



Enterprise Architecture
Facilitation Guides

July 2005



FACILITATION GUIDES

Introduction

This supplement is intended to be a library of facilitation guides used within the NASCIO community for facilitating the delivery of enterprise programs and projects.

NASCIO is interested in providing tools that will assist the wider government community launch and mature their enterprise architecture programs. The Architecture Working Group identified the need for tools to assist in **facilitating** the delivery process of enterprise architecture. That delivery process will require attention to governance, framework(s), methodology, training, facilitating, and many other dimensions for insuring the successful initiation and vitality of an enterprise architecture program. If there is a primary dimension that requires more attention and careful planning than the others it is organization – *i.e., the people side of enterprise architecture*. It is critical to the success of any enterprise architecture program that people are drawn into the activities of enterprise architecture delivery through effective communication and collaboration.

This supplement of the NASCIO Enterprise Architecture Tool-Kit is intended to collect and share a variety of facilitation guides from members of the NASCIO community. NASCIO members have addressed various aspects of program implementation and architecture development depending upon their unique circumstances and priorities. The aspects presented include the following subjects:

- *guidance on facilitation of meetings and workshops;*
- *establishing teams and team membership;*
- *gaining participation from team members;*
- *resolving conflict;*
- *record keeping of decisions and action items;*
- *keeping the team spirit alive;*
- *maintaining productive working relationships;*
- *keeping the team on track;*
- *approaches for productively exercising an established methodology;*
- *researching new technologies;*
- *gap analysis; and*
- *conducting compliance reviews*

As enterprise architecture is a program, the continued vitality of such a program is dependent on continued effective planning and execution in delivering enterprise architecture elements. For example, it can be expected that teams and committees will be required to deal with issues where there is a diversity of opinion. The creativity inherent in a team must be fully leveraged, while maintaining a course of action that delivers the intended results within the constraints of budget and schedules. Effective use of facilitation tools can expedite establishing consensus on the issues while maintaining a positive team spirit. This approach recognizes that the team will have many more mountains to climb after the current issues are identified, discussed, and resolved. The project team must be good at solving problems in an effective, productive manner. Conflict must be recognized as inevitable, and must be faced with objectivity and a strategic perspective – an enterprise perspective.

The following guides are presented with the understanding that there is also a diversity in the level of skill and experience among facilitators. The guides presented are pragmatic and can assist individuals at all

levels of skill and experience. It is expected that everyone will find the varied aspects of these materials useful in continuing to develop skills and expertise in the broad discipline of facilitation.

State of Connecticut
Enterprise Architecture Planning
Domain Team Guidebook

Developed for Domain Team Leaders
and Team Members

Single Document Version 2.0
June 2005

Department of Information Technology
Enterprise Architecture Program Office

Table of Contents

Section 1. Introduction to the Domain Team Operations Manual	1
Background and Goals	1
Current Governance Model	3
Formal Governance Groups of the EWTA	3
Using the Guidebook	5
Section 2. Team Management Guidelines	7
Roles and Responsibilities	7
Domain Team Meetings	8
How to target, qualify, obtain and retain team members	9
Documentation and status report requirements	10
Managing and prioritizing workloads of domain teams	11
Developing and documenting work plans for domain teams	13
Use of subcommittees for projects	13
Implementing Architecture	13
Section 3. Developing a New Domain Architecture	15
What is a domain?	15
What is a domain architecture?	15
Why do we want domain architectures?	15
What is a domain architecture based on?	16
Team Leader Activities	17
Domain Team Activities	17
Subject Matter Expert Activities	19
Standard format for domain team documents	20
Cross-Domain Issues	21
Section 4. Updating a Domain Architecture	23
Events leading to domain architecture changes	23
Frequency of domain architecture updates	23
Two primary classes of changes to architecture documents	24
Documenting reusable components and configurations	25
EWTA Update Process Workflows	25
Section 5. Identifying and Closing Gaps in a Domain Architecture	31
The Key Steps in Gap Analysis	31
Step One – Identifying Domain Gaps	31
Step two – Analyzing Domain Gaps	32
Step Three – Develop Recommendations	33
Step Four – Prioritize Recommendations	33
Section 6. Researching New Technologies, Products and Standards	35
Reasons for Doing Research	35
Domain Team Research	35
Mandatory Evaluation Criteria	37
Outcomes from Research	39
Section 7. Relating Domain Architecture to Infrastructure	41
Role of Domain Architectures and Infrastructure	41
Relationship of Domain Architectures to Infrastructure	41
Issues Involving Infrastructure Development	41

Section 8. Conducting Architecture Conformance Reviews	43
How to conduct a conformance review	43
Process for architecture conformance reviews by domain teams	43
Documentation Requirements.....	43
Appendix 1. Glossary of Abbreviations	45
Explanation of Abbreviations	45
Appendix 2. Deliverables (Templates) for Domain Team Activities.....	47
DT-1 Action Plan for Domain Team Research.....	49
DT-2 Recommendation for Domain Architecture Change.....	53
DT-2B Post Hands-on Evaluation Report and Recommendation.....	57
DT-3 Hands-on Project Plan Template.....	61
DT-4 Gap Analysis Report from a Domain Team.....	63
DT-5 Proof of Architecture Project Plan Template	65
DT-5B Post Proof of Architecture Report and Recommendation	67
DT-6 Monthly Status Report from a Domain Team or Subcommittee	71
DT-7 Report on Monthly Domain Team Leaders Meeting	73
ARB-1 Architecture Review Board Rejection of request for Domain Architecture Change...	75
Form EX-1 Request from Agency for Exception to EWTA Part B – Domain Team Recommendation	77
Appendix 3. Descriptions of the Technical Domains.....	81
Basic Technology Domains	81
Applied Technology Domains	83
Appendix 4. EWTA Update Process Workflow Diagrams	85
Appendix 5. Roles and Responsibilities	90
Business and IT Strategy Board.....	90
Architecture Review Board.....	90
Enterprise Architecture Team.....	90
Technical Domain Teams	91
DOIT Architecture Division	91
Enterprise Program Management Office (EPMO)	91
Appendix 6. Example of a Configuration Management Process.....	93
Involved Parties and Major Roles (Responsibilities).....	93
Major Activities	94
Information and Process Flows.....	94
Appendix 7. RFP Section for System Architecture.....	97
State of Connecticut Enterprise-Wide Technical Architecture.....	97
EWTA Conformance Review	98
Overall System Architecture.....	98
Technology View – Structural Diagram and Component Specification	100
Appendix 8. The EWTA Exception Process	104
Form EX-1 Agency Request for Exception to EWTA	105
Form EX-1 Request from Agency for Exception to EWTA Part B – Domain Team Recommendation	108
Form EX-1 Request from Agency for Exception to EWTA Part C – To be completed by the Architecture Team	111

Section 1. Introduction to the Domain Team Operations Manual

As an active participant in the State of Connecticut Enterprise Architecture Program, you are aware that an Enterprise-wide Technical Architecture (EWTA) is never completed. For that reason, the Department of Information Technology (DOIT) felt it necessary to create a guidebook to be utilized as a reference when progressing through the processes involved in maintaining the EWTA. This document will guide domain team leaders, team members and subcommittee members through the various technical and governance processes that have been defined to make EWTA a self-sustaining program.

Background and Goals

DOIT embarked on a project in April 2000 to create a statewide technical architecture to provide the framework for making strategic technology investment decisions on a cost effective, enterprise basis. These IT decisions must also meet the diverse business needs of the agencies in the executive branch, the constitutional officers, higher education institutions, and the other branches of state government. It was determined from the beginning of the project that to be successful, the State of Connecticut's technical architecture would have to:

- Be based on the strategic business direction of the state as an enterprise.
- Be based on a planning process that supports strategic business planning as well as ongoing tactical decisions made when implementing systems.
- Involve agency business managers as well as IT staff throughout the process.
- Provide strategic direction for making technology decisions without requiring wholesale and major changes to the current IT environment.
- Allow agencies to share many IT infrastructure components without sacrificing responsiveness to the changing business needs of individual agencies.
- Reduce the time it takes IT to satisfy ever shorter agency business change cycles by making the IT environment adaptable to change.
- Reduce the cost of IT over the lifecycle of each system.
- Have a governance process that supports the ongoing evolution of the architecture as well as its enforcement.
- Evolve in synch with changing business strategies.
- Be implemented in a short amount of time to avoid analysis paralysis.

In May 2000, an Architecture Team, made up of six DOIT managers and six senior agency managers, was established to discover and articulate the enterprise business requirements of the State for use within the EWTA process. These business requirements were documented in two essential documents: the Common Requirements Vision and the Conceptual Architecture Principles.

The Common Requirements Vision represents the environmental trends, major business drivers, business information requirements and requirements for technical architecture that tie the IT architecture to the business needs of the agencies

The nine original technical architecture domains:

1. Platforms
2. Networks
3. Security
4. Enterprise Systems Management
5. Middleware
6. Data Management and Data Warehouses
7. Application Development
8. Collaboration and Directory Services
9. Web / E-Government

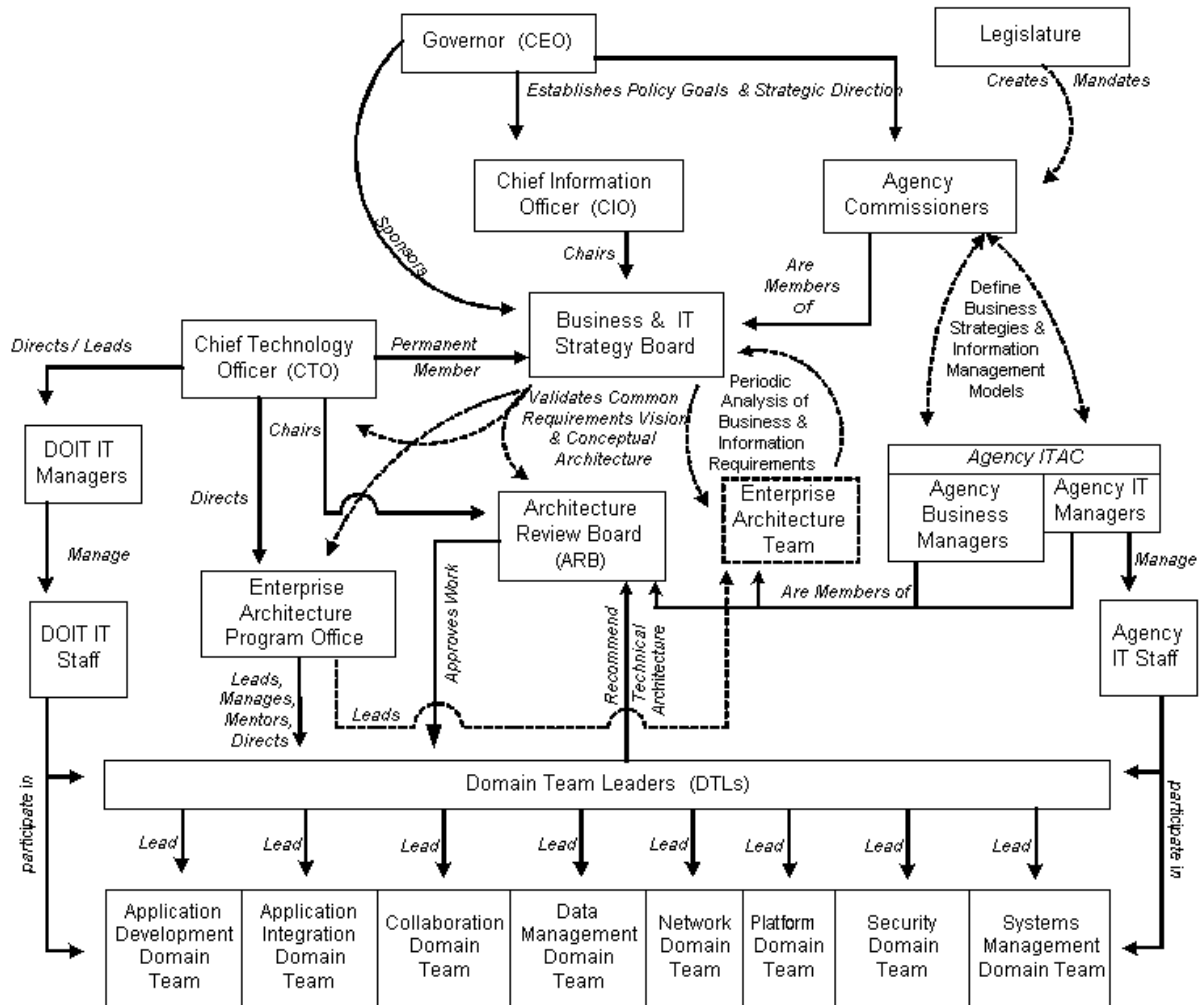
and the State. The Conceptual Architecture Principles represent the core business and technical principles on which all the technical domain architectures are based. That history and overview is captured in the Enterprise-wide Technical Architecture Introduction which can be found on the Internet at <http://www.ct.gov/doit/lib/doit/downloads/intro.pdf>.

The Architecture Team defined nine domains, or groups of related technology, that include most of the components utilized in information technology. Nine teams of technical experts from throughout the State of Connecticut were deployed to develop the initial technical architecture for each domain. The results are documented in the original nine Domain Technical Architecture Documents that were published in January of 2001. The current versions of the technical architectures and their associated appendices and guidelines are available online at <http://www.ct.gov/doit/cwp/view.asp?a=1245&q=253968>. These documents define design principles, technical standards, product standards, and implementation guidelines that will be utilized by the agencies and DOIT, as well as vendors and consultants implementing state systems. It is the responsibility of the domain teams to maintain and update the domain technical architectures when changes in the environment occur. Major changes to the domain architectures are handled through a formal process that involves the Architecture Review Board.

Current Governance Model

State Government – Connecticut

The following diagram illustrates the Architecture Governance Model for the State of Connecticut.



Formal Governance Groups of the EWTA

To create and maintain the EWTA, an organizational structure was put in place. These EA specific groups interface with other organizational entities normally found in an enterprise IT services group. The following is a description of the different governance groups involved in the process and their roles.

CIO

The Chief Information Officer is the executive sponsor for the Enterprise Architecture Program. As DOIT's agency head, reporting directly to the governor, the CIO is a primary point of contact with the policy and program functions in State government, including the agency commissioners, who are both peers and customers.

Business and IT Strategy Board

The Business and IT Strategy Board exists to ensure the alignment of IT with the business requirements of the State and its agencies. This group verifies the Common Requirements Vision and approves the Conceptual Architecture Principles of the EWTA. The board works with the Architecture Team to keep the Requirements for Technical Architecture and the Conceptual Architecture Principles current with the business needs of the State. They provide important advice and support for new statewide IT initiatives and policies, as well as adjudicate final appeals for exceptions to architecture standards. This board is chaired by the Chief Information Officer.

Architecture Review Board

The Architecture Review Board (ARB) is responsible for the approval, promotion and enforcement of the technical standards. Its membership consists of senior State IT and business managers. The ARB approves domain team deliverables (i.e. technical standards, design principles, product standards, best practices, and standardized configurations) and adjudicates requests for exceptions to architecture standards. This board is chaired by the Chief Technology Officer.

Technical Domain Teams

The technical domain teams provide the knowledge and expertise required to develop the technical architectures and standards for the EWTA process. Each team consists of technical experts from throughout the State. These teams are responsible for the development and maintenance of the Domain Architecture Documents, including the domain specific deliverables. The teams are expected to keep abreast of new technology and make recommendations on new technology to address deficiencies in the current environment. The teams also participate in the Exception Process. Each team is lead by a senior technical person with broad knowledge in the subject areas covered by the team and deep knowledge in one or more of the technologies addressed within the domain technical architecture.

Enterprise Architecture Team

The architecture team translates the agencies' requirements into business driven IT direction statements. Its members include senior IT and agency business managers. This important team develops and updates the Common Requirement Vision and Conceptual Architecture Principles that document the business requirements of the State that must be addressed by the technical architecture. This is not a permanent group. It is activated on a periodic basis or whenever a major change occurs that was not anticipated in the previous analysis of business requirements.

Enterprise Architecture Program Office

The Enterprise Architecture Program Office (EAPO) coordinates the execution of the EWTA processes. The office is responsible for coordinating all technical domain team activities, as well as communications and the publication of EWTA deliverables.

Director of Architecture

The Director of Architecture is responsible for the design and direction of the governance activities associated with the development and implementation of the enterprise technical architecture. The director ensures that the EA Program Office is aware of and attuned to evolving business requirements and information technology strategies. The director is also responsible for intra-agency and inter-agency communications related to the EA Program. The State of Connecticut Enterprise Architecture Program Office was previously the Division of Architecture & Planning which was headed by a Director level position. The Director retired in the spring of 2003 and the position was not refilled. The Chief Technology Officer has been serving as the Chief Architect for the EA Program. We believe the functions served by a full time Director are essential to the long term viability of an Enterprise Architecture Program.

Using the Guidebook

This manual is designed to provide guidance to domain team leaders, domain team and subcommittee members as well as subcommittee chairpersons in developing, updating, and refining the EWTA technical domain architectures and their associated appendices and implementation guidelines.

The chapters are organized as follow:

- Team Management Guidelines – for team leaders. Provides guidance on organizing and managing domain teams and their workload; also provides information on team member roles and responsibilities.
- Developing a New Domain Architecture – for new team members or team leaders developing a new technical domain. Provides basic information on what domain architecture is, and the process used to develop it in the first place.
- Updating a Domain Architecture –for team leaders, team and subcommittee members. Provides reference material about what triggers the need for a change to the domain architecture, the process for documenting recommendations for the update, and how updates are approved and published.
- Identifying and Closing Gaps in a Domain Architecture – for team leaders, team and subcommittee members. Provides guidance on how to perform gap identification, analysis and resolution for a domain architecture.
- Researching New Technologies, Products and Standards – for team leaders, team and subcommittee members. Provides guidance on how research of technology is conducted and documenting the outcome.
- Relating Domain Architecture to Infrastructure – for team leaders, team and subcommittee members, infrastructure service managers and project teams. Describes the relationship of the architecture work by domain teams and the enterprise infrastructure that is being planned and implemented by DOIT.
- Conducting Architecture Conformance Reviews – for team leaders. Describes the process used to assess conformance to architecture standards.

- The Appendices - provides the templates used to structure EWTA deliverables, EWTA process diagrams, roles and responsibilities of all EWTA governance bodies, an example of a domain specific configuration management process, and other relevant background information. In addition, these are many links back to the EWTA material and the published technical domain documents for reference.

Section 2. Team Management Guidelines

The following section is designed to provide guidelines for domain team leaders on managing domain team activities, organizing and prioritizing workloads, and documenting deliverables. In addition, it will provide clarification of roles and responsibilities for members of the domain team, subcommittee members and chairpersons involved with domain activities.

Roles and Responsibilities

Domain Team Leader

Each domain of the Enterprise-wide Technical Architecture (EWTA) has a leader who leads the activities of the domain team to keep the domain architecture current and relevant, and represents the team in cross-domain and enterprise architecture planning activities. The minimum time commitment for this role is .2 FTE.

The responsibilities of the team leader include leading or coordinating all team activities, communications and outputs. These include:

- Periodic updating of the content for the domain architecture and associated documents.
- Assigning and leading the domain team members, including scheduling regular meetings and ensuring a broad base of expertise on the team to cover the technical components making up the domain.
- Assuring that the technical components assigned to the domain are appropriate and providing any cross-domain coordination for components if needed.
- Developing and managing the execution of a work plan for all activities and deliverables that the team is responsible for, including:
 - a. Decomposing Conceptual Architecture Principles into domain specific principles.
 - b. Developing domain specific deliverables (i.e., design principles, technical standards, product standards, standard configurations, and guidelines).
 - c. Coordinating on-going research activities of team members such as utilization of external research services and vendor presentations.
 - d. Performing gap analyses to identify gaps between the installed base and the future state for each of the technologies within the domain team's purview.
 - e. Recommending initiatives to resolve gaps.
 - f. Evaluating projects or proposals for conformance to architecture.
 - g. Ensuring that the domain architecture and documents are reviewed and refreshed as needed.
- Identifying resource needs required by the team for tasks listed above as part of work plan development.
- Overseeing subcommittees assigned to deliver specific tasks for the domain team.
- Coordinating and communicating with other domain teams and with infrastructure service managers, the Enterprise Architecture Program Office and the Architecture Review Board.
- Documenting the domain architecture, preparing status reports and other deliverables required for approval of domain architecture additions or modifications.

Domain Team Members

The domain technical teams provide the knowledge and expertise required to define the technical architectures. These teams are responsible for the development and maintenance of the content for the domain architecture documents, including all domain specific deliverables (i.e. design principles, technical standards, reference models, product standards, standard configurations, and best practices). The teams are expected to keep abreast of new technologies and make recommendations on their potential to address deficiencies in the current environment. The minimum time commitment for this role is .1 FTE, depending on how many components the individual is covering.

Each domain team of the EWTA consists of agency and DOIT technical personnel who have expertise in one or more technical components that make up the domain architecture. Membership is usually assigned on a year-to-year basis and members are expected to keep abreast of the technical trends and standards for their area of expertise. They provide support and consulting for the domain team based on what is best for the State of Connecticut as an enterprise.

Responsibilities of team members include:

- Attending regular domain team meetings.
- Ongoing enhancement of the domain architecture via tasks assigned by team leader.
- Ongoing research for assigned technical areas based on the member's expertise.
- Leading as chair or participating as a member of a technical architecture subcommittee.
- Providing technical consulting in assigned technical areas as directed by team leader.
- Communicating EWTA goals and the domain architecture to agencies and vendors.

Domain Subcommittees

Subcommittees are created by the domain team leader to work on a specific task or project related to the domain architecture. The domain team leader works with the subcommittee to define specific objectives, tasks, deliverables and evaluation criteria for these subcommittees, and assigns a subcommittee chairperson to oversee the group. The chairperson is typically the most experienced expert in the technology being investigated.

The subcommittee chair oversees the group and communicates the recommendations back to the domain team for discussion and approval. Subcommittees are often used to research, evaluate and make recommendations for new technical or product standards for the domain and to author associated implementation guidelines.

Responsibilities of the subcommittee chairperson include:

- Leading the activities of the subcommittee.
- Reporting status of activities back to the team leader.
- Ensuring completion and quality of deliverables assigned to the subcommittee.

Domain Team Meetings

Team meetings should be conducted at least quarterly with the entire domain team. Additional sessions can be scheduled at the discretion of the domain team leader, but subcommittees will conduct most domain teamwork between quarterly meetings. Subcommittees will meet at the discretion of the domain team leader or the subcommittee chairperson for that group. The

domain team leader should speak with all subcommittee chairs on a weekly basis to monitor progress and to surface any issues for resolution.

The quarterly meetings of the domain team should be documented with minutes or a meeting summary (see Form DT-6 Quarterly Status Report from a Domain Team in Appendix 2). Decisions made by the team that resulted in changes to the domain architecture should be reviewed and verified at the quarterly meetings.

How to target, qualify, obtain and retain team members

Each EWTA domain is made up of a group of related technologies or components. While it is ideal to have an expert on the team for each technology component, experts may not exist in the State for some components and the team size needs to be kept to a manageable number. Domain teams of six to ten members are recommended. The goal is to maintain a broad level of expertise across the team with some members responsible for one or more technologies. Additional technology expertise from outside the team can be used on subcommittees for specific research activities.

Recruiting the best-qualified personnel is one of the most difficult tasks of the domain team leader, since the best-qualified personnel are usually the busiest. Methods for targeting needed expertise include:

- Word-of-mouth among domain team members (the domain team members represent a community of technicians that often know who their peers are across the State and know it is in their best interests to have a qualified team).
- Utilizing the DP Skills Inventory, when implemented by DOIT, to get a profile of personnel experience in the state.
- Posting opportunities in various list services and newsletters that are available to these technical experts.
- Identifying agency or DOIT projects that will require training in-house personnel or acquiring outside expertise in a technology area that is not covered by anyone on the team. Specialized technical expertise that must be acquired for an agency or DOIT project could be utilized by the domain team to help the team evaluate the technology from a statewide perspective.
- Utilizing the other EWTA groups such as the EA Program Office, the ARB or the Business and IT Strategy Board to find in-house expertise.

Qualifying the potential new member will require an understanding of the experience and competence needed for that technology component. Ideally, members should have some hands on experience with major aspects of the targeted technology.

With the constant changes in technology, team leaders should look for a profile of expertise that demonstrates an understanding and aptitude for this area of technology. Team members should have an understanding of the technology and how it is applied, rather than just experience with one or two products or technology components. Team leaders can work with the EA Program Office to target appropriate training and access to research to round out the experience of team members.

Once a qualified person has been identified, the next step is to get them on-board. While knowledge of the EWTA process is reaching more agencies, you should not assume that the

person knows anything about EWTA or architecture. Getting their interest will depend on your ability to convince them that the time spent in this process has value to them and the State of Connecticut. It would be prudent to identify other people with source credibility that this person can talk to about the value of the process.

After an individual has agreed to participate in the domain team, the next step is to get clearance from their management to give them adequate time to participate. Team leaders should work with the EA Program Office to communicate the value of EWTA directly to the new member's management. The value must be articulated in terms of how it may help that agency, the projects being planned or implemented, the expertise of the person needed, and the ability to integrate systems with outside agencies and organizations. The time commitment may need to be limited at first until the qualified person or their management sees this value. This may mean limiting their involvement to a particular subcommittee or initiative at first. It may also mean getting an endorsement from the ARB, the Business & IT Strategy Board, or DOIT management to demonstrate the importance of their participation to the State of Connecticut.

To retain valuable technical expertise on the domain team or any subcommittee, it is important that members, and their management, are aware of the accomplishments of the team. Team members should always be encouraged and rewarded when possible for their work and never taken for granted.

Training requirements

All team leaders should attend the introductory training for EWTA. This provides context on how the process works and why, and on their role in the process. Periodic classes on EWTA for domain team members will be made available as the program evolves. In addition, all team members should be encouraged to receive training in their areas of expertise. While DOIT is not providing direct funding for individuals to do this, appropriate training is often a matter of knowing what classes are available and convincing members' management as to its value. Team leaders should obtain and share information on training opportunities in their domain. A team leader should expect to provide mentoring for a replacement team leader, through at least the first team meeting.

DOIT normally provides for half-day briefings by experts from external research services and web access to research materials. Some vendors provide product training at no cost. It is up to the domain team leader and team members to take advantage of these opportunities. There are also many specialized list services and web sites designed to keep technology communities updated and in touch. In addition, initiatives to define standards and best practices in new technologies will require vendor assessments and on-site visits, which provide opportunities to learn.

Documentation and status report requirements

The technical domain architecture documents themselves are the primary documentation responsibility of the team leader, using content provided by the team. These documents are the repository of information describing domain technology components, as well as the associated standards, design principles, reference models, and guidelines that will be used by agency personnel or vendors and consultants working for agencies to implement systems. It is important that these documents continue to be updated and enhanced so that the work of the domain team

has meaningful impact on all systems being built or enhanced. The process and associated documentation requirements are described in the Updating a Domain Architecture section of this guideline.

Monthly domain team meetings should be documented with minutes or a meeting summary and shared with the other domain teams to give everyone information on what activities and issues are being addressed. This provides information needed to identify and coordinate cross-domain activities (see Form DT-6 Monthly Status Report from a Domain Team in Appendix 2). Subcommittees must provide status reports on active initiatives to the domain team leader as well. The decision on the format of this report is left up to the domain team leader.

Managing and prioritizing workloads of domain teams

Domain team members are normally expected to be available for one day a month to support the work of the team. Additional time may be requested of a member for work on a subcommittee, with a subcommittee chairman possibly requiring up to one day a week. A team leader normally requires the equivalent of one day a week to manage a domain team, meet with other domain team leaders to discuss cross-domain issues, and to represent the team for consulting and compliance engagements. Additional time may be by team leaders to oversee the work of subcommittees, deal with gaps, track the status of domain work, and conduct their own research.

With limited available resources and the significant amount of work involved in the architecture process, it is important that workloads be identified and organized. This workload planning is one of the important responsibilities of the domain team leader.

Prioritizing Workloads

Before workload can be defined and delegated, it is important to categorize the work so that it can be prioritized on an ongoing basis. While work should be prioritized within each category, the categories have different priorities relative to each other. Domain team workload can be categorized and prioritized on the following basis:

Responding to changes in the State's business needs

The successful implementation of EWTA is dependent on the technical domain architectures being able to directly support the business drivers and their associated Conceptual Architecture Principles. Therefore, the domain architecture must be reviewed periodically to assess the impact of changes to the business drivers and environmental trends of the State. This review must be the highest priority because of the potential impact to the ongoing work of the team. This work normally is completed within two weeks of getting new Conceptual Architecture Principles or Requirements for Technical Architecture.

Gap Initiatives

Beyond the annual refresh of the domain architecture and ongoing work on the domain documents, completing gap initiatives is the core ongoing work of the teams (see section entitled Identifying and Closing Gaps in a Domain Architecture). Gaps are prioritized once or twice a year by the teams and in conjunction with the other teams. Project plans for the highest priority gap initiatives are completed by the domain team leader and assigned to subcommittees to complete them. Priorities for gap initiatives are usually based on team input, the dependencies of

other domains, DOIT priorities and availability of resources. While additional gaps may be found throughout the year, gap priorities do not change that often. Gap initiatives are the second highest priority for ongoing domain work.

Architecture Conformance Reviews

Domain teams have a role to play in the governance of the EWTA. One aspect of this is to review proposals to RFPs for architecture conformance. This activity can range from providing consultation on standards and implementation issues at a meeting with an agency, to a documented conformance review of a multi-million dollar vendor proposal to an RFP. The later can involve a significant amount of work (especially evaluating multiple proposals). This work is usually considered a high priority because it usually involves large projects and affects their timetables. Team leaders are dependent on good project planning by agencies to ensure that this work can be scheduled in a timely manner and with a minimum of interruption to the ongoing work of the team. Team leaders should work closely with the EA Program Office and resource owners or scheduling function to estimate resource requirements and schedule time for work. Conformance reviews can take two to three weeks to complete and may require several team members' participation. Reviews requiring significant resource time may require leaders to document the impact on other projects and report this to the ARB for assessment.

Evaluating agency and infrastructure projects, and exception requests

Another ongoing governance responsibility of domain teams is the review of new agency and infrastructure projects during architecture consultations and conformance evaluations. In addition, agencies may file exceptions to the architecture with the Architecture Review Board that may result in an ARB request to the domain team for a written evaluation.

These evaluations are also a high priority, team leaders should try to monitor ongoing agency and DOIT projects to better anticipate, and schedule resource needs. This requires a close working relationship with the resource owners or scheduling function to provide advanced planning and resource requirement information to the Architecture Division and the domain team leaders.

Updating the domain architecture

To be meaningful, the domain architecture must be updated periodically to relate to changes in the State's needs as well as the technology available. In addition, the domain architecture documents should be refined to make them more useful and to provide reference models and guidelines for implementing the architecture.

This ongoing updating and refinement process is not as high a priority as the previous categories, but the resources and work involved must be accounted for in work plans to ensure it takes place. Much of this updating is an outcome of the EWTA Update Process, while the refinement of documents requires a more diligent management approach by team leaders.

Researching technology components and training

Domain team members should be assigned specific technology components to keep abreast of and identify changes in technology trends that may effect the refresh cycle or cause a gap in the architecture. Adequate time and access to information and training should be allocated to each expert, although most IT professionals keep up with technology related to their expertise during work hours while completing other duties. See Section 6 Researching New Technologies,

Products and Standards section for more information on this activity.

Developing and documenting work plans for domain teams

With the need to balance the workload and priorities of different categories of work in a domain, team leaders need to organize all work with a comprehensive work plan. A template is provided in Appendix 2 (Form DT-4 Gap Analysis Report from a Domain Team) to help team leaders monitor resources needed, timeframes required and deliverables involved with each task involving the team.

Work involving gap initiatives will be documented in an Action Plan (Form DT-1 Action Plan for a Domain Architecture Update requiring Architecture Review Board Approval in Appendix 2) so that it can be delegated to subcommittees for completion. Other work of the team can be managed using only the work plan. The domain work plan should facilitate the organization and scheduling of work as well as adjusting to the impact of new priorities such as compliance reviews and project evaluations.

Use of subcommittees for projects

Subcommittees should be used whenever work does not need the entire team. Managing a subcommittee involves more coordination, but the EWTA Update process has several forms to facilitate this. The subcommittee chair oversees the group and provides status reports to the domain team leader. When the subcommittee has completed its work, the chair communicates the recommendations back to the full domain team for discussion and approval. See the Updating a Domain Architecture section for more details on how to use subcommittees to manage workload.

Implementing Architecture

Question: Who is responsible for implementing the architecture?

Answer: Everyone

Ideally, architecture guides **all** IT decision making (infrastructure, application development, operations, etc.). An awareness of architectural conformance must become second nature. The domain architectures are intended to provide guidance for many day-to-day IT activities. For example:

- IT procurement
- Buy-versus-build decisions
- Setting evaluation criteria in RFPs
- Hardware upgrading
- Software package/tool selection
- Design decisions in the context of a specific IT project/system

Section 3. Developing a New Domain Architecture

It's a creative process, not a cookbook!

This section is about creating a domain architecture for the first time. The process for updating an existing domain architecture is discussed in the next section of the guidebook. This section should be read by anyone who is unfamiliar with the EWTA process, in particular new members of existing domain teams or teams assigned to develop the architecture for a new domain. The most important thing to remember about developing a domain architecture is that it is a collaborative, iterative, creative process. A team effort is required because of the complexity of the individual technologies and their interdependencies. Domain architectures are never done because change is a constant in the realm of information technology and in the realm of government services. Architecture development is a creative endeavor that requires thoughtful analysis and inspired thinking to respond to the many challenges inherent in an architectural approach to deploying and managing technology to satisfy the business needs of the agencies.

What is a domain?

A domain comprises a group of related technologies, usually organized around common IT infrastructure services or information management functions. The Director of Architecture is responsible for determining how many technology domains are appropriate and assigning individual technologies to them. The list of technologies typically contains those currently in use and new technologies that are likely to be implemented in the near future. There are currently nine domains: Application Development, Collaboration & Directory Services, Data Management & Data Warehouse, Enterprise Systems Management, Middleware, Network, Platform, Security, and Web/E-Government. For the list of technologies covered by each of these domains see Appendix 3.

What is a domain architecture?

A domain architecture acknowledges and interprets the Conceptual Architecture and the Requirements for Technical Architecture in terms of the specific technologies and products associated with the domain. The architecture defines:

- General principles adopted from the Conceptual Architecture with rationales and implications further articulated for the domain technologies.
- Design principles specific to the domain technologies.
- Technical standards for the domain technologies.
- Reference models for implementing the domain technologies.
- Product standards for the domain technologies.
- Standardized configurations and reusable components for the domain technologies.
- Guidelines and methods for the implementation and management of the domain technologies.

Why do we want domain architectures?

The Enterprise-wide Technical Architecture (EWTA) is an interrelated set of domain architectures. They are intended to guide all IT activities to support the State's business

strategies and information requirements. These activities include the planning, design, selection, construction, deployment, support and management of information technologies. Over time, as the Enterprise Architecture Planning Program matures, the information requirements will be articulated as a formal information architecture. The EWTA also provides the basis for evaluating and prioritizing changes to the State's portfolio of information systems (referred to as the Applications Portfolio).

What is a domain architecture based on?

When a domain team is charged with developing the technical architecture for a group of related technologies, the framework for their research and deliberations is provided by the Conceptual Architecture. The rationale for doing this is twofold. First, the use of a common framework allows multiple teams to work in parallel with some assurance that their recommendations will align with each other and support the work of domains with which there is technological overlap. Secondly, the domain architecture is based on a set of principles and requirements that are derived from the agencies' business drivers and business strategies. Defining the domain architectures within this business context provides the initial alignment of information technology to the State's business needs.

To provide a context for domain decisions, it is useful to have a mental map of the relationships between the deliverables defined during the creation of the Conceptual Architecture. Those relationships are as follows.

Environmental Trends – The environmental and technological trends that are driving change in the agencies. They include important internal and external forces as well as government trends at the federal, state and local levels.

Agency Business Strategies – The intentional responses of the agencies to each of their respective business drivers.

Enterprise Business Drivers – A consolidated list of the essential business change drivers that are common to a majority of State agencies and require a statewide technological response.

Enterprise Business Information Requirements – Who needs information, what information do they need, where do they need it, when do they need it, where does it come from, and what are the currency and integrity issues for that information. These information management issues are considered for each of the State's enterprise business drivers.

Requirements for Technical Architecture - What is required of the technical architecture to support the business information requirements of the State as an enterprise.

The Conceptual Architecture Principles – the core business and technical principles upon which domain architecture principles are based.

For an explanation of the process via which each of these deliverables is created, the reader is referred to the description of the Enterprise Architecture Process documented on the DOIT web site at <http://www.ct.gov/doit/cwp/view.asp?a=1245&q=253980>.

Team Leader Activities

The Domain Team Leader must lead, guide, push, pull, cajole and encourage the team members to complete their individual assignments and to fulfill the responsibilities of the team. Architecture development is an iterative creative process. The team should be encouraged to approach its work with an open mind and leave sacred cows behind. Team leaders should strive to develop a rapport with each of the team members and to foster an atmosphere of mutual respect within the team. Delegation of work to team members is not only good survival strategy, but the team will be more effective when the members realize they are empowered to guide technology decisions for the State.

As coordinator of all domain team activities, it is imperative for the team leader to be well organized and to communicate openly and frequently with team members. Every member of the team must have complete and current documentation and understand what is expected of them at each step of the development of the domain architecture. Open and active communication with the Enterprise Architecture Program Office, with the other domain team leaders and with infrastructure service managers will be essential for the coordination and resolution of cross-domain issues. A number of technologies and technical standards impact multiple domains and will require creative thinking and collaboration across domain team boundaries.

The team leader is responsible for all documentation generated for publication as part of the domain architecture. Delegation of responsibility for meeting minutes and draft documents is appropriate, but the team leader is responsible for the quality and completeness of any documentation produced by the team and all its subcommittees. See Standard Format for Domain Team Documents below for information about the format and content requirements for domain team deliverables.

Domain Team Activities

Review and Acceptance of the Domain Technologies

The first task of a newly formed domain team is to review the technologies assigned to the domain by the Architecture Team. If the domain team believes that a technology is more appropriately addressed in another domain, that recommendation must be proposed to the Director of Architecture. When the list of technologies is finished, the domain team leader must assess whether the team has the knowledge and experience to address all the technologies. The EA Program Office can then assist with recruitment of missing subject matter experts.

Review of Functionality and Major Issues for the Domain Technologies

It is important to organize the working list of domain technologies into functional categories in order to establish a baseline understanding of the technologies, and to facilitate prioritization and delegation of work. The team then prepares a list of functions that should be addressed within each category. Missing technologies will be revealed during this brainstorming activity. The master list of domain technologies is then revised. A list of issues is defined for each of the technology categories within the domain. This information will help set priorities for the domain team's work, especially if the team will not be able to address all technologies within the time allowed for the initial development of the domain architecture.

Review and Adoption of Conceptual Architecture Principles

A thorough grounding in the Conceptual Architecture is essential to the successful development of the enterprise architecture. Therefore, the third major task of the domain team is to analyze and interpret the Conceptual Architecture Principles in terms of the domain's technologies. This analysis results in the adoption of Conceptual Architecture Principles as general principles for the domain, with rationales and implications that are specific to the technologies within the domain. Implications will become important during the completion of gap analysis activities. It is important that thoughtful consideration be given to implications of implementing domain technologies so that they conform to the Conceptual Architecture Principles.

Review and Interpretation of RTAs for Domain Technologies

The fourth major task of the domain team is to analyze and interpret the Requirements for Technical Architecture (RTAs) in terms of the domain's technologies. This will assist with the definition of domain architecture principles, and identification of gaps in infrastructure services and support organizations. RTAs will also guide the selection of technical standards within the domain.

Defining Design Principles Specific to the Domain Technologies

During the analysis of Conceptual Architecture Principles and the Requirements for Technical Architecture, it will become apparent that additional principles are needed to guide the implementation of domain technologies. These design principles must be documented in the same format as the general principles, complete with rationales and implications.

Setting Priorities for Domain Team Work

The team must establish priorities for its work based on a number of factors. These include:

- Availability of subject matter experts.
- Need for infrastructure services that conform to the Conceptual Architecture and satisfy the Requirements for Technical Architecture.
- Severity and urgency of issues, and the priorities and budget of the Department of Information Technology and the State's other agencies.
- Major agency projects that require architecture guidance.
- Availability of resources to define low-level architecture specifications for configurations and to write implementation guidelines based on practical experience.
- Time available to complete the first iteration of architecture development.

Domain Architecture Gap Analysis

The first time through the EWTA process, there is usually insufficient time or expertise on the domain team to cover everything. These are gaps within the domain architecture itself. If current products or standards are not capable of meeting the strategic goals of the EWTA, they are also gaps in the domain architecture. Each of the functional areas or technologies within the domain that require further research and analysis will be prioritized and incorporated into the domain team work plan by the team leader. See Section 5 Identifying and Closing Gaps in a Domain Architecture for additional information.

Review and Acceptance of all Subject Matter Expert Work

Some of the domain team's work will be delegated to members with deep technical knowledge and practical experience with one or more of the technologies. This allows multiple architecture research and evaluation efforts to run concurrently. All deliverables from subcommittees are subject to review and acceptance by the full domain team. The team is responsible for ensuring that lower level decisions remain true to the Conceptual Architecture, conform to the domain's own principles and will not create conflict with other domain architectures.

Subject Matter Expert Activities

Descriptions and Status of Domain Technologies

For each of the domain technologies, a brief description is written to assure consistent definitions within and across the domains. These descriptions also help readers understand unfamiliar technologies and their relationships with other technologies. These descriptions are updated over time to reflect changes in the capabilities and maturity of the technologies. It is preferable that subject matter experts write each of the descriptions or at least have primary responsibility for researching the current state of each technology and its related technical standards. For ongoing work, these team members will assume responsibility for tracking those technologies and standards.

Conformance to Domain Architecture Principles

Each of the IT products and technical standards currently in use within State agencies should be rated for its conformance to technical standards, general conformance to the domain architecture principles and ability to satisfy the Requirements for Technical Architecture. Someone familiar with the technology or technical standard, preferably a deep subject matter expert, should perform these evaluations. Each product and technical standard is then categorized as Strategic, Transitional, Obsolete or Research/Emerging.

Strategic - These are the standards and products selected by the state for development or acquisition, and for replacement of obsolete or transitional standards or products. (Strategic means a three to four year planning horizon.) When more than one similar strategic standard or product is specified for a technology category, there may be a preference for use in statewide or multi-agency development. These preferred standards and products are indicated where appropriate.

Note: some strategic products may be in "pilot testing" evaluation to determine implementation issues and guidelines. Pilot testing must be successfully completed prior to full deployment by the agencies or the State.

Transitional - These are standards or products in which an agency or the State has a substantial investment or deployment. These standards and products are currently supported by DOIT, the agencies, or the vendor (industry, manufacturer, etc.). However, agencies should undertake development using these standards or products only if there are no suitable alternatives that are categorized as strategic. Plans should be developed by the agencies or the State to move from transitional to strategic standards or products as soon as practical. In addition, the State should not use these standards or products for development.

Note: many older versions of strategic standards or products fall into this category, even if not specifically listed in a domain architecture document.

Obsolete - It is highly likely that these standards or products, while still in use, will not be supported by the vendor (industry, manufacturer, etc.) in the future. Some products and standards have already reached the non-supported state. Plans should be developed by the agencies or the State to rapidly phase out and replace them with strategic standards or products. No development should be undertaken using these standards or products by either the agencies or the State.

Research / Emerging - This category represents proposed strategic standards and products that are in advanced stages of development and that should be evaluated by the State. Some of these standards or products may already be undergoing “hands-on” evaluation. Others will need to be tracked and evaluated over the next 6 to 18 months.

Recommending New Technical Standards and Technologies

During the course of technology and standards research, evolving standards and new technologies will be identified that support the domain architecture and the business goals implicit in the Conceptual Architecture. Standards that are expected to be worthy of inclusion in the domain architecture when they are adopted by the IT industry should be declared as emerging standards that will be tracked by the domain team. They can then be included in the domain team’s work plan and be assigned a priority and adequate resource time. For information on the assessment of emerging technical standards during routine research and monitoring of technologies, see the chapter on Researching New Technologies, Products and Technical Standards. If a standard has evolved to the Request for Comment stage (RFC version published), or a product is available in a BETA version, it can be declared as a subject of research. The team leader can then draft a proposal for how to best proceed with evaluating the new technology or technical standard. (See Section 4 on Updating a Domain Architecture for specific information about this process and its deliverables).

Documenting Standard Configurations and Reusable Components

One of the Conceptual Architecture Principles requires that applications, systems and infrastructure employ reusable components across the enterprise. For infrastructure, reusable components are defined as standard configurations. For applications and systems, reusable components are defined as libraries of modular programming code and standardized infrastructure services respectively. Code libraries will be developed as a central resource for application development teams. Infrastructure components are typically those that DOIT is responsible for on a statewide basis, or that will be widely deployed by the agencies.

Documenting Guidelines and Methods for Implementation and Management

Guidelines are practical advice for implementation and management practices based on the experience and research of the State’s most knowledgeable experts. Methods are more formal and more prescriptive. When approved methods are embodied in products, they will become strategic products.

Standard format for domain team documents

Templates for these documents are found in Appendix 2

Domain Architecture Document

Monthly Team Status Reports (DT-6)

Gap Analysis Report (DT-5)

Hands-on Research Work Plan (DT-3)

Cross-Domain Issues

A number of technologies and technical standards impact multiple domains and will require creative thinking and collaboration across domain team boundaries. It is essential that all members of all domains are familiar with the complete set of domain architectures. Some technology overlaps are more obvious than others are. For some technologies, the synergy between domain architectures is of overriding concern. Some domain technologies provide infrastructure services for other domains. In the practical application of architecture, systems are constructed with components from all the domains. Therefore, all the domain architectures must be in synch with each other. Open dialogue and cross-fertilization of ideas among the domains is very important. Cross-domain issues must be documented and discussed at the regular domain team leader meetings.

Section 4. Updating a Domain Architecture

All changes to a domain architecture must remain true to the EWTA Conceptual Architecture and satisfy the Requirements for Technical Architecture (RTAs).

This section describes the types of changes that can occur while updating a domain architecture and the process and deliverables for making them. There is a formal approval process for specific types of changes that will have major impact. The domain team has the authority to make other types of changes on its own, as long as there is consensus among the team members and they conform to the prime directive for domain teams as stated above. The specifics of the types of changes that fall into these two classes are detailed below in this section.

Events leading to domain architecture changes

Strategic Planning

Annual agency planning activities can cause revisions to the EWTA source documents, which in turn will trigger a comprehensive review of all the domain architectures. New business change drivers and business information requirements will impact the Conceptual Architecture Principles and the Requirements for Technical Architecture (RTAs). Changes in industry best practices for information technology can also impact the Conceptual Architecture Principles. These too will require a comprehensive review of all the domain architectures to determine the impacts (if any).

Agency and Infrastructure Projects

Routine project activities such as requirements analysis and architecture consultations may reveal a need to rework or refine portions of the architecture. As the architecture specifications for infrastructure services are defined, a deeper understanding of the cross-domain dependencies may require domain changes to reconcile lower level architecture elements such as interface standards, standard configurations and implementation guidelines.

Domain Team Activities

A basic premise of the EWTA process is that the domain architectures can only remain relevant through constant refinement and the resolution of gaps that are identified by the domain team. Change is supported and driven by the domain team's research activities. Routine technology tracking and focused research related to specific conformance reviews and project consultations will reinforce the need for greater conformance in some areas and greater flexibility in others.

Frequency of domain architecture updates

The frequency of updates to the domain architecture depends on a number of factors. Some technologies are rather volatile and experience rapid or frequent changes, while other change little in six months. Infrastructure and agency projects, while usually keyed to budget cycles, may occur at any time.

Domain architecture updates should happen at least once per year and should occur and work in conjunction with the mid-June agency planning cycle. It is expected that a change requiring ARB approval (see below) will occur every 3 to 6 months on average.

Two primary classes of changes to architecture documents

There are two primary classes of changes to domain architectures and their associated documents, those that require the approval of the Architecture Review Board, and those that do not.

Changes that require ARB approval

- Adding or removing principles, technical standards, or product standards.
- Adopting methods that become mandatory or are embodied in products that are categorized as strategic.
- Significantly altering the meaning or intent of a principle, technical standard or product standard.
- Changing the status of a product, i.e., from research to strategic, from strategic to transitional, from transitional to obsolete.
- Making any change that will have major impact on technology products, agency financial or personnel resources, or on the ability of an agency to implement application systems.
- Requiring modification of a pending RFP (SOW etc.) or an RFP currently out for bid.
- Requiring changes to ongoing implementation projects.
- Greatly accelerating the agencies' transition planning for implementing a new architecture.

Changes that a domain team can make under its own authority

- Updating version numbers of product standards.
- Adding or refining narrative to provide a better explanation of component technologies or standards.
- Providing guidelines for the implementation and management of component technologies or technical standards.
- Documenting reusable components and configurations.
- Updating the technology review section of a domain architecture document.
- Adding, updating, or deleting a best practice, provided it does not have a major impact on an agency or on multiple agencies.
- Recommending changes in component technologies or their domain assignments.
- Adding new technologies, products or technical standards to the research category.
- Identifying new gaps in the architecture for the *To Be Determined* section.
- Removing technologies, products or technical standards from the research category if routine research and monitoring indicates that they are not viable or will not fit within the EWTA.

Process and deliverables for changes that require ARB approval

Changes to the domain architecture that require approval of the ARB will follow the "Approved EWTA Update Process – June 7, 2001 (see Update Process Workflows below) and will utilize the deliverables defined for that process.

Process and deliverables for changes that do not require ARB approval

See the section entitled *Researching New Technologies, Products and Standards* for a discussion of the process and expected deliverables related to research activities.

Changes that do not require approval by the Architecture Review Board must always be documented. This is accomplished by updating the *Table of Changes* located at the beginning of each domain architecture document. The change statement must include the date of the change. It must also include a succinct but complete description of the item that changed and its location in the architecture document, e.g., “*In Table 2 Middleware Product Selection Matrix added STC e*Gate™ to Messaging and Application Integration Products – Research*”.

Changes can be proposed by anyone on the domain team but must be reviewed and approved by the full domain team. The domain team must consider cross-domain implementation issues before making any change. Only then should the domain team leader edit the document and submit it to the Enterprise Architecture Program Office for review and publication. If the EAPO agrees that ARB approval is not needed, it will notify the other domain team leaders of the proposed change. The team leaders will provide a peer review and commentary.

The new version of the domain architecture document, with appropriate change notices, will be published on the DOIT web site. The EA Program Office will also provide a summary report to the ARB outlining the changes that the domain teams have made to the domain architectures. Advisory notices will be sent to the agencies by the EAPO.

Documenting reusable components and configurations

Domain team leaders must work with their technology experts to define the appropriate content and standard formats for documenting reusable components and standard configurations for each of the domain technologies. As this will vary significantly from domain to domain, there is no single prescribed format that can be used for all technologies. For some technologies the content and format may be governed by methods and tools selected for implementing or managing those technologies. Of equal importance to the elements used to define reusable components or configurations is the process for creating and updating them. As an example of how to approach both process and documentation for standard configurations see Appendix 6 Example of a Configuration Management Process for information about the Standard PC Configuration Specification developed by the Platform Domain Team.

The reader is also referred to the section entitled Section 6 Researching New Technologies, Products and Standards.

EWTA Update Process Workflows

On June 7, 2001, the Architecture Review Board (ARB) approved a formal process for updating domain architectures. The process accommodates three types of changes to the architecture. One, those changes not requiring hands-on research prior to board approval. Two, those changes requiring hands-on research prior to a final decision. Third, changes that would require a prototype or pilot project prior to a final decision (Proof of Architecture via Production Ready implementation). It is the responsibility of the domain team leader, in consultation with the domain team, to decide which type of change is required. Regardless of the proposed change, each workflow is preceded by a set of common activities.

Initial Workflow Activities

The process starts with a decision to affect a significant change in the domain. After consulting with the domain team, the team leader prepares a Form DT-1 Action Plan for Domain Team Research. A template for this can be found in Appendix 2. At this point the team knows how much effort is required and whether or not hands-on research will be required.

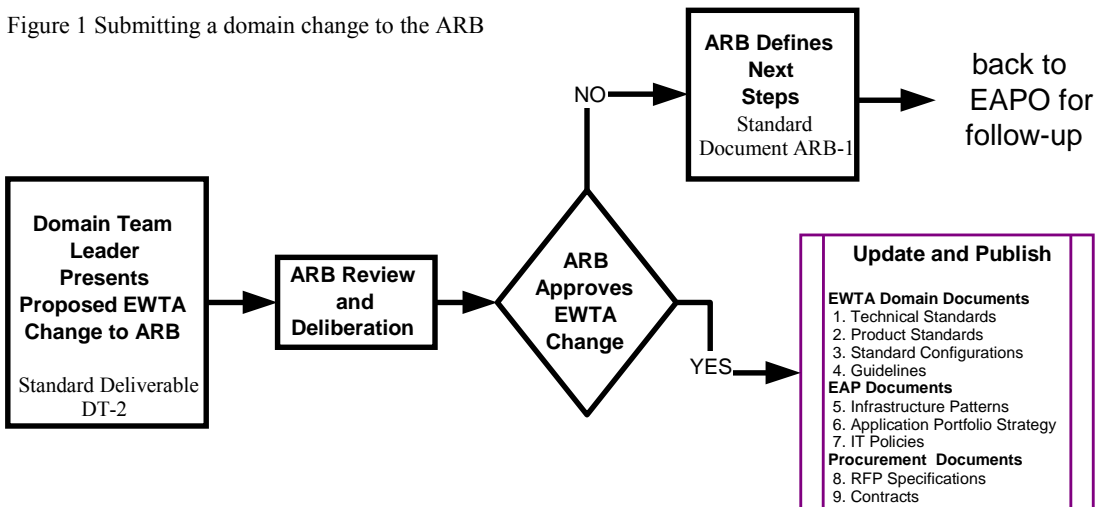
After a quality assurance review, the EA Program Office will coordinate with the resource owners or scheduling office for an assessment of resources that might be needed and for potential impact on DOIT or agency projects. EAPO handles the coordination with other domains that are impacted by the anticipated change to the domain architecture. EAPO will also maintain the involvement of other domain teams in the review process. Following a short commentary period for the other domain teams, EAPO consolidates the comments and communicates them to all involved domain team leaders. At this point, the domain team will update the action plan as needed, following which EAPO will forward the DT-1 to the Chief Technology Officer for a review of the research plan. EAPO will work with the domain team to resolve any problems with the scope of the research as identified by the CTO. The CTO determines that the research effort is significant enough to merit review and approval of the evaluation criteria by the Architecture Review Board. After the research plan has been approved, and the identified resources are committed, the domain team leader assembles the research subcommittee and appoints a chair. Subcommittees may be as small as one or two people, or as large as needed. Subcommittee members can be from inside or outside the domain team to provide the broadest participation by the agencies, to involve the optimal number of subject matter experts, and to address any cross-domain impacts.

The subcommittee is responsible for conducting any research and evaluations outlined in the action plan. See Section 6 - *Researching New Technologies, Products and Standards* for more information on research procedures and mandatory evaluation criteria. Following the conclusion of the research and evaluation, the subcommittee prepares a preliminary report and recommendation (Form DT-2 Recommendation for Domain Architecture Change found in Appendix 2) and submits it to the entire domain team for review and comment. After a final version has been accepted by the domain team, the team leader forwards the DT-2 to the EA Program Office for a quality assurance review and for a peer review by the other domain team leaders. The team leader adjusts the DT-2 and proceeds to the next steps in the process. The nature of these next steps depends on whether or not Hands-on Research or a Proof of Architecture (POA) is needed.

Flow One – No Hands-on Research

The simplest next step in the process is for the team to conduct the research effort, document the results and prepare a recommendation to change the technical architecture. The team leader presents the proposed architecture change to the ARB. This is for research efforts where no hands-on evaluation or proof of architecture is required. The flow is relatively straightforward (see Figure 1 Submitting a domain change to the ARB). The team leader makes a presentation to the ARB about the proposed change. The ARB then reviews the proposed change and votes either to approve it or send it back to the domain team for further work. Depending on the nature of the change this might take a week or more, and require additional information from the team leader.

Figure 1 Submitting a domain change to the ARB

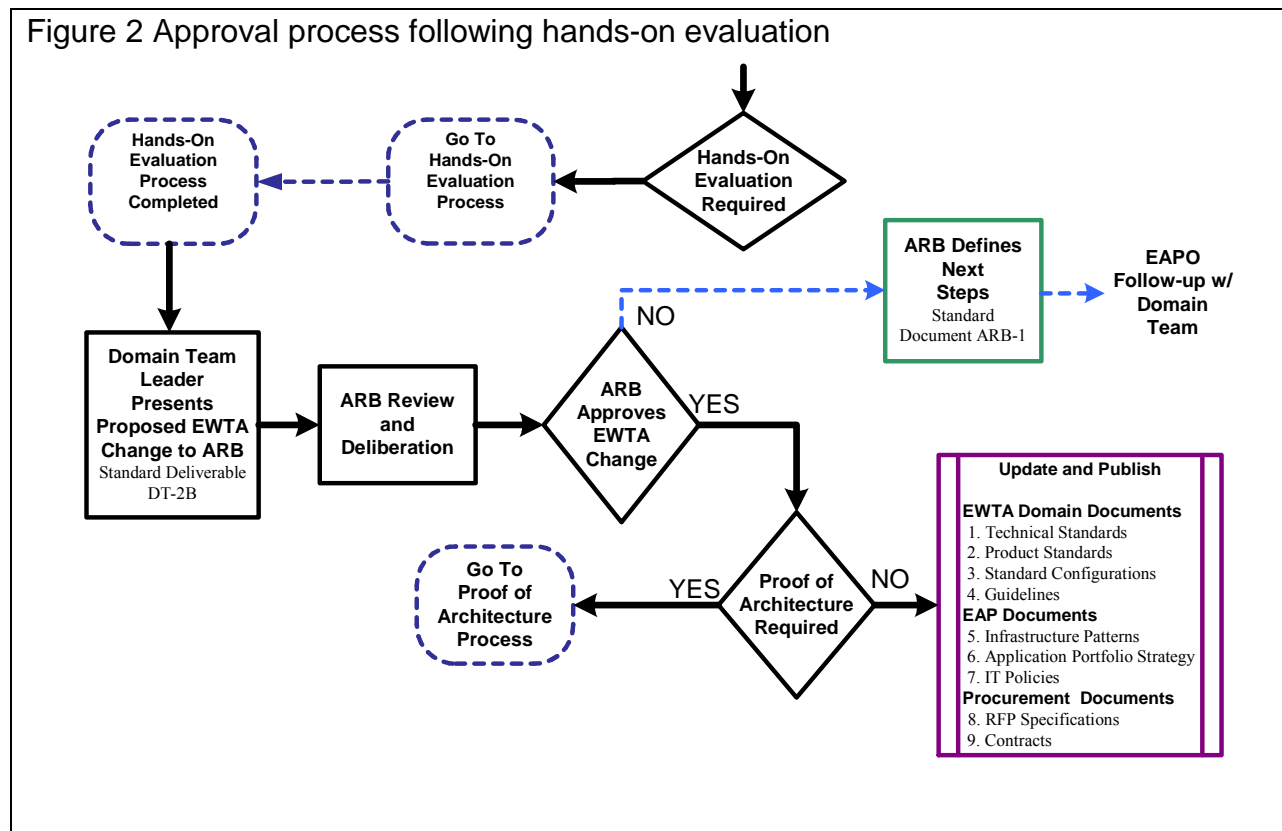


If the ARB approves the change to the domain architecture the EA Program Office will coordinate the updating and publication of the revised technical architecture documents. See Update and Publish box in Figure 1. Should the ARB decline to approve the change, they will document the decision and recommended next steps on a form ARB-1 Architecture Review Board Rejection of Request for Domain Architecture Change (in Appendix 2). The EAPO will work with the domain team on any follow-up activities or next steps.

Flow Two – Hands-on Research

There is a formal process and standard deliverables for research situations that require hands-on evaluation (see Figure 2 Approval process following hands-on evaluation, and Appendix 4 Diagram 2 - EWTA Hands-on Evaluation Process). The hands-on evaluation could involve interoperability testing with infrastructure components or a real world shoot-out between two products that appear to be equivalent in terms of functionality and usability. The subcommittee usually determines during the course of paper-based research effort that a hands-on evaluation is required. After review of the DT-2 deliverable by the full domain team and the EA Program Office, the subcommittee chair prepares the Form DT-3 Hands-on Project Plan Template Appendix 1) for the evaluation.

The EA Program Office completes a scripted quality assurance review and coordinates with the resource owners or scheduling office to review the proposal and prepare a report on the availability of the resources requested for the evaluation. The proposal is then reviewed by the Chief Technology Officer (CTO). The CTO can request that the proposed evaluation project be scaled down, that the priority for the project be reduced, or that the subcommittee does additional paper-based research. When the project proposal receives the blessing of the CTO, the resource owners assign staff and schedule their time on the Master IT Resource Schedule. The project manager for the evaluation (not necessarily the subcommittee chair) assembles and briefs the project team. The project manager procures or otherwise obtains necessary products, schedules time in the lab, oversees the lab set up and manages the hands-on evaluation. The project manager prepares regular status reports for the research subcommittee and the EA Program Office. The ARB receives monthly updates on the status of all evaluations. When the evaluation is complete, the project team prepares the form DT-2B Post Hands-on Evaluation Report and Recommendation (found in Appendix 2) in collaboration with the subcommittee, for review and



acceptance by the full domain team. After a scripted quality assurance review by the EA Program Office, the report is released to the domain team leader for final resolution. If no further action is required the report is filed and a final report is given to the ARB. If the hands-on evaluation results in a request to change the domain architecture, the domain team leader follows the process described in figure 2 above for submitting a domain change to the Architecture Review Board. In this case, a formal presentation is made to the ARB after the board has had time to review the DT-2B and supporting documentation.

If the change request is not approved, the ARB defines next steps in standard deliverable ARB-1 and EA Program Office coordinates with the appropriate groups to accomplish them.

If the change request is approved, the EAPO will coordinate the update and re-publication of appropriate architecture documents as well as the development and release of an advisory memorandum.

Flow Three – Proof of Architecture Concept

If a hands-on evaluation is successful but the complexity or risks indicate the need for a formal pilot or prototype implementation, the subcommittee prepares a proposal to conduct a Proof of Architecture (POA). The process is illustrated in Figure 3 Approval following Proof of Concept below, and Appendix 4 Diagram 3 – Proof of Architecture Process. The proposal is documented in Form DT-5 Proof of Architecture Project Plan Template (found in Appendix 2). As with the hands-on evaluation, the EA Program Office completes a quality assurance review and

coordinates with the resource owners or scheduling office for a report on the availability of resources.

Unlike the request for hands-on evaluation, which only requires the blessing of the CTO, a request for a Proof of Architecture requires formal approval by the Architecture Review Board. The ARB can request that the scope of the project be revised, that additional research be done, that another agency project be chosen as the basis for the assessment, or that the priority for the project be reduced.

If the ARB approves the proposal, the EA Program Office works with the Agency IT manager to negotiate a memorandum of understanding with the agency to use its project for the POA. DOIT and the agency then prepare for and launch the project. The management of the project should follow the State's standard project management protocol. Proof of Architecture requirements and deliverables are incorporated into the agency's project plan and procurement documents. The resource owners or scheduling office assign staff and schedule their time on the Master IT Resource Schedule. The project manager assembles and briefs the project team.

During each of the phases in the agency's project, there will be specific EWTA evaluation criteria that are considered. The agency-specific criteria may vary somewhat from project to project but there is a core set of mandatory assessment topic areas, requirements and viewpoints which are required for all technology and product research efforts. These mandatory evaluation criteria are defined in Section 6 - Researching New Technologies, Products and Standards. In general, the shift in focus through the project phases will be as follows:

- During the design phase of the project, design principles, technical standards and best practices are the focus.
- During the build or construction phase of the project, standard configurations, methods and documentation are the focus.
- During the test phase, interoperability with standard infrastructure services is conducted.
- During phased implementations, an assessment of scalability and usability will be made.
- During full implementation of the product, rigorous analysis of reliability and scalability will be accomplished.

Regular status reports on project progress and EWTA evaluation results will be provided to the subcommittee and EA Program Office for ARB updates and review by the domain team.

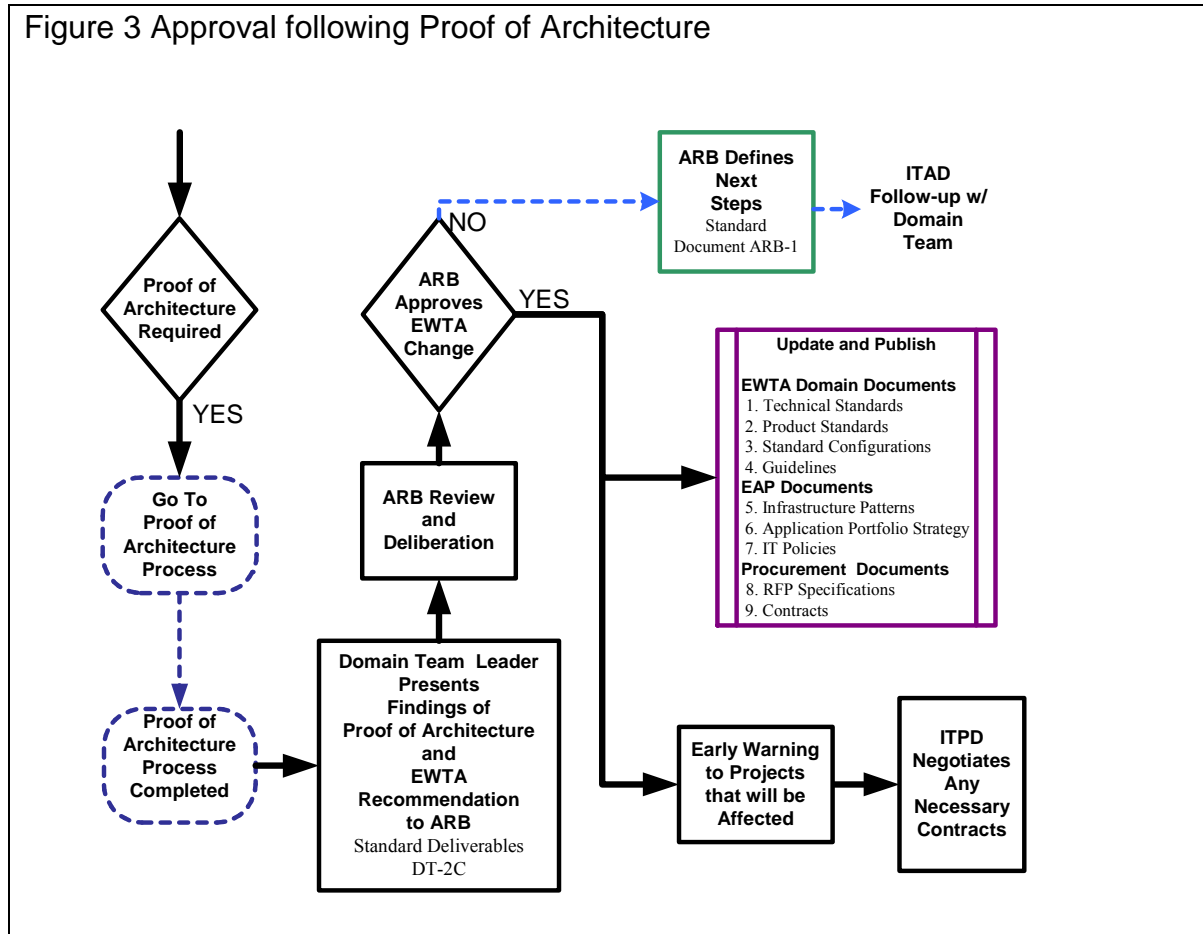
Regular status reports also go to the project stakeholders for project quality assurance review.

At the conclusion of the project, the project manager and the subcommittee chair prepare a formal report on the results of the POA (see Form DT-5B Post Proof of Architecture Report and Recommendation found in Appendix 2). As usual, the report must be reviewed and accepted by the full domain team and pass quality assurance review by the EA Program Office before being released.

If no further deployment is recommended, the report is filed and a final report is given to the ARB. If the Proof of Architecture results in a request to change the domain architecture, the domain team leader follows the process described below in Figure 3 *Approval following Proof of Architecture*. In this case, the DT-2C is presented to the board.

If the change request is not approved, the ARB defines next steps in standard deliverable ARB-1 and EA Program Office coordinates with the appropriate groups to accomplish them.

Figure 3 Approval following Proof of Architecture



If the change request is approved, the Project Management Office issues an early warning to agencies for projects that will be affected by the change. IT Procurement negotiates any necessary contracts. At this point the EA Program Office will coordinate the update and publication of the appropriate architecture documents as well as the development and release of an advisory memorandum.

Section 5. Identifying and Closing Gaps in a Domain Architecture

As part of their ongoing research, or in reviewing and revising products or technical standards, domain teams will undoubtedly identify “gaps” in domain technologies. Gaps are component technologies that do not exist in the current IT environment, are improperly structured or non-standard, or have yet to be addressed in the technical architecture.

Once identified, these gaps should be captured in the Form DT-4 Gap Analysis Report from a Domain Team (found in Appendix 2 of this guidebook).

This document can be utilized as a reference and planning tool by enterprise planning teams and the resource managers. It is important that domain team leaders have their gap identification document completed prior to mid-June in order for the document to be beneficial to the agency planning process.

The Key Steps in Gap Analysis

1. Complete the identification of differences between the “as-is” (“current state”) and target domain architecture.
2. Analyze gaps between the “as-is” and the target domain architecture.
3. Develop recommendations (actions) to close the gap.
4. Identify and prioritize interdependencies of recommendations.

Step One – Identifying Domain Gaps

Differences between the current and target architecture

Most of the gap identification occurs during the creation of the domain architecture. The domain team completes the identification of differences between “as-is” (or “current state”) and target domain architecture within the context of principles, technical standards, product standards and best practices. Some gaps identify technologies needed to satisfy Requirements for Technical Architecture (RTAs) in the target domain architecture. They are focused on technologies and products, not on how they are used or implemented. The additional work of gap identification focuses on the latter requirements. Some sources of gaps are:

- Requirements for technical architecture (RTAs) that are not met by current technical infrastructure
- Policies that do not exist but may be needed
- Standards, either existing or new
- Products, either existing or new
- Configurations and current infrastructure patterns
- Lack of training in new skills

Other sources of gaps are “overlaps” - needless complexity of products/solutions in the same technology category, and insufficient product standards for implementation (see Gaps created by the Exception Process or Agency Project Needs below).

Figure 4 Example Gaps for Data Management illustrates typical gaps for the Data Management and Warehouse domain.

Using Fundamental Questions

Teams often find it useful to focus on the following fundamental questions when discovering gaps.

- What will this (Principle, Architectural Requirement, etc.) mean to us?
- What are its impacts/issues?
- What dimensions reveal the impacts (i.e., processes, policies, metrics, culture, structure, technologies?)

Gaps created by the Exception Process or Agency Project Needs

Given the dynamic nature of technology and changing agency needs, it is likely that there will be required solutions using products or standards not covered in the domain architecture. In such cases, the team should designate these products or standards as gaps and assign them to be researched.

Refining Gaps

After new gaps are identified, the team should collect, aggregate, and sort the gaps, followed by the consolidation of related gaps. Gaps should be reworded for clarity and reviewed by the entire domain team to confirm the gap.

Figure 4 Example Gaps for Data Management

- No policies for decisional data analysis
- No data warehouse
- No metadata repository
- Multiple databases with duplicate data copies — No authoritative source identified
- No standard data movement technology
- No standard data cleansing technology — same data cleansed (using different tools) multiple times for multiple target databases
- Inconsistent usage of query and OLAP tools
- Too many products deployed

Step two – Analyzing Domain Gaps

Once the gaps have been identified, they need to be analyzed by the team. The analysis of domain gaps requires creative and collaborative minds. There is no set procedure for the analytic process.

For each gap identified, the team should develop alternative solutions to “fill” the gap. For example:

- Is a new solution (application, data, technology) required?
- Is major research including Hands-on or Proof of Architecture required?
- Are new skills required?
- Is a new approach required?
- Is a new implementation of old technology required?
- Are new behaviors required?
- Are new IT policies required?
- Are new or expanded support resources required?

The domain team should “flesh out” the solution details: description, components, rationale (principles, RTAs, gaps being addressed), business benefits, dependencies (if any), and the specific actions steps required to close the gaps. If time permits, the team should provide sufficient detail in the initiative description for use in future comparisons and the capital budgeting process.

For the larger or more complex gaps, it is helpful to consider incremental steps for closing it.

Step Three – Develop Recommendations

Recommendations on closing the gaps can take many forms. For example:

- Eliminate duplicate and inconsistent databases, functionally duplicate applications, or obsolete and unused technology components.
- Enhance and support database sharing.
- Promote shared applications and component reuse.
- Replace nonstandard products/configurations with standard offerings.
- Other changes (e.g., re-training to develop new skills, restructuring working groups or organizations, it policy making).

Step Four – Prioritize Recommendations

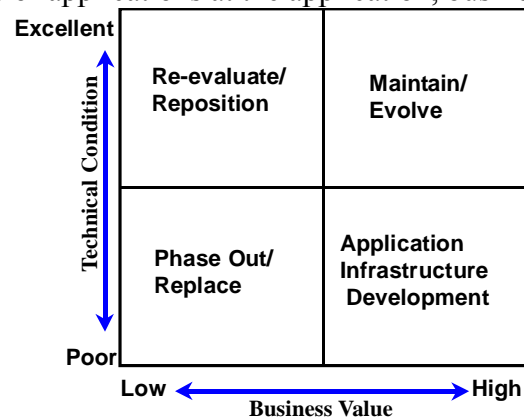
Not all gaps require immediate action, for instance, some gaps

- Can not be filled right away,
- Should not be filled (for business reasons),
- May never be filled due to priorities, or
- May be optionally filled by business units or an enterprise effort.

The gaps that do need action need to have priorities established for them. These priorities can be internal to the domain team, or can be external, if a project is recommended to fill the gap. This latter prioritization should be done jointly with enterprise planning functions. This helps to ensure that the priorities are as consistent as possible with those of the business and other active or planned initiatives.

Interdependencies must be identified between applications, infrastructure, information recommendations, and other gap-closing efforts. For applications or infrastructure the planning should address the technology ‘fit’ and business value of applications at the application, business process and enterprise levels. One model that META Group recommends is to look at a matrix comparing the business values and the technology condition of applications (see Figure 5).

Figure 5 Migrating the Application Portfolio to meet enterprise business needs



Section 6. Researching New Technologies, Products and Standards

The two main ongoing activities of domain teams are doing research and analyzing gaps. This section of the manual deals with the research activity.

Reasons for Doing Research

The fundamental reasons for conducting research are a reflection of the original factors that lead to the creation of the domain architecture. These are:

Reviews of Technology in the Marketplace and Technology Trends

One of the primary on-going activities of the domain team is the regular review of technology trends and changes. Domain architectures are meant to be adaptive, not static.

Gap Analysis Activities

Another primary activity of a domain team is filling known or newly created gaps in the architectures (see Section 6 Identifying and Closing Gaps in a Domain Architecture).

Conceptual Architecture Changes

The EWTA Conceptual Architecture is not static although the frequency of changes is less often than seen with domain architectures. The same basic influences on the development of new domain architectures can also lead to changes in existing domain architectures:

- Business Change Drivers.
- Requirements for Technical Architecture.
- Conceptual Principles.
- Application Portfolio.

As indicated in the section on Team Management, analysis of, and dealing with, the impact of changes in the Conceptual Architecture is the highest priority task of a domain team

New and Planned Projects

- DOIT and multi-agency infrastructure activities.
- Multi-agency and single agency IT projects.

Assigned Research

Assigned research is limited duration, topic specific research that has been assigned to the domain team by either the CTO or the Architecture Review Board. Assignments from the Architecture Review Board would normally derive from the EWTA exception process (Appendix 8).

Domain Team Research

What needs to be researched?

The predominant research topics are trends and changes in the domain technologies, product standards and technical standards, and specific research undertaken by subcommittees for proposed changes to the domain architecture. Additionally, the gap analysis / closure process often generates a need for specific research. Other research topics are generally assigned by the domain team leader.

How often should technology be researched?

The timing for tracking trends and technology changes is up to individual team members based on their own personal styles and work schedules. However, a sweep through the major sources of information should be undertaken at least monthly. A shorter refresh cycle might be needed based on the marketplace dynamics of the technologies that make up the domain, or if the domain is conducting research for an on-going project or conformance review. The team should determine what the refresh cycle should be for the domain and the team leader should ensure that this is adhered to. Research for the ARB, gap analysis and domain architecture updating is triggered by those events.

Who does the research?

Research into trends and changes in technology should be undertaken by all domain team members according to their areas of expertise and team assignments. Research on specific topics or membership on subcommittees will be assigned by the domain team leader.

What sources should be used for research?

A variety of sources is available to domain team members. Team members, in all likelihood, have specific publication **web sites** that they visit on a regular basis. Most manufactures and most publishers of software have product web sites, as do standards bodies. In addition, the State usually has research and advisory organizations under contract.

The Research Process

The research process for domain member research or for internal team activities has no formal structure, but it does have mandatory evaluation criteria and a standard documentation set (see below). The process for research conducted for domain architecture changes that require the approval of the ARB is more highly structured. A complete explanation can be found in EWTA Update Process Workflows (see Section 4 and Appendix 4).

Initial Steps in Structured Research

The formal change process starts with a decision to affect a significant change in the domain architecture. After consulting with the domain team, the team leader prepares a Form DT-1 Action Plan for Domain Team Research. A template for this can be found in Appendix 2. By this point in time, the domain team should have determined the degree of effort required and whether or not hands-on research will be required.

After a QA review, the EA Program Office will coordinate with the resource owners or scheduling office for any resources that might be needed and for potential impact on DOIT or agency projects. EAPO handles the coordination with other domains that are impacted by the anticipated change to the domain architecture. EAPO will also maintain the involvement of other domain teams in the review process. Following a short commentary period for the other domain teams, EAPO consolidates the comments and communicates them to all involved domain team leaders. At this point, the domain team will update the action plan as needed, following which EAPO will forward the DT-1 to the CTO for a review of the research plan. EAPO will work with the domain team to resolve any problems with the scope of the research as identified by the CTO. After the CTO has approved the plan and the requested resources have been committed, the domain team leader assembles a research subcommittee and appoints a chair. Subcommittees may be as small as one or two people, or as large as needed. Subcommittee members can be from inside or outside the domain team

to provide the subject matter expert necessary, to address cross-domain impacts, and to involve as many agencies as possible in the decision..

The subcommittee is responsible for conducting any research and evaluations outlined in the action plan. Following the conclusion of the research and evaluation, the subcommittee prepares a preliminary report and recommendation (the Form DT-2 Recommendation for Domain Architecture Change) and submits it to the entire domain team for review and comment. After a final version has been accepted by the domain team, the team leader forwards the DT-2 to the EA Program Office for a QA review and for a peer review by the other domain team leaders. The team leader adjusts the DT-2 and proceeds to the next steps in the process. The nature of these next steps depends on whether or not hands-on research or proof of architecture is needed. The reader is directed to the EWTA Update Process Workflows (Section 4 and Appendix 4) for more information.

Mandatory Evaluation Criteria

The Architecture Review Board has established the following technology assessment topic areas, requirements and viewpoints which are required for all technology and product research efforts.

Problem Definition

1. Business stakeholders and goals associated with this technology selection and implementation, i.e. what are we trying to accomplish for each of the people or groups of people that will be impacted by this decision; and what do we want this technology or product to do for them.
2. Scope of the target deployment: agency-specific (program, project, agency-wide), agency cluster, state-wide, nation-wide.
3. Technology boundaries: what is covered and what is not. How do external technologies on the boundaries affect this decision? What are the alternatives to this technology? Why this technology rather than one of the alternatives?
4. Use case definition (scenarios).
5. Deployment environment description and timeframe.
6. Constraints: identify how the target product must fit into the existing environment. For example, the product might have to interface with or use some existing hardware, software or business practice, or it might have to fit within a defined budget or be ready by a defined date.

Requirements That Must Be Addressed In All Assessments

1. Architecture requirements: what requirements for technical architecture are relevant to this class of technology?
2. EWTA Principles and Standards (design standards, technical standards and implementation practices) that are relevant to this assessment.
3. Required Product Capabilities: features and functions, key differentiating factors, product strengths and limitations, correct functioning, effective features, fit criteria (quantify the requirement by specifying an objective measure of the requirement's meaning by which to determine whether the product satisfies each requirement).
4. Performance and capacity requirements. Service level requirements.

5. Security requirements for confidentiality, integrity and availability. Security enforcing controls for satisfying requirements, e.g. access control, auditing, intrusion detection, etc. Non-technical security requirements that must be supported by the technology, or at least not subverted by the technology. Security vulnerabilities.
6. Legal/ Regulatory requirements: legislative (federal and state), executive orders, regulations, court orders (e.g. consent decree).
7. Business continuity requirements for service restoration after disaster, sabotage, equipment failure, or human error.
8. Weeding requirements: selection criteria that will be used to determine which products will be evaluated during each stage of the assessment, such as market position (e.g. magic quadrant), market share, and mandatory requirements.
9. Testing requirements: acceptability of hands-on evaluations performed by external parties, what hands-on testing will be done by State employees, what testing must be done within the context of a production deployment (i.e. Proof of Architecture).
10. Data Requirements: Identify any data conversion or data integration requirements. Identify data retention requirements, from both State public records administration and agency perspectives.
11. Training requirements: based on the scope of deployment and use case scenarios identify the number and type of support staff and users that will need to be trained. If this is a replacement product, identify the number and type of support staff and users and their current level of training and expertise.
12. Maintenance requirements: FTE skills and experience required for self-support, maintenance contract requirements (24x7, 8x5, per call, etc) for outsourced support.

Analysis Viewpoints – beyond basic assessment of functionality

1. Interoperability & Integration: support of open integration standards, layering (engineering design), 3rd party integration, and data integration.
2. Cost: licensing policies, pricing models, cost of skilled support, training requirements. Cost versus effectiveness analysis, price/performance balance point.
3. Stability: dependability, reliability (as tested in real world deployments), meantime to failure, routine downtime for updates, frequency of patching required.
4. Usability: developer perspective, user perspective, look and feel requirements (consistency with current electronic work environment and applications), cultural and political issues, stylistic concerns, knowledge and training assumptions. Compliance with relevant Accessibility requirements for support of persons with disabilities [WCAG, Section 508, etc.]
5. Manageability: availability (as required to satisfy standard service level agreements, supportability (support skills and knowledge required to support use of product), cost of managing the product.
6. Maintainability: maintained by technical or non-technical, local deployment versus central deployment, in-sourced versus outsourced maintenance of product. For Commercial Off The Shelf products where code maintenance is not required assess maintenance requirements for such things as parameter tables, access controls, etc.
7. Implementability: deployment models, technical maturity, complexity, fit with current infrastructure services, leveraging current skills versus development of new skills, training requirements.
8. Flexibility: scalability, evolvability, portability.

9. Dependencies: reuse of installed technologies, need for new technologies.
10. Strategic viability of company: market overview, market consolidations, key differentiators among market leaders and followers, corporate vision and strategy, corporate commitment and ability to execute vision, presence in market, financial stability of company, percentage of earning allocated to research and development.
11. Strategic viability of technology or product. Maturity of technology or product. Potential for rapid diffusion. Relation to successor technologies.
12. Securability: ability to satisfy all legal, regulatory, policy and architectural requirements for security in all environments relevant to the deployment of the product(s) under review. Environments include network, database, SAN, applications, data, identify management, testing, auditing, interfaces. Vulnerability remediation practices of company.²

Outcomes from Research

Category of Change

- Creating new principles, standards or product standards.
- Moving a standard or product standard between categories, (e.g., From *research* to *strategic*, from *strategic* to *transitional* or from *transitional* to *obsolete*).
- Editing or modifying principles.
- Updating the version of an existing strategic standard or product standard.
- Adding a new technology category to the domain architecture.

Documentation Requirements

All comparative analysis matrices, narratives and transcriptions of all other information gathered and analyzed during the research effort, plus the following standard documents.

- DT-1 Action Plan for Domain Team Research
- DT-2 Recommendation for Domain Architecture Change
- DT-2B Post Hands-on Evaluation report and Recommendation
- DT-3 Hands-on Project Plan Template
- DT-5 Proof of Architecture Project Plan Template
- DT-5B Proof of Architecture Report and Recommendation
- DT-6 Monthly Status Report from a Domain Team or Subcommittee

Section 7. Relating Domain Architecture to Infrastructure

A major characteristic of an adaptive infrastructure is increasing reuse of technology assets. However, an adaptive infrastructure does not begin with implementing software, networks, and hardware; it begins with an adaptive, Enterprise-wide Technology Architecture (EWTA) to provide engineering guidance and Enterprise Business & Information Architectures to define common patterns of business organization and information management practices. .

Role of Domain Architectures and Infrastructure

A primary role of domain architectures is to organize technologies and their usage rules to assist architects in identifying common uses of technologies, and to eliminate as much redundancy as possible. This is essential to providing reusable infrastructure technology across the enterprise. The distinction between domain architectures and infrastructure patterns is in the way they are used. One is an architecture aid, used to guide the identification, selection, and implementation of technologies in standard configurations; the other is an engineering aid used to guide the identification and implementation of standard infrastructure services that have corresponding business and information management patterns.

Relationship of Domain Architectures to Infrastructure

The relationship between domain architectures and infrastructure is bi-directional. To define the domain architectures, architects must know what types of services the business requires so the requisite technology standards are defined. Likewise, to design and implement the reusable infrastructure access services, infrastructure developers must know which technology standards and principles have been defined within the domain architectures (see Figure 6 below). Also, there is a great amount of overlap in the content of each. For instance, platform domain architecture is likely to define the mainframe, midrange, and workgroup server, as well as the desktop hardware/operating system vendors and products.

Issues Involving Infrastructure Development

The principles and standards of domain architectures are defined by taking into account the need to optimize technology across the enterprise, including across different infrastructure patterns and domain architectures. An explicit implication of this practice is that individual components and lower level services may have to be sub-optimized in order to achieve the overall optimization goals.

The primary role of an infrastructure pattern is to speed the identification, configuration, and implementation of technologies by defining a proven set of technology services enabling a particular style of information system services. These services define reusable interfaces for applications to access the reusable infrastructure technologies defined in domain architectures. Examples include security access services, middleware connectivity services, enterprise directory services, and common data access services. It is interesting to note the majority of services required are not new to most project teams. The difference is that in an adaptive environment, these services are not built by project teams for the use of one or two applications, but by an infrastructure development group for use across as many applications as possible.

Section 8. Conducting Architecture Conformance Reviews

Ideally, architecture guides all IT decision making (infrastructure deployment, application development, operations management, etc.)

As awareness of the need for architectural conformance becomes second nature, the domain architectures will provide guidance for many day-to-day IT activities. For example:

- IT procurements and contract requirements
- Buy-versus-build decisions
- Setting evaluation criteria in RFPs and SOWs
- Upgrading hardware and infrastructure
- Software package or tool selection
- Design decisions in the context of a specific IT project or application system

Therefore, from time to time, domain teams are expected to participate in architecture conformance reviews of Requests for Proposals (RFP), vendor responses to RFPs, agency IT architectures and agency IT projects. This can be accomplished as a team effort, or as a subcommittee effort. The reviews assess and evaluate conformance of project or system proposals to EWTA conceptual principles, and domain principles, standards and guidelines.

How to conduct a conformance review

Existing domain architecture documents serve as a basis for the reviews. The reviews evaluate conformance to EWTA conceptual principles, domain architecture principles, technical and product standards, and implementation practices.

Process for architecture conformance reviews by domain teams

Domain team conformance reviews result in the domain team leader submitting to the EA Program Office a report with any necessary questions, items for clarification and/or requests with specific source document references. It is the responsibility of the EA Program Office to create a composite view and complete the final report that is submitted to the requestor of the conformance review and the CIO.

Documentation Requirements

Documentation formats have not yet been defined for architecture conformance reviews because of the variations in the size and complexity of the system proposals that have been reviewed to date. A Systems Architecture section for RFPs has been defined. See Appendix 7. Until specific architecture conformance requirements are routinely included in RFPs, there will be a need for clarifications from vendors regarding specific products, design decisions and other implementation recommendations. This is assembled as a combined list of questions from the domain team leaders with reference to specific RFP sections and the documentation submitted by a vendor as part of its proposal. The EA Program Office provides specific guidance to the domain team leaders as to the approach and content of review deliverables. In general our philosophy is to identify what is good about a proposal as well as what aspects of the proposal do not conform to the architectural elements that define the ideal system. To date we have found this approach more useful to RFP evaluation committees and project teams.

Appendix 1. Glossary of Abbreviations

Explanation of Abbreviations

ARB	Architecture Review Board
BITSB	Business and Information Technology Strategy Board (also abbreviated as B&ITSB)
CIO	Chief Information Officer
CTO	Chief Technology Officer
DOIT	Department of Information Technology
DT	Domain Team
DTL	Domain Team Leader
DTSC	Domain Team Sub Committee
EAP	Enterprise Architecture Planning
EWTA	Enterprise-wide Technical Architecture
EAPO	Enterprise Architecture Program Office
POA	Proof of Architecture.
RFP	Request for Proposal
SOW	Statement of Work

Appendix 2. Deliverables (Templates) for Domain Team Activities

DT-1 Action Plan for Domain Team Research.....	49
DT-2 Recommendation for Domain Architecture Change.....	53
DT-2B Post Hands-on Evaluation Report and Recommendation.....	57
DT-3 Hands-on Project Plan Template.....	61
DT-4 Gap Analysis Report from a Domain Team.....	63
DT-5 Proof of Architecture Project Plan Template.....	65
DT-5B Post Proof of Architecture Report and Recommendation.....	67
DT-6 Monthly Status Report from a Domain Team or Subcommittee.....	71
DT-7 Report on Monthly Domain Team Leaders Meeting.....	73
ARB-1 Architecture Review Board Rejection of request for Domain Architecture Change.....	75

A self-extracting ZIP file of all templates is available for download from the DOIT web site. The resulting extracted files will be found in a local folder entitled: C:\State of CT EWTA Domain Templates

DT-1 Action Plan for Domain Team Research

(Required for all research by a Domain Team)

Basic Information

Submittal Date:

Domain Team:

Team Leader:

Contact Information (phone, email):

Overview

Goals and Objectives

What are the specific goals and objective of this research?

Summary

Please provide a summary of the proposed research basic approach, what is being evaluated, etc. (**note:** details should be provided below).

Priority

What is the priority of this research? When do you anticipate the research will start and when it will be completed? (**Note:** detailed information on estimated time is to be provided below in Work Plan below)

Need or justification (may be more than one)

Please check off the reason for requesting the research and then provide a brief description. If there is more than one reason for requesting the research, describe them in decreasing order of importance.

Please copy the checkmark and past it over the to indicate a "check off"

- Domain team reviews of technology in the marketplace and technology trends
- Domain team gap analysis activities
- Changes to the conceptual architecture
- Agency project – Architecture consultation
- DOIT and multi-agency infrastructure activities
- Agency ETWA Exception process
- Infrastructure implementation or proposed DOIT service offering

- Assigned research other than research for the exception process
- Other (please specify)

Describe the business and technical reasons for the research here.

Architectural Impact

Domain Architecture Impact

What is the potential impact on domain architecture and EWTA? Please check off the reason for requesting the research. If there is more than one reason for requesting the research, check all that apply. Provide a brief description of the impact below.

Please copy the checkmark ✓ and past it over the to indicate a "check off"

- Adding or removing principles, technical standards, or product standards
- Adopting methods that become mandatory or are embodied in products that are categorized as strategic
- Significantly altering the meaning or intent of a principle, technical standard or product standard
- Changing the status of a product, i.e., from research to strategic, from strategic to transitional, from transitional to obsolete
- Making any change that will have major impact on technology products, agency financial or personnel resources, or on the ability of an agency to implement application systems
- Requiring modification of a pending RFP (SOW etc.) or an RFP currently out for bid
- Requiring changes to ongoing implementation projects
- Greatly accelerating the agencies' transition planning for implementing a new architecture
- Other: specify here

Please provide a brief description of the anticipated impact:

Provide a brief description of the changes to the domain architecture that are the subject of the proposed research (check off specific architecture impacts below). Please describe the justification for this research in the justification section.

What is the impact on other Domain Architectures (if any)?

Type of Research and Information Sources

Please check off the type of research and then provide a brief description. If there is more than type of research, describe them in decreasing order of importance.

Please copy the checkmark ✓ and past it over the to indicate a "check off"

- Web or paper research
- Use of IT Research and Advisory Service Contracts or other consultant services.
Note: if this item is checked please include any anticipated costs in the work plan below; please include staffing and other resources in the work plan below.
- Publications from national or international standards bodies
- Publications from industry consortia
- Manufacturer (or publisher) presentation, seminar, etc.
- Agency experiences (identify agencies and projects below)
- Hands-on evaluation (**Note:** if hands-on research is proposed, a DT-2 will be required once the research has been approved.)
- Other specify here

Web or Research

Research and Advisory Service

Standards Bodies

Manufacture or publisher

Agency experiences

Etc.

Scope of Work

The intent of this section is to provide the CTO (and the ARB) with enough information to reach a decision in support of resource commitment need for this research.

List the proposed assignments to subcommittee
chair for subcommittee
domain team members
team members from other domains
agency staff

Briefly describe what other resources will be needed, other than staffing, such as consultants, vendor or manufacturer presentations, etc.

Financial Cost

What is the estimated financial cost of this conducting this research? (acquisition of hardware, software, research, facilities, consultants, etc.)

Time Estimates

Provide an estimated time to complete research (work hours, meeting hours, start/end dates, etc.).

Description of Work Plan

Provide a basic description of the work plan for conducting the research needed to support this change request; indicating major activities and milestones. (A simple GANTT chart would be useful but is not required.)

Evaluation Approach

Evaluation Criteria to Be Used

Describe the evaluation criteria to be used:

Products Or Standards to Be Evaluated

Describe the products or standards that will be considered. Include alternatives, even if not subjected to a complete evaluation.

Additional Comments

Use this space for any additional comments

DT-2 Recommendation for Domain Architecture Change

Basic Information

Date of Approval of DT-1

Submittal Date of DT-2:

Domain Team:

Team Leader:

DTL Contact Information (phone, email):

Sub-Committee Name and Members
(if applicable)

Sub-Committee Chair Contact
Information (phone, email)

Scope of the change

Note: This information should be copied from the approved DT-1, if available.

Description

Provide a brief description of the proposed change or changes. A complete description is to be provided in Recommendation(s) below.

Priority and Time Frame

What is the priority of this change request? When do you anticipate making the change?

Architectural and Financial Impact

Full details, including a TCO analysis when possible, are to be provided in **Impact Assessment** below.)

EWTA Impact

What is the impact on other domains (if any)? What is the impact on the EWTA (if any)?

Financial Impact

What is the estimated overall financial impact of this change request?

Need or justification (may be more than one)

Note: This information should be copied from the approved DT-1, if available.

Please check off the reason for requesting the change and then provide a brief description. If there is more than one reason for requesting the change, describe them in decreasing order of importance.

Paste this ✓ over any of the items below to indicate a "check off".

- Domain team technology tracking activities
- Domain team gap analysis activities
- Agency project – Architecture consultation
- Agency ETWA Exception process
- Strategic planning and business planning (business drivers, RTAs, *etc.*)
- Infrastructure implementation or proposed DOIT service offering
- Changes to State or agency application portfolio(s)
- Other

Summary of Research Performed

Note: This information should be based on the content of the approved DT-1, if available.

Type of Research and Approach

If hands-on research conducted, please complete section 2 below,

Scope of the research

Please describe the scope of the research. Indicate team members in this description.

What alternative standards or products were considered?

Outcomes based on evaluation criteria

Evaluation Criteria

Describe the evaluation criteria that were used.

Note: This information should be copied from the approved DT-1, if available, and augmented with any additional criteria that were added during the research or evaluation process.

Results

Describe the results of the evaluation. If more than one standard or product was included in the evaluation, provide comparative results.

Recommendation(s)

Please choose the appropriate recommendation and provide details or justifications as required.

YES – change the domain architecture and associated documents

Provide the exact text of the proposed change, *e.g.*, proposed or modified principle, version number or standard numbers, *etc.* Changes involving a significant amount of text may be attached as documents, as long as the new material is easily identified when it is mixed with existing approved EWTA content.

Domain architecture principles

Standards and/or product standards tables

Domain architecture best practices / guidelines

Impact Assessment

Describe the impacts on the following areas should the recommended changes be implemented (use all that are appropriate).

Note: This information should be copied from the approved DT-1, if available, and modified as needed.

Infrastructure (patterns, components, services)

Impacts on other domain architectures

Existing or proposed projects, RFPs, SOWs, transition planning, etc.

Financial (include TCO when possible)

Request for Comment

Identify groups or individuals outside of the EWTA Domain Teams who reviewed the recommendation and provided comments. Identify changes that were made to the recommendation based on those comments.

Next Steps

Use this space to describe any next steps or following action that are needed.

Additional Comments

Use this space for any additional comments.

Section 2 - Supplemental Materials for Hands-on Evaluation

Description of the Research

Please describe the hands-on research that was conducted.

Note: staffing and other resources should be included in the work plan below.

Basic work plan

Provide a basic description of the work plan used for conducting the research that supports this change request; indicate major activities and milestones. Include time used to complete the research (work hours, start/end dates).

List the assignments to subcommittee to conduct the hands-on research

chair for subcommittee

domain team members

team members from other
domains

agency staff

Describe what other resources were used, other than staffing? Indicate any costs.

DT-2B Post Hands-on Evaluation Report and Recommendation

Basic Information

Submittal Date:

Domain Team:

Team Leader:

Contact Information (phone, email):

Research Project

Indicate which research project this report is for.

Outcomes based on evaluation criteria

Evaluation Criteria

Describe the evaluation criteria to be used.

Note: This information should be copied from the approved DT-1 or DT-2

Results

Describe the results of the evaluation. If more than one standard or product was included in the evaluation, provide comparative results.

Recommendation(s)

Please choose the appropriate recommendation and provide details or justifications as required.

YES – change the domain architecture and associated documents

Provide the exact text of the proposed change.

Domain architecture principles

Standards and/or product standards tables

Domain architecture best practices / guidelines

YES – but need to conduct a proof of architecture prior to final decision

If this is the recommendation of the research team, then a Proof of Architecture Work Plan (DT-5) must be completed and submitted along with this recommendation form.

NO – take no action at this time, consider in the future, etc.

Please select a reason and then provide a brief explanation for that choice.

High risk, immature – continue tracking

Needs more “paper” evaluation

Inconclusive results of comparative evaluation

Inappropriate or negative evaluation

Other (specify)

Impact Assessment

Describe the impacts on the following areas should the recommended changes be implemented (use all that are appropriate).

Note: This information should be copied from the approved DT-1 or DT-2 and modified as needed.

Infrastructure (patterns, components, services)

Impacts on other domain architectures

Existing or proposed projects, RFPs, SOWs, transition planning, etc.

Financial (might include TCO)

Next Steps

Use this space to describe any next steps or following action that are needed, other than a Proof of Architecture.

Additional Comments

Use this space for any additional comments.

DT-3 Hands-on Project Plan Template

Basic Information

Date of Approval of DT-1

Submittal Date:

Domain Team:

Team Leader:

Contact Information (phone,
email):

Justification

Scope of Change to Domain Architecture

Indicate what change to the domain architecture is supported by this research.

Note: Can be copied from DT-1 or DT-2.

--

Purpose of the Research

Briefly, describe why this hands-on research is needed.

--

Scope of the Research

Description of the Research

Please describe the hands-on research to be conducted.

Note: staffing and other resources should be included in the work plan below.

--

Time Estimates

Provide an estimated time to complete research (work hours, start/end dates)

--

Work Plan

Project Plan

Provide a basic description of the work plan for conducting the research needed to support this change request; indicate major activities and milestones. A detailed Gantt chart with resource assignments, milestones and deliverable dates must be attached (this can be in the form of a MS Project file along with a print-out).

--

Committee Assignments

List the proposed assignments to subcommittee to conduct the hands-on research (indicate if same or new)

- chair for subcommittee
- domain team members
- team members from other domains
- agency staff

Training

Describe any training that will be required by the evaluation team members; include method, duration and location of training. The cost for training should be included in the resources section below.

Resources

Describe what other resources will be needed, other than staffing? Itemize the individual costs, including training costs here. Examples of resources include facilities, consulting services, and equipment or software acquisition.

Evaluation criteria to be used

Describe the evaluation criteria to be used.

DT-4 Gap Analysis Report from a Domain Team

Note: This is in Excel spreadsheet format (see sample below)

Instructions

Column A	Planning Category Or Technology Category	attempt to group similar gap items that could be incorporated in the same (future) plan
Column B	Gap Description	brief description of the gap item (or a label)
Column C	Priority	relative priority within the domain for resolving the gap item; ranked from A highest to C lowest
Column D	Cross Reference	list of other gap items that are related or linked to this gap item, based on the gaps identified in the domain architecture document
Column E	Short List?	gap items to be acted upon first
Column F	Order	used to order the short list and remaining gaps as part of the planning process
Column G	Domain Principles Supported	list of domain principles supported by resolving the gap
Column H	Comment / Action Item	indicate how the gap will be resolved, and any other comments that are relevant; this cell can include historical actions
Column I	Skills	skills required as an aide to resource planning and assignment of team members to activities or research

Sample Template

This example is based on a Gap Analysis Report from the Application Development Domain.

Planning Category	GAP	Prio.	xref	Short List?	Order	Domain Principles Supported	Comment/Action Item (from May meeting)	Skills Required
Merge as single GAP.	Web-based enterprise reporting tools	A	5	<u>X</u>		Anytime/Anyw here Access	Select tool based on EWTA principles and standards. Style Report and Crystal Reports in use.	Reporting and web development experience.
	Reporting Tool Standard for legacy systems	A	6				Agency Suggestion. Roll into Web-based reporting - recommend Web for legacy reporting.	
Move to eGov.	GUI front-end tools for legacy systems	<u>X</u>	8				Agency Suggestion. Recommend moving to "Web enable legacy systems" in eGOV domain.	
Document Update	Evaluation of 2nd tier baseline technologies (e.g. Oracle tools)	<u>A</u>		<u>X</u>		Reduce Integration Complexity	Gap in original assessment (Include disposition of all "research" items)	Development experience/research.
Document Update	Consider OO Cobol as a strategic language	<u>C</u>	9			Reduce Integration Complexity	Agency Suggestion.	
skills required as an aide to resource planning	Research VA Generator, VA Business Rules	c				Reduce Integration Complexity	Re-evaluate as part of document review.	Advanced developer, research.

DT-5 Proof of Architecture Project Plan Template

Basic Information

Date of Approval of DT-1

Submittal Date:

Domain Team:

Team Leader:

Contact Information (phone, email):

Additional Justification

Briefly, describe why this proof of architecture via production ready implementation is needed. This description should go beyond that of the DT-1 or DT-2b and include information on the following:

5. Immediate or near term business need at agency or multi-agency level (might be part of the EWTA Exception Process).
6. Proposed as a service offering or architecture component.
7. Clearly identified business drivers or RTAs with immediate strategic impact.

Scope of the Research

Description of the Research

Please describe the research to be conducted. Include the product or products to be evaluated.

Note: staffing and other resources should be included in the work plan below.

Time Estimates

Provide an estimated time to complete research (work hours, start/end dates)

Participating Agencies

Provide name(s) and contact(s) at the agencies that will be involved in this proof of architectural project.

Work Plan

Project Plan

Provide a basic description of the work plan for conducting the research needed to support this change request; indicate major activities and milestones. A detailed Gantt chart with resource assignments, milestones and deliverable dates must be attached (this can be in the form of a MS Project file along with a print-out).

Committee Assignments

List the proposed assignments to subcommittee to conduct the hands-on research (indicate if same or new)

- chair for subcommittee
- domain team members
- team members from other domains
- agency project manager
- agency staff

Training

Describe any training that will be required by the evaluation team members or agency staff; include method, duration and location of training. The cost for training should be included in the resources section below.

Resources

Describe what other resources will be needed, other than staffing? Itemize the individual costs, including training costs here. Examples of resources include facilities, consulting services, and equipment or software acquisition.

Funding

Describe what sources and amounts of funding will be available, including agency funds.

Evaluation criteria to be used

Describe the evaluation criteria to be used.

DT-5B Post Proof of Architecture Report and Recommendation

Basic Information

Submittal Date:

Domain Team:

Team Leader:

Contact Information (phone, email):

Proof of Architecture Project

Indicate which proof of architecture project this report is for.

Summary of project activities

Briefly summarize the major activities of the project and approach used.

Outcomes based on evaluation criteria

Evaluation Criteria

Describe the evaluation criteria to be used.

Note: This information should be copied from the approved DT-5

Results

Describe the results of the evaluation. If more than one standard or product was included in the evaluation, provide comparative results.

Recommendation(s)

Please choose the appropriate recommendation and provide details or justifications as required.

YES – change the domain architecture and associated documents

Provide the exact text of the proposed change.

Domain architecture principles

--

Standards and/or product standards tables

--

Domain architecture best practices / guidelines

--

The following are optional recommendations that would be in addition to the above.

Add as a service or component offering (describe)

--

Proceed to full deployment or production mode at the agency or agencies participating in project.

--

NO – take no action at this time, consider in the future, *etc.*

Please select a reason and then provide a brief explanation for that choice.

High risk, immature – continue tracking

--

Inconclusive results of comparative evaluation

--

Inappropriate or negative evaluation

--

Other (specify)

--

Impact Assessment

Describe the impacts on the following areas should the recommended changes be implemented (use all that are appropriate).

Note: This information should be copied from the approved DT-1 or DT-2 and modified as needed.

Infrastructure (patterns, components, services)

--

Impacts on other domain architectures

--

Existing or proposed projects, RFPs, SOWs, transition planning, etc.

Financial (might include TCO)

Next Steps

Use this space to describe any next steps or following action that are needed.

Additional Comments

Use this space for any additional comments.

DT-6 Monthly Status Report from a Domain Team or Subcommittee

Meeting Information

Domain Team or Subcommittee:

Team Leader or Subcommittee Chair:

Meeting Date:

Members in attendance:

Members absent:

Details

Reports for On-Going Individual Work

Briefly, describe results and recommendations from on-going reviews and research by team members with individual assignments. Attach any written reports prepared by them.

Subcommittee Status Reports

Briefly, describe status of any subcommittee activities and attach subcommittee reports.

Action Items

Use this space to report on items requiring resolution, indicating next steps, information or resources needed, etc.

Domain Team Decisions During Meeting

Use this space to report any decisions made by the team.

Domain Team Feedback

Use this space for any comments or suggestions the team wishes to submit to the EAP managers.

DT-7 Report on Monthly Domain Team Leaders Meeting

Meeting Information

Meeting Date:

Members in attendance:

Members absent:

Details

Agenda Item One

Agenda Item One

Action Items

Use this space to report on items requiring resolution, indicating next steps, information or resources needed, etc.

Domain Team Leader Decisions During Meeting

Use this space to report any decisions made by the team.

Domain Team Leader Feedback

Use this space for any comments or suggestions the team leaders wishes to submit to the CTO.

ARB-1 Architecture Review Board Rejection of request for Domain Architecture Change

Basic Information

Date of Rejection of DT-1 or DT-2

Domain Team:

Team Leader:

Scope of the Rejection

Description

Provide a description of the change proposed, include the exact text of proposed or modified principle, version number or standard numbers, etc.

Note: copied from DT-1 or DT-2

Nature of the Rejection

Provide a description of the rejection. If a partial or conditional rejection, please be clear as to which part of the change request is rejected, or what the conditions are.

Recommended Next Steps

Please indicate what the domain team should do for follow-up activities (if any).

Form EX-1 Request from Agency for Exception to EWTA Part B – Domain Team Recommendation

This section should be completed by all of the domain teams that are impacted by this exception request.

EWTA Domain Team: _____

Team Leader: _____

Contact Information: _____

Project Description

Exception Request Received Date: _____

Project Title: _____

Participating Agency or Agencies: _____

Current Project Life Cycle Stage: _____

Nature of Exception Request

- Conceptual Architecture Principles
- Domain Architecture Principles,
- Technical Standards
- Product Standards

Exception Requested:

Recommendation

Is the domain team supporting this exception request?

Requires Additional Research To Make Recommendation

If additional research is required, then a matching DT-1 must be submitted along with this recommendation.

YES NO

If yes, will changes to the domain architecture be proposed? YES NO

If technical architecture changes will be proposed, then a matching DT-2 must be submitted separately by the domain team.

What is the recommendation of the domain team with respect to the exception request?
(simple declarative statements, including any recommended implementation constraints)

Briefly describe the justification or rationale for the above recommendation.
(*e.g.*, Requested product is consistent with domain principles or technical standards as noted below, or, Requested implementation violates domain principles or best practices, as noted below)

Conceptual Principles

Technical Standards

Product Standards

Best Practices

Supporting Research For This Recommendation

Supporting Research

Please check off the type of research the domain team did in support of this agency exception request and then provide a brief description. If there is more than type of research, describe them in decreasing order of importance.
(copy this ✓ and paste over the box)

- Web or paper research
- Use of consultant services
- Other

Please provide a description of the research that was conducted:

Please check off the information sources used and then provide a brief description below each source including specific names as appropriate.
(copy this ✓ and paste over the box)

- IT Research and Advisory Services

- Publications from national or international standards bodies

- Publications from industry consortia

- Information provided by manufacturer or software publisher

- Other

Impact of Approving This Exception Request

If the Architecture Review Board approves this exception request, what will the impact be on the following:

This Domain Architecture

Provide a brief description of the changes to the domain architecture that will result from the approval of this exception request. **Note:** If the technical architecture will not change, indicate no impact.

Domain Team Workload

- Adding non-standard products to the IT environment that the domain architecture team must account for, track or accommodate in the technical architecture and implementation documents
- Adding a non-conforming design or configuration to the IT environment that the domain team must account for, track or accommodate in the technical architecture and implementation documents
- Other

Cost of Ownership

What is the estimated financial impact of this exception request?

(Include TCO analysis when possible. i.e. Hard Costs – hardware, software, systems management, support, development, communications fees; Soft Costs – end-user peer support, self support and casual learning, planned and unplanned downtime, etc.)

Additional Comments

Add any additional comments that are deemed necessary.

Appendix 3. Descriptions of the Technical Domains

The nine technical domains created by the Architecture Team were classified as either basic technology or application domains.

Basic Technology Domains

These architectures cover the commonly used technologies that almost every information system or utility depends on. Typically these include network, computer hardware, operating systems and other system software, middleware, database management system, distributed environment management tools. We have added data warehouse (typically an applied technology domain) by combining it with the data management domain.

Domain	Description	Technology Categories
Network	Network architecture provides for all aspects of the communications infrastructure for a distributed computing environment. This includes logical elements, physical hardware components, carrier services and protocols. The scope of the architecture includes voice, data, and video and directory services.	Wiring, hubs, routers, LAN switches, ATM switches, Frame Relay switches, network operating systems, carrier services, LAN / WAN protocols, directory services.
Distributed Environment Management	This architecture defines how the hardware and software components of the environment will be controlled. It focuses on issues of configuration management, fault detection/isolation, testing, performance measurement, problem reporting, software upgrades/control, and remote systems management.	Networks and systems management, LAN management, software distribution, storage management, asset management, help desk, security, performance management, capacity planning, change control.
Middleware	The middleware architecture defines the components that create an integration environment between clients and the legacy and server environments. Middleware sites between the application and network communication mechanisms, and provides for application integration independent of network and platform technologies.	Messaging oriented middleware, object request brokers, transaction processing monitors, database gateways.

Domain	Description	Technology Categories
Platform	The Platform architecture defines the technical computing components of the infrastructure including client/server hardware platforms, operating systems, database engines and environments, and interfaces.	Workstations, client software, groupware servers, midrange boxes and mainframes, operating systems, and OLTP and OLAP database management systems.
Data Management and Data Warehouse	This architecture defines the mechanics for managing, securing, and maintaining the integrity of an enterprise's significant logical entities, and specifies standards for accessing business data. Also describes the internally consistent logical structure of authoritative databases and provides the standards for decision support and OLAP data.	Data repositories, data modeling tools, data replication tools, data administration tools, data extraction tools, OLAP tools, multidimensional databases, etc.
Security	The security architecture facilitates appropriate access to information while ensuring integrity and availability. It supports innovative business process as well as compliance with all government regulations and standards related to information security. It is concerned with is identification, authentication and access rights. Other aspects of security architecture include virus protection, intrusion prevention and privacy.	Digital certificates, intrusion detection systems, Public Key Infrastructures, encryption, administrative tools, firewalls, directory services, access lists and methods, anti-virus tools, etc.

Applied Technology Domains

These architectures are more specific to the way in which technology is being applied to support the business.

Domains	Description	Technology Categories
Application Development	Application architecture is the focal point of an organization's systems inventory. It defines how applications are designed and constructed, how they communicate and cooperate, and where they reside. A subset of this architecture is the object architecture, which defines the internally consistent set of relationships between business relevant entities; it defines how real-world things interact, and defines the expected behaviors of each object.	Application development tools, 3GLs and 4GLs, languages, web development and authoring tools, repositories, ERP applications, project management, CASE tools, testing tools, object development tools, object repositories.
WEB / E-Government	Web / E-Government architecture defines the technologies, standards and guidelines that relate to web based universal access for employees, customers and partners to business information and applications. It covers web based business to business, business to customer, and employee to agency, and inter- and intra-agency transactions. This architecture addresses user interfaces, electronic commerce, digital government, database connectivity and business logic, e-forms processing, etc.	Electronic commerce (procurement, payment, EDI), Web browser, intranet servers (mail, web, news, proxy), PKI, web portals, forms processing, middleware, content management, database connectivity, development and authoring tools, search engines, etc.

Domains	Description	Technology Categories
Collaborative / Workflow	The collaborative and workflow architecture defines the environment for facilitating and automating business processing and content management. It addresses the rules, behaviors of conversation focused business behavior, and the rules and practices of activity focused business behavior.	Collaborative tools, workflow, middleware, groupware tools, E-Mail, document management, imaging, content management, videoconferencing, middleware, etc.

Appendix 4. EWTA Update Process Workflow Diagrams

This appendix contains diagrams that illustrate the EWTA update process workflows.

Diagram 1 EWTA Update Process – Paper-based Research	82
Diagram 2 EWTA Hands-on Evaluation Process	83
Diagram 3 EWTA Proof of Architecture Process	84
Diagram 4 PC Configuration Management Process	85

Diagram 1 – EWTA Update Process – Paper-based Research

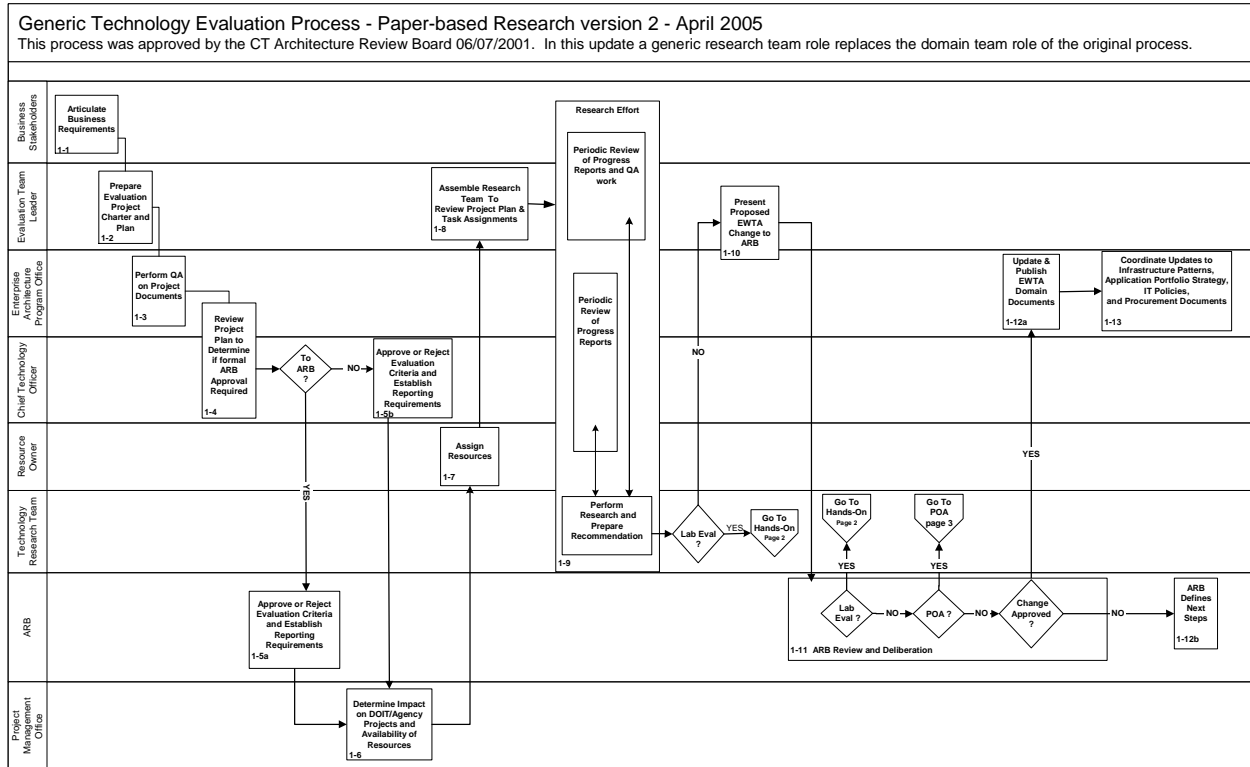


Diagram 2 – EWTA Hands-on Evaluation Process

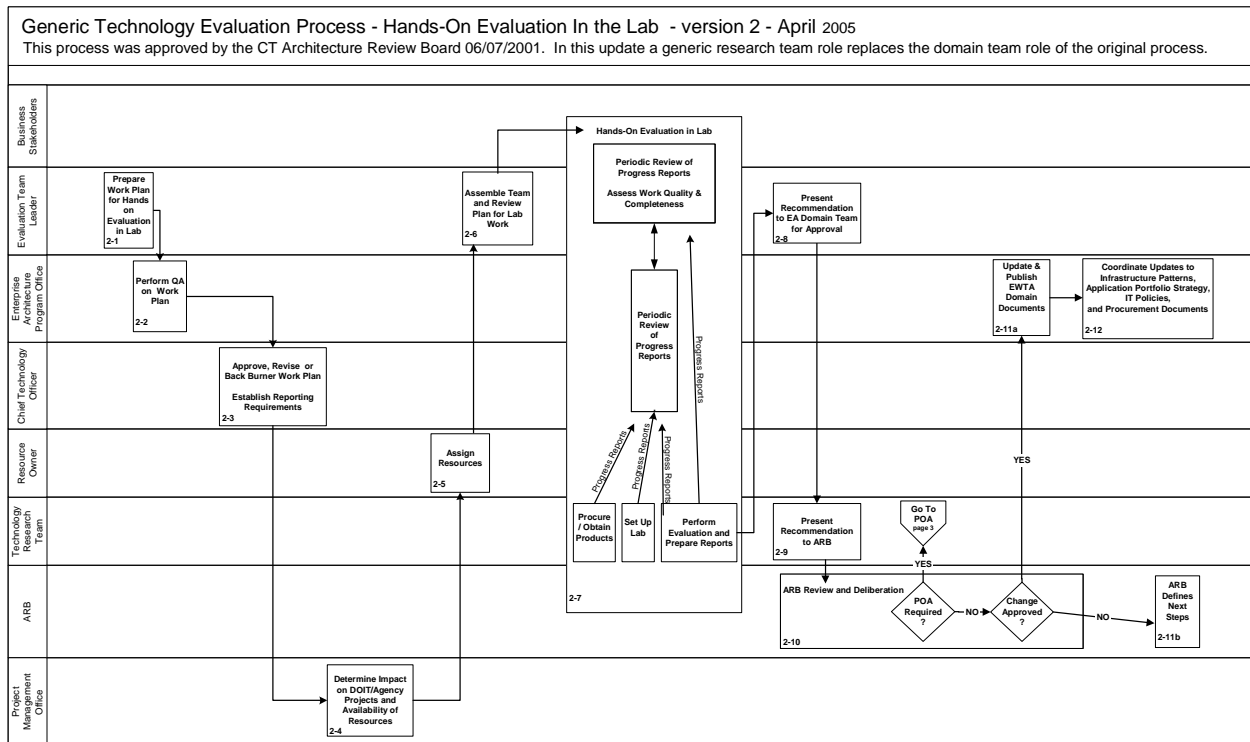


Diagram 3 – Proof of Architecture Process

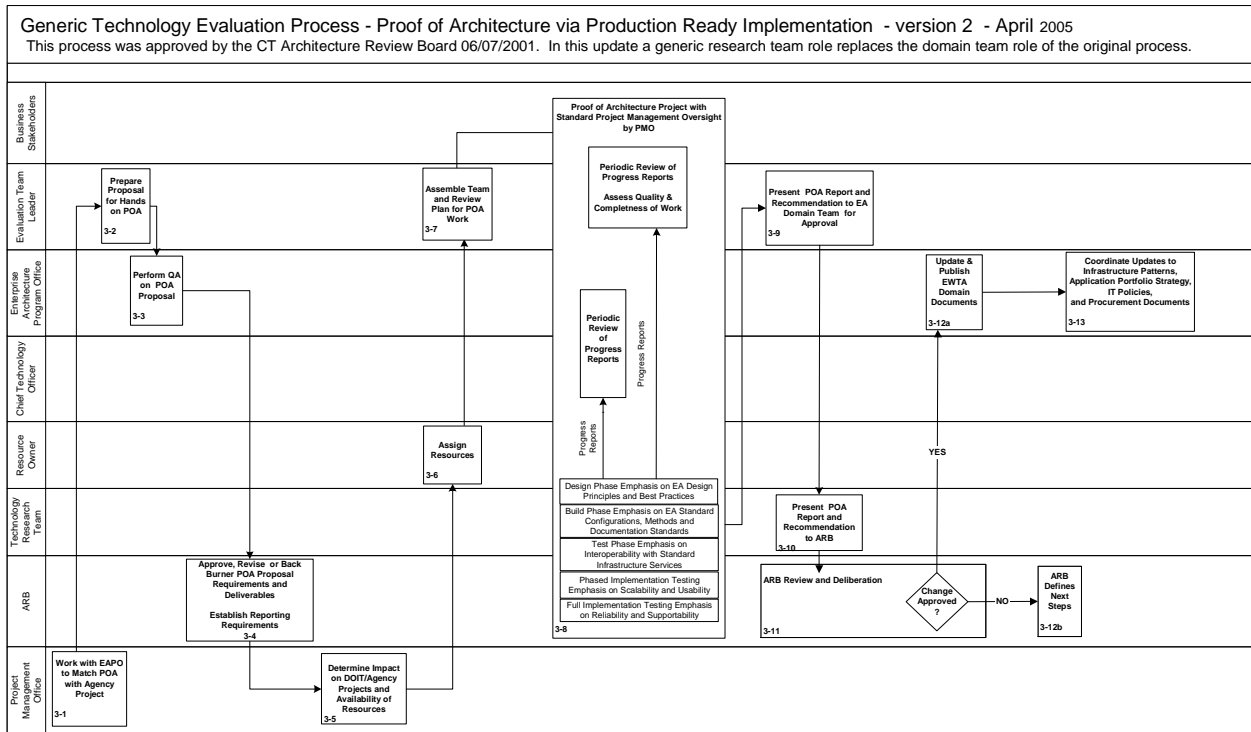
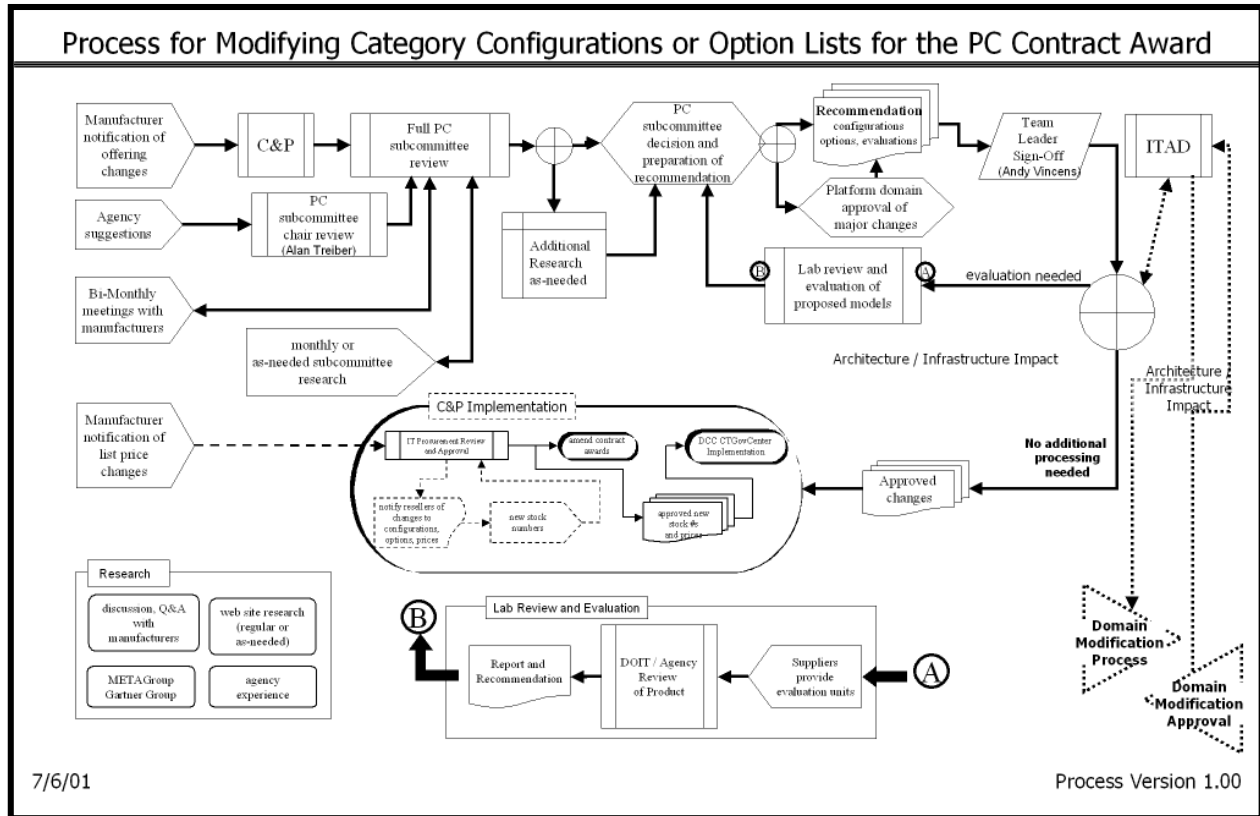


Diagram 4 PC Configuration Management Process



Appendix 5. Roles and Responsibilities

Business and IT Strategy Board

The Business and IT Strategy Board exists to ensure the alignment of IT with the business requirements of the State and its agencies. This group verifies the Common Requirements Vision and approves the Conceptual Architecture Principles of the EWTA. The board works with the Architecture Team to keep the Requirements for Technical Architecture and the Conceptual Architecture Principles current with the business needs of the State. They provide important advice and support for new statewide IT initiatives and policies, as well as adjudicate final appeals for exceptions to architecture standards.

Responsibilities include:

- Work closely with the Architecture team to provide input on business drivers and their subsequent decomposition into Requirements for Technical Architecture (RTAs).
- Approve the Common Requirements Vision and the Conceptual Architecture.
- Charter the Architecture Review Board (ARB) and authorize them to approve certain lower level EWTA deliverables, specifically the domain architecture documents, and to deny/approve/escalate exceptions to the EWTA standards. Note: the Strategy Board is the final “court of appeal” for exception requests.
- Charter the Enterprise Program Management Office (EPMO) to manage resources associated with (but not limited to) architecture development or infrastructure projects on behalf of the Strategy Board or ARB.
- Recommend to the CIO IT policies for adoption.

Architecture Review Board

The Architecture Review Board (ARB) is responsible for the promotion, approval and enforcement of the technical standards. Its membership is made up of senior IT and agency personnel. The ARB approves domain team deliverables (i.e., technical standards, design principles, product standards, best practices, and standardized configurations) and adjudicates appeals for exceptions to architecture standards. The Architecture Review Board (ARB) role is to promote, approve and enforce the technical standards. Its membership is made up of senior IT and agency personnel, and is chaired by the DOIT Chief Technology Officer.

Responsibilities include:

- Maintaining the EWTA process discipline and sponsoring new and revised standards.
- Approving domain team deliverables that impact agencies (i.e. technical standards, design principles, product standards, best practices and standardized configurations).
- Adjudicating appeals for exceptions to architecture standards.
- Reviewing domain and architecture team initiatives and recommend priorities.
- Reviewing possible infrastructure impacts of planned projects.
- Utilizing EWTA teams as a resource in understanding domain deliverables.

Enterprise Architecture Team

The architecture team translates the agencies’ requirements into a business driven IT direction. This team is made up of the members of the Architecture Division, senior technical management

from DOIT, and senior business management from agencies who are familiar with the use of IT to solve business problems. This important team develops and updates the Common Requirement Vision and Conceptual Architecture Principles that document the business needs of the State for the technical architecture. This team is usually assembled when a new iteration of the common requirements and conceptual architecture is needed. Between iterations, the DOIT Architecture Division covers the responsibilities of this team.

Responsibilities include:

- Development of the common requirement vision and conceptual architecture required for EWTA.
- Assure that that technical domain teams are organized and sized correctly and the technology components are assigned to the appropriate domain team.
- Charter and oversee domain team activities.
- Consolidate and identify additional initiatives from domain teams to fill domain gaps.

Technical Domain Teams

The technical domain teams provide the knowledge and expertise required to develop the technical architectures and standards for the enterprise architecture process. Each team consists of technical experts from throughout the State. These teams are responsible for the development and maintenance of the Domain Architecture Documents, including the domain specific deliverables (i.e. design principles, technical standards, product standards, standard configurations, and best practices). The teams are expected to keep abreast of new technology and make recommendations on new technology to close gaps in the current environment.

DOIT Architecture Division

The DOIT Architecture Division coordinates the EWTA process and its associated activities. The division is responsible for coordinating all technical domain team activities as well as communications and web site content. They also provide the function of the EWTA Architecture Team in between iterations of the Business Vision and Conceptual Architecture.

Responsibilities include:

- Ongoing enhancement, communication and governance of EWTA and EAS.
- Coordination of activities and deliverables between domain teams.
- Coordination and QA of deliverables and presentations to ARB.
- Provide staff support to ARB and the Business and IT Strategy Board.
- Coordinating publication of domain architecture documents.
- Coordinating use of research services.

Enterprise Program Management Office (EPMO)

The PMO exists at the enterprise level to coordinate and track: IT projects, schedules, and the architecture compliance process. DOIT personnel staff this office

Responsibilities include:

- Act as the facilitator for an architecture assurance function at the project level)
- Create / update the projects portfolio.
- Manage the projects portfolio

- Provide the strategy board and DOIT management with project scheduling recommendations.
- Coordinate the enterprise resource management and scheduling information.
- Track and coordinate interdependencies among projects.
- Monitor, report and communicate significant changes to projects.
- Provide project management for DOIT initiated enterprise-wide projects
 - Track the progress and completion of projects.
 - Coordinate the architecture compliance process to ensure that the integrity of the architecture is maintained as systems and infrastructure are acquired, developed and enhanced.

Appendix 6. Example of a Configuration Management Process

The following process is used by the Platform Domain team and the PC Subcommittee to manage the configurations for the personal computers available to State agencies.

Procedures for Maintaining the PC Contract Award and CTGovCenter web site
Version 1.00

Author: Alan H. Treiber

Additional materials submitted by: Mark Bannon, Gary Therrien, Richard May, Andy Vincens, Holly Miller-Sullivan.

Involved Parties and Major Roles (Responsibilities)

DOIT Contracts and Purchasing Division (CPD)

Administration of the contract award, including meetings with manufacturers and Suppliers as needed.

Audit product offerings and pricing.

Interface with Digital Commerce Corporation (DCC)

Provide oversight of CTGovCenter web site.

Manager of DOIT Mgmt. Oversight Group (MOG) IT Architecture Division (shortened to EA PROGRAM OFFICE below)

Responsible for governance of the modification process.

Coordination with other domain teams as necessary

Coordinate the presentation of any major Domain Architecture changes requiring the approval of the Architecture Review Board (ARB).

DOIT Platform Domain Team and PC Subcommittee

Creation and modification of categories and configuration specifications.

Approval of “major” or substantial changes to product offerings.

At present

Andy Vincens (DOIT) is the team leader of the Platform Domain;

PC subcommittee members are Gary Clauss (DOIT) Steven Lynch (DSS), Rick May (DMR) and Alan Treiber (DOIT); Alan Treiber serves as PC subcommittee chairperson.

Manufacturers of the Personal Computers

Provide up to date model component specifications and web site addresses (or URLs) for product information on a publicly accessible web site.

Provide product line direction and planned changes in offering.

Provide updated list prices to CPD along with URLs to publicly accessible list prices.

Suppliers (Resellers) of the Personal Computers

Provide discounted pricing and stock numbers (to CPD) for use on CTGovCenter.

Provide required reporting requirements (for example see:

<http://www.doit.state.ct.us/purchase/awards/CA0017021/vendinst.htm>).

Digital Commerce for Contracts (DCC)

Process orders for PCs from the CTGovCenter web site.

Provide maintenance of the CTGovCenter web site, including maintenance of links to manufacturers' web sites.

Provide required reporting.

State of Connecticut Agencies

Responsible for reporting problems with deliveries, billing/receipting, warranty support issues, *etc.* to Contracts and Purchasing (CPD).

Major Activities

Administration (by CPD)

- Modification of the contract awards by amendment process.
- Processing of changes to list prices and discounted prices.
- Quality Assurance auditing of product offerings and prices for compliance with contract award provisions.
- Updating information and prices on CTGovCenter.
- Resolving issues involving problems with deliveries, billing/receipting, warranty support issues, *etc.* and any other matters with suppliers and manufacturers.

Configuration Management (by the subcommittee or Platform Domain)

- Changes to category configurations, *i.e.*, specifications; this includes category options.
- Responding to agency requests for changes.
- Hands-on product reviews for compliance with configuration specifications.
- Additions or deletions of categories.

Meetings

- Regular meetings of the PC subcommittee with manufacturers to discuss technical and/or product updates or changes; – these would be either monthly or bimonthly depending on market place volatility and vendor preference.
- Monthly meetings of the PC subcommittee to consider modifications to configurations or specifications, and to consider agency requests; these meetings may be conducted electronically or by phone, conditions permitting.
- Regular meetings of CPD with Suppliers (and DCC) on contract administrative matters – the frequency of these meeting would be determined by CPD.
- CPD meetings with manufactures on contract administrative matters – as needed.

Information and Process Flows

There are three primary information / process flows:

1. Modifications to the PC categories and their specifications, *i.e.*, configurations, and the options offered.
2. Processing of requests by agencies for modification (changes or additions) to the PC configurations and options.
3. Contract Administration, *e.g.*, processing of reseller information (prices, stock numbers, product descriptions, *etc.*) for updating CTGovCenter and for quality assurance audits,

resolving disputes between agencies and resellers, enforcement of contract award provisions, *etc.*

1. Modifications of Categories and Specifications (Adds, Deletes, Changes)

Changes to the specification of and/or approval of manufacturer models for those categories and changes to options are the responsibility of the PC subcommittee of the Platform Domain team. As part of the process, manufacturers may request changes, but the Platform Domain team or PC subcommittee will originate all modifications. Major changes to category specifications will be the joint responsibility of the PC subcommittee and the full Platform Domain team.

The Suppliers have no role to play in the final determination of categories, specifications or product offerings. Under no circumstances will CPD approve changes to specifications, models or options by manufacturers and suppliers.

The PC subcommittee will conduct regular reviews of technology and product offerings. This can be accomplished by:

- researching Internet web sites and manufacturer web sites,
- gathering & reviewing information from the State's IT consultants (METAGroup or Gartner Group),
- receiving regular communications from, and conducting discussions with, the manufacturers, and
- gathering & reviewing agency experience or research.

In addition, the manufacturers will notify DOIT Contracts and Purchasing (CPD) of substantial changes to components or models that were not available for disclosure at the regular meetings between the PC subcommittee and the manufacturers. CPD will then forward that information to the PC subcommittee.

Based on its review, the PC subcommittee will make recommendations on the modification to the specifications for any category. The subcommittee will make recommendations on the models that will meet those specifications. The PC subcommittee will also make recommendations on the options for each category.

If needed, the PC subcommittee can request that a hands-on review of products be conducted by designated team(s). In some cases, it may be possible to use agency level product research. Optionally, the manufacturers may be charged with evaluating their offerings based on DOIT supplied evaluation criteria. Gary Clauss (DOIT LAN Support and PC Subcommittee member) will coordinate the evaluation, and will define and maintain the testing criteria and process steps as approved by the Platform Domain leader.

The chairperson of the subcommittee will compose the final recommendation and present it to the entire subcommittee and, once approved by the subcommittee, to the Platform Domain team leader for action.

The entire Platform Domain team will review and approve any major changes to categories, or the addition or deletion of a category. The Platform Domain team leader (Andy Vincens) will sign off on all final recommendations, prior to forwarding the recommendations to CPD for implementation. The team leader will notify EA PROGRAM OFFICE of the recommended changes and outcome of the implementation.

NOTE: Some additions or changes to the configurations or categories may have substantial impact on the Platform Domain Technical Architecture. (An example would be the proposed addition of a thin-client category.) In such cases, the Platform Team will also follow the defined Platform Architecture Modification Process. EA PROGRAM OFFICE will coordinate any involvement of other domain teams and all interactions with the Architecture Review Board.

2. Agency Requests

Agencies will present suggestions for changes to configurations, or changes or modifications to the option lists to the chairperson of the PC subcommittee. Normally this will be done by e-mail to the subcommittee chairperson (alan.treiber@po.state.ct.us). Should any of these be sent to IT CPD, they would then route those requests to the chairperson, and will also notify the requestor. The chairperson will review the agency requests and then forward the suggestions to the PC subcommittee for review and determination of action. The review process for options and some configuration changes would probably be limited to Internet based research. The review process for all new configurations or major changes would follow the process outline in point 1 above.

Should the PC subcommittee have a positive recommendation, the Platform Domain team leader (Andy Vincens) will sign off on the recommendations and forward them to CPD for implementation. CPD will notify the original requestor of the final decision on their request.

3. Contract Administration

All approved recommendations and changes to configurations and options will follow the contract supplement processes of CPD. CPD will notify the suppliers of the changes to configurations and options. CPD will obtain appropriate information on reseller model numbers, descriptions, list prices, discounted prices etc. After review by CPD, this information will then be sent to DCC for updating the CTGovCenter web site. CPD will also update the appropriate Contract Award posted on the DOIT Internet web site [<http://www.doit.state.ct.us/purchase/awards/CA0017021/award.htm>].

The manufacturers are responsible for notifying CPD of changes to list prices on base configurations and options. CPD will verify all list prices and discounts (using the manufacturer's public web site, prior to posting changes on the CTGovCenter web site. Only CPD will initiate changes to the CTGovCenter web site.

The manufacturers will notify CPD of any major changes to product offerings that occur between the regular meetings between the manufacturers and the PC subcommittee. CPD will forward that information to the PC subcommittee for consideration.

CPD will conduct regular audits of product availability and pricing by examination of the publicly accessible configuration pages on the manufacturer's publicly accessible web site.

Appendix 7.RFP Section for System Architecture

This System Architecture section is designed to be used in RFP's to create a free-standing technical architecture section in respondent proposals to facilitate and expedite architecture conformance reviews during an RFP evaluation process. Without a separate section it is difficult and time consuming to create an integrated view of the architecture from thousands of facts and tens of diagrams spread throughout proposals that can be hundreds of pages in multiple documents.

SYSTEM ARCHITECTURE

State of Connecticut Enterprise-Wide Technical Architecture

DOIT has established an Enterprise Architecture Program (EAP) as part of its mission to develop and support a statewide IT environment for State agencies using standardized IT components and services. The EAP has established formal processes for the development and implementation of an Enterprise-Wide Technical Architecture (EWTA) for the State of Connecticut. The EWTA is currently comprised of the following nine technical architecture domains:

- Application Development
- Collaboration and Directory Services
- Data Management and Data Warehouse
- Enterprise Systems Management
- Middleware
- Network
- Platform
- Security
- Web/E-government

DOIT has developed a document for each domain to serve as a reference guide to the technical architecture for the technologies covered by the domain. Vendors will need to reference these documents to identify the policies, principles, product and technical standards, best practices and guidelines that are relevant to this RFP. Current domain documents are on-line at <http://www.ct.gov/doit/cwp/view.asp?a=1245&q=253968> . As the domain architectures can change from month to month, each document has a History of Changes table that can be consulted to quickly identify what changed in each revision.

The policies, principles, standards, best practices and guidelines referred to in these documents are considered **State IT architecture requirements** for any new system or major enhancement to the current IT environment. Vendors are strongly encouraged to propose solutions that both satisfy the functionality stipulated in this RFP and conform to the EWTA. Vendors should be aware that the proposal evaluation process includes a conformance review, which may result in rejection of proposed architectural elements.

EWTA Conformance Review

Vendor proposals will be evaluated for conformance to the EWTA. The conformance evaluation will be based on a review of the response to this System Architecture section. All necessary information must be provided in this section and should not be included by reference to other sections. Proposals will be evaluated against relevant aspects of all nine EWTA domains. Non-conforming architectural elements of otherwise favorable Vendor proposals may be subject to approval by the State's Architecture Review Board (ARB), through an exception process described online at <http://www.ct.gov/doit/cwp/view.asp?a=1245&q=253972>. The ARB is the governing body charged with reviewing and resolving architecture conformance issues. The ARB's architecture exception process examines the impact and cost of allowing the implementation of non-conforming products, standards and design practices. Among the issues considered during the exception process are the satisfaction of agency information and process management requirements, consistency with conceptual architecture principles, and Total Cost of Ownership (cost of implementation as well as ongoing support, maintenance and enhancements). All software included in the proposal is subject to EWTA conformance review, including Commercial Off The Shelf (COTS) products, whether they are the primary means of providing business functionality or merely a component of the proposed solution. Vendors are reminded that the EWTA includes design principles and practices that govern how some products are implemented. How strategic products are deployed is as important to the State as which product is used.

Overall System Architecture

The Vendor's proposal must provide information needed for the State to determine the extent to which the proposed solution conforms to the Enterprise-Wide Technical Architecture (EWTA).

Overview of Architecture

Vendor must provide an overview of how its proposal conforms to the State of Connecticut Enterprise-Wide Technical Architecture. Vendor must explicitly address conformance from the perspective of the principles, product and technical standards, as well as best practices and guidelines relevant to the major components of the proposed system.

The overview must specifically address the issues of:

- Logical N-Tier design, consisting of modular components and sub-components with partitioning of components by defined interfaces and messaging based communications (inter-application and intra-application);

- Use of XML for application to application messaging.

 - The Vendor must explain how the proposed design utilizes XML for inter-application messaging.

 - If your design also uses XML for intra (component to component) messaging, please explain that as well.

 - The Vendor must identify the source of the XML Schema or Document Type Definitions (DTDs) utilized in the proposed design;

- Open system implementation using established standards and non-proprietary components.
All proprietary extensions to open standards specifications must be identified;
- A multiple zone security model (e.g., DMZ, server zone, database zone) separated by firewalls and access restriction mechanisms; and
- Use of the State's LDAP-enabled enterprise directory as the primary authentication service for system users in conjunction with a role-based authorization method within application components.

Vendor Rationale for Architectural Choices

The State does recognize that IT standards and products evolve over time, often rapidly. To ensure that functional requirements are met, the State may consider proposals that include architectural elements that do not conform to the EWTA, but vendors must thoroughly describe the rationale for their recommendations. Rationales are to be comprehensive but concise. Do not cut and paste manufacturer's marketing literature. Vendors may attach manufacturer technical specifications as supporting documentation, but the rationale itself must be sufficient to justify the recommendation. Rationales should provide documentation of how the Vendor's recommended technologies are consistent with the State's Conceptual Architectural Principles (<http://www.ct.gov/doit/cwp/view.asp?a=1245&q=253964>) and with the relevant domain architecture principles.

Where the Vendor proposes architectural elements for which standards do not exist, or for which the EWTA provides for more than one product, technology or approach, the Vendor must provide a rationale for the recommended choice.

Where the proposal does not conform to the EWTA, the Vendor must itemize the exception(s), and provide a rationale for each item. Rationales for non-conforming items must also address suitability for functional requirements, and applicability to the objectives of this RFP. The Vendor must identify, by section number and heading, where, in the proposal, the proposed technologies or design approaches have impact or are referenced.

Rationales for non-conforming items must compare the recommended element against the element provided for in the EWTA, including the functional, technical and cost considerations that make it a better choice for the State than one that conforms to the EWTA. (Note: specific costs must not be included in the rationale, only a description of cost considerations.) Rationales for non-conforming items must also describe the skills, training and experience necessary to implement and support the non-conforming elements, and provide an FTE estimate for these activities. This information will be used by the State to evaluate the risk and implied costs of non-conforming elements.

If the Vendor's proposed design does not use message-based interfaces between components or systems, or an N-Tier design, the Vendor must explain the rationale for such a design. The Vendor must explain what the impact would be if the Vendor is required to use message-based interfaces between components or systems.

If the Vendor's proposed design does use message-based interfaces but does not utilize the products specified in the relevant domain architecture documents, the Vendor must explain the rationale for choosing alternative products. The Vendor must explain what the

impact would be if the Vendor is required to use the products specified in the domain architectures.

Technology View – Structural Diagram and Component Specification

Structural Diagram

The Vendor's proposal must provide a diagram showing all the physical components of the system and how they are interconnected. The diagram must include the components required for the application and data environments – Development, QA/Test, Staging and Production. The diagram must include the proposed backup solution. Organize the components by the tiers of the n-tier architecture (see the Conceptual N-Tier Architecture diagram in the Attachment entitled *EWTA Patterns: N-Tier, Security Zones, Principles, Partitioning*). A detailed description of the hardware and software that comprise each component must be provided in the Detailed Technology Component Specification section (below).

Use the following formatting conventions in the Structural Diagram:

1. All physical components in the proposed system must be represented by an icon in the structural diagram whether they will be provided by the vendor, the State, or a third party. See Note 1 below for instructions on making those distinctions through labeling and component specifications. Use standard IT icons and be consistent in their use within and across diagrams. Each component icon in the structural diagram must be labeled to indicate the function of the component in the system. The label format is "System Component Function (n)". The number (n) in the label for the physical component is the number of these physical components required for the system, e.g. Production Database Server (3), Production Application Server (2), Development Application Server (1). The detailed description of the hardware and software that comprises the component must be provided in the Detailed Technology Component Specification section.
2. Icons representing system components must be boxed with a dashed line to indicate different physical locations (e.g. vendor data center, State data center, agency regional office, etc.), with each box labeled at the bottom.
 - For situations where there are multiple instances of the physical location, include the number of instances in the label for the box, e.g. Branch Offices (5). The diagram should indicate the components to be installed in each physical location, e.g., Application Server (1). The cost sheet should indicate the total quantity of components for each location. In this example the quantity in the cost sheet would be five application servers (one in each of five branch offices).
 - If necessary because of the complexity of the system, additional diagrams may be provided for some physical locations. The primary diagram should include a box for the physical location with the appropriate label and a reference to the second diagram. The primary diagram and the secondary diagram must include the connection lines and labeling information so that we can correctly match up the interfaces between components.
 - Additional diagrams may also be used to provide structural details about interfaces with other systems.
3. The major functional tiers of the system (client tier, presentation/interface tier, applications tier, database tier) should be indicated by using different colors for the background and

labeling each one at the top. This should remind the vendor that the State has architecture design principles and practices related to physical and logical partitioning of system components, which should be reviewed and carefully considered when developing proposals. Place the icon for each physical component on the background color that corresponds to its appropriate tier in the system. The Conceptual N-Tier Architecture diagram is an example of this format. Vendors are to use separate icons to represent the client platforms for public users, external State and Partner users (outside the firewall), mobile users, and internal State users (network attached inside the firewall) in order to differentiate the application design, implementation and security details for those different clients and environments.

4. It is not necessary to include firewalls in the structural diagram, however the proposed system must be able to communicate between the tiers through a firewall. The Security Focused N-Tier Architecture diagram in the Attachment entitled *EWTA Patterns: N-Tier, Security Zones, Principles, Partitioning* shows the partitioning of the environment into security zones through the use of multiple firewalls. Vendors should double check the structural layout of the proposed system by overlaying it on the security zones. Vendors may include this additional security view in this section if they wish.
5. Use lines to indicate how the physical components are interconnected, and label each with the transport protocols, messaging protocols, data packaging formats, and encryption methods.
6. Circles, ellipses or clouds can be used to indicate networks (LAN, WAN, MAN, mobile communication networks, Internet) but each should be clearly labeled.

Notes:

1. See the Current State and Agency Infrastructure section in the RFP for the existing infrastructure components that must be accommodated in the vendor's proposed system. Where a vendor is proposing to use existing infrastructure components, the component icon in the diagram should indicate (Existing) below the icon label. The corresponding Detailed Physical Component Specification should also include the word "existing" where appropriate to indicate which elements within the component will be reused, upgraded or added. This will allow for situations where hardware will be upgraded, existing software and licenses reused, or new licensing units added.
2. The (n) in the System Component Function label for each icon in the structural diagram is the number of these physical components proposed for the system, e.g. Database Server (3), Production Application Server (2), Development Application Server (1). If the detailed specification for the component is not the same for each instance, then a separate icon must be used in the diagram for each differing component, with a different label used for each, and a separate detailed description provided. If redundant components and communication channels are used to provide parallel processing, they should also be shown as separate.

Detailed Technology Component Specification

The Vendor's proposal must provide a detailed technology component specification that includes the requested information (items 1-15 below) in the specified format.

For each Technology Component represented in the Structural Diagram the following detailed information must be provided. If an information item is not relevant for the technology component, respond with “Not Applicable” rather than leaving the item blank.

1. System Component Function (n) [Matches label used on structural diagram].
2. Reason for multiple components, e.g. load balancing, fail-over, etc.
3. Hardware Manufacturer, Product Name, and Product Model. Detailed manufacturer’s technical literature is to be attached as an appendix that is referenced in this item. Do not include manufacturer’s marketing verbiage in this section.
4. Hardware Operating System and Version.
5. Hardware CPU Type (n).
6. Hardware Motherboard.
7. Hardware Memory Types and Size of each.
8. Hardware Cache Types and Size of each, including L2.
9. Hardware Storage Types and Size of each.
10. Backup Method. Identify the system component that provides the backup medium for this component. Specify the frequency, duration, and bandwidth requirement for each type of backup provided by the proposed system. Be sure to address system software backup, application software backup, and data backup as appropriate.

Provide the following information for each software product installed on the component. Embedded Software Products that have a significant functional role in the system, e.g. an embedded web server, must be specified separately.

11. Software Function
12. Software Manufacturer, Product Name and Product Version. Detailed manufacturer’s technical literature is to be attached as an appendix that is referenced in this item. Do not include manufacturer’s marketing verbiage in this section.
13. Software License Type (n)

Provide the following information about the connections between this component and other system components.

14. Network Connection Type, Communication Protocols, Network Interface Card Manufacturer, Model and Bit Rate. If more than one network interface card is included in this component, provide the quantity. If different network interface cards are included in this component, provide the manufacturer, model, bit rate and quantity for each one.
15. Identify all other components that this component communicates with. For each one provide the interface type, communication protocols, including protocols encapsulated in other protocols, whether it is a synchronous or asynchronous link, any specific port requirements, bandwidth requirements and encryption methods to be used.

Partitioned Systems

The Vendor must provide the following additional information for system components that are partitioned to perform multiple functions:

1. An additional separate diagram showing how the component is partitioned.

2. For each partition provide the following information: Partition Name, Function, Resources Allocated to Function, access methods (indicate which components or partitions this partition is connected to, and the method used).
3. For functions that are required by the State's security model to communicate through a firewall, but will instead be communicating on a partition-to-partition basis, describe the mechanism for providing equivalent firewall functionality.
4. The partitioned component's icon label in the primary and secondary diagram must reflect the multiple functions performed by the component.

Notes:

1. The (n) in the System Component Function label is the number of these physical components proposed for the system, e.g. Database Server (3), Production Application Server (2), Development Application Server (1). If the detailed specification for the component is not the same for each instance, then a separate icon must be used in the diagram for each differing component, with a different label used for each, and a separate detailed description provided.
2. The (n) in the item Hardware CPU Type is the number of CPU's included in the proposed system component.
3. The (n) in the item Software License Type is the number of these licenses included in the proposed component, e.g. Server License (1) [one for each instance of the component]. If three instances of the same component are included in the proposal, this would be reflected in the cost sheet as a quantity of three.
4. For any of the information items in the Detailed Technology Component Specification where existing products, software or licenses will be used, include the word "Existing" at the beginning of the response. For existing physical devices, identify the organization that is providing the item, and where it is located, e.g. "3. Hardware Manufacturer, Product Name, and Product Model: Existing OSC Dell server, model 8450 located at DOIT Data Center." If upgrades to existing components are required include that information in the response for the appropriate item, e.g. "4. Hardware Operating System and Version: Existing Windows 2000 Server SP2, Upgrade to Windows 2000 Advanced Server SP3".

Appendix 8. The EWTA Exception Process

An exception to the principles and comprehensive standards defined in the EWTA can be requested by a State agency at several stages during the life-cycle of a project.

- Non-conformance to the EWTA may be identified during an initial architecture review as part of project approval by DOIT. The agency can file a request for a one-time exception to the architecture for the project. The exception will be addressed at a regularly scheduled Architecture Review Board (ARB) meeting.
- After a project has been approved and the project is in an implementation phase, an agency may find a need to deviate from the EWTA for business reasons. This type of exception request would also cover procurement situations where an agency is in the process of evaluating proposals to an RFP, SOW, etc. An agency can request an expedited review if the situation warrants it and the ARB will convene a special meeting to adjudicate the request. Otherwise it will be taken up at a regularly scheduled ARB meeting.

An agency must submit a formal request to the ARB for an exception to the architecture. The request must document the justifications for the exception and the impact of granting versus not granting the request. The domain team leaders of the affected domain architectures assess the request, and their recommendations are documented in a standardized format for the ARB. The agency and the domain team leaders are required to present oral arguments along with the written documentation to the ARB.

If an exception is not granted to the agency, an appeal can be filed to the Chief Information Officer. This appeal must be in writing and state clearly the business reasons for granting the exception.

The DOIT Enterprise Architecture Unit manages the exception process.

Agency requests for exceptions and appeals must use the approved template, Exception Request Form EX-01 Part A. (see below)

The Domain Teams provide an analysis and recommendation regarding the exception request. This is documented on Part B of the form.

The EA Program Office creates a summary of the analysis and recommendations on Part C of the Exception Request form.

Form EX-1 Agency Request for Exception to EWTA

Submittal Date:

Part A – To be completed by agency requesting the exception

Project Description

Project Title: _____

Participating Agency or Agencies: _____

Project Manager: _____

Contact Information (phone, email): _____

Outside consultant or vendor: _____

Contact Information (phone, email): _____

Start and End Dates: _____

Anticipate date of "roll-out" into
production mode at agency: _____

Note: If phased roll-out, provide dates for each phase.

Current Project Life Cycle Stage
(copy and paste this symbol ✓)

- IT Planning
- Project Planning
- IT Architecture Design
- RFP/SOW Requirements Definition
- RFP/SOW Evaluation
- Contract Negotiation
- System Implementation

Is this an internal agency application or system? Yes No

If no, please list which State agencies are users of this application or system.

Project Architecture

Do you have an agency IT architecture defined? Yes No

If yes please attach or e-mail a copy.

Is this application or system compliant with the agency's IT architecture? Yes No

Provide a description of the architecture proposed for the application/system including any interfaces to other systems within the agency, to other agencies, and to external parties. Please attach or e-mail a diagram.

Nature of Exception Request

Check all exemptions that apply (copy and paste this symbol ✓) and then describe the nature of the request in the appropriate boxes below.

- Conceptual Architecture Principles
- Domain Architecture Principles
- Technical Standards
- Product Standards
- Implementation Guidelines or Best Practices

Exemption from Conceptual Architectural Principles

Exemption from Domain Architectural Principles

Exemption from Domain Technical Standards

Exemption from Domain Product Standards

Exemption from Implementation Guidelines or Best Practices

Briefly, describe the products that are being proposed, or have been chosen, to implement the application/system. Indicate if the products are currently in use, obtained from another State or Federal agency, commercial off-the-shelf, vendor package or custom built.

Justification for Exception Request

Is this a temporary solution to fix a critical problem, until a replacement system or application can be developed or implemented? Yes No
If yes, please indicate the duration involved.

Briefly, describe all other business reason(s) for requesting the exception, including functional impacts of not using proposed standard(s) or product(s).

Briefly, describe technical reason(s) for requesting the exception, including functional impacts of not using proposed standard(s) or product(s).

Impact Assessment

Briefly describe the impact on the agency's IT architecture, infrastructure and existing or planned systems should this exception request be approved.

In the event, this exception request is approved, describe the time frames for transitioning away from the non-conformant principles, standards, products or practices granted in the exception and implementing EWTA-conformant principles, standards, products or practices.

Briefly, describe the financial impacts of using the proposed exception(s) to EWTA principles, standard(s), product(s) or practice(s). This description should include Total Cost of Ownership (including upgrades, maintenance, support, training, etc.) over the estimated lifetime of the application or system.

Briefly, describe the alternative(s) for design or implementation should the Architecture Review Board decline the request for an exception.

Form EX-1 Request from Agency for Exception to EWTA Part B – Domain Team Recommendation

This section should be completed by all of the domain teams that are impacted by this exception request.

EWTA Domain Team: _____

Team Leader: _____

Contact Information: _____

Project Description

Exception Request Received Date: _____

Project Title: _____

Participating Agency or Agencies: _____

Current Project Life Cycle Stage: _____

Nature of Exception Request

- Conceptual Architecture Principles
- Domain Architecture Principles,
- Technical Standards
- Product Standards

Exception Requested:

Recommendation

Is the domain team supporting this exception request?

Requires Additional Research To Make Recommendation

If additional research is required, then a matching DT-1 must be submitted along with this recommendation.

YES NO

If yes, will changes to the domain architecture be proposed? YES NO

If technical architecture changes will be proposed, then a matching DT-2 must be submitted separately by the domain team.

What is the recommendation of the domain team with respect to the exception request?
(simple declarative statements, including any recommended implementation constraints)

Briefly describe the justification or rationale for the above recommendation.
(e.g., Requested product is consistent with domain principles or technical standards as noted below, or, Requested implementation violates domain principles or best practices, as noted below)

Conceptual Principles

Technical Standards

Product Standards

Best Practices

Supporting Research For This Recommendation

Supporting Research

Please check off the type of research the domain team did in support of this agency exception request and then provide a brief description. If there is more than type of research, describe them in decreasing order of importance.
(copy this ✓ and paste over the box)

- Web or paper research
- Use of consultant services
- Other

Please provide a description of the research that was conducted:

Please check off the information sources used and then provide a brief description below each source including specific names as appropriate.
(copy this ✓ and paste over the box)

- IT Research and Advisory Services
- Publications from national or international standards bodies
- Publications from industry consortia
- Information provided by manufacturer or software publisher

- Other

Impact of Approving This Exception Request

If the Architecture Review Board approves this exception request, what will the impact be on the following:

This Domain Architecture

Provide a brief description of the changes to the domain architecture that will result from the approval of this exception request. **Note:** If the technical architecture will not change, indicate no impact.

Domain Team Workload

- Adding non-standard products to the IT environment that the domain architecture team must account for, track or accommodate in the technical architecture and implementation documents
- Adding a non-conforming design or configuration to the IT environment that the domain team must account for, track or accommodate in the technical architecture and implementation documents
- Other

Cost of Ownership

What is the estimated financial impact of this exception request?

(Include TCO analysis when possible. i.e. Hard Costs – hardware, software, systems management, support, development, communications fees; Soft Costs – end-user peer support, self support and casual learning, planned and unplanned downtime, etc.)

Additional Comments

Add any additional comments that are deemed necessary.

Form EX-1 Request from Agency for Exception to EWTA Part C – To be completed by the Architecture Team

Submittal Date:

Project Description

Project Title: _____

Participating Agency or Agencies: _____

Project Manager: _____

Nature of Exception Request (copied from Agency Exception Request)

Check all exemptions that apply (copy and paste this symbol ✓) and then describe the nature of the request in the appropriate boxes below.

- Conceptual Architecture Principles
- Domain Architecture Principles,
- Technical Standards
- Product Standards

Exemption from Conceptual Architectural Principles

Exemption from Domain Architectural Principles

Exemption from Domain Technical Standards

Exemption from Domain Product Standards

Briefly, describe the products that are being proposed, or have been chosen, to implement the application/system.

(Indicate if the products are currently in use, obtained from another agency, State or federal agency, off-the-shelf, vendor package or custom built.)

Summary Recommendation

What is the overall recommendation of the architecture and domain teams?

If the recommendation is negative, what acceptable or existing alternatives can be proposed to solve the business and technical problems of the agency are being proposed?

(Details should be included in the domain team section.)

What is the anticipated impact on the relevant domain architecture(s) should this exception be granted?

What is the anticipated impact on the State IT architecture should this exception be granted?

What is the anticipated impact on the State IT infrastructure should this exception be granted?

Include impact on Total Cost of Ownership if possible.

What is the anticipated impact on the State IT support services and staffing should this exception be granted?

Include impact on Total Cost of Ownership if possible.

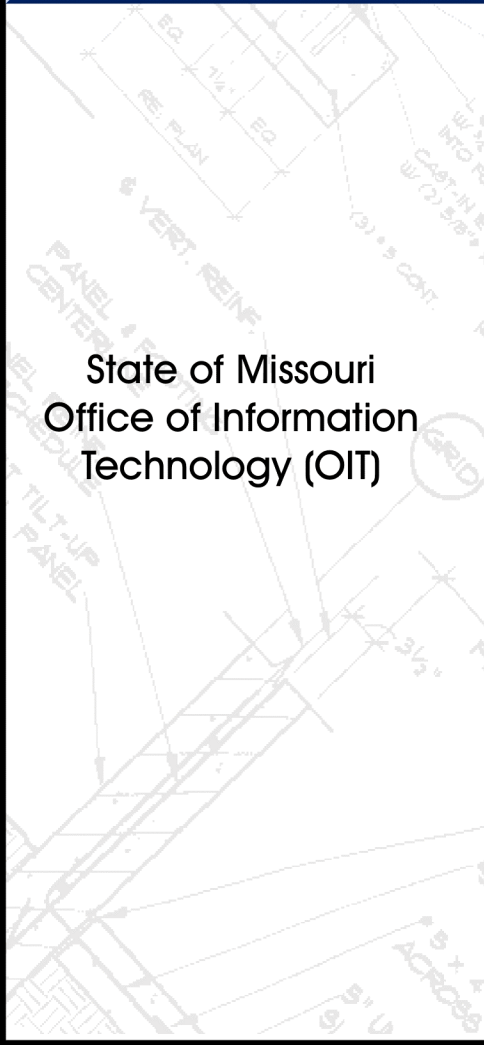
Is the technical standard or product being proposed re-usable or suitable for inclusion in the affected domain architecture(s)?

Domain Teams Contributing Recommendations



MISSOURI ADAPTIVE ENTERPRISE ARCHITECTURE

Implementing a Blueprint for Standards and Methods



State of Missouri
Office of Information
Technology (OIT)

MAEA Domain
Facilitator's Guide

April 2004, Version 2.0

TABLE OF CONTENTS

INTRODUCTION	1
What Is Facilitation And Why Is It Important?	2
Who Should Read This Guide?	3
How to Use This Guide?	4
FACILITATING THE DOMAIN COMMITTEE KICK-OFF SESSION	5
Welcome, Introductions, Expectations	5
Welcome Domain Committee Members and Participants	5
Affirm the Roles of the Domain Committee Members	6
Affirm Domain Implementation Approach	7
Set Tone and Pace	8
Remind the Domain Committee of Their Charge	8
Establish a Timeline	9
Empower Domain Committee Members	9
Plan Team Building and Social Time	9
Operations, Logistics and Administration	10
Establishing an Organized Presence	10
Set Up a Domain Kick-Off Agenda	10
Working Session Location Logistics	11
Start the Working Session on Time	11
Keep the Group Focused On the Topics Listed In the Agenda	11
Creating a Set of Ground Rules	11
Reaching Agreement and Taking Action	12
FACILITATING DOMAIN WORKING SESSIONS	14
Developing the Agenda	14
Setting Agenda Priorities	14
The Working Session Agenda	15
Guiding the Domain Committee through the Agenda	16
Make Sure the Domain Committee and the Agenda Are In Synch	16
Brainstorming and Concept Development	17
Brainstorming	17
Concept Verification	17
Concept Documentation	18
Domain Committee Research and Technology Scans	18
Facilitating the Documentation Process	19
How to Get Documentation Started	19
Confirm Priorities with the Architecture Office and ARC	20
Producing Architecture Blueprint Documents	20
Scribing and Note Taking	21
Recording Parking Lot Issues, Action Items and Decisions	21
Preparing Assets for Review	22
Behind the Scenes Activities	22

Review Parking Lot Issues.....	22
Action Items – Assignments and Resolutions.....	22
Provide Behind the Scenes Support via Email.....	23
WORK SESSION WRAP-UP ACTIVITIES	24
Identify Next Steps.....	24
Review Action Items and Plans	24
Visit Your Parking Lot.....	24
Update the Domain Committee Calendar	25
Adjourn On a Positive Note	25
CORE FACILITATION SKILLS AND TOOLS	26
Making Everyone Feel Comfortable and Valued.....	26
Use Body Language.....	27
Thank participants.....	27
Encouraging Participation	28
Encourage Silent Members	28
Use Open-Ended Questions	28
Consult the Committee	28
Use Visual Aids	29
Conflict Prevention and Management.....	29
Set Ground Rules	29
Search for Agreement	29
Use Conflict to Improve Decisions.....	29
Agree To Disagree	30
Listen and Observe.....	30
Listen Actively.....	30
Scan the Room.....	30
Guiding the Group.....	31
Refer Back To Working Session Agenda and Objectives	31
Stray From the Agenda When Necessary	31
Use a Parking Lot	31
Ensure Quality Decisions	31
Remind the Domain Committee of Decision Deadlines	32
Poll the Domain Committee before Major Decisions.....	32
Outcome-Based Working Sessions	32
Review Objectives for Each Agenda Item.....	32
Record Decisions	32
Develop an Action Plan	32
FACILITATION CREATIVITY AND PRODUCTIVITY TECHNIQUES.....	33
General Guidelines	33
Assess the Committee’s Concentration and Engagement.....	33
Clarify Confusing Discussions	33
Provide Feedback to the Committee When Necessary or Appropriate.....	34
Enforce Ground Rules.....	34
Maintaining Focus and Order.....	35

Staying With the Group	35
Side Conversations	35
Dealing with Silence	35
Personality and Motivation Techniques	36
Awareness of Your Own Attending Behavior	36
Understanding Group Behavior and Dynamics	36
Motivating Domain Committee members.....	37
Conflict Resolution.....	38
Conflict Advantages and Disadvantages.....	38
Managing Conflict: Six Steps.....	39
CONCLUSION.....	40
APPENDICES	41
Appendix A – Working Session Agenda Template.....	42
Appendix B – Working Session Minutes Template	43
Appendix C – Security Domain Sample Agendas.....	4
Appendix D – Security Domain Sample Minutes	5
Appendix E – Lessons Learned – Domain Pilot.....	6

INTRODUCTION

The *MAEA Domain Workgroup Facilitators Guide* is intended to assist MAEA Domain Committees, committee chairs, committee members, and external facilitators in preparing for and facilitating MAEA Domain Committee working sessions. This guide is primarily designed as a training tool to help facilitators create a setting of highly participative discussion, provide a setting of collaboration, work through social and political issues, connect to the policy making processes of the MAEA, and build a sense of community among the Domain Committee members.

This document is part of the continuing development of Missouri's Adaptive Enterprise Architecture Program, developed in concert with the Missouri Office of Information Technology (OIT), the Missouri Information Technology Advisory Board (ITAB), the Architecture Review Committee (ARC), and the Security Domain. National Systems & Research Co. (NSR) has been retained to assist in the coordination, document design, process development, and overall production of this document.

Productive MAEA Domain Committee meetings play a critical role in developing the Missouri Adaptive Enterprise Architecture Blueprint.

In general this guide has been produced to make the role of the facilitator easier by providing tools and topics that will be valuable to both new and experienced facilitators. Topics covered in this guide include:

- Specific guidance for facilitation of MAEA Domain Committees
- An overview of facilitation and general facilitation skills, which will be useful for Domain Committee working sessions
- Guidelines for Domain Committee productivity and dealing with conflict
- Additional resources for group facilitation included in the appendices

Though subject to the same over-arching Architecture Lifecycle Processes, it is not likely that any two MAEA Domain Committees will function in exactly the same manner. It is the role of the facilitator to ensure that what happens within each working session is consistent with the overall goals of the Missouri Adaptive Enterprise Architecture program: producing Architecture Blueprint assets through democratic deliberation, broad and diverse participation, and shared problem solving.

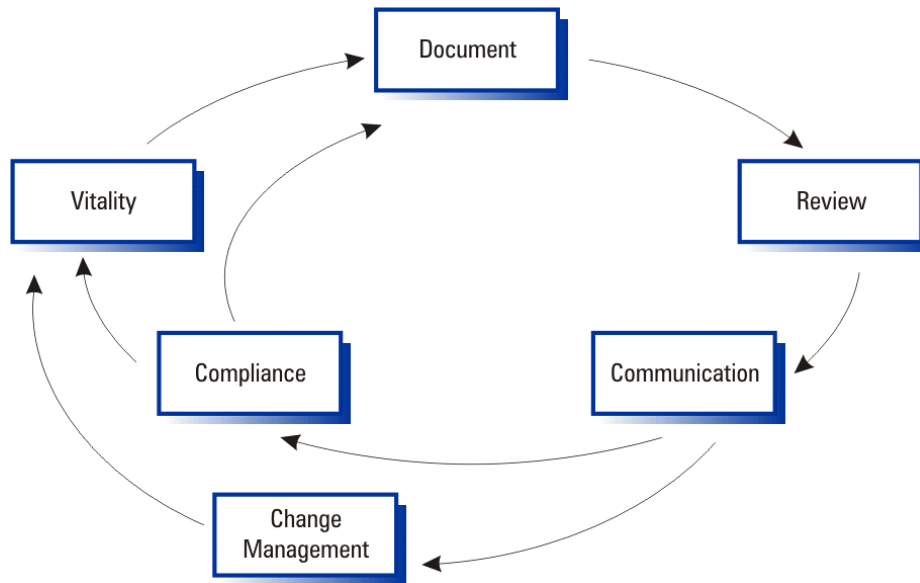
Productive MAEA Domain Committee working sessions play a critical role in developing the Missouri Adaptive Enterprise Architecture Blueprint. Given the potential diversity of the Domain Committee members' professional and personal experiences, facilitating MAEA Domain Committee working sessions can be both challenging and rewarding.

As a reminder, this guide is not meant to be a substitute for the MAEA Manual, but as a supplement to it. Facilitators should have read and become familiar with the MAEA Manual and with the Architecture Lifecycle Processes and should have participated in MAEA Education Sessions prior to facilitation of any Domain Working Sessions.

WHAT IS FACILITATION AND WHY IS IT IMPORTANT?

Facilitation is the act of assisting a group with the process of communication, enabling the group to complete its mission. Facilitation is the art and science of managing working sessions and group processes. Facilitation of the MAEA Domain Committee working sessions involves guiding the group as their activities touch each of the MAEA Architecture Lifecycle Processes as shown in Figure 1 below.

Figure 1. Missouri Adaptive Enterprise Architecture Lifecycle Processes



The facilitator's job is to guide the Domain Committee to use the MAEA Architecture Lifecycle Processes correctly, while at the same time, keeping the group focused on delivering those Architecture Blueprint items most useful to the State's IT decision makers. The following quote, adapted from a resource book for facilitators - *How to Make Meetings Work*, paraphrases the characteristics of the ideal facilitator.

Facilitation is the act of assisting a group with the process of communication, enabling the group to complete its mission.

*"The best facilitator has unobtrusive chameleon-like qualities; gently draws group members into the process; deftly encourages them to interact with one another for optimum synergy; lets the dialog flow naturally with a minimum of intervention; listens openly and deeply; uses silence well; plays back group member statements in a distilling way that brings out more refined thoughts or explanations; and remains completely non-authoritarian and non-judgmental."*¹

Facilitators create an environment in which Domain Committee members share ideas, opinions, experiences, and expertise to achieve a common goal. A skilled facilitator smoothes the way for the Domain Committee to brainstorm Enterprise Architecture options, identify the viable IT issues, and develop and implement specific Architecture Blueprint assets.

¹ Paraphrased from *How to Make Meetings Work*, Doyle and Straus, 1987

Good facilitators possess a variety of qualities and skills. Some of the qualities spring from such innate personality traits as being able to recognize one’s own biases while remaining neutral, enjoying interaction with diverse groups, and inspiring trust. Although some people possess a natural talent for facilitation, most develop the skills through experience and with guidance from experienced facilitators.

The following “Checklist for Facilitation Skills,” will appear throughout this guide as a reminder of the core skills that a facilitator should use to evaluate their effectiveness in dealing with Domain Working Session situations.

Checklist for Facilitation Skills

<i>ARE YOU USING YOUR FACILITATION SKILLS?</i>
Making Everyone Feel Comfortable And Valued
Encouraging Participation
Preventing And Managing Conflict
Listening And Observing
Guiding The Group
Ensuring Quality Decisions

With these core skills and this checklist in mind, a facilitator acts as a presence in the Domain Committee working sessions for the following reasons:

- To “balance” (facilitators are impartial)
- To ensure all voices are heard
- To mediate if necessary
- To pick up on subtle emotions and undercurrents
- To help the Domain Committee come to consensus
- To keep the Domain Committee on schedule

A skilled facilitator smoothes the way for the Domain Committee to brainstorm Enterprise Architecture options, identify the viable IT issues, and develop and implement specific Domain Architecture assets.

Facilitation is also about building a social relationship. Not all professionals work effortlessly in groups. As a facilitator you will need to tailor your style to build a strong rapport with the Domain Committee members. How well you facilitate matters little if you do not earn the trust and respect of the Domain Committee members. The combination of the core skills and a good rapport are the foundation of a strong facilitation process.

WHO SHOULD READ THIS GUIDE?

Potential Domain Committee facilitators, Committee Chairs, Committee Members, external facilitators and anyone else interested in MAEA Domain Committee working sessions will benefit from reviewing this guide. Those who have little or no formal training in facilitation will find a pragmatic summary of basic concepts and skills. Those with facilitation training or experience will find a targeted review of the unique facilitation activities associated with MAEA Domain Committee working sessions.

The facilitator's role is multi-faceted. Having a group made up primarily of facilitators does not necessarily mean the facilitation will be easy; in fact, the situation could be quite the contrary. If you don't have a facilitator in the group, it does not mean the group cannot accomplish anything. Facilitation is not a mystical or magical role. It's not one that most of us do naturally, but that many of us do intuitively.

We can all learn to do it. There is no personality that makes it impossible to be a facilitator. And there isn't a wrong way to do it. Facilitation, like teaching or parenting, is different for each one of us. Each one of us develops strengths and abilities based on our own approach to the world and our own attitudes. There is no cookie cutter model.

HOW TO USE THIS GUIDE?

This guide presents facilitation skills and tools in the order in which they are most commonly used within a Domain Committee working session. Nevertheless, this guide is not meant to be opened and followed during a working session. Study of this guide before facilitating a working session can be extremely helpful for preparation, while a review of the information after a working session can help to determine ways to do a better job next time.

Facilitation is not a mystical or magical role...we can all learn to do it.

If facilitation is new to you, you should read, or at least scan, all sections and then go back and concentrate on those you find the most useful. Remember that this guide only touches a small portion of the vast knowledge available regarding facilitation, communication and group dynamics. If you have experience or training as a facilitator, you may want to go directly to the sections that address the needs particular to facilitating MAEA Domain Committee working sessions.

The first three sections of this guide suggest specific approaches to use when conducting MAEA Domain Committee working sessions, namely:

- Facilitating The Domain Committee Kick-Off Session
- Facilitating Domain Working Sessions
- Work Session Wrap-Up Activities

The next section of this guide, **Core Facilitation Skills and Tools**, provides an overview of the skills and tools that a facilitator will use throughout most working sessions.

The **Facilitation Creativity and Productivity** section presents ideas for coping with challenging situations, such as members carrying on private conversations.

The **Appendices** provide various facilitation support tools, including agenda and minutes templates, as well as sample agendas and minutes from the Security Domain pilot.

Facilitating the Domain Committee Kick-Off Session

The purpose of the Domain Committee Kick-off session is to set a climate of welcome and efficiency for work. A good climate is more likely when people use introductions to get to know each other's experiences and interests, and when the group members take responsibility to agree on agenda and guidelines as a structure for their work.

The Domain kick-off session is your best opportunity, as a facilitator, to energize the group and establish a common purpose toward completing the work. A great kick-off is the result of good planning. Before you go to the kick-off working session, you should prepare carefully for your role by reviewing those core facilitation skills and tools that are documented in the last two sections of this guide, **Core Facilitation Skills and Tools** and **Facilitation Creativity and Productivity**.

The facilitation process needs to feel inclusive from the beginning, so it's important not only to encourage but also to validate all input.

Checklist for Facilitation Skills

ARE YOU USING YOUR FACILITATION SKILLS?

Making Everyone Feel Comfortable And Valued

Encouraging Participation

Preventing And Managing Conflict

Listening And Observing

Guiding The Group

Ensuring Quality Decisions

WELCOME, INTRODUCTIONS, EXPECTATIONS

Before diving into the main agenda, take a few moments to welcome participants. If you and key group members make everyone feel welcome, all will participate. Full participation is vital, for each person brings a different perspective that can contribute to the Domain Committee's success. Be personable and have fun; everyone will enjoy participating more if you take this approach.

Welcome Domain Committee Members and Participants

Take immediate charge of the working session and welcome everyone officially. Acknowledge that they are contributing their valuable time to attend this working session and thank them for coming. By doing so, you validate and legitimize their comments and contributions.

Introductions help participants feel welcome and remind them who their team members are. Introductions also give you an opportunity to clarify your role as facilitator for the working session and to explain the role of any outsider. Require everyone to say a few words, even if only, "My name is ... but I

want to pass on this.” Once people have heard their voices in a group, they feel more inclined to speak up again later.

Consider an icebreaker. You may ask people to share their favorite ice cream flavor, their first pet’s name, or anything else light and personal but non-threatening as they introduce themselves.

Give precise instructions - list the information you would like members to give as they introduce themselves, e.g., name, role, and relevant identifying information (e.g., agency they represent). Consider asking them to each limit the introduction to 10 to 20 seconds. This is an opportunity to build a sense of community and collaboration and to break the pattern of name, rank, and serial number.

If your group has the time, consider inviting participants to expand their introductions by briefly talking about their expectations for the working session. This can help Domain Committee members clear their minds and focus on the working session.

Affirm the Roles of the Domain Committee Members

As the facilitator of the Domain Committee kick-off it is important to remind each of the committee members what is expected of them to make the most of the Domain Committee experience, and to suggest ways in which they can help the group. Part of the kick-off should include restating the Roles and Responsibilities of each Domain Committee Member as outlined in the MAEA Manual.

As the facilitator of the Domain Committee kick-off it is important to remind each of the committee members what is expected of them to make the most of the Domain Committee experience.

Each Domain identified will be developed and documented by a Domain Committee made up of subject matter experts who are familiar with the State’s IT environment. Domain Committee members are selected by the ARC and represent a cross-section of State of Missouri agencies and/or branches of government.

By procedure the ARC should have appointed the Domain Committee Chairperson. There may be instances, however, where the ARC has left this determination to the Committee itself. If this is the case, one of the agenda items during the kick-off should be to elect the Domain Committee Chairperson. Prior to this election, the following should be said regarding the role of the Domain Committee Chairperson:

- **The Domain Committee Chairperson must be able to lead, guide, push, pull, cajole and encourage** the team members to complete their individual assignments and to fulfill the responsibilities of the team.
- **As coordinator of all domain team activities**, it is imperative for the Domain Committee Chairperson to be well organized and to communicate openly and frequently with team members.
- **The Domain Committee Chairperson is responsible for all documentation** generated for review and publication as part of the domain architecture. The Domain Committee Chairperson attends any ARC meetings in which Domain assets are being reviewed to present this documentation and help the ARC with any questions or clarifications.

All Domain Committee members are expected to provide knowledge, experience, and expertise towards development of the Domain’s Architecture Blueprint. As Subject Matter Experts, all members are responsible for the development and maintenance of the content of domain architecture documents, including the domain specific deliverables (i.e. technical standards, product standards, standard

configurations, and compliances). Members are expected to keep abreast of the technical trends and standards for their area of expertise.

Affirm Domain Implementation Approach

When a Domain Committee is charged with developing the technical architecture for a group of related technologies, the framework for their research and deliberations is provided by processes and templates found in the MAEA Manual. These templates and processes are intended to provide structure and rigor to the Domain development effort. Facilitating the definition of Domain architectures within the MAEA Framework context provides a straightforward “top-down” approach to planning, selection, construction, review, deployment, and management of Architecture Blueprint assets.

As Facilitator, it is important to understand that one-size does not fit all. Developing domain architectures is a collaborative, iterative, creative process.

As Facilitator, it is important to understand that one-size does not fit all. Developing domain architectures is a collaborative, iterative, creative process. Architecture development is a creative endeavor that requires thoughtful analysis and inspired thinking to respond to the many challenges inherent in an architectural approach to deploying and managing technology to satisfy the business needs of the State and its agencies.

The primary outcome of the Domain Kick-off should be an affirmation of how to organize work with a comprehensive implementation approach. The first task of a newly formed domain team is to review the technologies assigned to the domain by the ARC. If the domain team believes that a technology is more appropriately addressed in another domain, that recommendation must be proposed to the Architecture Office. When the list of technologies is finished, the Domain Committee must assess the Domain Implementation Approach.

The Domain Implementation Approach will help set priorities for the Domain Committee’s work. The approach and priorities can be influenced by a number of factors. These include:

- **Severity and urgency of issues** – There may be a specific state-wide need or intent behind the launch of a given Domain dictating that particular Technology Areas are addressed ahead of Domain and Discipline definitions.
- **Level of Architecture Blueprint detail** – Not all Domains will need to, or want to, document to all levels of the Architecture Blueprint. For example, the Domain Committee may decide not to document Product Components to avoid any vendor biases. They may choose, instead, to document explicit selection criteria as Compliance Components at the Technology Area level.
- **Availability of Existing Standards** – In order to gain comfort with the Architecture Documentation Process, the Domain Committee may want to start with some proverbial “low-hanging-fruit.” This could entail adapting ITAB approved assets into the appropriate Architecture Blueprint assets.
- **Availability of Information from other Government or Standards Bodies** – Enterprise Architecture is not about re-inventing the wheel. Several Federal, State and Local governments are progressively documenting architecture standards. The Domain Committee should capitalize on these published efforts to help kick-start their own documentation efforts. Using publications from organizations such as the National Institute of Standards and Technology (NIST), IEEE or W3C can also dictate the implementation approach.

The Domain Implementation Approach should also establish a baseline set of requirements regarding how subsequent levels of the Domain Architecture Blueprint will be documented. This approach, along with any other Discipline specific documentation details, should be recorded in the "Discipline Documentation Requirements" section of the Discipline Template.

SET TONE AND PACE

A great deal of the tone of future Domain Committee working sessions will be determined by the set-up and opening of the kick-off working session. It's always important to establish a spirit of collaboration, trust, and respect early in the kick-off working session, and it's absolutely critical when you expect conflict. While conflict can promote the airing of different perspectives and increase the options being considered, conflict that is hurtful or angry can impede the Domain development process. One of the best ways to deal with negative conflict is to prevent it from happening.

It's always important to establish a spirit of collaboration, trust, and respect early in the kick-off meeting.

Reaffirm the charge of the Domain Committee, its purpose, and expected goals and deliverables. Briefly discuss the role of each person as a Domain Committee member. You, as the facilitator, should do most of the talking in this first working session. The kickoff is intended to bring everyone up to speed, not to discuss every item in detail. Every participant needs to see you taking charge of the working session agenda.

Focus on driving home the following points during the kick-off:

- **Listen carefully to others.** Try to understand the concerns, values and experiences that underline each Domain Committee member's views.
- **Maintain an open mind.** You don't score points by rigidly sticking to and constantly repeating your earlier statements. Feel free to explore ideas that you have rejected or not considered in the past.
- **Strive to understand the position of those who disagree with you.** Your own knowledge is not complete until you understand other committee members' points of view and why they feel the way they do.
- **Help keep the discussion on track.** Make sure your remarks are relevant.
- **Speak your mind freely, but don't monopolize the discussion.** Make sure you are giving others a chance to speak.
- **Address your remarks to the group members rather than the facilitator.** Feel free to address your remarks to a particular committee member; especially one who has not been heard from or who you think may have special insight.
- **Communicate your needs to the facilitator.** The facilitator is responsible for guiding the discussion, summarizing key ideas, and soliciting clarification of unclear points, but he/she may need advice on when this is necessary. Chances are you are not alone when you don't understand what someone has said.
- **Value your own experience and opinions.** Don't feel pressured to speak, but realize that failing to speak means robbing the group of your wisdom.
- **Engage in friendly disagreement.** Differences can invigorate the group, especially when it is relatively even on the surface. Don't hesitate to challenge ideas, and don't take it personally if someone challenges your ideas.

Remind the Domain Committee of Their Charge

Now that you've set the tone, discuss the MAEA, Architecture Review Committee and Architecture Office expectation of the Domain Committee that set the stage for how they will develop their Domain architecture assets.

Refer to the MAEA Manual that they should have reviewed in training and highlight the activities of the Domain Committee process by process. Explain and reinforce to everyone that membership on the committee is a commitment. Explain that the routine Domain Committee working sessions become the foundation for status reports and are used as the primary communication vehicle for managing the Domain effort. As you step through the mission, point out key dependencies or factors you noted in preparing for the working session that affect the completion of documenting the Domain.

Keep your discussion to the point. Reinforce key success factors and explain why they are important.

Establish a Timeline

Determine an appropriate time and day and schedule (day of week, frequency, etc.) for Domain Committee working sessions. Reinforce the need for everyone to attend and to have each working sessions required tasks completed.

Take time to remind the group that teamwork is essential.

Take time to remind the group that teamwork is essential. Reinforce the need for participants to look out for one another. The objective is to complete the Domain successfully, and it is up to everyone to do their part and to help one another.

Empower Domain Committee Members

Empower team members to own their responsibilities and to ask for help. Repeat that you expect everyone to attend Domain Committee working sessions prepared and with all tasks completed, unless you know ahead of time that there are obstacles. Part of your facilitation job is to help the team identify bottlenecks and eliminate obstacles.

If you have agenda items that could cause conflict (e.g., voting of a Domain Committee Chairperson or Scribe), emphasize to Domain Committee members that their success is dependent on working together and agreeing on similar issues.

Plan Team Building and Social Time

Throughout your work with the Domain Committee, you will need to use team-building techniques. Through teambuilding, committee members get to know each other better and develop a group rapport. They also better understand each other's motivations and intentions, and that helps when conflicts arise.

Plan social time, such as coffee breaks, so that participants may talk to each other informally. At a minimum such breaks should occur every 90 minutes and should last no more than 15 minutes.

OPERATIONS, LOGISTICS AND ADMINISTRATION

All Domain Committee working sessions should operate under a set of procedures that ensure fairness and equality. One of the most widely read and used resources for establishing meeting operating procedures is *Robert's Rules of Order* or some variation thereof. Robert's Rules focus on voting, but much of the work done in the Domain Committee working sessions is done more so through consensus.

Whether you use Robert's Rules or other operating procedures be sure to include administrative and logistics rules that include:

- Establishing an organized presence
- Creating of a set of ground rules
- Reaching agreement and taking action

Establishing an Organized Presence

As a facilitator it is critical that you demonstrate to the Domain Committee that you are on top of things. The Domain Committees are most effective in completing their mission if the facilitator maintains an organized presence. Establishing an organized presence requires little more than the fundamentals of planning and running effective working sessions, which includes:

- Setting up a Domain kick-off agenda
- Working session location logistics
- Starting the working session on time
- Keeping the group focused on the topics listed in the agenda

Set Up a Domain Kick-Off Agenda

The working sessions kick-off, or opening session, is a great opportunity to show the Committee members that many different agencies and organizations are involved in the MAEA program, that the State's IT leaders have "bought in" to the idea of Enterprise Architecture, and that taking part in the Domain Committee will give the members a real opportunity to effect change on the IT issues they care about. As in any effective working session, participants are better off when they have a clear understanding of how it will progress.

For the kickoff, the facilitator should plan an event that includes some combination of high-profile speakers (i.e., members of the ARC, the Chief Architect, or the State CIO), and testimonials from people who participated in the pilot Domain working sessions or from members of other Domain Committees.

The Domain Committee opening session will be different from the usual recurring working session agendas as it is designed to call attention to the mission of the specific Domain Committee and encourage participation. An MAEA Domain working session agenda template can be found in **Appendix A**. Using this format, the typical kick-off session agenda should include the following major parts:

As a facilitator it is critical that you demonstrate to the Domain Committee that you are on top of things.

- Introductions (30 minutes)
- Guest speakers, testimonials (30 minutes)
- Roles of the facilitator and participants (20-30 minutes)
- Overview of the mission and objectives of the Domain Committee (30 minutes)
- Ground rules (30 minutes)
- Discussion Questions/Study of Domain priorities (30 – 45 minutes)
- Summary (15 minutes)
- Debriefing the session/Action items (15 minutes)

Working Session Location Logistics

Make sure that you have a working session location that can easily be found by the members of the Domain Committee and/or guests; try to use the same location for all of your working sessions. The ideal working session location will be free from potential hurdles such as parking issues, distractions (e.g., open, public facing windows), and noise (such as construction).

Be sure the working session location is large enough to accommodate all Domain Committee members and potential representatives from the ARC, Architecture Office, or guests.

As a facilitator, you should arrive at the working session early in order to prepare the room for the working session. This includes making sure projection facilities are available, white boards or flip charts are available (including markers), and any other working session necessities are in place. You should familiarize yourself with such logistics issues as restroom locations, break locations, and emergency procedures.

Start the Working Session on Time

Waiting too long for the latecomers to start the working session will show that you don't care about those who arrived on time. You are inconsiderately wasting the time of the loyal members, waiting for a few stragglers. This applies to breaks as well – the continuance of a working session should begin immediately after the designated break period is over.

Waiting to long for the latecomers will show that you don't care about those who arrived on time.

Keep the Group Focused On the Topics Listed In the Agenda

Don't let discussions stray away from the goals of the working session. Rather, encourage group "bonding" through organized icebreakers before the session, during an appropriate break, or plan social time after the session. The purpose of the working sessions is Domain Committee business, not socializing. Don't let side conversations prevent or disrupt the business of the group.

Creating a Set of Ground Rules

A simple ground rules exercise for the group, which only takes a few minutes, is to brainstorm a list of behaviors and attitudes that enhance the effectiveness of working sessions. A good framing question to set up the brainstorm is to ask the participants to list the actions that they have observed that in their judgment were helpful to groups they have worked in.

As facilitator, you will need to clarify to the group that actions are observable behaviors and if ideas come up that may not be actions you can ask the question, “How do you know this is happening?” Write down the actions so all the committee members can see them and then have the group choose the ones they want to adopt.

Here are a few sample ground rules for enhancing the effectiveness of working session participants. There are lots of others; a simple search of the Internet using the keywords *Ground Rules* is likely to find many more ideas.

- **Be a good listener** – Ask for clarification about why people think or feel as they do. Never interrupt.
- **Be open to outcome** – Don’t come to working sessions with the *plan* come with *ideas*. Let the group expand on the ideas and be open to the change.
- **Be concise** – Think out what you are going to say before you say it and then be brief. Don’t ramble and don’t repeat what others have said. If you think the same as someone else, then simply say, “I agree.”
- **Be patient** – Ask if committee members need more time. Some may need more time to understand or may need more information.
- **Take a dose of humility** – Just because you think you have the answer does not mean it’s the best answer for everyone, or that what meets your needs meets the needs of others.
- **Learn when to let go** – Don’t get hung up on small details (e.g., wordsmithing), let the decision go forward and then examine it later. Be willing to let the group go ahead so they can learn, even if it means they might make a mistake or two.
- **Give the reasons behind your thinking** – Whenever you state an opinion, you can add valuable information by giving the committee the reasons for your opinion. Be open to questions and comments about your opinions.
- **Do your homework** – Don’t wait until the working session to get or give information. Call other committee members, hold small gatherings, etc. Read everything you are given closely and think about it before the session.

Reaching Agreement and Taking Action

It should come as no surprise that without agreement and action, nothing happens. Every one of the Domain Committee members should have a say in what is produced, especially concerning assignments they themselves worked on. It is possible for the group to get bogged down in endless discussions over trivial points, especially when the committee members don’t think they’re so trivial. It is the role of the facilitator to determine when such a discussion is really warranted, and to cut it off when it’s not.

The important thing is that people generally feel happy with the actions and stances taken when taken as a group. If there is disagreement, if 60% of the group likes an idea but you don’t want to alienate the remaining 40%, remember that you can always encourage people to take action or speak out. You should be constantly encouraging people to participate, give their input, and feel a part of the group.

It should come as no surprise that without agreement and action, nothing happens.

People generally feel happy with the actions and stances taken when taken as a group.

How do you define when the Domain Committee agrees on something? The idea of consensus is that you talk and refine until pretty much everyone agrees. The downside of this is that a few dissenters can paralyze the group, even when the vast majority endorses something.

For MAEA Domain Committee decisions requiring a vote, such as completed Architecture Blueprint assets being submitted to the Architecture Office, a simple majority vote is all that is necessary. In this model, in order for a vote to be conducted at least 51% of the Domain Committee must be present (1 more than half of the designated members present). Should this level of attendance occur, full consensus of those present is necessary in order to reach agreement and take further action.

Facilitating Domain Working Sessions

When facilitating Domain working sessions, you are responsible for making sure the working session runs smoothly, the agenda is followed, and discussions proceed constructively. As facilitator, you should begin to develop a sense for when the Domain Committee is approaching consensus and be able to determine when Architecture Blueprint assets are concrete enough to be voted on.

The facilitator has the responsibility to make sure the group dynamics are good. The facilitator must balance the conversation so that some people are not dominating the conversation, making it difficult for others to provide input. The facilitator must also make sure that everyone gets a chance to speak and that everyone listens to each other. Remember, are you using your facilitation skills?

Checklist for Facilitation Skills

ARE YOU USING YOUR FACILITATION SKILLS?

Making Everyone Feel Comfortable And Valued

Encouraging Participation

Preventing And Managing Conflict

Listening And Observing

Guiding The Group

Ensuring Quality Decisions

DEVELOPING THE AGENDA

The agenda is the template for Domain working sessions. It should be developed thoughtfully so that the Domain Committee spends the bulk of the session time addressing deliverables, issues and matters that require decisions and less on time for “housekeeping” or routine subjects.

By treating agenda development seriously, you will be rewarded with more orderly and productive meetings.

The best approach for agenda development involves collaboration from the Facilitator, the Domain Chairperson, the Architecture Office, the scribe, and the Domain Committee members. The agenda should delineate plainly what topics will be addressed, how much time they will get, etc. By treating agenda development seriously, you will be rewarded with more orderly and productive working sessions.

Setting Agenda Priorities

As is evidenced by the order of launch of the individual Domain Committees, the priorities for developing the MAEA program and its assets is based on the information needs of a wide variety of stakeholders including the ARC, the Architecture Office, Legislative issues, Homeland Security, etc. Such priorities

trickle down to the actual order of issues the Domain Committee is to address through the appropriate development of Architecture Blueprint assets.

It is important to recognize that if the Domain Committee is to stand a chance of success, the desires of the individual committee members must also be taken into account. For an active group, it is probably best to mix issues with obligation, interest and opportunity where the group can learn a lot about networking with other people, researching issues, and have a chance of success.

There are essentially three categories of activity that influence Domain direction and session-to-session agenda development:

- **Agendas items based on obligation** - There is an obligation to address needs and issues identified by the ARC or ITAB. Tackling issues based on obligation is an essential part of the service component of the Domain Committee and its mission.
- **Agenda items based on interest** – Domain development is a long-term focus and pursuing issues in particular areas of interest to the Domain Committee members enables a greater sense of motivation.
- **Agenda items based on opportunity** - Sometimes agenda items will be based on the opportunity they provide to support a particular project, address a particular political issue, current technology trends or collaborative efforts between Domains.

Developing agendas that recognize multiple motivations helps to further the service provided by the Domain Committee. Setting agendas that include more balance can increase the value generated by Domain efforts and promote greater growth for individual committee members and the MAEA as a whole.

Developing agendas that recognize multiple motivations helps to further the service provided by the Domain Committee.

The Working Session Agenda

At a minimum, the Domain working session agenda should include a review of correspondence from past minutes, reports from the Architecture Review Committee or Architecture Office or Domain Committee Chair, old business and new business. As a facilitator, you will need to check-in with the Architecture Office and committee chairpersons before placing time for their report on the agenda. A working session that has many “no reports” or poorly prepared reports will weaken the effectiveness of the working session.

A sample agenda template has been included in **Appendix A**; this agenda can be modified depending on the specific needs of the Domain Committee or the topics being covered in the working session. At a minimum, however, the typical working session agenda should typically cover the following topics:

1. Call to order by the Committee Chair (or Facilitator)
2. Review of the minutes from the last working session
3. Domain Chairperson’s report
4. Reports from the ARC and/or Architecture Office
5. Old Business
6. New Business
7. Action Items
8. Close of the working session

The agenda should be distributed at least 48 hours in advance of the working session. Each Domain Committee member will be responsible to bring a copy of the Agenda to the working session. As a facilitator, it is good practice to bring additional copies in the event that guests attending the working session will need one.

The agenda will help the Domain Committee members follow the flow of the working session, will serve as a reminder of the topics covered during the session, and most importantly, will help keep the session focused on relevant issues.

GUIDING THE DOMAIN COMMITTEE THROUGH THE AGENDA

Often Domain Committee agendas are packed with discussion on multiple levels of the Architecture Blueprint (Technology Areas, Compliance Components, Products, etc.). To ensure the committee meets its objectives, you must focus attention and energy on the objectives for that working session. It helps to start each working session with a review of the objectives for each agenda item.

To ensure the committee meets its objectives, you must focus attention and energy on the objectives for that meeting.

Make Sure the Domain Committee and the Agenda Are In Sync

A Domain Committee makes quality decisions only after all committee members have had an opportunity to contribute relevant expertise, experience, and the majority have come to support the best possible solutions. Rushing can lead to ill-considered decisions and the loss of members' support. If you are running out of time faster than you are running out of agenda items, stop and choose one of the following options:

- Determine if you have enough time to complete the agenda and closing tasks
- Extend the working session
- Help the group set priorities and decide which remaining agenda items to address in the time remaining.

The following lists some tools to assist in guiding the Domain Committee through the agenda and keeping them focused on the activities at hand.

- **Delegate a timekeeper.** Set a time limit for discussion on each topic and ask someone to help you stay on schedule. "Since we still have four other agenda items to discuss today, let's give ourselves about 15 minutes to conclude discussion on this item. Judy, can you let us know when 15 minutes is up?"
- **Refer back to the working session objectives and agenda.** When the group strays, remind members of their decision to accomplish specific objectives in an agreed upon period. "Though this topic is not one of our objectives for today, there seems to be a great deal of interest in this discussion. Should we re-assess today's agenda or post-pone this discussion until the next working session?"
- **Allot extra time if needed.** Don't cut short a valuable discussion or let a conflict fester because the allocated time is up. Ask the group to approve the departure from the schedule. "We originally planned to discuss the 'Fit Matrices' until 2:00. It seems that they may take a few minutes longer. Is everyone okay with delaying Product Component discussions until we finish talking about the matrices?"

- **Postpone non-agenda topics.** Use a ‘parking lot’ as a tool for staying on topic, not as a way to ignore comments on other topics. “Pete that is definitely an issue we will need to discuss. Would it be okay to place it in the parking lot now so that we can focus on the fit matrices?”
- **Speed the group up.** At times, members may prolong a discussion because of their interest rather than new ideas. To push the group to wrap it up and come to a decision, summarize the main points. Then you may say, “Did I accurately summarize the issues regarding this Technology Area? To keep on schedule, should we make a decision?”
- **Slow the group down.** At times, members may be tired or uncomfortable and rush through a decision to to meet an ARC deadline. Say something like, “I know that we are almost to the end of the working session, but it seemed we rushed through that last product discussion. This is a fairly important decision. Let’s make sure we’ve identified all the potential aspects.”

BRAINSTORMING AND CONCEPT DEVELOPMENT

The goal of brainstorming and concept development is to build a plan for success by integrating the needs of the Missouri statewide enterprise for IT information with the experience of each Domain Committee member. As Domain Committees tackle the issues they will begin by researching them and applying their experience to develop a set of quality concepts that through collaboration with the committee will guide the production of Architecture Blueprint assets.

The goal of brainstorming and concept development is to build a plan for success by integrating the needs of the Missouri statewide enterprise for IT information with the experience of each Domain Committee member.

Brainstorming

Brainstorming is the standard, democratic technique, for figuring out what the current and alternative approaches and technologies are for a given piece of the Architecture Blueprint. As new Technology Areas, Products and/or Compliance Components are introduced during a working session, the first thing the committee will do is brainstorm. This simply means tossing ideas into the air and recording these ideas, without much discussion or scrutiny.

Brainstorming allows the Domain Committee to suggest ideas in an atmosphere of openness, without the fear of being put down. Sometimes it is good to have some order in the process to avoid a collision of voices and so that each member can speak and be heard. The best method for this is to simply go around the room allowing each person to name a couple of new ideas – ideas should be brief with enough explanation to get the point across. Meanwhile, the scribe should record the ideas for the subsequent detailed discussion and verification of ideas.

Concept Verification

Concept verification begins the detailed discussions and evaluation of the quality of those generated ideas for a given Architecture Blueprint topic. This should be an active discussion in which the Domain Committee determines what the best ideas are and begin to shape the outline of what will be included in the planned Architecture Blueprint documentation.

Concept Documentation

The Domain Committee will use the templates provided in the MAEA Manual to document the Architecture Blueprint assets. When drafting these assets, having the entire Domain Committee work the specific wording during a working session can be a nightmare.

Once all of the key ideas and general direction for a blueprint item have been set, it's good to assign an individual committee member or two to come up with the initial draft that the group can discuss. This development, or "homework", should be done between working sessions and distributed to the whole group at least 48 hours prior the next working session to begin the process of revision and consensus.

Domain Committee Research and Technology Scans

The main activity of the Domain Committees, prior to documenting Architecture Blueprint assets, is conducting research. The predominant research activities are in the form of Technology Scans as outlined in Part II of the MAEA Manual. Technology Scan research topics center around individual Technology Areas and involve investigating product standards and technical standards specific to a particular topic.

The main activity of the Domain Committees, prior to documenting Architecture Blueprint assets, is conducting research.

Research and Technology Scans should be undertaken by all Domain Committee members. Research on specific topics may also be assigned or delegated by the Domain Committee Chair. Technology Scans are triggered by three major events:

1. **Launch of a new Technology Area.** The initial step to begin initial documentation of a Technology Area is conduct a scan of the enterprise to determine any existing or proposed Products and Compliance Components used throughout the state that relate to this technology. Technology Scans can also includes external scans of other government entities and the technology industry for information related to this Technology Area.
2. **During Compliance Reviews.** As more and more agencies interact with the Architecture Blueprint, there may be occasions when help may be sought from the Domain Committee to address an identified gap in the architecture. Reviews of existing architecture product components and new technology scans can be conducted to aid in finding a technology solution.
3. **During the Vitality Process.** Technology Scans should be included as part of the Vitality Process by taking a sweep through the major sources of information to verify the original factors that lead to the creation of the domain architecture assets.

A variety of sources are available to the Domain Committee members to assist with research. Team members, in all likelihood, have specific publication web sites that they visit on a regular basis. Most manufactures and most publishers of software have product web sites, as do standards bodies. In addition, there are usually sub-committees of ITAB, user groups or other statewide committees that can assist.

FACILITATING THE DOCUMENTATION PROCESS

Probably the most effort-filled architecture lifecycle activity that each Domain Committee faces is the Documentation Process. Documentation of MAEA Architecture Blueprint assets will be the majority focus of the Domain Committee for the first few years of working sessions. As a facilitator of these sessions it is critical that you understand the MAEA documentation process. This will help you to effectively guide the Domain Committee in working collaboratively to plan, research, write, edit, revise, review, evaluate and produce Architecture Blueprint documentation.

How to Get Documentation Started

During the Domain Committee Kick-off working session both ground rules and a Domain Implementation Approach should have been agreed upon by the Domain Committee. With these rules and approach in hand, the first task of a newly formed Domain Committee is to review the technologies assigned to the domain by the ARC, as well as any preliminary definitions and boundary topics for the Domain.

The Domain Committee should then begin to organize and categorize a working list of discipline technologies to establish a baseline understanding of the technologies, and to facilitate prioritization and delegation of work. Missing topics and technologies should be revealed during this brainstorming activity.

Generally speaking, this activity should produce a “master-list” of Discipline technologies as well as some categorical hierarchy that can then be applied to form the Domain→Discipline→Technology Area structure that will be addressed by the Domain Committee. This information will also help set priorities for the Domain Committee’s work.

Unless the Domain Committee is being driven by an urgent enterprise-wide issue, the first set of Domain deliverables should include the following assets:

- **Domain Definition** – Completed Domain template that clearly demonstrates the Domain Committee understands the Domain boundary and relationship with other Domains.
- **Discipline Definitions** – Completed Discipline templates that clearly illustrate the categorization of Domain related technologies so that requisite Technology Area standards and products may be defined.
- **List of Technology Areas and Priorities.** As part of the Communication Process, the Domain Committee should submit its list of Technology Area priorities in order that MAEA stakeholders (Architecture Office and ARC) are aware of upcoming documentation and to serve as a feedback mechanism to ensure that the needs of the stakeholders are being addressed in a timely fashion.

From here, the Documentation Process continues as the Domain Committee must work to define the appropriate content to populate the Compliance and Product Component templates for each of the Discipline Technology Areas. As this will vary significantly from Domain to Domain, there is no single prescribed method that can be used for all technologies. For some technologies the content may be governed by methods and tools selected for implementing or managing those technologies.

Open and active communication with the Architecture Office and ARC will be essential for approval of architecture assets and development priorities, coordination and resolution of cross-domain issues, and managing the expectations of all MAEA stakeholders.

Confirm Priorities with the Architecture Office and ARC

Open and active communication with the Architecture Office and ARC will be essential for approval of architecture assets, development priorities, coordination and resolution of cross-domain issues, and managing the expectations of all MAEA stakeholders. A number of technologies and technical standards impact multiple domains and will require cross-functional domain activities that will be prioritized and established by the ARC through the Architecture Office.

One of the first Domain Committee deliverables, mentioned above, is a list of Technology Areas and priorities. The Domain Committee should seek the guidance and approval of the ARC for each of the identified priorities. There may be statewide issues of which the Domain is unaware that could cause a shift in priorities.

Annual agency planning activities can also cause shifts in priorities, which in turn will trigger a comprehensive review of all the domain architectures. New business drivers and business information requirements will impact the MAEA Principles, Best Practices and Trends. Changes in industry best practices for information technology can also impact the MAEA architecture documentation priorities. The ARC and Architecture Office must be aware of existing Domain activities and priorities to determine the impacts.

Producing Architecture Blueprint Documents

Having the entire Domain Committee simultaneously working on the documentation of a specific Architecture Blueprint asset can be time defeating. It's better that just a few Domain Committee members work up an initial draft that the group can discuss as a starting point for the documentation process.

As a facilitator, it is your responsibility to ensure that Domain Committee working session time is focused on the **content** of the Architecture Blueprint documentation – making sure that critical ideas are captured and that major sections are not missing or poorly constructed. All too often working sessions can become sessions in “wordsmithing”, where members critique the language, sentence structure or particular words used in communicating the content.

To ensure working sessions are focused on the content of each document, document ownership must be clearly assigned. The Domain Committee should collectively identify a document owner (single point of contact) for a particular draft document or set of documents (such as a group of related Compliance Components). It is the responsibility of this “Documenter” to:

- **Collect all related working drafts** – As “homework” is assigned and due dates given, the designated Documenter should collect these drafts on the date due (a date in advance of the next working session). As multiple Domain Committee members could be working on the same document, it is critical that a central point-of-contact is established for collection.
- **Consolidate working draft content** – In the event that multiple committee members were working on the same Architecture Blueprint asset, the Documenter must consolidate these individual drafts into a single deliverable that can be presented to the committee at large.
- **Distribute working drafts for comment** – Once collected and consolidated, the Documenter should work with the Facilitator and/or Scribe to distribute the working draft to the entire Domain Committee at least two full days prior to the working session in which these items will be reviewed.

As a facilitator it is your responsibility to ensure that Domain Committee working session time is focused on the content of the Architecture Blueprint documentation...

To further facilitate the documentation process, each Domain Committee member is responsible for reviewing the working drafts prior to the next working session. Group members should submit electronic or hand-written comments to the Documenter for revision of the document. These comments should include any wording or semantics that could help clarify the content.

During the designated working sessions, the Committee at large once again reviews the draft documentation for content. This process could go back and forth between the committee and the designated Documenter until all members of the committee generally agree upon the content of the document. While any documentation is going through this iterative cycle, its status should remain as “In Development.”

SCRIBING AND NOTE TAKING

Delegation of responsibility for working session minutes and draft documents to a Domain Committee “Scribe” is not only appropriate, but it is encouraged. The Scribes role may be appointed, elected, or handled on a rotating basis based on time, topic or workload; however the Facilitator **should never** carry the dual role of scribe and facilitator. No matter who the scribe may be, it is strongly encouraged that everyone on the Domain Committee take some notes. Otherwise, members must depend on their memory as to what was said and agreed upon.

The Facilitator should never carry the dual role of scribe and facilitator...the Scribe’s primary role is to create a record of the deliberations of the Domain working sessions.

Recording Parking Lot Issues, Action Items and Decisions

The Scribe’s primary role is to create a record of the deliberations of the Domain working sessions. This serves many purposes: it helps to committee members stay on track and move the discussion along; it provides a means of capturing the wisdom and common themes that are identified during discussions; and most importantly, these notes serve as the basis for the development of the working session minutes. A template for Working Session Minutes has been provided in Appendix B.

Recording the working sessions issues, action items and decisions can be accomplished in many ways. Recording issues can be done on a tablet, a PC, a whiteboard or flip chart. Whatever the means, there are a few key points to keep in mind.

- **Notes need not be a detailed account of everything.** These notes do not have to be word-for-word but should include all key ideas, issues, and action items.
- **Notes should truly reflect the discussion.** Try to use the words the speaker used, rather than paraphrasing. Always check back with the speaker/group to see if the notes capture the essence of their thoughts.
- **Write down something for each person who speaks.** Make sure the notes are inclusive of all who participated in the discussion.
- **Do not let recording detract from the discussion.** People should be talking to each other, not the flip chart!

Preparing Assets for Review

Once the Domain Committee is satisfied with the content of a particular Architecture Blueprint asset, it should be called to a vote by the committee for inclusion in the next “package” to the Architecture Office for ARC review. Typically, a simple majority vote is sufficient for approval to include the artifact in the next Architecture Periodic Review Packet that is submitted to the ARC.

As a facilitator, you should be aware of those items that have been voted on in order that the Domain Committee Chair can decide when sufficient assets have been completed for submission to the Architecture Office. Though there are no set specifics for what should be included in the Architecture Periodic Review Packet and when it should be delivered, the following is a list of simple guidelines:

- At a minimum, the packet should include a completed set of assets related to a Technology Area including the Technology Area definition.
- Any assets reviewed as part of the Vitality Process should be included in the next scheduled Architecture Periodic Review Packet.
- The Domain Committee should strive towards a monthly delivery of assets for review.

Once the Architecture Periodic Review Packet contents have been agreed upon, all documented assets included should have their status updated to “Under Review” and then delivered to the Chief Architect (*OITArchitect@mail.oit.state.mo.us*).

BEHIND THE SCENES ACTIVITIES

The facilitator’s role does not begin and end with the start and conclusion of each Domain Committee working session. In fact, many responsibilities exist outside of the working sessions. In addition to the preparation activities discussed earlier (e.g., agenda development), there are other areas of support that fall to the facilitator.

The most important factor in the success of using a parking lot concept is the commitment of the facilitator to ensure issues are not lost.

Review Parking Lot Issues

There will always be some issues that arise during a working session that cannot be resolved before the end of the session. This is usually because consensus could not be reached or because more research was needed outside of the working session. These issues are moved to a parking lot – a place to ‘park’ issues for later follow-up.

The most important factor in the success of using a parking lot concept is the commitment of the facilitator to ensure these issues are not lost. The facilitator should routinely examine the parking lot issues to determine if any offline follow up is needed, determine who will address these issues offline and adjust future agendas to include necessary parking lot issues.

Action Items – Assignments and Resolutions

Much like parking lot issues, inevitably during a working session, some tasks or follow-up assignments will result. It is the responsibility of the facilitator to ensure that someone is assigned to complete each

task. In addition to the task assignment, the facilitator should note the importance of the action item or context in which it came up. A simple action item planning sheet could look like the following example:

Sample Action Item Planning Work Sheet

<i>ACTION ITEM</i>	<i>ACTION ITEM IMPORTANCE/CONTEXT</i>	<i>DATE ITEM RAISED</i>	<i>RESPONSIBILITY</i>	<i>DUE DATE</i>
Confirm location for next Domain Working Session	Need to determine invitation specifics	June 21	John Doe	June 21
Collect agency data on anti-virus software in use on desktops	Use for input and sampling for Virus Detection Product Components	July 19	Jane Doe	July 19

Provide Behind the Scenes Support via Email

Email is a good response mechanism for addressing both parking lot issues and action items – to prod Domain Committee members into completing their assignments and homework without embarrassing them during a working session. If Domain Committee members start saying interesting content-related comments via email, carefully capture their comments so that their ideas can be shared with the rest of the group. Be careful to remain unobtrusive and share these comments anonymously if desired.

Email is a good way to gather feedback about whether the working sessions are meeting the Domain Committee’s expectations...

An email should be sent to the entire Domain Committee at least 48 hours prior to the next working session to direct participants to the location of working session, minutes, assignments, and agenda items (these could also be attachments to the email itself). These are handy reminders for people who might otherwise "forget" the what, where, when and why of an upcoming session.

Email is also a good way to gather feedback about whether the working sessions are meeting the Domain Committee’s expectations, so that adjustments can be made if necessary.

Work Session Wrap-Up Activities

At the conclusion of each Domain Committee working session, you can help the group tie everything together and outline the next steps, assignments and deadlines. Your primary tasks as a facilitator are to *Identify the Next Steps* and *Adjourn on a Positive Note*.

Now is not a time to forget your facilitation skills. If Domain Committee members leave the working session feeling they've had their say and the group has accomplished its goals, you have laid the foundation for success at your next working session.

Checklist for Facilitation Skills

ARE YOU USING YOUR FACILITATION SKILLS?

Making Everyone Feel Comfortable And Valued

Encouraging Participation

Preventing And Managing Conflict

Listening And Observing

Guiding The Group

Ensuring Quality Decisions

IDENTIFY NEXT STEPS

Looking at the next steps instills a sense of momentum. There's some skill involved in getting assignments and deadlines across to people, especially in groups, like the MAEA Domain Committees, that have a lot of things are going on. Sometimes you might find in the whirlwind of discussion that has occurred in the working session, nobody realizes what needs to be accomplished for the next working session or maybe even where and when the next working session is to occur.

At the conclusion of each Domain Committee meeting, you can help the group tie everything together and outline the next steps, assignments and deadlines.

Review Action Items and Plans

With the assistance of the working session scribe, keep a running list of action items on a flip chart, white board or in a spreadsheet and add to it whenever the group identifies a "next step" or "to do". At the end of the working session, review the items in the list and develop action items that specify what needs to be done, who will take each action, and when each action is to be completed.

Visit Your Parking Lot

During the wrap-up is your last chance to review any topics you put in the parking lot. If time doesn't allow the Domain Committee to discuss all of these items, propose adding some topics to the next working session's agenda or assigning items to committee members to report upon in the next working session.

Update the Domain Committee Calendar

Remind each Domain Committee member to jot down any action items or issues assigned to them and their due dates. Announce any upcoming Domain Committee working sessions and logistics changes including:

- Where and when the next working session will take place
- What the tentative goals and agenda items will be
- Who will be facilitating, scribing and documenting the working session
- Who may need to be invited outside of Domain Committee members
- Updates to any contact information for the group.

ADJOURN ON A POSITIVE NOTE

Before adjourning the Domain Committee working session, take a few minutes to accentuate the positive.

- First and foremost, thank all of the committee members for their perseverance and hard work.
- Recall agreements – remind the group of decisions that received strong support.
- Practice being proactive – discuss what worked well and what could be done differently to foster success.
- Lastly, make it official – Close the working session with a signal. This could be as formal as banging a gavel or as simple as turning off the projector – anything to indicate closure.

Before adjourning the Domain Committee meeting, take a few minutes to accent the positive.

Core Facilitation Skills and Tools

The Missouri Adaptive Enterprise Architecture is an interrelated set of Domain Architectures that together form the State of Missouri's Enterprise Architecture Blueprint. Each MAEA Domain Committee must develop a comprehensive set of Architecture Blueprint assets that support the State's business strategies and information requirements. These activities include the documentation, review, communication, compliance and vitality of statewide information technologies.

When a Domain Committee is charged with developing the technical architecture for a group of related technologies, succeeding in these tasks requires numerous facilitation skills. This section identifies the core facilitation skills and tools a facilitator will use most throughout Domain Committee working sessions.

One way to approach these core facilitation skills is to think of them in terms of people, processes and product.

- **People:** How do the Domain Committee members feel about their involvement? How do they relate to one another? In a well-facilitated working session, members must trust and respect and trust each other. All should feel their expertise and opinions are valued.
- **Process:** How are decisions made? How are working sessions run? In a well-facilitated working session, members understand how the group decides or how the facilitator runs the working sessions. The decision-making methods encourage members to participate, yet respect the limited time members have together. Part II of the MAEA Manual details the Domain Documentation Process that addresses many of the decision points that impact the Domain Committee.
- **Product:** What are the key deliverables or results from the working session? In a well-facilitated working session, members produce quality products in a timely manner. The products and deliverables for which MAEA Domain Committees are responsible include those assets that form the MAEA Architecture Blueprint which are produced using the templates found in Part II of the MAEA Manual.

One way to approach building your core facilitation skills is to think of them in terms of people, processes and product.

The table on the following page, "*The 3 Ps of Facilitation*", places the core facilitation skills within this framework. Certain skills, of course, may be used in more than one area. The sections that follow will further define the core facilitation skills and tools.

MAKING EVERYONE FEEL COMFORTABLE AND VALUED

Most people will not participate fully in a working session unless they feel comfortable with other members and believe their opinions will be heard. The facilitator, with the Domain Committee's support, must create an environment in which members value the potential contributions of those with various perspectives.

The 3 Ps of Facilitation Skills

3 PS	SKILLS	TOOLS
People	Make Everyone Feel Comfortable and Valued	<ul style="list-style-type: none"> • Use Body Language • Thank Participants
	Encourage Participation	<ul style="list-style-type: none"> • Encourage Silent Members • Use Open-Ended Questions • Consult The Committee • Use Visual Aides
	Prevent and Manage Conflict	<ul style="list-style-type: none"> • Set Ground Rules • Search For Agreement • Use Conflict To Improve Decisions • Agree To Disagree
Process	Listen and Observe	<ul style="list-style-type: none"> • Listen Actively • Scan The Room
	Guide the Group	<ul style="list-style-type: none"> • Refer Back To Objective And Agenda • Stray From The Agenda If Necessary • Use A Parking Lot
Product	Ensure Quality Decisions	<ul style="list-style-type: none"> • Remind The Group Of Deadlines • Poll Group Before Major Decisions • Review The Decision
	Ensure Outcome-Based Working Sessions	<ul style="list-style-type: none"> • Review Objectives And Agenda Items • Record Decisions • Develop Action Plans

Use Body Language

Body language is probably the most powerful part of communication. A person’s words may be saying one thing, but tone of voice, posture, and eye contact, may be saying another. You send messages with your movements as well as your voice, so be aware of what your body language is saying.

Know what your “listening face” looks like. Get feedback from committee members. There are no hard and fast rules regarding what you should and should not do in every situation, but you have to be aware of any contradiction between the verbal and non-verbal language you convey. By using body language to show warmth and acceptance, you encourage others to relax and respond in kind. Be genuine!

Body language is probably the most powerful part of communication... you send messages with your movements as well as your voice, so be aware of what your body language is saying – be genuine!

Thank participants

This sounds minor, but by merely thanking the Domain Committee members and any attendees during each working session, you legitimize their comments, contributions and continued commitment to the MAEA.

ENCOURAGING PARTICIPATION

Some Domain Committee members will be outspoken and energetic. Others will be quiet and reserved. As a facilitator, you should balance these extremes so that everyone has an equal opportunity to participate.

Encourage Silent Members

Some people are taught not to interrupt. These people often need to be “invited” to speak and given that opportunity free from others speaking. If members are silent or disengaged, catch their eye or ask them (even at the individual level) to share their expertise.

You want to be the one doing the least amount of talking – you want the Domain Committee members to do the talking.

Use Open-Ended Questions

Ask questions that committee members cannot answer with a *yes* or *no*. You want to be the one doing the least amount of talking – you want the Domain Committee members to do the talking.

Questions beginning with *when*, *what*, or *how* usually encourage members to provide detailed answers, which can spark additional ideas from other members. The following table illustrates the differences between closed questions and open questions.

The Difference between Closed and Open Questions

CLOSED QUESTIONS	OPEN QUESTIONS
Encourage One Word Answers	Encourage Discussion
Questions Start With:	Questions Start With:
Do (E.G., “Don’t You Like This Model?”	Who...
Is...	What...
Can...	Where...
Would...	When...
Could...	Why....
Should...	How...
Will...	

Closed questions discourage discussion and are often based on assumptions (e.g., “Did you have a previous problem with this vendor?” assumes something about their reason for selecting a particular product). Asking questions that don’t imply or assume an answer allows the group to open up. You may have to learn some “mental gymnastics” to rephrase your questions.

There are times, however, when closed questions can be useful. They can be used to begin a conversation with someone who is reluctant to talk, given enough information on which to base further questions. They can also be used to change the topic, or to re-focus a conversation on the topic at hand when it has strayed.

Consult the Committee

When a Domain Committee member addresses a question to you, prompt participation from other members by consulting the group at large. This is also an effective technique for shifting the focus of discussion from one member to the whole group. Remember, you're the one looking for information, so don't lecture. When someone in the group provides an answer, keep on topic to get more answers in the topic area.

Use Visual Aids

Most people process information better if they can see it, so use a white board, flip chart, an overhead projector, handouts, etc. Writing the working session objectives on a flip chart that everyone can see can help keep the working session focused. If a Domain Committee member has done some extensive work or research on a particular topic of discussion, it will benefit the group as a whole if he/she provides hard copies of any documentation during the discussion.

CONFLICT PREVENTION AND MANAGEMENT

One of the best ways to deal with conflict is to prevent it, but some conflict is inevitable and can on occasion even be helpful to the Domain working session process. Use conflict to develop options the group would not have considered otherwise.

Set Ground Rules

Ground rules help a group by defining the actions that help the group work together, and ideally form a commitment by the group participants to working together as effectively as possible. Ground rules are guidelines to encourage the use of effective processes and behaviors.

Domain Committee members' agreement on ground rules makes your job easier when conflict arises. Basic ground rules may include items such as: that the group will hear all views and no one will make personal attacks.

Ground rules help a group by defining the actions which help the group work together, and ideally form a commitment by the group participants to working together as effectively as possible.

Search for Agreement

Drawing attention to points that Domain Committee members agree upon helps create an atmosphere of positive collaboration and forward momentum. If at any point during the working session the group reaches agreement on one or more topics, move to full closure by asking the group if they are ready to make a decision and indicate preferences among the top suggestions.

Use Conflict to Improve Decisions

Conflict can be used to clarify individual points of view and to underscore how strongly people feel. Disputes don't have to mean disrupted working sessions. Many people can think of only two ways to manage conflict – fighting or avoiding the problem.

Take a step back. Get the facts straight, brainstorm all ideas that might help resolve the argument, and discuss the pros, cons, and consequences. That way, you will use conflict to improve the situation and to learn from past mistakes.

Agree To Disagree

No decision is ever going to be without its down side; eventually decisions need to be made. Make certain that you always end discussions with an agreed upon outcome. In a conflict situation you must guide the committee away from blaming or being judgmental and help the members to agree to disagree. Urge members to treat each other with respect even when they disagree.

LISTEN AND OBSERVE

Throughout a working session keep your eyes and ears open and stay attuned to the group. Pay attention not only to the group as a whole but also to individuals. Some people are splendid listeners. They can recite verbatim, they can hear and memorize, but they don't have any sort of heart for what the person *meant* as opposed to what they *said*.

Letting a Domain
Committee member know
you hear them can be an
incredibly powerful act.

Listen Actively

Apply the basic skills of one-on-one conversation. If you've ever taken a course in interpersonal relations, active listening sounds a lot like, "*So what I'm hearing you say is...*" This is a very valuable skill because letting a committee member know you hear them is an incredibly powerful act.

The following list provides 10 simple steps to improve active listening skills:

1. Stop Talking
2. Focus on the speaker
3. Keep an open mind
4. Summarize out loud when appropriate
5. Observe both content and body language
6. Do not offer advice (especially silently)
7. Do not argue mentally
8. Avoid judgments
9. Ask open questions
10. Do not be defensive

Scan the Room

While maintaining eye contact with the speaker, note how other members are responding to that person's message. The importance of body language was mentioned earlier, we instinctively rely on the information we gain from body language. While scanning the room, pick up on the body language of the other participants.

Some of the most common body language indicators involve eye contact, facial gestures, torso and arm behavior, and leg activity. You have it in you to recognize some of the most common body language signs:

- Positive Behaviors
 - *Direct eye contact* – Interested, likes speaker or subject

- *Open posture, leaning forward* – Very interested in what you are saying
- *Fingers interlocked behind the head, elbows open* – very open to ideas
- *Smiling* – is comfortable, positive attitude
- Negative Behaviors
- *Limited or no eye contact* – Lying, uninterested, uncomfortable, distracted
- *Closed off posture, rigid, crossed arms* – Lacking interest, anxious, uptight
- *Bouncing legs, tapping feet or fingers* – agitated, anxious or bored

GUIDING THE GROUP

At any point during a Domain Committee working session you may need to guide the group to move along or stick to the topic. In each group, you must be clear about the task that is to be accomplished. Each working session is part of the high-level task of completing the Domain Architecture Blueprint. It is important to have a good understanding of the session goals prior to the working session.

Your task as a facilitator is to be aware of the meeting objectives and issues...you have to be on the same track as the Domain Committee members.

Refer Back To Working Session Agenda and Objectives

When the group strays, remind members of their decision to accomplish specific objectives in an agreed upon period. Your task as a facilitator is to be aware of the working session objectives and issues. As a facilitator you need to ask if you are not clear. You have to be on the same track as the Domain Committee members.

Stray From the Agenda When Necessary

Recognize that an agenda is a tool to reach an end, not an end unto itself. If your working session is having a particularly useful discussion, consider straying from your agenda, but ask the group's permission before doing so.

Use a Parking Lot

If members bring up important topics or questions unrelated to the current discussion, put these in the "parking lot," which may be on a flip chart or a spreadsheet on an overhead. Don't end the working session without discussing or otherwise generating action items related to or disposing of these topics.

ENSURE QUALITY DECISIONS

Quality decisions are based on agreed-upon criteria backed by sound information that decision makers consider thoroughly. They use an agreed-upon process that all understand and, at a minimum, they agree to accept the outcomes.

Remind the Domain Committee of Decision Deadlines

Provide a calendar that details the key dates when Domain Committee members must make decisions (e.g., the date the Domain and Discipline definitions are due).

Poll the Domain Committee before Major Decisions

Avoid surprises. The committee should know before making a big decision that different perspectives exist. Poll the group before the official decision – making certain to clarify the various points of view and to work toward compromise.

OUTCOME-BASED WORKING SESSIONS

Every Domain encompasses many related topics and technologies, and committee members sometimes try to discuss all of these at once. As the facilitator, you bear primary — but not sole — responsibility for focusing discussions on accomplishing the objectives of the working session and of the planning process.

Review Objectives for Each Agenda Item

Keep Domain Committee members focused on the task at hand by providing objectives for each presentation, discussion, or other activity on your agenda. Remind members of the objectives as you take up each item.

As the facilitator, you bear primary — but not sole — responsibility for focusing discussions on accomplishing the objectives of the meeting and of the planning process.

Record Decisions

Your group must record activities and decisions. While taking minutes is not the facilitator's responsibility, you can assist by writing key decisions on flipcharts, a chalkboard, computer presentation, etc. that all committee members can see.

Develop an Action Plan

For each decision, write down when action steps need to occur and who is responsible for these. This can be done by reviewing any recorded decisions or common themes from throughout the Domain Committee working session. The action plan should include actions to be taken by individuals and/or the Domain Committee at large. As facilitator you should work with the Chairperson to help members prioritize and plan for action.

Facilitation Creativity and Productivity Techniques

Probably the hardest thing about facilitating any working session is keeping the group motivated and creative. Any Domain Committee can become more creative and more productive if you have the skills to facilitate that evolution. The topics in this section can help, as long as you realize you must build your own style. Try out several things you find here, and then let your experiences help develop your own style of facilitation.

GENERAL GUIDELINES

Facilitators provide continuity. They act as the glue for binding together the assets of a group into an organic process that is meaningful for the participants. In some sense, a good facilitator is the narrator of the working session, a human face and voice that gives form to the MAEA Domain development processes.

Friendliness, openness and good communication skills are by far the most essential facilitation attributes.

Friendliness, openness and good communication skills are by far the most essential attributes. Facilitators need to be sensitive to the input and reactions of each participant while keeping an eye on the bigger picture, namely the group dynamic and the overall direction of the group.

Assess the Committee's Concentration and Engagement

When assessing the Committees concentration and engagement, monitor the group as a whole and the individual committee members.

- **Read the group's energy level** – Assess the tone in members' voices as they speak. Are they energized? What is the group's body language telling you?
- **Check involvement** – How involved is the group? What are people asking? How are people responding to you as a facilitator or to each other?
- **Give them a break** – If you sense the committee is losing energy or the ability to concentrate, take a quick break. Use energizers or games that last no more than five minutes. *“How many three- to six-letter words can you make out of the work ‘architecture’ in the next two minutes?”*

Clarify Confusing Discussions

As a discussion twists and turns, it's easy to lose a couple of the committee members. You can do several things to make sure that all stay with you and participate fully.

- **Listen for unfamiliar terms** – In the jargon filled IT world over time terms and acronyms can often hold different meanings to the various Domain Committee members. When someone uses acronyms or terms that others may not know or you as a facilitator may not know, clarify these by asking the speaker to explain them or provide further context.

- **Restate the issue before a decision** – Summarize key points or ask the speakers to clarify (“*I’m not sure we all understand that. Do you mind clarifying that point?*”), or ask the scribe to write the points down.
- **Make sure everyone has had a chance to comment** – Before the Domain Committee decides on an action, make sure that all committee members present have had the opportunity to comment.

Provide Feedback to the Committee When Necessary or Appropriate

Providing feedback to Domain Committee members can be difficult during working sessions. In most facilitation situations there isn’t a moment where a facilitator gets to say, “Would you like a bit of feedback on the last comment you made?” In fact, using that opening would not solicit a positive response.

So how do you provide feedback to the committee? As a facilitator you should always be maintaining an objective perspective on the group’s discussion and provide feedback to the group only when necessary. In a controlled way, you have to be able to say what you really think.

As a facilitator you should always be maintaining an object perspective on the group’s discussion and only provide feedback to the group when necessary to encourage positive group behavior...

- **Check your personal biases** – Be aware and manage your own personal biases. Stay as objective as possible. Evenly distribute any feedback. Do not favor or disfavor any individual in the group.
- **Be specific in describing what you observe** – This helps committee members focus on a specific behavior or comment. “*I have noticed that every time we have said the word ‘vitality’, several people have winced.*”
- **Describe or probe the impact of what you observe** – Let Domain Committee members express their feelings. “*Can one of you explain your reaction to the word ‘vitality’?*”
- **Ask for and summarize suggestions** – Request suggestions from the group and then summarize these. “*Perhaps we should use the word ‘continuity’ instead of ‘vitality’.*”
- **Point out similarities between committee members’ statements** – Use this technique when you sense that people are close to agreement but may not understand or recognize common ground.

Enforce Ground Rules

Ground rules help maintain a comfortable, productive environment for all participants. But ground rules are effective only if they are enforced. The entire Domain Committee is responsible for monitoring and pointing out when group members violate any of the rules and lessen the chances of accomplishing the committee’s objectives. As a facilitator you can support this process.

- **Know the ground rules** – To monitor ground rules everyone needs to be familiar with them. Renegotiate, or at least revisit, ground rules periodically.
- **Correct violations the first time, and as soon as, they occur** – Be gentle. Simply address the behavior and move on.
- **Be fair and consistent when enforcing the rules** – Take great care to be evenhanded in pointing out violations. Follow the rules consistently throughout all working sessions.

MAINTAINING FOCUS AND ORDER

Often agendas are packed with discussions, documentation, and decisions. To ensure the Domain Committee meets its objectives, you must focus attention and energy on the objectives for that working session and for the overall mission of the Domain Committee.

Staying With the Group

Staying with the group means that you're able to filter the variety of messages you're receiving and know where you are in relation to the task and to every one else. You may think that you're listening, then someone asks you a question, and you realize you haven't got a clue where you are. One thing you can do to stay with the group is to do a mental paraphrase of the last thing said while you're listening to the present statement, and to create a string of statements, with a mental "bead" to represent each speaker.

Remember that disruptive behavior is typically the sign of an unmet need. Domain Committee members are considered experts in their field, and experts need recognition.

Side Conversations

MAEA Domain Committees are designed to be a small group of experts in a particular set of technologies. Working sessions tend to be in conference rooms where it can be very distracting to the entire committee if two or more members are engaged in a side conversation. Consider why this might be happening:

- The conversation may relate to the subject.
- The conversation may be personal.
- The members are bored because the working session or a topic is dragging on.

Remember that disruptive behavior is typically the sign of an unmet need. Domain Committee members are considered experts in their field, and experts need recognition. When you can give them what they need, the behavior will disappear. Since this is not always possible, there are ways you can deal with it.

- **Catch their eye** – Making eye contact with the talkers may be enough to get them to stop.
- **Bring them into the discussion** – Call on one of them by name, restate the last remark made by the group, and ask for an opinion on the topic.
- **Walk towards the conversation** – If you move around the room during working sessions, saunter over and stand casually behind them and keep talking. They will get the message.
- **Approach them during a break** – Inform them that their side conversation was distracting and ask them to refrain or share with the group.

Dealing with Silence

Absolute silence during a working session rarely means content or consensus. Major disasters or poor decisions can occur because of this assumption. Say, for an example, you ask for comments on a new Compliance Component that is being considered and no one responds. Consider why this might be happening:

- They may not understand the topic or what is going on.
- They may be tired or indifferent.
- They may still be concerned or angry about the previous topic.

Recognize that Domain Committee members have other day-to-day responsibilities and these priorities can make it difficult to focus. There are ways to break the silence.

- **Acknowledge the situation** – Check with the group by saying, “I notice that everyone is being quiet. Can someone tell me what you’re thinking?”
- **Allow some silence** – Give the group some time to process what is happening. They may need to organize their thoughts or locate some research they have done on the topic.
- **Take a break** – Perhaps the group is drained or tired and could use a rest. Or perhaps someone should conduct an energizer exercise to get people motivated.

PERSONALITY AND MOTIVATION TECHNIQUES

One challenge of a facilitator is in understanding the personalities of the Domain Committee members and how to keep them motivated. Some behaviors contribute to the success of the groups work, most have no direct effect, and others detract from the group’s effectiveness. Getting each person at the working sessions motivated begins with you taking it upon yourself to be a good role model.

Awareness of Your Own Attending Behavior

One of the things you, as a facilitator, have to be aware of is your own attending behavior. If you show your emotion in obvious ways, this may affect Domain Committee members. You should know what you look like when puzzled, unhappy, etc. Make sure your words and your non-verbal signals are saying the same thing.

Be aware of your biases and acknowledge them. If you really do want to say something, call on yourself, but make sure you don’t use your role to dominate the discussion. For example, you may say “*Excuse me, let me step out of my role as a facilitator for a moment...*” then state your point and let the discussion continue.

Understanding Group Behavior and Dynamics

Acting as a facilitator requires some understanding of group behavior related to issues of leadership, power, and feelings.

- **Leadership issues** relate to the designated Domain Committee positions (e.g., Committee Chairperson, Scribe, etc.). Leadership issues arise from changes in leadership over time, and the leaders must have the consensus of the group.
- **Power issues** can accrue from a particular Domain Committee member’s position, knowledge, personal strength, or factional alignment.

One challenge of a facilitator is in understanding the personalities of the Domain Committee members...every working session will be full of behaviors by the members mixed with your own behaviors as a facilitator.

- **Feelings issues** relate to the fact that everyone comes to a group with feelings including old feelings, present time feelings and group feelings.

The personalities of group members can have an important bearing on group performance. Different personalities are suited to different tasks and aspects of group dynamics. Understanding the dynamics and performance of groups is clearly a complex matter. As a facilitator it is important to:

Understanding the dynamics and performance of groups is clearly complex matter...acting as a facilitator requires some understanding of group behavior related to leadership, power, and feelings.

- Have an understanding of the personal goals and motivations of the members of the Domain Committee by talking with the Architecture Office.
- Have a correct evaluation of what you can expect from each one in terms of commitment to the Domain Committee.
- Make clear what is expected of each member as soon as the tasks that need to be completed are clear and assigned to individual committee members.

Motivating Domain Committee members

Motivation is what gets the Domain Committee members interested in Enterprise Architecture. It is important to remember that the Domain Committee members have been hand-selected by ITAB, the ARC or Architecture Office – in most cases they are not volunteers. Each Domain Committee member’s verbal and non-verbal cues can show you whether or not they are motivated to contribute. The table below lists the most common cues as to whether or not a committee member is motivated.

Motivational Cues

	<i>Motivated to Learn</i>	
	<i>Yes</i>	<i>No</i>
Nods head	✓	
Smiles	✓	
Asks relevant questions	✓	
Leans forward	✓	
Shares experiences	✓	
Tries things on their own	✓	
Adds relevant information to topic	✓	
Makes eye contact	✓	
Drums fingers		✓
Shrugs		✓
Closes eyes		✓
Looks away		✓
Crosses arms and legs		✓
Easily distracted		✓
Consistently late to working sessions		✓

Motivation is what gets the Domain Committee members interested in Enterprise Architecture.

There are virtually an exhaustive number of things you can do as a facilitator to motivate the members of the Domain Committee. The list below provides just a few of the most basic ways in which you can begin to motivate the Domain Committee:

- Be a good listener.
- Praise members on their contribution during working sessions.
- Show what value Enterprise Architecture brings to them and their agency
- Avoid domination or forcefulness.
- Show interest and appreciation for each and every member.
- Let committee members in on the planning of working sessions from the start.
- Be consistent.
- Ask members for their counsel and assistance.
- Give members goals, a sense of direction, something to strive for.

CONFLICT RESOLUTION

Occasionally you will face challenging behaviors and situations as you facilitate MAEA Domain Committee working sessions. Because Domain Committee members come from many different agencies, different backgrounds, and their individual experiences are what have helped them become the experts they are – their views, opinions and methods will sometimes conflict. They can misunderstand each other, and react in ways that could hinder what was otherwise promising progress.

When conflicts occur, how you deal with them as a facilitator is what is important. It will help you to realize that regardless of differences, each member of the Domain Committee likely shares the same basic need for acceptance and being understood – a need that, when unmet, is at the bottom of virtually every conflict.

Conflict Advantages and Disadvantages

Too often, conflict is seen as negative, something to be avoided. Conflict is an essential part of working together as a group. In fact, too little conflict can be just as harmful to the Domain Committee's progress as too much. Conflict can be both constructive and destructive:

- **Conflict is Constructive** when it results in clarification; serves as a release to pent-up emotions and stress; when parties understand each others needs, and use the conflict to build cooperation and trust. Through constructive conflict the best Architecture Blueprint assets are developed that support he overarching needs to the State as a whole.
- **Conflict is Destructive** when it diverts energy; polarizes the group and deepens differences; parties take 'either – or' positions, believing their way is right and develop negative feelings towards each other.

Conflict is neither good nor bad. It is part of human nature and to be expected when humans interact. Conflict can provide the Domain Committee with opportunities to learn new skills, develop problem-solving abilities and infuse energy. As a facilitator, you don't want to squash all conflict. Focus your efforts on directing the energy of a conflict toward a positive result. Help the Domain Committee stay open to different perspectives.

Managing Conflict: Six Steps

The evolution of a conflict usually starts with a difference of opinion. Open expression and discussion of differing opinions at that time can often diffuse the conflict. If the conflict is left unattended, the conflict builds, factions may be formed, positions may become entrenched, and it becomes very difficult for those involved to resolve the conflict without the use of the facilitator. It is critical that you deal with conflict openly and fairly before emotions get committee members too entrenched in their positions.

It is critical that you deal with conflict openly and fairly before emotions get committee members too entrenched in their positions.

Managing conflict can be dealt with in six simple steps. In general, when conflict arises you should:²

1. Make sure all sides have an opportunity to be heard.
2. Help to clearly define the issues, perhaps by having each side of the debate restate the position of the other side to its satisfaction.
3. Keep discussion focused on the substance rather than the individuals.
4. Encourage the various sides to meet separately and come back to the full group for further discussion.
5. Help individuals to save face and be able to change their position.
6. Bring in outside assistance – individuals not directly involved in the situation – to help provide an outside perspective.

As a facilitator, some key messages about conflict resolution to remember are:

- Conflict is inevitable.
- Conflict does not have to result in winners and losers
- In conflict, both parties tend to believe that their opinion is fact
- Conflict is neither good nor bad

² Adapted from *Training Guide: A Resource for Orienting and Training Planning Council and Consortium Members*. U.S. Department of Health and Senior Services, 1997

Conclusion

There is an old adage “*give a man a fish and he has a meal, teach a man to fish and he has a meal for life*”. One major goal of the Missouri Adaptive Enterprise Architecture is to equip its IT professionals with the capability for making life-long IT decisions for the benefit of the citizens of the State of Missouri. The skills for this are acquired through the efforts of the Domain Committees in developing the Architecture Blueprint assets that will help guide statewide IT efforts.

It is important that the facilitators of the Domain Committee working sessions understand the MAEA processes, as well as the professional skills of facilitation outlined in this manual. Facilitating Domain Committee working sessions is not ‘lecturing’ wherein the facilitator is active and the committee members are passive. In fact, Domain Committee facilitation is quite the opposite – working sessions require the committee members to be active and the facilitator to be relatively passive.

The Facilitator is the guide and monitor of the working sessions, someone who is concerned with the group dynamics and the mechanisms of discussion, and inquiry to ensure that the Domain Committee is making quality decisions and producing quality assets to be added to the Architecture Blueprint. The facilitator maintains a state of ‘passive control’ where the dominant activity involves listening and monitoring the committee members’ discussions in parallel with the working session agenda.

The Domain Committee working session facilitator guides the group by supporting the chair, the scribe and the committee members, encouraging positive dialog, suggesting strategies, structures and ideas that enable group comprehension of the Architecture Lifecycle Processes. Above all else, the facilitator fosters an atmosphere in which the individuals feel confident about collaboration.

The Facilitator is the guide and monitor of the working sessions, concerned with the group dynamics and the mechanisms of discussion and ensures that the Domain Committee is making quality decisions and producing quality assets to be added to the Architecture Blueprint.

Appendices

The following appendices contain additional information that may be useful to those involved in facilitation MAEA Domain Committee working sessions. The appendices include templates for developing working session agendas and working session minutes, as well as actual agenda and minutes taken from the Security Domain pilot working sessions that can be beneficial in launching future MAEA Domain Committees.

Appendices are included for the following

- Appendix A: Working Session Agenda Template
- Appendix B: Working Session Minutes Template
- Appendix C: Security Domain Sample Agendas
- Appendix D: Security Domain Sample Minutes
- Appendix E: Lessons Learned – Domain Pilot

APPENDIX A – WORKING SESSION AGENDA TEMPLATE

The following Working Session Agenda Template can also be found in the Microsoft Word document entitled “MAEA Domain Working Session Agenda Template.doc”.



<NAME> DOMAIN AGENDA

Date / Time <INSERT DATE> <INSERT TIME>

Location: <INSERT LOCATION>

BRING TO SESSION

- Agenda
- MAEA Manual
- Documentation Specific to discussion item (Research, Templates, Materials, etc.)

BRING TO SESSION

Old Business (estimated time – e.g., 15 min.)

- Review and approve minutes from previous working session
- Action Item Updates

New Business (estimated time – e.g., 30 min.)

- Communications from the ARC
- Communications from the Architecture Office
- Communications from the Domain Committee Chair
- Communications from Domain Committee Members

Architecture Blueprint Items (estimated time – e.g., 2 hrs.)

- Domain
- Discipline(s)
- Technology Area(s)
- Compliance Component(s)
- Product Component(s)

Action Items/Assignments (estimated time – e.g. 15 min.)

Logistics and Close (estimated time – e.g., 5 min.)

- Next Working Session Date, Time, Place

APPENDIX B – WORKING SESSION MINUTES TEMPLATE

The following Working Session Minutes Template can also be found in the Microsoft Word document entitled “MAEA Domain Working Session Minutes Template.doc”.



<NAME> DOMAIN MINUTES

Date / Time <INSERT DATE>

ATTENDEES

- | | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> Attendee 1 | <input type="checkbox"/> Attendee 6 |
| <input type="checkbox"/> Attendee 2 | <input type="checkbox"/> Attendee 7 |
| <input type="checkbox"/> Attendee 3 | <input type="checkbox"/> Attendee 8 |
| <input type="checkbox"/> Attendee 4 | <input type="checkbox"/> Attendee 9 |
| <input type="checkbox"/> Attendee 5 | <input type="checkbox"/> Attendee n |

OLD BUSINESS

REVIEWED <INSERT DATE> MINUTES

Minutes reviewed and accepted with the following changes:

Content Changes

Additions, Deletions, Corrections

Grammatical Changes

Change 1...n

ACTION ITEM UPDATES

Items Completed since last working session

Item, Person Responsible, Resolution Description, Date Completed

Outstanding Items (Items not completed since last working session)

Item, Person Responsible, Item Description, Date Due

NEW BUSINESS

COMMUNICATIONS AND UPDATES

Communications from the ARC

List Communications

Communications from the Architecture Office

List Communications

Communications from the Domain Committee Chairperson

List Communications

Communications from Domain Committee Members

List Communications

ARCHITECTURE BLUEPRINT ITEMS

DOMAIN, DISCIPLINE, TECHNOLOGY AREA, PRODUCT OR COMPLIANCE COMPONENT #1

General Discussion

Brainstorming and content creation

Documentation

List any content discussion (creation, deletion, or changes)

Review and Approval

List any discussion regarding final acceptance by Domain Committee

Record approval (vote) and details related to submission of item to Architecture Office

DOMAIN, DISCIPLINE, TECHNOLOGY AREA, PRODUCT OR COMPLIANCE COMPONENT N

General Discussion

Brainstorming and content creation

Documentation

List any content discussion (creation, deletion, or changes)

Review and Approval

List any discussion regarding final acceptance by Domain Committee

Record approval (vote) and details related to submission of item to Architecture Office

ACTION ITEMS

- Item 1 – Description, Importance, Person Responsible, Due Date
- Item n – Description, Importance, Person Responsible, Due Date

LOGISTICS AND CLOSE

- Next Working Session Date, Time and Location
- Close Working Session



APPENDIX C – SECURITY DOMAIN SAMPLE AGENDAS

The agendas for the first twelve Security Domain working sessions can be found in the compressed file “Appendix C – Sample Agendas.zip”



APPENDIX D – SECURITY DOMAIN SAMPLE MINUTES

The minutes for the first eleven Security Domain working sessions can be found in the compressed file “Appendix D – Sample Minutes.zip”

APPENDIX E – LESSONS LEARNED – DOMAIN PILOT

During the course of the Security Domain Pilot project, several important lessons were learned that should guide the initiation of future MAEA Domains working sessions. Six of the lessons learned from the pilot are discussed below.

Lesson 1: Remain Flexible

The Missouri Adaptive Enterprise Architecture program is an ongoing, ever-changing process. An intergovernmental team, such as the Domain Committee, needs to be flexible and open to change. Be prepared to shift directions or discontinue the project if factors change. Expect that the players will change and may change extensively as the political winds of a jurisdiction changes. By the end of the pilot, at least two Domain Committee members changed and priorities shifted numerous times.

Lesson 2: Make Effective Use of Other Committees

As with many broad technology topics, the Security Domain Committee was one of many State of Missouri Committees tackling issues related to security. In many cases, such as with the ITAB Network Security Sub-Committee, these committees have many more members that can provide additional knowledge and expertise to topics being covered by the Security Domain. The Security Domain saw this as an opportunity to leverage this larger committee to do some “leg-work” in the form of research and Technology Scans that could be used for architecture documentation.

Lesson 3: Meeting Every Other Week Is Not Enough

When the Security Domain was launched, working sessions were scheduled as four-hour blocks, every other week. When launching a Domain, this is simply too few working sessions to get the ball rolling and produce any sizable amount of work. Once the Security Domain started meeting 3 out of every 4 weeks, the difference in both the quantity and quality of the Architecture Blueprint documents was markedly noticeable.

Lesson 4: Do More “Virtually”

Too much time was being spent in Domain Committee working sessions focused on “wordsmithing” or making grammatical changes that had little to do with the actual content of the deliverables. E-mail can be a powerful tool for handling reviews, feedback and approval cycles if used correctly. As more and more staff have fewer and fewer hours to devote to activities outside of critical job functions, using online collaboration or other virtual mediums will become a critical part of the success of Domain Committee Architecture assets.

Lesson 5: Schedule “Homework” On Two-Meeting Advance Notice

Assigning homework at the end of a working session to be due prior to the next working session (delivered to the “Documenter” 48 hours prior to the session) left very little time for Domain Committee members to complete this work in addition to their day-to-day responsibilities. Homework was often done the morning of a working session and made for some inefficient working sessions as time was spent during the session consolidating input. It was decided that “homework” assigned during a working session would not be due until the meeting following the next one (two-meeting advanced notice). This proved much more effective.

Lesson 6: Routinely Seek direction from ITAB and the ARC

Having felt as though they were often “working in a vacuum”, the Security Domain Committee took it upon themselves to re-evaluate their priorities after 6 months of Architecture Blueprint documentation. They pulled up their original priority list, checked-off the completed items, and re-evaluated all of the remaining Technology Areas. Then they produced a priorities report and delivered this as part of their monthly package to the ARC specifically requesting their approval and guidance. It is highly encouraged that future Domain Committees provide a similar report both at the outset of the Domain and every six months until the Domain is in vitality process.

September 5, 2003

State of South Carolina Enterprise Technology Architecture

Domain Subcommittee Guidebook
Developed By
Division of the State CIO

September 2003

Table of Contents

Section 1. Introduction to the Domain Subcommittee Guidebook	4
Background and Goals	4
Contents of this Guidebook.....	5
Section 2. Domain Subcommittee Management Guidelines	7
Roles and Responsibilities.....	7
Domain Subcommittee Meetings	9
How to Target, Qualify, Obtain and Retain Subcommittee Members	9
Documentation and Status Reporting Requirements.....	11
Managing and Prioritizing Workloads of Domain Subcommittees	12
Developing and Documenting Work Plans for Domain Subcommittees.....	13
Use of Workgroups to Conduct Research and Provide Recommendations	14
Implementing the Enterprise Architecture	14
Section 3. Developing a New Domain Architecture	15
What is a Domain?	15
What is the Purpose of a Domain Architecture?	15
Why Do We Need Domain Architectures?	16
What is a Domain Architecture Based On?.....	16
Domain Chairperson Activities	17
Domain Subcommittee Activities	17
Standard Format for Domain Subcommittee Documents	20
Cross-Domain Issues.....	21
Section 4. Changes to a Domain Architecture	22
Events Leading to Domain Architecture Changes	22
Frequency of Domain Architecture Updates.....	23
Two Primary Classes of Changes to Architecture Documents	23
SCEA Update Process Workflows.....	24
Section 5. Identifying and Closing Gaps in a Domain Architecture	27
Key Steps in Gap Analysis.....	27
Step One – Identifying Domain Gaps	27
Step Two – Analyzing Domain Gaps.....	28
Step Three – Developing Recommendations	29
Step Four – Prioritizing Recommendations	29
Section 6. Researching New Technologies, Products and Standards	30
Reasons for Conducting Research.....	30
Domain Subcommittee Research	31
Outcomes from Research	33
Section 7. Coordination With IT Planning and IT Procurement	34
IT Planning Processes	34
IT Procurement Coordination.....	34
Appendix 1. Glossary of Abbreviations	35
Explanation of Abbreviations.....	35
Appendix 2. Templates/Processes for Domain Subcommittee Activities	36
Form SCEA-1 Request for Assessment of Technical Architecture.....	37
Figure 1: Technical Compliance Assessment Process.....	41
Figure 2: Request for Change to Existing Technical Architecture Process.....	42

Form SCEA-2 Request for Waiver/Exception to Technical Architecture.....43
 Figure 3: Request for Waiver/Exception Process46
 Form SCEA-3 Request for Appeal of Technical Architecture Decision.....47
 Figure 4: Appeal of Technical Architecture Decision Process.....49
 Form SCEA-4 Domain Profile.....50
 Form SCEA-5 Discipline Profile51
 Form SCEA-6 Status Report From a Domain Subcommittee53
 Form SCEA-7 Work Plan for Domain Subcommittee54
 Form SCEA-8 Recommended Action by a Domain Subcommittee.....55
 Form SCEA-9 Gap Analysis Report From a Domain Subcommittee58
Appendix 3. Summary of Roles and Responsibilities 60
 Architecture Oversight Committee60
 Domain Subcommittees60
 CIO Architecture Support Group (CIO-ASG).....60
 Project Management Services Group (PMSG).....61

Section 1: Introduction to the Domain Subcommittee Guidebook

The South Carolina Enterprise Architecture (SCEA) is constantly changing and evolving. This is because the information needs of state agencies are continually changing, and the SCEA provides a means to address these needs through a structured review, evaluation and adoption of new and emerging technologies. It also provides a method to contain and eventually retire technologies that are no longer cost effective. It is for these reasons that the Division of the State CIO (CIO) has developed this Guidebook. It is to be used as a reference to guide participants through the processes involved in establishing, maintaining and updating the SCEA. This document contains information for domain subcommittees, discipline committees and workgroups that will help them understand the various technical and governance processes that have been adopted by the Architecture Oversight Committee to make the SCEA a self-sustaining program.

Background and Goals

The CIO embarked on a project in May 2002 to establish an enterprise technical architecture to be used as a framework for making strategic information technology decisions on a cost effective, statewide basis. These IT decisions must meet the diverse business needs of agencies in the executive, legislative and judicial branches of state government. It was determined from the beginning of the project that to be successful, the State of South Carolina's enterprise technical architecture would have to:

- Be based on the strategic business direction of the State as an enterprise.
- Involve agency business managers as well as IT staff throughout the process.
- Be developed and maintained through a shared vision and the use of collaborative processes involving all state agencies.
- Provide strategic direction for making technology decisions without requiring wholesale changes to the current IT environment.
- Allow agencies to share many IT infrastructure components without sacrificing responsiveness to the changing business needs of individual agencies.
- Reduce the time it takes IT to satisfy ever shorter agency business change cycles by making the IT environment adaptable to change.
- Reduce the cost of IT over the lifecycle of each system.
- Have a governance process that supports the ongoing evolution of the architecture as well as its enforcement.
- Evolve in unison with changes in business strategies.

Figure 1: Six Technology Architecture Domains

In July 2002, an Enterprise Architecture Committee, made up of managers from the CIO and nineteen state agencies, was established to develop a Technology Baseline for the State (an inventory of the technology being used in state agencies) and to identify the enterprise business requirements of the State for use within the SCEA process. The business requirements were documented in the Enterprise Architecture

1. Presentation Services
2. Communication Services
3. Security
4. Computing Services
5. Enterprise Applications
6. System Management Services

Framework published by this Committee in May 2003. The Enterprise Architecture Framework is divided into two parts: the Business Architecture Structure and the Technology Architecture Structure.

The Business Architecture Structure includes the State's major business drivers, business information requirements, implications for technology and principles for making technology decisions, and provides the link between the technical architecture and the business needs of agencies and the State. The Business Architecture Structure provided the core business principles on which all the technical domain architecture recommendations are based. The current business drivers, technology implications, technology vision and technology principles are documented on the SCEA Web site at <http://www.cio.sc.gov>.

The Technology Architecture Structure includes three major components: the IT taxonomy, domain profiles and discipline profiles. The IT taxonomy categorizes related technologies, called disciplines, into domains which logically comprise the Technical Infrastructure. There is a profile for each domain, which describes each portion of the Technical Infrastructure, including the plan of action and rules to guide decision-making concerning a discipline. This profile establishes limits as to the architectural decisions that can be made for each discipline. The Technology Architecture Structure also includes discipline profiles, which document the boundaries, life cycle and standards for each discipline.

The Enterprise Architecture is divided into six domains (see Figure 1 above), or groups of related technologies, that include the major technology components utilized by most state agencies. Six domain subcommittees, composed of technical experts from across State government, have been established to recommend standards concerning the technical architecture for each domain. The results will be documented in domain and discipline profiles. These profiles define the domain strategies, domain principles, technical standards, product standards (if appropriate), and implementation/migration guidelines to be utilized by state agencies. It is the responsibility of the domain subcommittees to maintain and update the domain and discipline profiles when changes in the environment occur. Requests by state agencies for exemptions from the domain architectures and appeal of decisions by the Architecture Oversight Committee are handled through formal processes that include review and recommendations from the domain subcommittees and approval by the Architecture Oversight Committee.

Contents of this Guidebook

This manual is designed to provide guidance to the chairpersons and members of domain subcommittees, as well as workgroups and discipline committees, as to their roles in developing, updating, and refining the enterprise technology architecture and the related profiles.

The chapters are organized as follow:

- Subcommittee Management Guidelines – for subcommittee chairpersons. Provides guidance on organizing and managing domain subcommittees and their workload; also provides information on subcommittee member roles and responsibilities.

- Developing a New Domain Architecture – for new domain subcommittee members and/or chairpersons charged with developing a new technical domain. Provides basic information on what a domain profile is, and the process to be used to develop the new version of the architecture.
- Updating a Domain Architecture – for subcommittee chairpersons and members, workgroups and discipline committees. Provides reference material about what triggers the need for a change to the domain architecture, the process for documenting recommendations for the update, and how updates are approved and published.
- Identifying and Closing Gaps in a Domain Architecture – for subcommittee chairpersons and members. Provides guidance on how to perform gap identification, analysis and resolution for a domain architecture.
- Researching New Technologies, Products and Standards – for subcommittee chairpersons and members. Provides guidance on how research of technology is conducted, documented and used to make decisions concerning changes to, and to assess compliance with, the domain architecture.
- Coordination with IT Planning and IT Procurement – for subcommittee chairpersons and members. Describes activities that may be requested of domain subcommittee members in coordination with IT Planning and IT Procurement.
- Appendices - provides the templates used to structure SCEA deliverables, SCEA process diagrams, roles and responsibilities of all SCEA governance bodies, and other relevant background information.

Section 2: Domain Subcommittee Management Guidelines

This Section is designed to provide guidelines for the domain subcommittee chairperson on managing domain subcommittee activities, organizing and prioritizing workloads, and documenting deliverables. In addition, it clarifies the roles and responsibilities of domain subcommittee members, workgroups and discipline committees.

Roles and Responsibilities

Domain Subcommittee - Chairperson

Each domain subcommittee has a chairperson who will oversee and coordinate the activities of the subcommittee to keep the domain architecture current and relevant, and to represent the subcommittee in cross-domain and enterprise architecture planning activities.

The responsibilities of the subcommittee chairperson include managing all subcommittee activities, communications and outputs to include:

- Periodic updating of the domain architecture and associated profiles.
- Coordinating the meetings and managing the operations of the domain subcommittee, including the need to have regular meetings and ensuring that there is a broad base of expertise on the subcommittee to cover the technical disciplines making up the domain.
- Ensuring that the disciplines assigned to the domain are appropriate and providing any cross-domain coordination needed.
- Provide an environment where all domain subcommittee members are encouraged to participate and where research/learning can occur.
- Developing and managing the execution of a work plan for all activities and deliverables for which the subcommittee is responsible, to include:
 - a. Developing an understanding of the goals set forth in the Enterprise Architecture Framework.
 - b. Developing domain specific deliverables (i.e., domain and discipline profiles).
 - c. Coordinating on-going research activities of subcommittee members to include utilization of external research services (e.g. Gartner) and vendor presentations.
 - d. Performing gap analyses to identify gaps between the Technology Baseline and the “future state” for each of the technologies within the domain subcommittee’s purview.
 - e. Identifying and developing initiatives to resolve gaps.
 - f. Evaluating requests, projects and proposals to determine conformance with the domain architecture.
 - g. Ensuring that the domain architecture and documents are refreshed as needed.
- Identifying the resources required for the tasks listed above as part of work plan development.
- Assigning tasks to subcommittee members and establishing workgroups and discipline committees as needed to satisfy the responsibilities of the domain subcommittee.
- Coordinating and communicating with other domain subcommittees, the CIO Architecture Support Group (CIO-ASG) and the Architecture Oversight Committee (AOC).

- Documenting domain subcommittee activities, domain and discipline profiles, and preparing status reports and other deliverables required for approval of domain architecture additions or modifications.

Domain Subcommittee - Members

The members of the domain subcommittees provide the knowledge and expertise required to develop the domain architectures. These subcommittees are responsible for the development and maintenance of the content of the domain architecture and related documents, including domain specific deliverables such as disciplines profiles, technical standards, product standards, migration strategies, dependencies and best practices. Subcommittee members are expected to keep abreast of new technology and make recommendations on new technology to close gaps in the current environment.

Each domain subcommittee will consist of state agency technical personnel who have expertise in one or more of the disciplines that make up the domain architecture. Membership is usually assigned on a year-to-year basis, and members are expected to keep abreast of the technical trends and standards for their area of expertise. Members are to provide support and consultation for the domain subcommittee based upon what is best for the State of South Carolina as an enterprise.

Responsibilities of domain subcommittee members include:

- Attending regular domain subcommittee meetings.
- Ongoing enhancement of the domain architecture through the successful completion of tasks requested by the subcommittee chairperson.
- Ongoing research in assigned technical areas based on the member's expertise.
- Serving as chairperson or member of a workgroup.
- Providing technical consulting in assigned technical areas as requested by the subcommittee chairperson.
- Communicating the SCEA and the domain architecture to state agencies and vendors.

Temporary Workgroups

The domain subcommittee chairperson may establish workgroups to conduct research on specific issues and to evaluate technologies related to the domain architecture. The domain subcommittee chairperson will appoint a chairperson to oversee the activities of the workgroup. The workgroup chairperson must be a member of the domain subcommittee. Other members of the workgroup should include interested domain subcommittee members, and subject matter experts from other government agencies, etc. that have knowledge of the specific issue or technology. Upon formation of a workgroup, the domain subcommittee will provide the workgroup with a charter, mission statement and list of expected deliverables.

Responsibilities of the workgroup chairperson include:

- Directing the activities of the workgroup.
- Reporting status of activities back to the subcommittee chairperson.
- Ensuring completion of deliverables assigned to the workgroup.

Discipline Committees

Discipline committees may be established by the Architecture Oversight Committee or the domain subcommittee chairperson to oversee specific technologies or projects related to the domain architecture. The discipline chairperson works with the subcommittee to develop specific objectives, tasks and deliverables. The chairperson is typically an expert in the technology being investigated.

The discipline chairperson communicates recommendations back to the domain subcommittee for discussion and approval. The discipline committee's tasks include research, evaluation and formulation of recommendations for new technical or product standards for the discipline and their implementation. (See SCEA Update Process)

Responsibilities of the discipline chairperson include:

- Directing the activities of a discipline committee.
- Reporting status of activities back to the subcommittee chairperson.
- Ensuring completion of deliverables assigned to the discipline committee.

Domain Subcommittee Meetings

Domain subcommittee meetings should be conducted on a regular basis. The frequency of such meetings should be dictated by workload, but it is recommended that they be conducted at least quarterly. Sessions will be scheduled at the discretion of the domain subcommittee chairperson. Discipline committees will meet at the discretion of the chairperson for these groups.

The meetings of the domain subcommittee should be documented with minutes or a detailed meeting summary (see Form SCEA-6, Status Report from a Domain Subcommittee, in Appendix 2). Recommendations for additions, deletions and modifications to the domain architecture are to be submitted to the Architecture Oversight Committee with supporting documentation for approval. Any dissenting opinions must also be submitted to the Architecture Oversight Committee.

How to Target, Qualify, Obtain and Retain Subcommittee Members

Each domain is made up of a group of related technologies called disciplines. While it is ideal to have an expert on the domain subcommittee for each discipline, experts may not be available from state agencies for some components and the size of the subcommittee needs to be kept to a manageable number. Gartner Group recommends domain subcommittees of approximately eight to ten members, with eight as the ideal size. The goal is to maintain a broad level of expertise on the subcommittee with some members responsible for one or more technologies. Additional technology expertise from outside the subcommittee can be used to conduct specific research activities, when necessary.

Recruiting the best-qualified personnel is one of the most difficult tasks of the domain subcommittee chairperson, since the best-qualified personnel are usually the busiest. Methods for targeting needed expertise include:

- Word-of-mouth among domain subcommittee members (the domain subcommittee members represent a community of technical experts that often know who their peers are across the State and know it is in their best interests to have a qualified team).
- Utilizing the Skills Gap Analysis, when completed by the CIO, to secure a profile of technical experience across state government.
- Posting opportunities in various listservs and newsletters that are available to these technical experts.
- Working with the IT Planning Office to identify agency projects that may require personnel trained in the desired technologies or the acquisition of outside expertise in a technology area that is not covered by any expertise on the subcommittee. Specialized technical expertise that must be acquired for an agency project could be utilized by the domain subcommittee to help evaluate this technology from a statewide, as well as, the project perspective.
- Utilizing the other SCEA groups such as the CIO or the AOC to find in-house expertise.

Qualifying the potential new member will require an understanding of the experience and competence needed for that technology component. Ideally, members should have some hands on experience with major aspects of the targeted technology.

With the constant changes in technology, chairpersons should look for a broad profile of expertise that demonstrates an understanding and aptitude for this area of technology. Subcommittee members should have an understanding of the technology and how it is applied, rather than just expertise with one or two products or technology components. The chairperson can work with the CIO to identify training opportunities and to access research needed to augment the experience of a subcommittee member.

Once a qualified person has been identified, the next step is to “get them on-board”. While knowledge of the SCEA process will increase over time, the chairperson should not assume that the person knows anything about SCEA or architecture. Capturing their interest will depend on the chairperson’s ability to convince them that the time spent in this process has value to them and the State of South Carolina. It would be prudent to identify other people that this person can talk to about the value of the architecture program. The CIO will also assist the domain chairperson in orienting this person to the benefits of an enterprise technology architecture.

Once an individual agrees to participate on a domain subcommittee, the next step is to obtain approval from their management to provide them adequate time to participate. A chairperson should work with the CIO to communicate the value of SCEA directly to the new member’s management. The value must be articulated in terms of how it may help that agency, the projects being planned or implemented, the expertise of the person needed, and the ability to integrate systems with outside agencies and organizations. The time commitment may need to be limited, at first, until the person or his/her management sees this value. This may mean limiting the person’s involvement on workgroups or initiatives at first. It may also mean securing an

endorsement from the AOC to demonstrate the importance of this person's participation to the State of South Carolina.

To retain valuable technical expertise on the domain subcommittee, it is important that members and their management are aware of the accomplishments of the subcommittee. Subcommittee members should be encouraged and acknowledged for their work, whenever possible.

Training Requirements

All domain subcommittee chairpersons should attend a half-day training session on the SCEA program. This provides context on how the architecture processes works, the purpose of each process, and on their role in these processes. Periodic sessions on the SCEA program for workgroup and discipline chairpersons will be made available as well. In addition, all subcommittee, workgroup and discipline committee members are encouraged to receive training in their areas of expertise. While the CIO does not provide direct funding for individuals to do this, appropriate training is often a matter of knowing what classes are available and members convincing their management as to its value. Chairpersons should obtain and share information on training opportunities about technologies within their domain. A chairperson should also provide mentoring for a new/replacement subcommittee member, through, at least, their first few subcommittee meetings.

The CIO will coordinate briefings by experts from external research services (e.g. Gartner, META, etc.) and provide research materials on specific topic upon request by domain or discipline committees. The CIO will also monitor and disseminate information from standards organizations and the federal government, as appropriate. Some vendors will provide product training at no cost. It is up to the domain chairperson and subcommittee members to take advantage of these opportunities. There are also many specialized listservs and Web sites designed to keep technology communities updated and in touch. In addition, initiatives to define standards and best practices in new technologies will require vendor assessments and on-site visits, which will provide additional opportunities to learn about the technologies.

Documentation and Status Reporting Requirements

The domain and discipline profiles are the primary deliverables of a domain subcommittee, and are the responsibility of the domain chairperson. These profiles document the decisions of the domain subcommittee and the research/input from workgroups and discipline committees. This document is a repository of information describing domain disciplines, as well as the associated standards, migration strategies, dependencies, and guidelines that will be used by state agencies to implement technologies and systems. It is important that these profiles continue to be updated and enhanced so that the work of the domain subcommittee has meaningful impact on all systems being built or enhanced. The process and associated documentation requirements are described in the Updating a Domain Architecture Section of this Guidebook.

Domain subcommittee meetings should be documented with minutes or a meeting summary and shared with the other domain subcommittee and the Architecture Oversight Committee to give everyone information on what activities and issues are being addressed. This provides information needed to identify and coordinate cross-domain activities (see Form SCEA-6, Status

Report from a Domain Subcommittee, in Appendix 2). Workgroups and discipline committees must provide status reports on active initiatives to the domain chairpersons as well. The decision on the frequency of these meetings and the format of the status reports is left up to the domain chairperson.

Managing and Prioritizing Workloads of Domain Subcommittees

Domain subcommittee members are normally expected to be available for one day a month to support the work of the subcommittee. Additional time may be requested of a member for work on a workgroup, with such work possibly requiring up to one or two days a month. A domain subcommittee chairperson normally requires the equivalent of an extra half day a month to manage a domain subcommittee, meet with other domain chairpersons to discuss cross-domain issues, and to represent the subcommittee at planning and compliance meetings. Additional time may be required by chairpersons to oversee the work of workgroups, deal with gaps, track the status of domain work, and conduct their own research.

With a limited amount of available resources and the significant amount of work involved in the architecture process, it is important that workloads be identified and organized. Workload planning is one of the important responsibilities of the domain subcommittee chairperson.

Prioritizing Workloads

Before workload can be defined and delegated, it is important to categorize the work so that it can be prioritized on an ongoing basis. While work should be prioritized within each category, the categories have different priorities relative to each other. Domain subcommittee workload can be categorized and prioritized on the following basis:

- Responding to Changes in the State's Business Needs - The successful implementation of SCEA is dependent on the technical domain architectures being able to directly support the business drivers and the associated IT architecture principles. Therefore, the domain architecture must be reviewed periodically to assess the impact of changes to the business drivers and environmental trends of the State. This review must be the highest priority because of the potential impact to the ongoing work of the team.
- Identifying Gaps in the Domain Architecture - Beside the annual refresh of the domain architecture and ongoing work on the domain and discipline profiles, completing gap initiatives is the core ongoing work of the subcommittee (see Section 5, Identifying and Closing Gaps in a Domain Architecture). Gaps are prioritized once or twice a year by the subcommittee and in conjunction with the other domain subcommittees. Project plans for the highest priority gap initiatives are completed by the domain chairperson and assigned to discipline committees or workgroups. Priorities for gap initiatives are usually based on subcommittee input, the dependencies of other domains, CIO priorities and availability of resources. While additional gaps may be found throughout the year, gap priorities do not change often. Gap initiatives are the second highest priority for ongoing domain work.
- Conducting Architecture Conformance Reviews - Domain subcommittees have a role to play in the governance of the SCEA. One aspect of this is to review requests from agencies for

architecture conformance. This activity includes comparison of technology and projects with existing standards. This work is usually considered a high priority because it usually involves large projects and affects their timetables. Domain chairpersons are dependent on good project planning by agencies to ensure that this work can be scheduled in a timely manner and with a minimum of interruption to the ongoing work of the subcommittee. Chairpersons should work closely with the CIO and the AOC to estimate resource requirements and schedule time for work. Conformance reviews can take two to three sessions to complete and may require the participation of multiple subcommittee members. Reviews requiring significant resource time may require chairpersons to document the impact on other projects and report this to the AOC for assessment.

- Evaluating Exemption Requests - Another ongoing responsibility of domain subcommittees is the review and evaluation of requests for an exemption from an architecture standard. Requests from agencies for exceptions to the architecture will be submitted to the domain subcommittee for a written evaluation and recommendation to the Architecture Oversight Committee.
- Updating the Domain Architecture - To be meaningful, the domain architecture must be updated periodically to relate to changes in the State's needs as well as the technology available. In addition, the domain and discipline profiles should be refined to make them more useful and to provide guidelines on implementing the architecture.

This ongoing updating and refinement process is not as high a priority as the previous categories, but the resources and work involved must be accounted for in work plans to ensure it takes place. Much of this updating is an outcome of the SCEA Update Process, while the refinement of documents requires a more diligent management approach by the domain subcommittee chairperson.

- Researching Technology Components and Training - Domain subcommittee members should be assigned specific technology components to keep abreast of and identify changes in technology trends that may effect the refresh cycle or cause a gap in the architecture. Adequate time and access to information and training should be allocated to each expert, although most IT professionals keep up with technology related to their expertise during work hours while completing other duties. See Section 6, Researching New Technologies, Products and Standards, for more information on this activity.

Developing and Documenting Work Plans for Domain Subcommittees

With the need to balance the workload and priorities of different categories of work in a domain, the subcommittee chairperson needs to organize all work with a comprehensive work plan. A template is provided in Appendix 2 (Form SCEA-7, Work Plan for a Domain Subcommittee) to help monitor resources needed, timeframes required and deliverables involved with each task.

Work involving gap initiatives will be documented on a Gap Analysis Report from a Domain Subcommittee, Form SCEA-9, which requires Architecture Oversight Committee Approval (see

Appendix 2) so that it can be conducted by the subcommittee or delegated to discipline committees or workgroups for completion.

All work of the subcommittee should be managed based on the priorities in the work plan. The domain subcommittee work plan should facilitate the organization and scheduling of work as well as to adjusting to the impact of new priorities such as compliance reviews and project evaluations.

Use of Workgroups to Conduct Research and Provide Recommendations

Workgroups may be established by a domain subcommittee chairperson to conduct research and provide recommendations on specific technology issues/topics. A workgroup should be used whenever the work to be performed is temporary in nature (e.g. evaluate a new/emerging technology) and does not require the efforts of the entire domain subcommittee. A workgroup chairperson is assigned to oversee the group and provides status reports to the domain chairperson. When the workgroup has completed its work, the chairperson of the workgroup communicates/presents the recommendations back to the full domain subcommittee for discussion and approval. See Section 4, Changes to a Domain Architecture, for more details on how to use workgroups to manage workload.

Implementing the Enterprise Architecture

Ideally, the enterprise architecture will guide all IT decision making (infrastructure, application development, operations, etc.). An awareness of architectural conformance must become second nature. The domain architectures are intended to provide guidance for many day-to-day IT activities and decisions. For example:

- IT procurements,
- State term contracts,
- Buy-versus-build decisions,
- Development of evaluation criteria in RFPs,
- Hardware upgrades,
- Software package/tool selection, and
- Design decisions in the context of a specific IT project/system.

Section 3: Developing a New Domain Architecture

This section is about creating a domain architecture for the first time. The process for changing an existing domain architecture is discussed in the Section 4 of this Guidebook. This Section should be read by anyone who is not familiar with the SCEA process, in particular, new members of domain subcommittees or individuals assigned to develop the architecture for a new domain. The most important thing to remember about developing a domain architecture is that it is a collaborative, iterative, creative process. A team effort is required because of the complexity of the individual technologies and their interdependencies. Domain architectures are never complete because change is a constant in the realm of information technology and in the realm of government services. Architecture development is a creative endeavor that requires thoughtful analysis and inspired thinking to respond to the many challenges inherent in an architectural approach to deploying and managing technology to satisfy the business needs of state agencies.

What is a Domain?

A domain is comprised of a group of related technologies called disciplines, usually organized around common IT infrastructure services or information management functions. The Architecture Oversight Committee is responsible for determining how many technology domains are appropriate and assigning individual disciplines to them. The list of disciplines typically included technologies currently in use and new technologies that are likely to be implemented in the near future. There are currently six domains: Presentation Services, Communication Services, Security, Computing Services, Enterprise Applications and System Management Services.

What is the Purpose of a Domain Architecture?

The purpose of a domain architecture is to identify, through a structured process, the technologies, industry standards and/or products in a specific technology group that best support the business and technical requirements of South Carolina State government. The technologies, industry standards and/or products identified through this process should comply with and further the principles set forth in the Business Architecture and Technical Architecture. A domain architecture provides:

- An overarching strategy for the selection of technologies and products in a domain that meet the business and information technology needs of state agencies.
- Principles that “flow down” from and support the Business Architecture and Technical Architecture Structures with rationales and implications further articulated for the specific disciplines.
- The design principles specific to the domain technologies.
- Technical standards for the domain technologies.
- Product standards for the domain technologies.
- Strategies to migrate from the present technical environment to the selected technologies and products.
- Guidelines, methods and dependencies for the implementation and management of the domain technologies.

Why Do We Need Domain Architectures?

The South Carolina Enterprise Architecture (SCEA) is divided into an interrelated set of six domain architectures. They are intended to guide all IT activities to support the State's business strategies and information requirements. These activities include the planning, design, selection, construction, deployment, support and management of information technologies. The SCEA will also provide the basis for evaluating and prioritizing changes to the State's portfolio of information systems.

What is a Domain Architecture Based On?

When a domain subcommittee is charged with developing the technical architecture for a group of related technologies, the framework for their research and deliberations is provided by the Enterprise Architecture Framework. The rationale for doing this is twofold. First, the use of a common framework allows multiple subcommittees to work in parallel with some assurance that their recommendations will align with each other and support the work of domains with which there is technological overlap. Secondly, the domain architecture is based on a set of principles and requirements that are derived from the agencies' business drivers and business strategies. Defining the domain architectures within this business context provides the initial alignment of information technology to the State's business needs.

To provide a context for domain decisions, it is useful to have a mental map of the relationships between the deliverables defined during the creation of the Enterprise Architecture Structure. Those relationships are as follows.

Business Architecture

- Enterprise Business Drivers – Major areas of focus for an organization based on its mission, services and constituents.
- Enterprise IT Implications – Key business issues relevant to IT that should be addressed in order to satisfy the business drivers.
- Enterprise IT Vision – Foundation statement regarding the role of IT in serving the business needs and direction of the organization.
- Enterprise IT Principles – Fundamental guides for technology decision-making. These principles are based on key values, standards and beliefs that provide the foundation upon which the architectural design is built.

Technology Architecture

- IT Taxonomy - Categorizes related technologies (disciplines) into domains which logically compose the technical infrastructure.

- Domain Profile – Describes each portion of the technical infrastructure, including the plan of action and rules to guide decision-making concerning a discipline. Sets limits as to the architectural decisions that can be made for each discipline.
- Discipline Profile – Documents the boundaries, life cycle and standards for each discipline.

For an explanation of the process via which each of these deliverables is created, refer to the description of the Enterprise Architecture Process documented on the CIO web site at <http://www.cio.sc.gov>.

Domain Chairperson Activities

The domain chairperson must lead, guide, push, pull, cajole and encourage subcommittee members to complete their individual assignments and to fulfill the responsibilities of the subcommittee. Architecture development is an iterative, creative process. The subcommittee should be encouraged to approach its work with an open mind and leave “sacred cows” behind. The chairperson should strive to develop a rapport with each of the subcommittee members and to foster an atmosphere of mutual respect within the subcommittee. Delegation of work to subcommittee members is not only good survival strategy, but the subcommittee will be more effective when the members realize they are empowered to guide technology decisions for South Carolina State government.

As coordinator of all domain subcommittee activities, it is imperative for the chairperson to be well organized and to communicate openly and frequently with subcommittee members. Every member of the subcommittee must have complete and current documentation and understand what is expected of them at each step of the development of the domain architecture. Open and active communication with the CIO, with other domain chairpersons and with the AOC will be essential for the coordination and resolution of cross-domain issues. A number of technologies and technical standards impact multiple domains and will require creative thinking and collaboration across domain boundaries.

The chairperson is responsible for all documentation generated for publication as part of the domain architecture. Delegation of responsibility for meeting minutes and draft documents is appropriate, but the chairperson is responsible for the quality and completeness of any documentation produced by the subcommittee and all its workgroups. See Standard Format for Domain Subcommittee Documents below for information about the format and content requirements for domain subcommittee deliverables.

Domain Subcommittee Activities

Review and Acceptance of the Domain Technologies

The first task of a newly formed domain subcommittee is to review the disciplines assigned to the domain by the Architecture Oversight Committee. If the domain subcommittee believes that a technology is more appropriately addressed by another domain subcommittee, that recommendation must be proposed to and approved by the Architecture Oversight Committee. When a list of disciplines is finalized, the domain subcommittee chairperson must assess whether

the subcommittee has the expertise and experience to address these technologies. The recruitment and retention of appropriate membership is critical to the success of a domain subcommittee. The CIO-ASG can assist with recruitment of missing subject matter experts.

Review of Functionality and Major Issues for the Domain Technologies

It is important to organize the disciplines by relevant factors (i.e., types and number of users, types of applications, total expected investment in a technology, total volume, total expected benefits from standardization, etc.) in order to identify all functionality and interrelationship between disciplines, and to also facilitate prioritization and delegation of work. The subcommittee should prepare a list of issues that impact all or multiple disciplines within the domain. Missing technologies may be revealed during this brainstorming activity. The master list of domain technologies should be revised accordingly. A list of issues should also be compiled for each discipline within the domain. This information will help the subcommittee establish priorities, especially if it is not able to address all technologies within the time allowed for the initial development of the domain architecture.

Review and Adoption of Conceptual Architecture Principles

A thorough grounding in the Enterprise Architecture Structure is essential to the successful development of a domain architecture. Therefore, the third major task of the domain subcommittee is to analyze and interpret the principles set forth in the Enterprise Architecture Framework in terms of the domain's technologies. This analysis results in the adoption of these principles as the general principles for the domain, with rationales and implications that are specific to the technologies within the domain. Implications will become important during the completion of gap analysis activities. It is important that thoughtful consideration be given to implications of implementing domain technologies so that they conform to the principles in the Enterprise Architecture Framework.

Development of a Domain Strategy

The fourth major task of the domain subcommittee is to develop a strategy for the domain that aligns with the IT vision and principles of the enterprise architecture in terms of the domain's technologies. This strategy for the domain will provide the overarching concepts to drive/direct the decision-making processes of the subcommittee. This strategy also establishes the boundaries of the domain, and will guide the selection/scope of technical standards for the domain. The domain strategy is documented on the form SCEA-4, Domain Profile (see Appendix 2).

Defining Domain Principles Specific to the Domain Technologies

After the development of a domain strategy, it will become apparent that principles specific to the domain are needed to guide the development of standards. These domain principles should be documented in the same format as the general principles, complete with rationales and implications. The domain principles/boundaries are documented on the form SCEA-4, Domain Profile (see Appendix 2).

Setting Priorities for Domain Subcommittee

The subcommittee must establish priorities for its work based on a number of factors. These include:

- Availability of subject matter experts.
- Number of requests received and pending from agencies, the AOC, etc.
- Severity and urgency of issues.
- Major agency projects that require architecture review.
- Availability of resources to define low-level architecture specifications for configurations and to write implementation guidelines based on practical experience.
- Time available to complete the first iteration of architecture or mandatory reviews of existing standards.

Domain Architecture Gap Analysis

The first time through the SCEA process, there is usually insufficient time or expertise on the domain subcommittee to cover everything. These are gaps within the domain architecture. If current products or standards are not capable of meeting the strategic goals of the SCEA, these are additional gaps in the domain architecture. Each of the functional areas or technologies within the domain that require further research and analysis will be prioritized and incorporated into the domain subcommittee work plan by the domain chairperson. See Section 5, Identifying and Closing Gaps in a Domain Architecture, for additional information.

Review and Acceptance of Work by Discipline Committees and Workgroups

Some of the domain subcommittee's work will be delegated to members with deep technical knowledge and practical experience with one or more of the technologies. This allows multiple architecture research and evaluation efforts to run concurrently. All deliverables from discipline committees and workgroups are subject to review and acceptance by the full domain subcommittee. The subcommittee is responsible for ensuring that lower level decisions remain true to the Enterprise Architecture Framework, conform to the domain's own principles and will not create conflict with other domain architectures.

Discipline Profiles

The domain subcommittee must analyze each discipline within a domain to determine if a new standard is needed or if an existing standard should be updated, and if the enterprise will be best served by this being an industry, technical or product standard. This is accomplished by reviewing a number of factors including the industry status of the technology, the state's existing technology baseline, and the state's future business and technology needs. The domain subcommittee must also determine what industry standards already exist (e.g., formal or de facto), the potential cost of implementing the new standard, and if state personnel are available/trained for this purpose. This requires a significant amount of research and discussion by domain subcommittee members. The recommendations of the domain subcommittee are then documented on a Discipline Profile Form, Form SCEA-5. This Form documents the life cycle and recommended deployment decisions for the discipline using the definitions set forth below:

- Baseline: The current technology or process discipline in use by the agency or enterprise.
- Tactical: Technologies that the State may use in the near term, tactical time frame, approximately the next two years. Currently available products needed to meet existing business needs are identified here.

- Strategic: Technologies the State envisions using in the future that provide strategic advantage. Usually, anticipated marketplace products are identified here.
- Retirement: Technologies and/or process disciplines targeted for deinvestment during the architecture planning horizon (e.g., the next five years).
- Containment: Technologies and/or process disciplines targeted for limited (maintenance or current commitment) investment during the architecture planning horizon.
- Mainstream: Technology and/or process disciplines targeted as the primary deployment/investment option for new systems or legacy system migration over the architecture planning horizon.
- Emerging: Technology and/or process disciplines to be evaluated for future integration into the target architecture (e.g., mainstream) based on technology availability and business need (key for “evergreening” or keeping the architecture current).

Other information such as dependencies, notes, migration considerations, and a review date are also included as part of the development of a Discipline Profile. Once completed, Discipline Profiles are submitted to the CIO-ASG for review by other domain subcommittees and approval by the Architecture Oversight Committee. They then become part of the Technical Architecture Domain Report.

Recommending New Technical Standards and Technologies

During the course of technology and standards research, evolving standards and new technologies will be identified that support the domain architecture and the business goals implicit in the Enterprise Architecture Framework. Standards that are expected to be worthy of inclusion in the domain architecture when they are adopted by the IT industry should be declared as emerging standards that will be tracked by the domain subcommittee. They can then be included in the domain subcommittee’s work plan and assigned a priority. For information on the assessment of emerging technical standards during routine research and monitoring of technologies, see Section 6 on Researching New Technologies, Products and Technical Standards.

Documenting Guidelines and Methods for Implementation and Management

Guidelines are practical advice for implementation and management practices based on the experience and research of the State’s most knowledgeable experts. Methods are more formal and more prescriptive. When approved methods are embodied in products, they will become strategic products.

Standard Format for Domain Subcommittee Documents

Templates for the following documents are found in Appendix 2.

- Status Reports From a Domain Subcommittee (SCEA-6)

- Work Plan for Domain Subcommittee (SCEA-7)
- Gap Analysis Report From a Domain Subcommittee (SCEA-9)
- Domain Profile (SCEA-4)
- Discipline Profile (SCEA-5)

Cross-Domain Issues

A number of technologies and technical standards impact multiple domains and will require creative thinking and collaboration across domain subcommittee boundaries. It is essential that all members of all domains be familiar with the complete set of domain architectures. Some technology overlaps are more obvious than others. For some technologies, the synergy between domain architectures is a significant concern. Some domain technologies provide infrastructure services for other domains. In the practical application of architecture, systems are constructed with components from all the domains. Therefore, all of the domain architectures must be in congruence with each other. Open dialogue and cross-fertilization of ideas among the domains are very important. Cross-domain issues must be documented and discussed at domain subcommittee and Architecture Oversight Committee meetings.

Section 4: Changes to a Domain Architecture

This Section describes the types of changes that can occur within a domain architecture, the role of the domain subcommittee in reviewing these changes, and the processes and procedures for recommending changes to the Architecture Oversight Committee (AOC). First, there are formal approval processes for specific types of changes that will have a major impact on South Carolina's Enterprise Architecture. These changes include: (1) the Technical Compliance Assessment Process (see Figure 1 in Appendix 2) and (2) Change to Existing Technical Architecture Process (see Figure 2 in Appendix 2). Secondly, the domain subcommittee has the authority to make other types of changes on its own, as long as there is consensus among subcommittee members and the changes are consistent with the conceptual principles of the enterprise architecture as reference above, and the changes are reported to and accepted by the AOC. The specifics of the types of changes that fall into these two classes are detailed below.

Events Leading to Domain Architecture Changes

Federal /State Mandates

Federal/State mandates can prompt agencies to request revisions to the SCEA standards, which in turn should trigger a review of the appropriate domain architecture elements.

Requests From Agencies

Annual agency planning activities can result in requests to revise the SCEA source documents, which in turn will trigger a comprehensive review of the appropriate domain architectures. New business drivers and business information requirements, as well as changes in industry best practices for information technology, can also impact the enterprise architecture. These too will require a comprehensive review of all domain architectures to determine the impacts (if any).

Enterprise-wide Technology Projects

Routine and enterprise-wide technology project activities such as requirements analysis and architecture consultations may reveal a need to rework or refine portions of the architecture. As the architecture specifications for infrastructure services are defined, a deeper understanding of the cross-domain dependencies may require domain changes to reconcile lower level architecture elements such as interface standards, standard configurations and implementation guidelines.

Industry Best Practices, New Products/Applications, and Domain Subcommittee Activities

A basic premise of the SCEA process is that the domain architectures can only remain relevant through constant refinements based upon industry best practices, the assessment of new products and applications, and the resolution of gaps that are identified by the domain subcommittee. Change is supported and driven by the domain subcommittee and on-going research activities. Routine technology tracking and focused research related to specific conformance reviews and project consultations will reinforce the need for greater conformance in some areas and greater flexibility in others.

Frequency of Domain Architecture Updates

The frequency of updates to the domain architecture depends on a number of factors. Some technologies are rather volatile and experience rapid or frequent changes, while others change little in twelve months. Infrastructure and agency projects, while usually keyed to budget cycles, may occur at any time. As such, domain architecture review/updates should happen at least once per year, and should occur and work in conjunction with the CIO IT Planning cycle. The appropriate frequency of update should be established when a domain standard is approved by the AOC, and should be monitored by the CIO-ASG to ensure a review is initiated in a timely manner.

Two Primary Classes of Changes to Architecture Documents

There are two primary classes of changes to domain architectures and their associated documents: those that require the approval of the Architecture Oversight Committee and those that do not.

Changes that Require AOC Approval

The types of changes that require AOC approval are as follows:

- Adding or removing principles, technical standards, or product standards.
- Adopting methods that become mandatory or are embodied in products that are categorized as strategic.
- Significantly altering the meaning or intent of a principle, technical standard or product standard.
- Changing the status of a product, i.e., from research to strategic, from strategic to transitional, from transitional to obsolete.
- Making any change that will have major impact on technology products, agency financial or personnel resources, or on the ability of an agency to implement application systems.
- Requiring modification of a pending RFP, SOW, etc. or an RFP currently out for bid.
- Requiring changes to ongoing implementation projects.
- Greatly accelerating the agencies' transition planning for implementing a new architecture.

Changes that a Domain Subcommittee Can Make Under its Own Authority

Changes that can be made by a domain subcommittee, but must be reported to the AOC as information, include:

- Updating version numbers of product standards.
- Adding or refining narrative to provide a better explanation of component technologies or standards.
- Updating guidelines for the implementation and/or migrating to component technologies or technical standards.
- Updating the technology review section of a domain architecture document.

- Adding, updating or deleting a best practice that supports an existing product or standard, provided it does not have a major impact on an agency or on multiple agencies.
- Making changes to assignments within a domain.
- Adding new technologies, products or technical standards to the research category.
- Identifying gaps in the architecture.
- Removing technologies, products or technical standards from the research category if routine research and monitoring indicates that they are not viable or will not fit within the SCEA.

Process and Deliverables for Changes that Require AOC Approval

Changes to the domain architecture that require approval of the AOC will follow the Request for Change to Existing Technical Architecture Process (see Figure 2 in Appendix 2) or Technical Compliance Assessment Process (see Figure 1 in Appendix 2) and will utilize the Request for Assessment of Technical Architecture Form, SCEA-1 (see Appendix 2).

Process and Deliverables for Changes that Do Not Require AOC Approval

Changes that do not require approval by the Architecture Oversight Committee must always be documented and presented to the CIO-ASG for AOC review and for information. The domain subcommittee can request that the CIO-ASG update the Table of Changes located at the beginning of each domain architecture document. The change statement must include: (1) the date of the change, (2) a succinct, but complete description of the item that changed, (3) its location in the architecture document, and (4) the type or basis of the change (research, prototyping, revisions, etc.). An example of such a change may include, “*Middleware Product Selection Matrix added STC e*Gate™ to Messaging and Application Integration Products – Based on Gartner Research*”.

Changes can be proposed by anyone on the domain subcommittee, but must be reviewed and approved by a majority of the full domain subcommittee and submitted to the CIO-ASG as information for AOC review. The domain subcommittee must consider cross-domain implementation issues before making any change. Only then should the domain chairperson edit the document and submit it to the CIO-ASG. If the CIO-ASG concurs that AOC approval is not needed, the recommendation will be placed on the agenda of the next AOC meeting for information and review purposes only. Once accepted, the CIO-ASG will notify the other domain subcommittee chairpersons of the proposed change. The domain chairpersons will respond to any questions arising from peer review and commentary.

The new version of the domain architecture document, with appropriate change notices, will be published on the CIO web site. The CIO-ASG will also provide a summary report to the AOC outlining the changes that all domain subcommittees have made to the domain architectures. Once accepted by the AOC, advisory notices will be sent to the agencies by the CIO-ASG.

SCEA Update Process Workflows

In July 2003, the Architecture Oversight Committee (AOC) approved formal processes for updating domain architectures that include (1) Change to Existing Technology Architecture, (2) Technical Compliance Assessment, (3) Request for Waiver/Exception, and (4) Appeal of Architecture Decision. At this time, the processes do not address whether hands-on research or a

prototype or a pilot project will be required prior to reaching a final decision. It is the responsibility of the domain subcommittee chairperson, in consultation with the domain subcommittee, to decide if such research or testing is required. Regardless, each workflow is preceded by a set of common activities.

Initial Workflow Activities

The process starts with a request to the CIO-ASG to affect a change in the domain architecture or to assess technical compliance (Request for Assessment of Technical Architecture Form, SCEA-1) with the domain architecture. After consulting with the requesting entity, the CIO-ASG performs a preliminary review of the request, determines whether the request is a change to the architecture or is in compliance, and whether additional research will be required. The CIO-ASG posts the request and their preliminary determinations to the Web Site. When compliance is not obvious, the CIO-ASG will conduct necessary research and then forward the request, including the research and any other available information related to the request, to the appropriate domain subcommittee for evaluation.

The domain subcommittee handles the coordination with other domains that are impacted by the anticipated change to the domain architecture. The domain subcommittee will seek to involve the other domain subcommittees in the review process to the extent necessary. Following a commentary period for the other domain subcommittees, the domain subcommittee consolidates the reviews and communicates those results to all involved domain chairpersons. The CIO-ASG will work with the domain subcommittee to resolve any problems with the research, the information provided to the subcommittee, and coordination responsibilities.

If needed, the domain chairperson will assemble a workgroup and appoint a chairperson to proceed with the evaluation. Workgroups may be as small as two or three people, or as large as needed. Workgroup members are generally domain subcommittee members, unless a non-member is needed because of their subject matter expertise, or because the topic has cross-domain impacts. The domain subcommittee may also request that the CIO-ASG provide additional research/information for its evaluation. Following the conclusion of the research and evaluation, the domain subcommittee (with the assistance of the workgroup or discipline committee that evaluate the technology) will prepare a preliminary report and recommendation (Form SCEA-8, Recommended Action by a Domain Subcommittee, found in Appendix 2) and submit it to the CIO-ASG. This Form summarizes all the research and evaluation activities related to a recommendation. The CIO-ASG will finalize an information packet, post an agency notice, and prepare the recommendation for inclusion on the agenda of the next Architecture Oversight Committee meeting.

The domain chairperson will make a presentation to the AOC outlining the domain subcommittee recommendation. The domain chairperson will also present any dissenting views from the domain subcommittee or workgroup. In situations where the domain subcommittee is making a recommendation that is in conflict with a request from an agency, the agency will be given the opportunity to make a brief presentation (approximately 10 minutes) to the AOC.

The AOC will then review all information and come to a consensus. Depending on the nature of the requested change, this might take more than one meeting and require additional information

from the domain subcommittee and/or the CIO-ASG. Should the AOC approve the change to the domain architecture, the CIO-ASG will coordinate the updating and publication of the revised architecture. Should the AOC decline to approve the change, the CIO-ASG will document and publish the decision. The CIO-ASG will work with the domain subcommittee on any follow-up activities, requests for clarification, etc. requested by the AOC.

Section 5: Identifying and Closing Gaps in a Domain Architecture

As part of their ongoing research, or in reviewing and revising products and technical standards, domain subcommittees will identify “gaps” in domain technologies. Gaps are areas that are nonexistent or inadequate in the current IT environment. For example, gaps may occur as a result of the emergence of a new technology, the merger of existing technologies, or the need to deploy a technology that is non-standard in nature.

Once identified, these gaps should be captured on the Form SCEA-9, Gap Analysis Report from a Domain Subcommittee (found in Appendix 2 of this Guidebook).

This document will be utilized as a reference and planning tool by the CIO IT Planning Office, the CIO-ASG and the AOC. It is important that domain subcommittee chairpersons complete the process on a regularly basis (at least annually) to identify and document gaps in the architecture in order to be beneficial to the IT planning process.

Key Steps in Gap Analysis

1. Complete the identification of differences between the Technology Baseline (or “current state”) and the target domain architecture.
2. Analyze gaps between the “as-is” and the target domain architecture.
3. Develop recommendations (actions) to close the gaps.
4. Prioritize recommendations taking into consideration interdependencies of technologies.

Step One – Identifying Domain Gaps

Differences Between Technology Baseline and Target Architecture

A large portion of the gap identification process occurs during the creation of the domain architecture. The domain subcommittee completes the identification of differences between the Technology Baseline (or “current state”) and the target domain architecture within the context of strategies, principles, technical standards and product standards. Gaps are identified and become the basis for domain subcommittee activities and recommendations. See Figure 2 below, Example of Gaps for Data Management. The domain subcommittee identifies the technologies needed to satisfy the target domain architecture. Thus, the domain subcommittee must focus on technologies, industry standards and/or products, not how they are used or implemented. The additional work of gap identification focuses on the latter requirements.

Some sources of gaps are:

- Requirements for technical architecture that are not met by current technical infrastructure.
- Policies that do not exist but may be needed.
- Standards do not exist or are out-of-date.
- Products not included in architecture or are out-of-date.
- Ineffective/inconsistent configurations and infrastructure patterns.
- Lack of training in necessary skills.

Other sources of gaps are “overlaps” - needless complexity of products/solutions in the same technology category, and insufficient product standards for implementation.

Using Fundamental Questions

The domain subcommittee may find it useful to focus on the following fundamental questions when discovering gaps:

- What will this (principle, architectural requirement, etc.) mean to us?
- What are its impacts/issues?
- How was the gap revealed and does it impact other parts (i.e., processes, policies, metrics, culture or structure) of the architecture?
- Will the gap create exceptions to the architecture?

Gaps Created by the Exception Process or Agency Project Needs

Given the dynamic nature of technology and changing agency needs, it is likely that solutions using products or standards not covered in a domain architecture will be required. In such cases, the subcommittee should designate these products or standards as gaps and assign them to be researched and reviewed.

Figure 2: Example of Gaps for Data Management

- No policies for decisional data analysis
- No data warehouse
- No repository
- Multiple databases with duplicate data copies — No authoritative source identified
- No standard data movement technology
- No standard data cleansing technology — same data cleansed (using different tools) multiple times for multiple target databases
- Inconsistent usage of query and OLAP tools
- Too many products deployed

Refining Gaps

Once new gaps are identified, the subcommittee should put them into logical groupings and consolidate related gaps. Gaps should be reworded for clarity and reviewed by the entire domain subcommittee to confirm the gap.

Step Two – Analyzing Domain Gaps

Once the gaps have been identified and logically grouped, they need to be analyzed by the subcommittee. The analysis of domain gaps requires creative and collaborative thinking. There is no set procedure for this analytic process.

For each gap identified, the subcommittee should develop alternative solutions to “fill” the gap. For example:

- Is a new solution (application, data, technology) required?
- Is major research including hands-on or Proof of Architecture Assessment required?
- Are new skills required?
- Is a new approach required?
- Is a new implementation of old technology required?

- Are new behaviors required?
- Are new IT policies required?
- Are new or expanded support resources required?

The domain subcommittee should “flesh out” the solution details: description, components, rationale (principles, requirements and gaps being addressed), business benefits, dependencies (if any), and the specific actions steps required to close the gaps. If time permits, the subcommittee should provide sufficient detail in the initiative description for use in future comparisons and capital budgeting process.

For the larger or more complex gaps, it is helpful to consider incremental steps for closing these gaps, and if additional research or information is needed, request assistance from the CIO-ASG.

Step Three – Developing Recommendations

Recommendations on closing the gaps can take many forms. For example:

- Eliminate duplicate and inconsistent databases; functionally duplicate applications; obsolete and unused technology components.
- Enhance and support database sharing.
- Promote shared applications and component reuse.
- Replace nonstandard products/configurations with standard offerings.
- Other changes (e.g., re-training to develop new skills, restructuring working groups or organizations, it policy making).

Step Four – Prioritizing Recommendations

Not all gaps require immediate action, for instance, some gaps:

- Cannot be filled right away,
- Should not be filled (for business reasons),
- May never be filled due to priorities, or
- May be optionally filled by business units or an enterprise effort.

Gaps that require action must have priorities established for them. These priorities can be internal to the domain subcommittee or external, if a project is recommended to fill the gap. This latter prioritization should be done jointly with CIO-ASG. This helps to ensure that the priorities are as consistent as possible with those of enterprise business needs, other active or planned initiatives, and those of other domain subcommittees.

Section 6: Researching New Technologies, Products and Standards

The ongoing activities of domain subcommittees will require access to professional research services. The CIO has contracted with Gartner Group to perform these services. Other research services (e.g. META) are also available on an as needed basis. The CIO-ASG will conduct preliminary research prior to forwarding requests to domain subcommittees. If a subcommittee requires additional information, the chairperson may request that the CIO-ASG obtain additional information or may request the information directly from the research services. This Section of the Guidebook deals with these research activities.

Reasons for Conducting Research

The fundamental reasons for conducting research are a reflection of the original factors that lead to the creation of a domain architecture. These are as follows:

Reviews of Technology in the Marketplace and Technology Trends

One of the primary on-going activities of the members of a domain subcommittee is the regular review of technology trends and changes. Because domain architectures are not static, but adaptive, members must remain current with major changes in technology.

Gap Analysis Activities

Another primary activity of a domain subcommittee is filling known or newly created gaps in the architectures (see Section 5, Identifying and Closing Gaps in a Domain Architecture). In most instances, this will require access to new or additional research.

Technical Compliance Assessment

Another primary activity of a domain subcommittee is to determine if a proposed technology product, application or solution is in compliance with an existing IT enterprise architecture standard.

SCEA Changes

The Enterprise Architecture Framework is not static, but adaptive, though the frequency of changes occurs less often than with domain architectures. The same basic influences on the development of a domain architecture (see Section 3, Developing a New Domain Architecture) can also lead to changes in existing domain architectures:

- Change in enterprise business drivers.
- Change in requirements for enterprise technical architecture.
- Change in enterprise IT principles.
- Additions to or changes in enterprise applications portfolio.

Analysis of the impact of changes on the Enterprise Architecture Framework is the highest priority task of a domain subcommittee and will generally require new or additional research.

New and Planned Projects

Projects often result from federal/state mandates, from needs internal to an agency and from enterprise initiatives. Types of projects that may require additional research include:

- CIO and multi-agency infrastructure projects.
- Multi-agency and single agency IT projects.

Assigned Research

Assigned research is limited duration, topic specific research that is being undertaken by the CIO, a domain subcommittee, workgroup or discipline committee. Assigned research is normally derived from one of the four SCEA processes and is necessary to make or clarify a recommendation for review by the AOC.

Domain Subcommittee Research

What Needs to be Researched

The predominant research topics are trends which produce changes in the domain technologies, product standards or technical standards. Such trends generally require that specific research be undertaken by subcommittees for proposed changes to the domain architecture. Additionally, the gap analysis/closure process often generates a need for specific research. Other research topics are generally assigned by the domain subcommittee chairperson.

How Often Should Technology be Researched

A review date for all standards approved by the AOC will be established when such approval takes place. The domain subcommittee will determine what the review/refresh cycle should be for each standard, and the CIO-ASG will ensure that this schedule is adhered to. The term of the refresh cycle shall be based on the marketplace dynamics for the specific technology involved. However, the review/refresh cycle may be modified if required by a new project or by a request for conformance review by an agency. The need for research may be triggered by any number of such events.

The timing of the tracking of trends and changes in technology is up to the domain subcommittee members and will be based on their own personal styles.

Who Does the Research

Research into trends and changes in technology must be available to all domain subcommittees, workgroups and discipline committees on a timely basis. Such research will initially be conducted by the CIO-ASG through its contract with Gartner Research Services. Additional research may be requested/performed by the domain chairperson as appropriate.

What Sources Should be Used for Research

A variety of sources is available to domain subcommittee members. Subcommittee members, in all likelihood, have specific publication Web sites that they visit on a regular basis. Most manufacturers and most publishers of software have product Web sites, as do standards bodies.

In addition, the State has contracted with Gartner Group for professional research services and can obtain research from META Group on specific topics on an as needed.

Gartner Group

Gartner Group provides research material to the CIO on a regular basis. Subcommittee members interested in seeing this material should contact their domain subcommittee chairpersons. The CIO will consolidate these materials in a library, as well. Specific questions for Gartner Group should be directed to CIO-ASG.

META Group

Meta Group provides a variety of research options ranging from 1-3 pages (called Deltas and Meta Faxes), on up to 20 or more pages (Meta Briefings and Meta Practices). META also offers conference proceedings and teleconference proceedings. The CIO-ASG can acquire materials on specific topics on an as needed basis.

The Research Process

The research process for domain subcommittee research activities has no formal structure. The only requirements are for documentation of the research (see below). The process for research conducted for domain architecture changes that require the approval of the AOC is more highly structured.

Initial Steps in Structured Research

The formal change process starts with a decision to affect a significant change in the domain architecture (see above). After consulting with the CIO-ASG, a domain chairperson prepares a Form SCEA-7, Work Plan for a Domain Subcommittee. A template for this can be found in Appendix 2. By this point in time, the domain subcommittee should have determined the degree of effort required and whether or not hands-on research will be required.

The CIO-ASG will coordinate any resources needed with the CIO's Project Management Services Group to determine the potential impact on CIO or agency projects. The domain subcommittee handles the coordination with other domains that are impacted by the anticipated change to the domain architecture. Domain subcommittee will also maintain the involvement of other domain subcommittees in the review process. Following a short commentary period for the other subcommittees, the domain subcommittee coordinates the reviews and communicates the results to all involved domain chairpersons. At this point, the CIO-ASG will work with the domain subcommittee to resolve any problems with the scope of the research. The domain chairperson assembles a workgroup and appoints a chair. Workgroups may be as small as two or three people, or as large as needed. Workgroup members are generally from the domain subcommittee, unless a non-member is needed because they have special expertise, or because the topic has significant cross-domain impacts.

If a workgroup is established, it should be responsible for conducting the research and evaluation outlined in the action plan. Following the conclusion of the research and evaluation, the workgroup prepares a preliminary report and recommendation (the Form SCEA-8, Recommended Action by a Domain Subcommittee) and submits/presents it to the

entire domain subcommittee for review and comment. Once a final version has been approved by the domain subcommittee, the chairperson forwards the SCEA-8 to CIO-ASG for review and for a peer review by the other domain chairpersons. The chairpersons make recommendations for adjusting the SCEA-8 and proceed to the next step in the process. The nature of the next step will depend on whether additional research is needed.

Outcomes from Research

Category of Change

- Creating new principles, disciplines, and technical or product standards.
- Moving a technical or product standard between categories, (e.g., from mainstream to containment or from containment to retirement).
- Editing or modifying principles.
- Updating the version of an existing technical or product standard.
- Adding a new discipline to the domain architecture.

Documentation Requirements

Various reports must be completed by the domain subcommittee chairperson each month, depending on the activities occurring during that month, including:

SCEA-6 Status Report for Domain Subcommittee
SCEA-7 Work Plan for Domain Subcommittee, and
SCEA-8 Recommended Action by a Domain Subcommittee.

Section 7: Coordination with IT Planning and IT Procurement

Decisions made by the Architecture Oversight Committee (AOC) will be distributed to both the IT Planning and IT Procurement Groups. The IT Planning Group will use this information to evaluate agencies' IT plans and planning requests. This information will become the basis for the state's information technology plan. The IT Procurement Group will use this information to develop state term contracts for products that conform to the standards established by the AOC, and also to assist agencies in conducting procurement related activities such as:

- Developing IT procurement and contract requirements,
- Making buy-versus-develop decisions,
- Determining evaluation criteria in RFPs,
- Upgrading hardware and infrastructure,
- Selecting software package and/or tools, and
- Making design decisions in the context of a specific IT project or application system.

From time to time, domain subcommittee members may even be asked to review Requests for Proposals (RFPs), vendor responses to RFPs, agency IT architectures and/or agency IT projects. This can be accomplished as an individual or as a team effort. The reviews will assess and evaluate conformance of projects or proposals to SCEA business drivers, IT principles, and domain principles, standards and guidelines.

IT Planning Processes

The IT Planning Group will follow its standard practices in evaluating IT plans and planning requests. If this Group determines that a plan and request is in compliance with SCEA standards, it will approve this plan or request, and no action is required by the domain subcommittee or the AOC. If not in compliance with SCEA standards, the IT Planning Group will first attempt to resolve any differences with the agency. If this effort is unsuccessful, the IT Planning Group will submit the plan or request to the appropriate domain subcommittee for review and action. Existing domain architecture documents shall serve as a basis for such evaluations. Such reviews should evaluate conformance of the plan or request to SCEA principles, domain architecture principles, technical and product standards, and best practices.

IT Procurement Coordination

There may be a need for a domain subcommittee to assist the IT Procurement staff in developing or reviewing technical specifications, providing clarifications to vendors regarding specific RFP requirements and evaluating responses to RFPs. If a review is requested by the IT Procurement Group, a list of questions will be provided to the domain chairperson with reference to specific documents, sections, etc., along with a description of the assistance needed. The IT Procurement Group will provide specific guidance to the domain subcommittee chairperson as to the approach and content of the desired deliverables.

Appendix 1: Glossary of Abbreviations

Explanation of Abbreviations:

AOC	Architecture Oversight Committee
CIO	Division of State Chief Information Officer
CIO-ASG	Division of State Chief Information Officer – Architecture Support Group
CTO	Chief Technology Officer
IT Planning	IT Planning Group
PMSG	Project Management Services Group
SCEA	South Carolina Enterprise Architecture
RFP	Request for Proposal
SOW	Statement of Work

Appendix 2: Templates/Processes for Domain Subcommittee Activities

Form SCEA-1	Request for Assessment of Technical Architecture	37
Figure 1:	Technical Compliance Assessment Process	41
Figure 2:	Request for Change to Existing Technical Architecture Process	42
Form SCEA-2	Request for Waiver/Exception to Technical Architecture	43
Figure 3:	Request for Waiver/Exception Process.....	46
Form SCEA-3	Request for Appeal of Technical Architecture Decision	47
Figure 4:	Appeal of Technical Architecture Decision Process	49
Form SCEA-4	Domain Profile.....	50
Form SCEA-5	Discipline Profile	51
Form SCEA-6	Status Report from a Domain Subcommittee	53
Form SCEA-7	Work Plan for Domain Subcommittee	54
Form SCEA-8	Recommended Action by a Domain Subcommittee.....	55
Form SCEA-9	Gap Analysis Report from a Domain Subcommittee	58

Form SCEA-1

Tracking Number:

REQUEST FOR ASSESSMENT OF TECHNICAL ARCHITECTURE

This form is to be used for the following purposes: (1) to recommend a technology product, application or solution for inclusion in the technical architecture; (2) to recommend an update to a product, application or solution that is currently included in the technical architecture; or (3) to determine if a product, application or solution is in compliance with the existing technical architecture. Once complete, the requester may submit this form either manually or electronically to the Division of the State Chief Information Officer. Where possible, additional information should be submitted to enhance assessment. This additional information may also be submitted with this form either manually or electronically. If submitting information manually, mail to: Division of State CIO, 1201 Main Street, Suit 820, Columbia, SC 29201.

BASIC INFORMATION (required for all requests):

Name of Requestor:	Submittal Date:
Agency:	Telephone Number:
Address:	Email Address:
Position:	Fax Number:
Architecture Domain:	Discipline:
Agency Director/Committee Chair Authorization: (if applicable)	

TYPE REQUEST (required for all requests):

Change to Existing Technical Architecture: <ul style="list-style-type: none"> <input type="checkbox"/> Addition to Technology Architecture <input type="checkbox"/> Update to the Existing Technology Architecture
<input type="checkbox"/> Assessment of Compliance with Existing Technology Architecture

IF ADDITION TO TECHNOLOGY ARCHITECTURE ONLY - PROPOSED TITLE/NAME:

(The title or name should uniquely identify the technology to be assessed. It might include product name, copyright owner, version/release identification, etc.)

PRIORITY (required for all requests):

<input type="checkbox"/> High Priority (<i>significant impact on agency operation</i>)
<input type="checkbox"/> Medium Priority (<i>normal processing</i>)
<input type="checkbox"/> Low Priority (<i>can be delayed if necessary</i>)

DESCRIPTION OF TECHNOLOGY TO BE ASSESSED FOR COMPLIANCE ONLY:

(Provide a description of the technology to be assessed for compliance with an existing technical architecture standard)

<i>Describe the proposed addition/change to the technology architecture:</i>
<i>Describe any known areas in which this technology may conflict with existing technical architecture standards:</i>
<i>Describe the current base of installation and history associated with its implementation:</i>
<i>Identify additional requirements for the implementation of this technology:</i>
<i>Identify where the technical expertise necessary to manage this proposed technology will be acquired:</i>
<i>Provide other information as appropriate:</i>

PURPOSE, PRIORITY AND CONSTRAINTS/MANDATES (required for all requests):

(Describe briefly the need or problem being addressed with this technology from the agency perspective)

<i>Describe areas or processes to which the technology would be applied:</i>
--

Describe any changes in business processes that would result from the adoption of the technology as a standard:
Describe the degree to which the adoption of this proposed standard might impact suppliers, peers, customers, or clients:
Proposed addition/change significantly altering the meaning or intent of which principle, technical standard or product standard?
How will proposed addition/change impact the status of a product, i.e. from mainstream to containment, from emerging to mainstream, from containment to obsolete or introducing a new product as emerging?
Provide other information as appropriate:

IMPACT ON OTHER DOMAINS (required for all requests): *(if known, what is the requestor’s estimate of the impact of an assessment of technical compliance on the any of the following domains and their disciplines)*

Presentation Services:
Communication Services:
Middleware and Messaging:
Computing Services:
Enterprise Applications:
Systems Management Services:

FINANCIAL IMPACT (required for all requests):

What do you expect this implementation to cost, over what time period:
What are you currently spending to perform this function:
If savings and efficiencies are anticipated, identify the efficiencies, the estimated amount of savings, and if known, the source(s), over what period of time and whether or these cost savings are recurring.
If known, what is your peer group/benchmark spending, using what technology: <i>(identify source(s) of data)</i>

MIGRATION CONSIDERATIONS (if any): (outline your migration strategy, including timetable and resource requirements.)

--

ADDITIONAL BACKGROUND: *(List evaluation criteria, alternatives considered, and any other pertinent information and analysis used in preparing this proposal)*

--

Figure 1. Technical Compliance Assessment Process

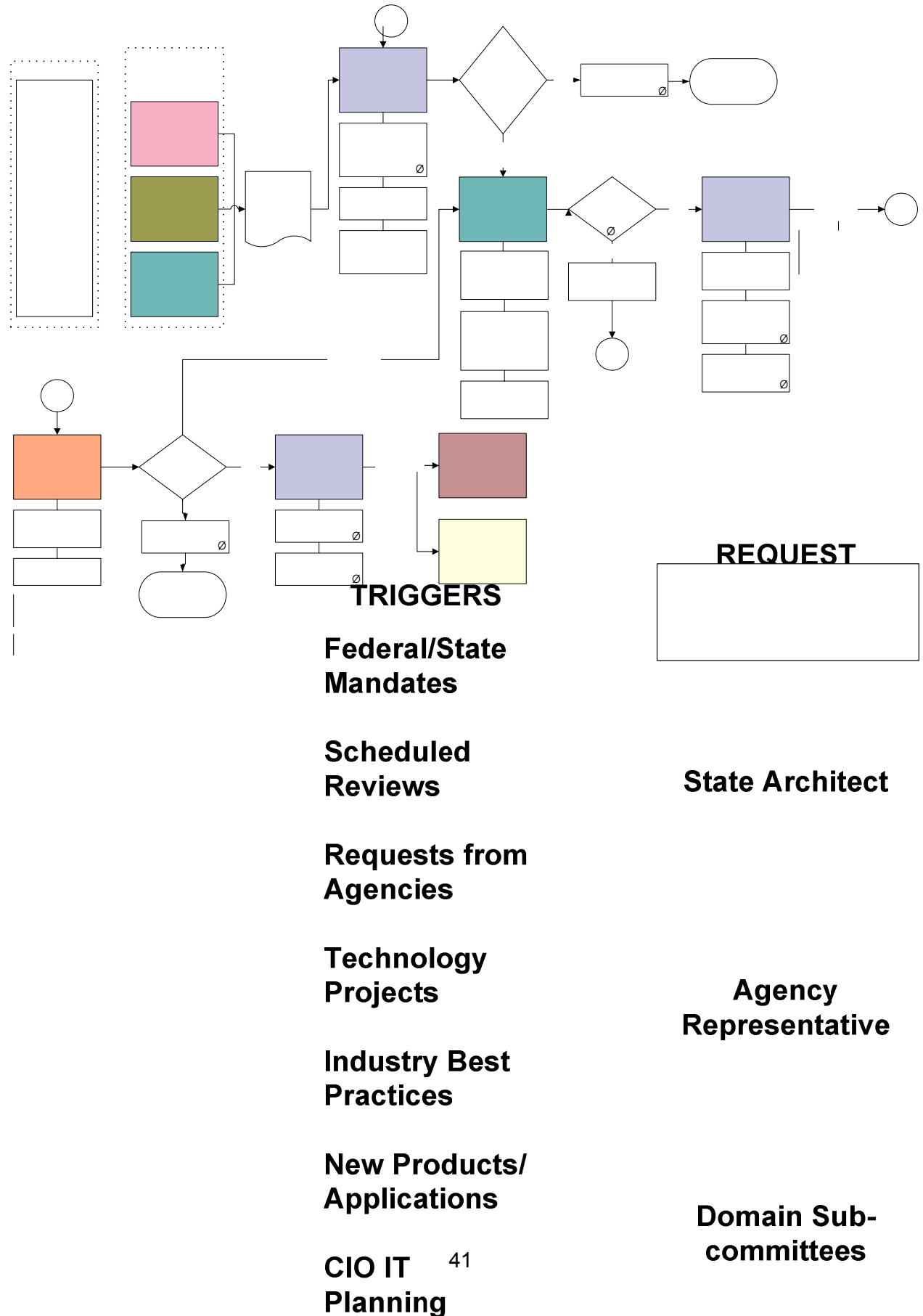
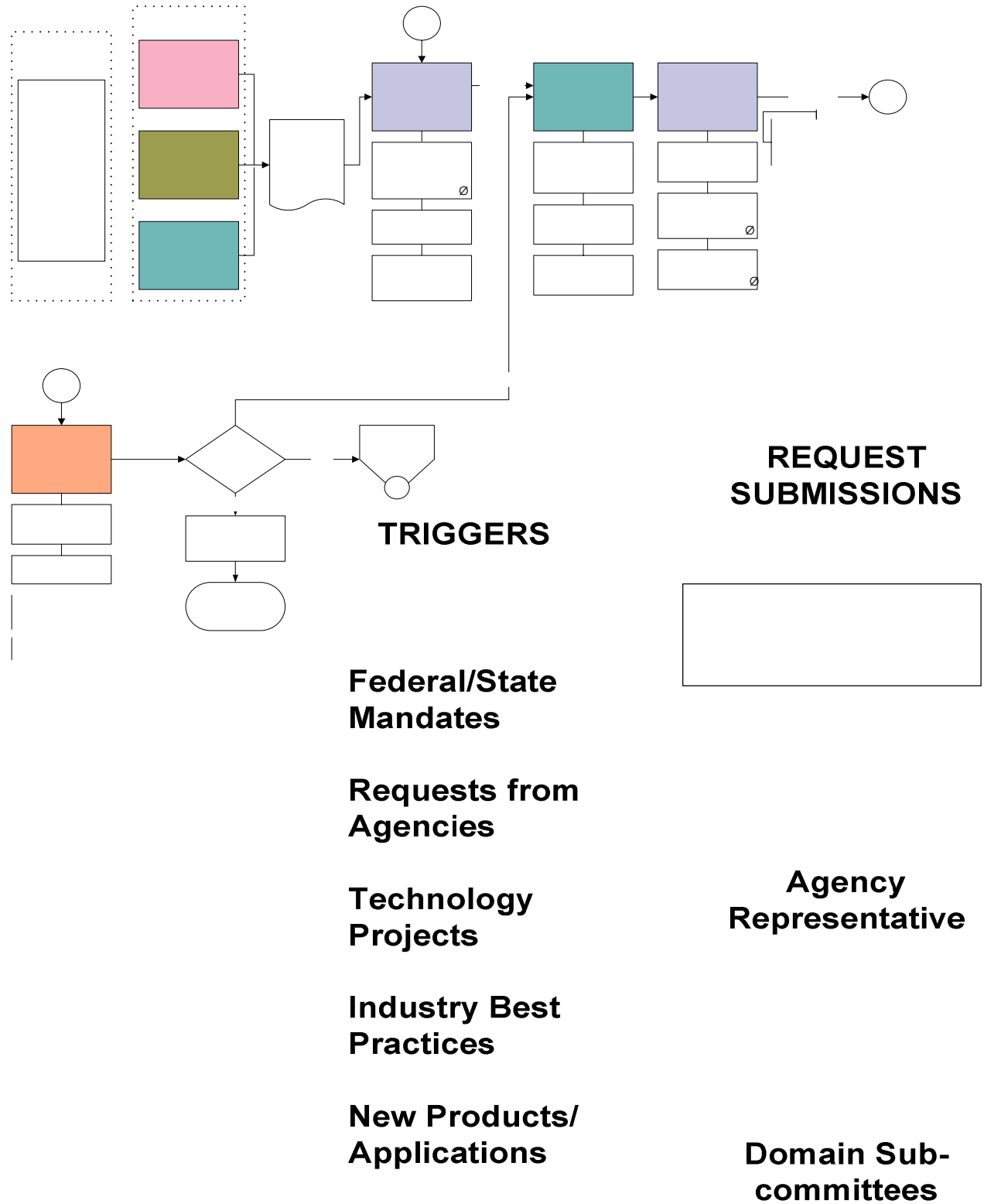


Figure 2: Request for Change to Existing Technical Architecture Process



Tracking Number:

REQUEST FOR WAIVER/EXCEPTION TO TECHNICAL ARCHITECTURE

This form is to be used for the purpose of requesting a waiver or exception to a technology product, application or solution that is currently included in the technical architecture. Once complete, the requester may submit this form either manually or electronically to the Division of the State Chief Information Officer. Where possible, additional information should be submitted to enhance assessment. This additional information may be submitted with this form either manually or electronically. If submitting information manually, mail to: Division of State CIO, 1201 Main Street, Suit 820, Columbia, SC 29201.

BASIC INFORMATION (required for all requests):

Name of Requestor:	Submittal Date:
Agency:	Telephone Number:
Address:	Email Address:
Position:	Fax Number:
Architecture Domain:	Discipline:
Agency Director/Committee Chair Authorization: (if applicable)	

IDENTIFICATION OF TECHNICAL STANDARD TO BE WAIVED/EXCEPTED:

SCOPE OF THE PROPOSED WAIVER/EXCEPTION: (Provide a description of the waver/exception, include the impact on introducing a non-standard technology on existing applications, infrastructure, and resources)

REASON FOR WAIVER/EXCEPTION:

<input type="checkbox"/> Federal/State Mandate
<input type="checkbox"/> New technology products/application
<input type="checkbox"/> Special agency requirements
<input type="checkbox"/> Grant requirements
<input type="checkbox"/> Technology Project
<input type="checkbox"/> Other (please specify)

PRIORITY:

<input type="checkbox"/> High Priority (<i>significant impact on agency operation</i>)
<input type="checkbox"/> Medium Priority (<i>normal processing</i>)
<input type="checkbox"/> Low Priority (<i>can be delayed if necessary</i>)

IMPACT ON OTHER DOMAINS: (*if known, what is the requestors estimate of the impact of an assessment of technical compliance on the following domains and their disciplines*)

Presentation Services:
Communication Services:
Middleware and Messaging:
Computing Services:
Enterprise Applications:
Systems Management Services:

BUSINESS JUSTIFICATION FOR WAIVER/EXCEPTION:

--

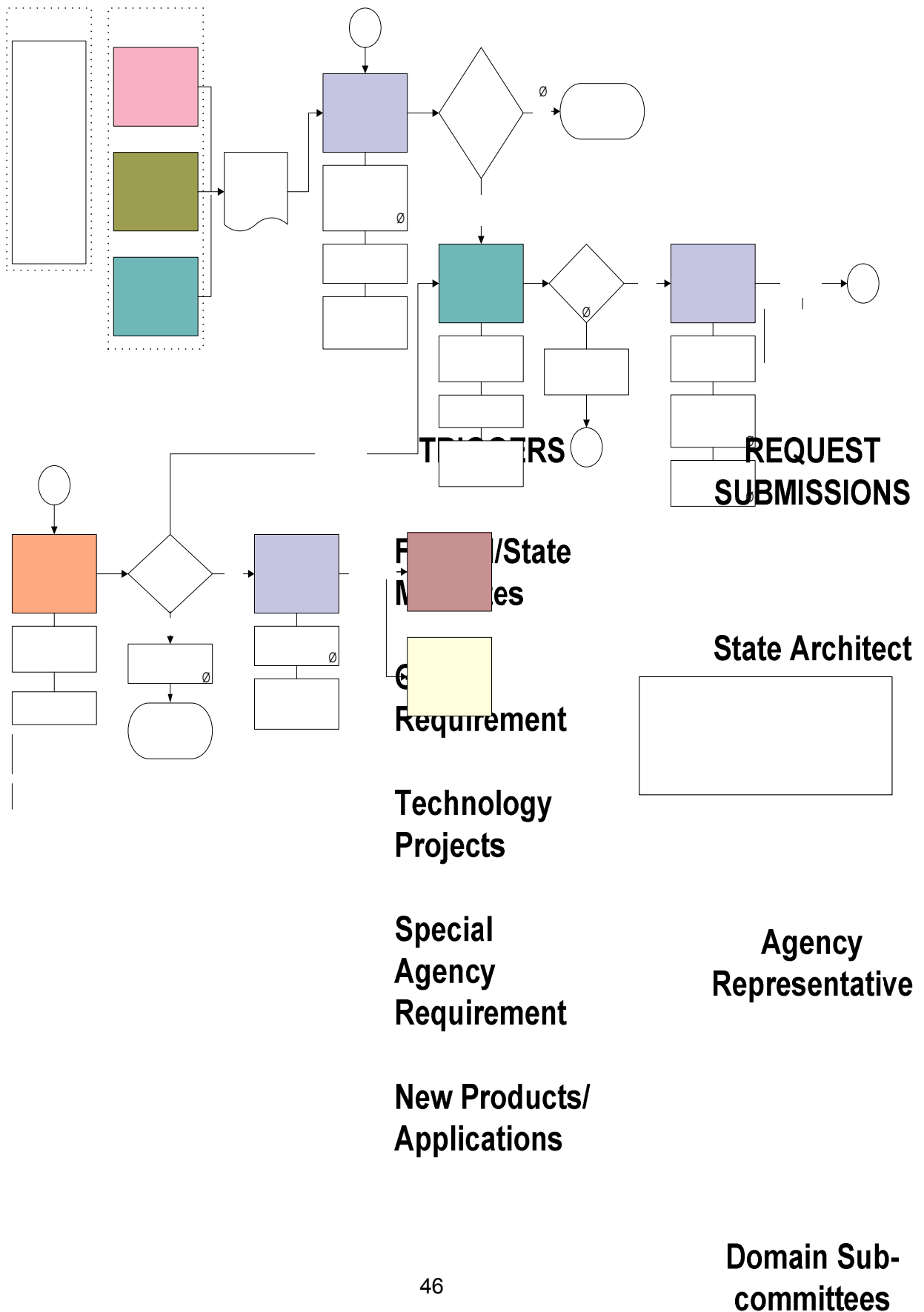
FINANCIAL IMPACT:

What is the estimated financial impact of this waiver/exemption:
What are you currently spending to perform this function:
If know, identify the source(s) and amount(s) of savings associated with this waiver/exemption:

ADDITIONAL BACKGROUND: *(List pertinent information and analysis used in preparing this proposal)*

--

Figure 3: Request for Waiver/Exception Process



Form SCEA-3

Appeal Number: Original Tracking Number:

REQUEST FOR APPEAL OF TECHNICAL ARCHITECTURE DECISION

This form is to be used to request a review or hearing on a previous decision by the Architecture Oversight Committee. Once complete, the requester may submit this form either manually or electronically to the Division of the State Chief Information Officer. Where possible, additional information should be submitted to enhance assessment. This additional information may be submitted with this form either manually or electronically. If submitting information manually, mail to: Division of State CIO, 1201 Main Street, Suit 820, Columbia, SC 29201.

BASIC INFORMATION (required for all requests):

Name of Requestor:	Submittal Date:
Agency:	Telephone Number:
Address:	Email Address:
Position:	Fax Number:
Architecture Domain:	Discipline:
Agency Director/Committee Chair Authorization: (if applicable)	

SCOPE OF APPEAL: (Provide a description of the appeal, address specific issues and/or concerns that would impact a previous decision made by the Architecture Oversight Committee)

--

PRIORITY:

<input type="checkbox"/> High Priority (<i>significant impact on agency operation</i>)
<input type="checkbox"/> Medium Priority (<i>normal processing</i>)
<input type="checkbox"/> Low Priority (<i>can be delayed if necessary</i>)

REASONS FOR THE APPEAL:

Addresses issues/concerns outlined in the original decision.
--

Describe any additional relevant information regarding the appeal.

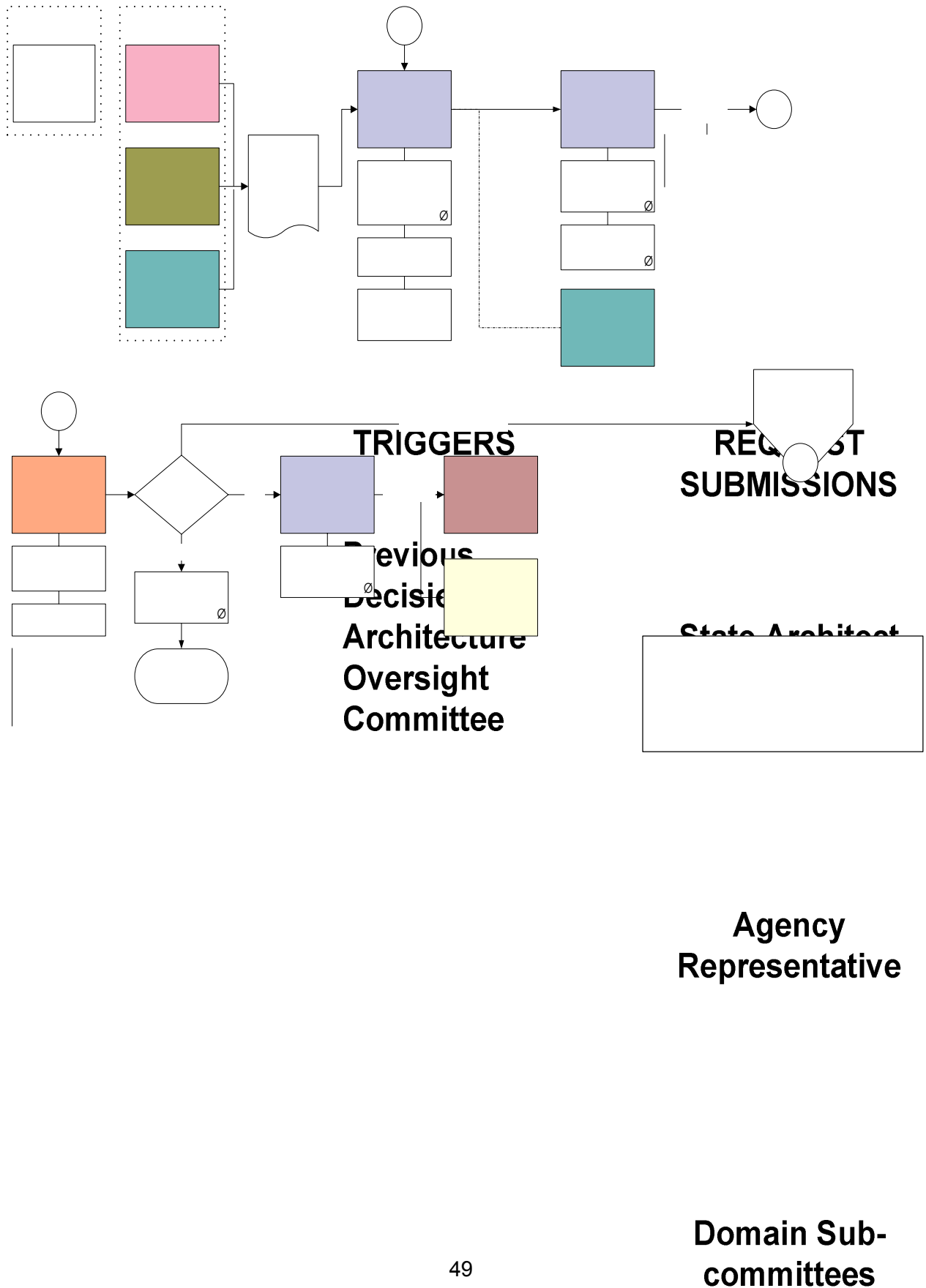
BUSINESS JUSTIFICATION FOR APPEAL:

--

ADDITIONAL BACKGROUND: *(List pertinent information and analysis used in preparing this appeal)*

--

Figure 4: Appeal of Technical Architecture Decision Process



DOMAIN PROFILE

DISCIPLINES

DOMAIN STRATEGY

DOMAIN PRINCIPLES/BOUNDARIES

DISCIPLINE PROFILE

Discipline Boundaries:

Discipline Roadmap For:

Current	2 Years	5 Years	
Baseline Environment	Tactical Deployment	Strategic Direction	
		Shared	Agency



Retirement Targets	Mainstream Platforms (must be supported)
--------------------	--

Containment Targets (fully supported but no new development)	Emerging Platforms
--	--------------------

Implications and Dependencies

Roadmap Notes

DISCIPLINE PROFILE

Discipline Standards:

Migration Considerations:

Exception Considerations:

Miscellaneous Notes:

Date Last Updated:

STATUS REPORT FROM A DOMAIN SUBCOMMITTEE

Meeting Information

Meeting Date and Time:

Domain Subcommittee:

Subcommittee Chairperson:

Members Attending the Meeting:

Meeting Details

Meeting Agenda

Adapt as needed, but these should be probable items.

- member reports on on-going research
- workgroup status reports (if any)
- discipline committee reports (if any)
- action items
- new business

Results of On-Going Research

Briefly, describe results and recommendations from on-going research.

Subcommittee Status Reports

Briefly, describe status of any subcommittee activities.

Recommendations to be Submitted to AOC

Use this space to describe recommendations by the subcommittee for proposed changes to the domain architecture

Action Items

Use this space to report on items needed resolution, next steps needed, etc.

Comments

Use this space for any comments, suggestions, etc.

Form SCEA-8

RECOMMENDED ACTION BY A DOMAIN SUBCOMMITTEE

Basic Information

Submittal Date:

Domain Subcommittee:

Subcommittee Chairperson:

Contact Information (phone or email):

Scope of the Change

Description

Provide a description of the requested/proposed change.

Priority and Time Frame

Indicate the priority of this change – if it needs to be expedited, explain why and indicate date needed.

Architectural Impact

Briefly describe impact on domain architecture and SCEA. Also, indicate if there will be any impact on other domains.

Financial Impact

Provide estimated financial impact of the proposed change, if available. Include TCO analysis when possible.

Need or Justification (may be more than one)

Check the reason for requested change. If there is more than one reason for the requested change, check all appropriate boxes. (Copy this ✓ and paste over the box)

- Domain subcommittee technology research activities
- Domain subcommittee gap analysis activities
- Agency project
- Agency waiver/exception process
- Change in enterprise strategies and/or business direction
- Infrastructure implementation or proposed CIO service offering
- Appeal of AOC decision

Other (please specify _____)

Summary of Research Performed

Type of Research

Summarize the research that supports the subcommittee’s recommendation. Attach copies of research, if appropriate.

Scope of the research

Describe the scope of the research. Indicate workgroups or discipline committees involved in this research.

Describe any alternative standards or products considered by the subcommittee.

Recommendation(s)

YES – change the domain architecture as follows (attach domain or discipline profiles as appropriate):

Domain architecture strategies/principles

Discipline profiles (technology standards, product standards, life cycle designation, etc.)

NO – action not recommended at this time

High risk, technology not mature – continue tracking

Needs further evaluation

Inconclusive results/insufficient information at this time

Negative evaluation or results

Other (specify)

Dissenting Opinions

Summarize dissenting opinions from members of domain subcommittee, workgroup or discipline committee, if any.

--

Agency Position/Comments

Briefly indicate agency's desired outcome if different from recommendation of domain subcommittee.

--

Form SCEA-9**GAP ANALYSIS REPORT FROM A DOMAIN SUBCOMMITTEE**

Note: This is in Excel spreadsheet format

Basic Information

Meeting Date and Time:

Domain Subcommittee:

Subcommittee Chairperson:

Members attending the meeting

Instructions

Column A	Planning Category	attempt to group similar gap items that could be incorporated in the same (future) plan
Column B	Gap Description	brief description of the gap item (or a label)
Column C	Priority	relative priority within the domain for resolving the gap item; ranked from A highest to C lowest
Column D	Cross Reference	list of other gap items that are related or linked to this gap item, based on the gaps identified in the domain architecture document
Column E	Short List	gap items to be acted upon first (low hanging fruit, most impact, etc.)
Column F	Order	used to order the short list and remaining gaps as part of the planning process
Column G	Domain Principles Supported	list of domain principles supported by resolving the gap
Column H	Comment/Action Item	indicate how the gap will be resolved, and any other comments that are relevant; this cell can include historical actions
Column I	Skills	skills required as an aide to resource planning and assignment of subcommittee members to activities or research

Planning Category	GAP	Priority	Cross Reference	Short List	Order	Domain Principles Supported	Comment/Action Item	Skills Required

Appendix 3: Summary of Roles and Responsibilities

Architecture Oversight Committee

The Architecture Oversight Committee (AOC) is responsible for the review and approval of technical standards, and for the promotion of the SCEA statewide. Its membership is made up of senior IT leaders and senior agency management personnel. The AOC approves domain subcommittee recommendations/deliverables (i.e., technical standards, design principles, product standards, best practices, and standardized configurations) and adjudicates exceptions to architecture standards and appeals of architecture decisions. The AOC is chaired by the State's Chief Technology Officer.

Responsibilities include:

- Maintaining the SCEA process discipline and sponsoring new and revised standards.
- Approving domain subcommittee deliverables that impact agencies (i.e. technical standards, design principles, product standards, best practices and standardized configurations).
- Adjudicating appeals for exceptions to architecture standards.
- Reviewing domain and Architecture Oversight Committee initiatives and recommend priorities.
- Reviewing possible infrastructure impacts of planned projects.
- Utilizing SCEA teams as a resource in understanding domain deliverables.

Domain Subcommittees

The domain subcommittees provide the knowledge and expertise required to develop the technical architectures and standards for the enterprise architecture process. Each subcommittee consists of technical experts from across the State. These subcommittees are responsible for the development and maintenance of Domain Architecture Documents, including the domain specific deliverables (i.e. domain principles, technical standards, product standards, and best practices), and administrative documents such as meeting minutes, action plans, gap analyses, etc. The subcommittees are expected to keep abreast of new technology and make recommendations on new technology to close gaps in the current environment.

CIO Architecture Support Group (CIO-ASG)

The CIO Architecture Support Group coordinates the SCEA process and all associated activities. This Group is responsible for coordinating/supporting all domain subcommittee, as well as communications and web site content/maintenance.

Responsibilities of the CIO Architecture Support Group include:

- Ongoing enhancement, communication and governance of SCEA.
- Coordination of activities and deliverables between domain subcommittees.
- Coordination and quality assurance of deliverables and presentations to AOC.
- Provide staff support to AOC and the domain subcommittees.
- Coordinating publication of domain architecture documents.

- Conduct research and coordinating the use of research services by the AOC and the domain subcommittees.

Project Management Services Group (PMSG)

The PMSG exists at the enterprise level to coordinate and monitor major IT projects. CIO personnel staff this Office

Responsibilities include:

- Establish and promote the use of a standard project management methodology including forms, templates, reports, etc.
- Monitor the state's portfolio of major IT projects reviewing standard reports and providing the CIO and agency management with recommendations on project activities.
- Develop project management training and certification programs for state employees.
- Provide project management services upon request by an agency and for enterprise projects.