Overview of Enterprise Architecture Artifacts

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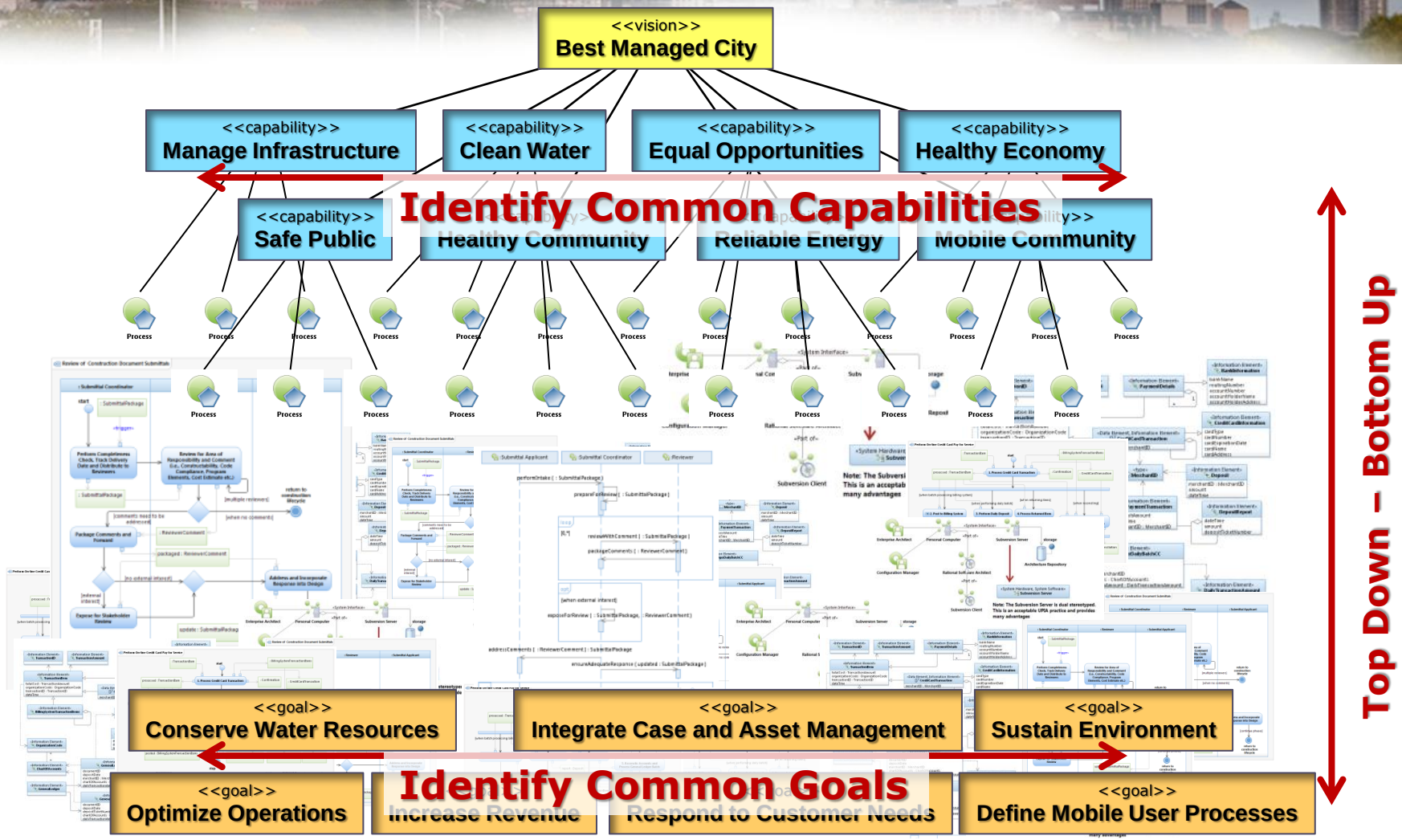
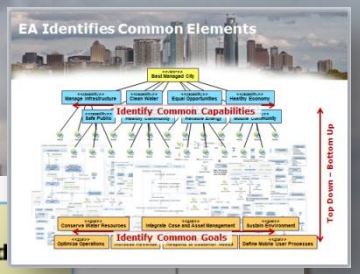
EA Identifies Common Elements



Goal setting…
Concentration and Dependency Analysis



«Capability»
Transportation Strategic Planning

«Capability»
Manage Traffic Signal System

«Capability»
Manage Right of Way Signage and Markings

«Capability»
Needs

«Capability»
Manage Parking Assests

«Capability»
Regulate Vehicles for Hire

«Capability»
Regulate Right of Way

«Capability»
Regulate Special Events

«Capability»
Public Works
Information Portal

«Future, Capability»
Peform Business Intelligence

«Goal»
Establish and enforce design and d standards

«Goal»
Identify comprehensive plans and history about infrastructure assets based on geospatial information

«Goal»
Provide better integrated planning and project management

«Goal»
Obtain electronic review solution

«Goal»
Develop centra lized data retention

«Goal»
Integrate Case and Asset Management with Emphasis on GIS

«Depends On»

«Goal»
Cost estimation based on historical project bid data

«Goal»
Greater ability to perform analysis

«Depends On»

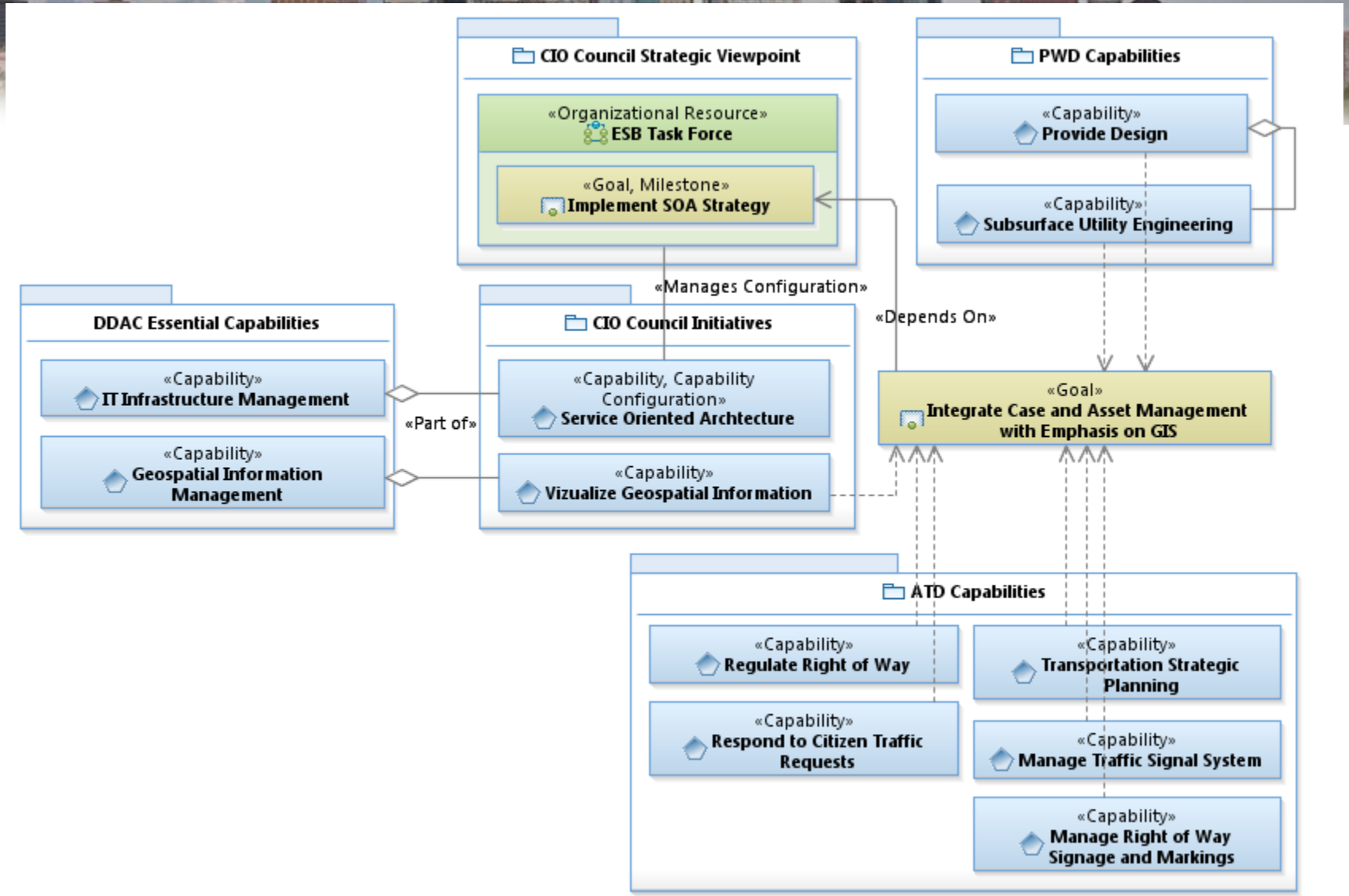
«Goal»
Enhanced data capture and analysis, with an emphasis on GIS and spatial techniques

Has the greatest need

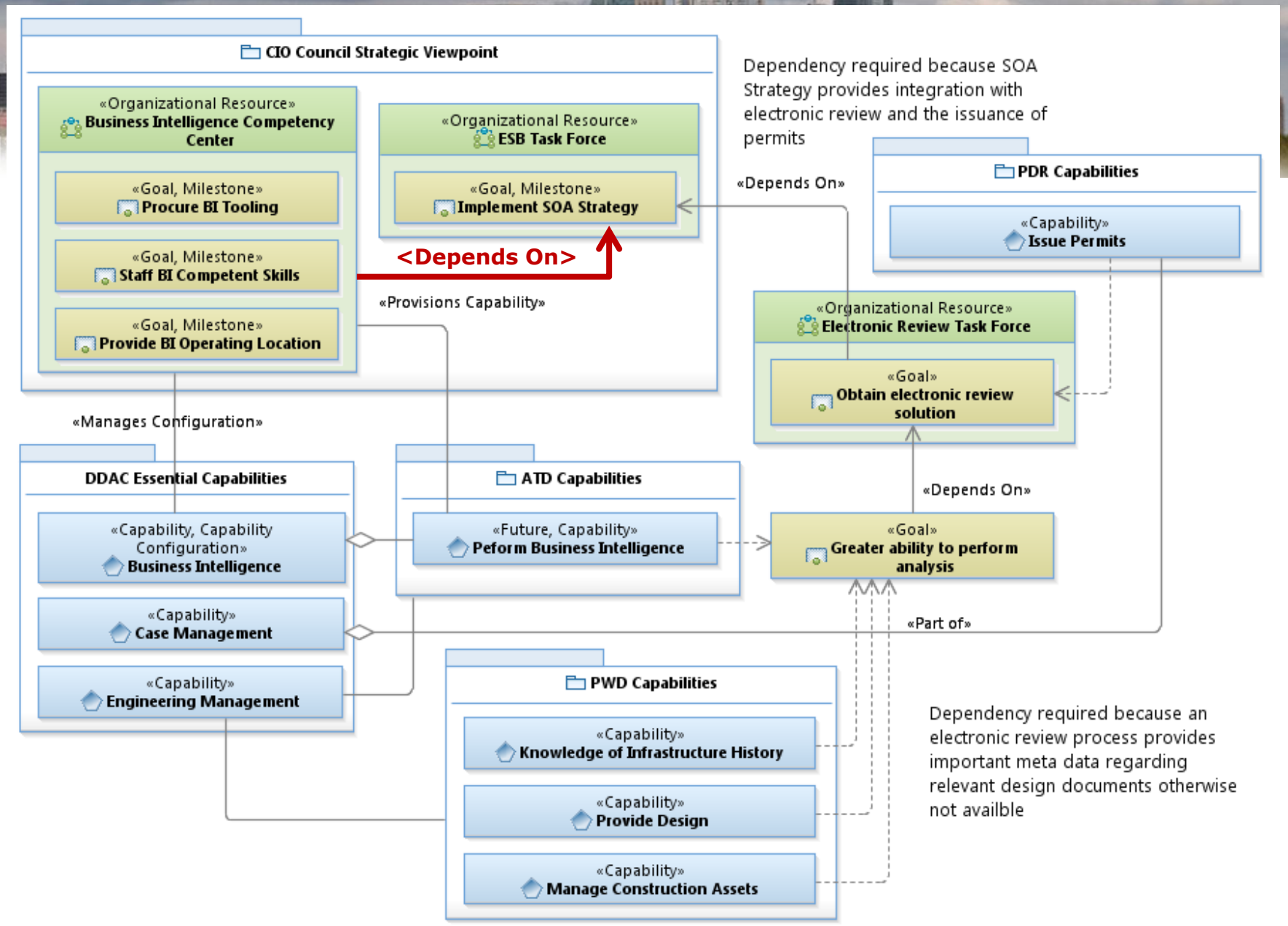
Provides the greatest solution

Significantly contributes to goal

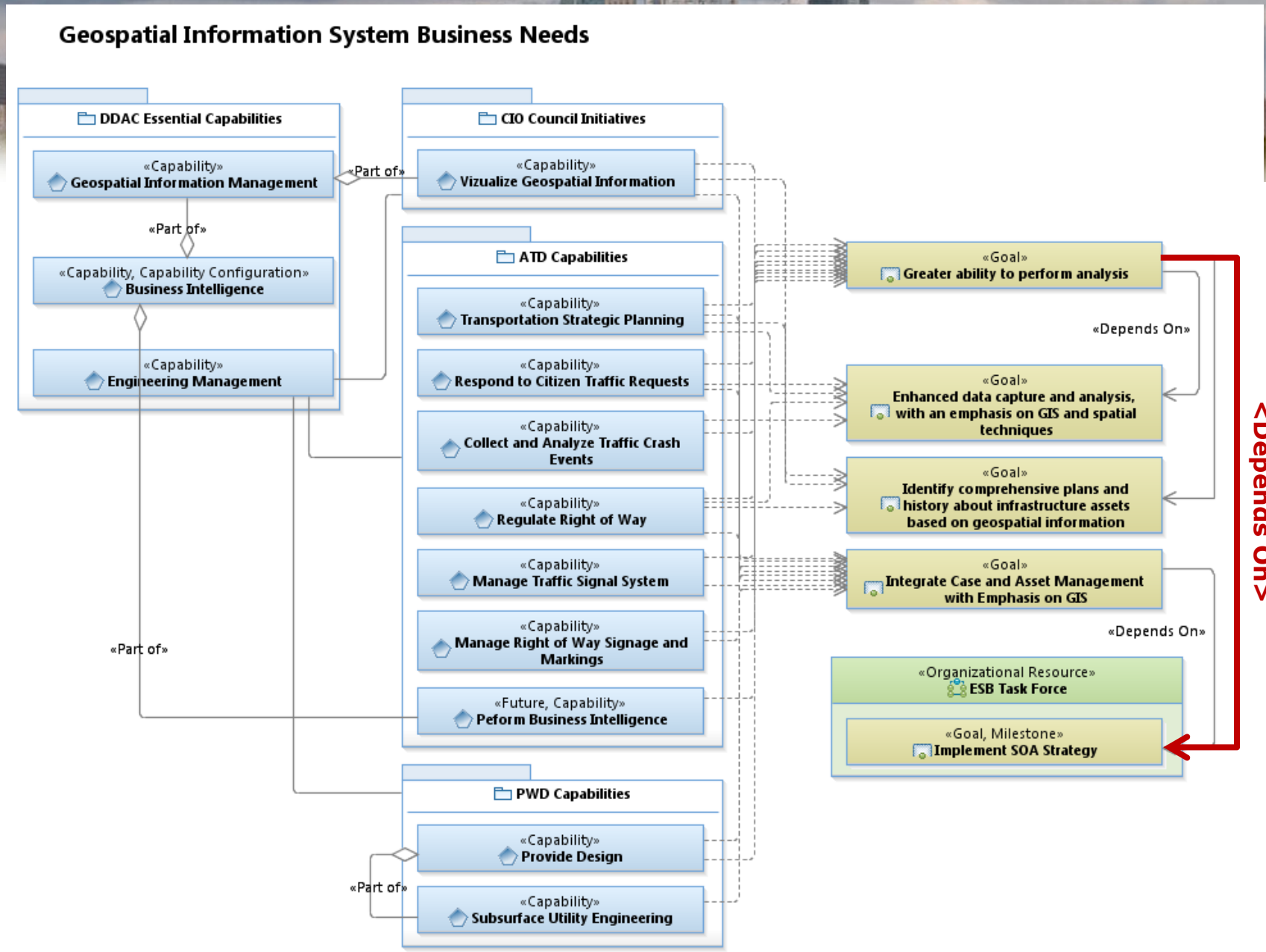
Requirements Analysis Example 1



Requirements Analysis Example 2



Requirements Analysis Example 3



EA – Part of Governance

Business Need Statement

Enterprise Service Bus (ESB)
Use common enterprise-wide systems and share available information

1. Dept: *Multiple Departments*

2. Sponsor: *CIO Council*

3. Need Description:
An enterprise service bus (ESB) is an architecture model used for designing and implementing the interaction and communication between mutually interacting software applications in a service-oriented architecture (SOA). SOA is a software architecture model for distributed computing. It is a variant of the more general client-server software architecture model and promotes agility and flexibility concerning communication and interaction between city applications. Its primary use is in enterprise application integration (EAI) of heterogeneous and complex IT landscapes.

4. Legal/Regulatory Requirement:
☒ No ☐ Yes

5. Leveraging Essential IT Capabilities
Please check all that apply
☒ A. Engineering Management
☒ B. Financial Management
☒ C. Geospatial Information Management
☒ D. Human Capital Management
☒ E. IT Infrastructure Management
☒ F. Mobile Operations Management
☒ G. Asset Management
☒ H. Business Intelligence Management
☒ I. Case Management
☒ J. Citizen Engagement
☐ K. Communications Management
☒ L. Information Management
☐ M. Other

6. Support for Imagine Austin Plan:
Please check all that apply
☐ A. Grow as a compact and connected city
☐ B. Integrate nature into the city
☒ C. Provide paths to prosperity for all
☐ D. Develop an affordable and healthy community
☐ E. Sustainably manage water, energy and environment
☒ F. Think creatively and work together.

7. Solution Expectations:
- *Both Austin Energy (AE) and Austin Water Utility (AWU) have successfully employed an ESB. They are excited with the results and requested CTM to expand their future development activities to include SOA solutions. AWU volunteered the use of their ESB to reduce ownership cost and increase infrastructure managed integration citywide.*
- *Many of the city's IT point-to-point solutions have increased the scale of complexity to dangerous levels with growing future risks. Nearly all DDAC Essential Capabilities benefit from a well-deployed ESB service. With an ESB solution, we can monitor and control message exchanges between services, resolve contention between service components, better control system deployment and versioning, drastically reduce redundant services, perform data transformation for business intelligence, increase enterprise security controls, and enforce information quality.*

8. Financial Benefits:

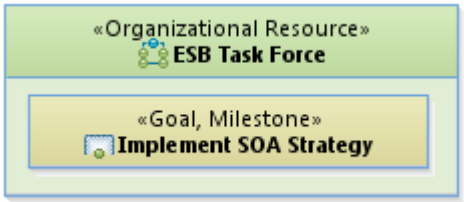
Revenue increase (annual)	*NA*
One-time revenue increase	*NA*
Ongoing cost avoidance (annual)	*>$1,000,000*
One-time cost avoidance	*NA*

9. Support for "Best Managed":
- *Today, CTM employs point-to-point solutions to integrate citywide applications. This leads to interface solutions that prohibit service reuse. As a result, integration is very expensive and hard to maintain. For example, many interfaces require rewrite after an application upgrade. One of the primary advantages of an ESB is that it gives you a standardized platform for integration. When everyone is using the same tools, we can develop enterprise-wide frameworks, patterns and best practices for building re-usable services. Without a unifying platform, we get a divergence of integration methods, which leads to inconsistency and higher cost of integration and change. Therefore, an ESB platform helps with design-time governance leading to best managed.*
- *The citywide IT Strategy FY2011 calls for adoption of a Service Oriented Architecture (SOA) to support reusability, simplify development and maintenance.*
- *AE and AWU have successful ESB solutions – these organizations are unable to tap into CTM services.*
- *ESB lays the foundation for both business intelligence and future mobility applications.*

10. Department Support:
- *Both AE and AWU have committed their support to assist CTM in an ESB rollout.*

11. Service Group Executive support:
This capability CIO Council's 1st priority.

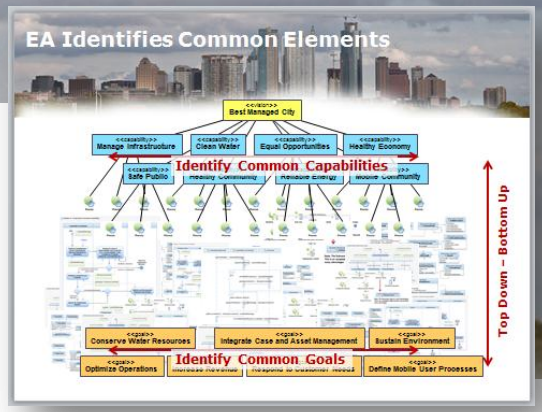
establishes



consists of

Attendee List:	Organization	Title
Barrett, Phil <Phil.Barrett@austintexas.gov>	Austin Water Utility	Mgr Info System & Bus Entrprs
Barta, Josh <Josh.Barta@austinenergy.com>	Austin Energy	Programmer Analyst Supervisor
Brown, Aaron <Aaron.Brown2@austintexas.gov>	Enterprise Architecture	Senior Enterprise Architect
Byrd, Rob <rob.byrd@austintexas.gov>	Enterprise Architecture	Chief Enterprise Architect
Calabrese, Joe <Joe.Calabrese@austintexas.gov>	Austin 311	Manager
Esquibel, Matthew <Matthew.Esquibel@austintexas.gov>	CTM	Internet Services & IT Apps Manager
Ficke, Bill <Bill.Ficke@austintexas.gov>	Austin Water Utility	IT Systems Architect
Gangidi, Sekhar <Sekhar.Gangidi@austintexas.gov>	CTM	Database Administrator Supv
Hutton, Steve <Steve.Hutton@austintexas.gov>	Austin Water Utility	Information Systems Division Manager
Jackson, Wesley <Wesley.Jackson@austintexas.gov>	CTM - Public Safety	IT Division Manager
Karimi, Kamran <Kamran.Karimi@austintexas.gov>	CTM	Programmer Analyst Supervisor
Madrid, Jennifer <Jennifer.Madrid@austintexas.gov>	Austin Water Utility	Supv, Programmer Analyst
Mills, Kevin <Kevin.Mills@austintexas.gov>	Austin Water Utility	Programmer Analyst Sr
Read, Jeremy <Jeremy.Read@austintexas.gov>	Austin Water Utility	Supervisor, Programmer Analyst
Rincon, Joseph <Joseph.Rincon@austintexas.gov>	CTM	Programmer Analyst Supervisor
Starks, Bill <Bill.Starks@austintexas.gov>	Austin 311	Business Systems Analyst Sr
Courtesy Invite:		
Bowmer, Brownlee <Brownlee.Bowmer@austintexas.gov>	Austin Water Utility	Chief Information Officer
Claypool, Alan <Alan.Claypool@austinenergy.com>	Austin Energy	Chief Information Officer
Elkins, Stephen <Stephen.Elkins@austintexas.gov>	City of Austin	Chief Information Officer
Hooper, Brian <Brian.Hooper@austintexas.gov>	Austin Energy	Sr. Business System Analyst
Hopingardner, Paul <Paul.Hopingardner@austintexas.gov>	CTM	Deputy CIO Public Safety
Pacatte, Leeanne <leeanne.pacatte@austintexas.gov>	CTM	Deputy CIO Business Applications Support

Identifying Common Process



ATD Capabilities

«Goal»
Greater ability to perform analysis

«Future, Capability»
Peform Business Intelligence

«Capability»
Manage Parking Assests

«Capability»
Manage Right of Way Signage and Markings

«Capability»
Manage Traffic Signal System

«Capability»
Respond to Citizen Needs

«Capability»
Respond to Citizen Traffic Requests

«Capability»
Collect and Analyze Traffic Crash Events

«Capability»
Requlate Vehicles for Hire

«Capability»
Regulate Right of Way

«Capability»
Regulate Special Events

«Capability»
Transportation Strategic Planning

«Depends On»

Dependency due to the need for meta-data necessary for analysis

contributes to

Use Case

Review of Construction Document Submittals

«Exercises Capability»

«Goal»
Obtain electronic review solution

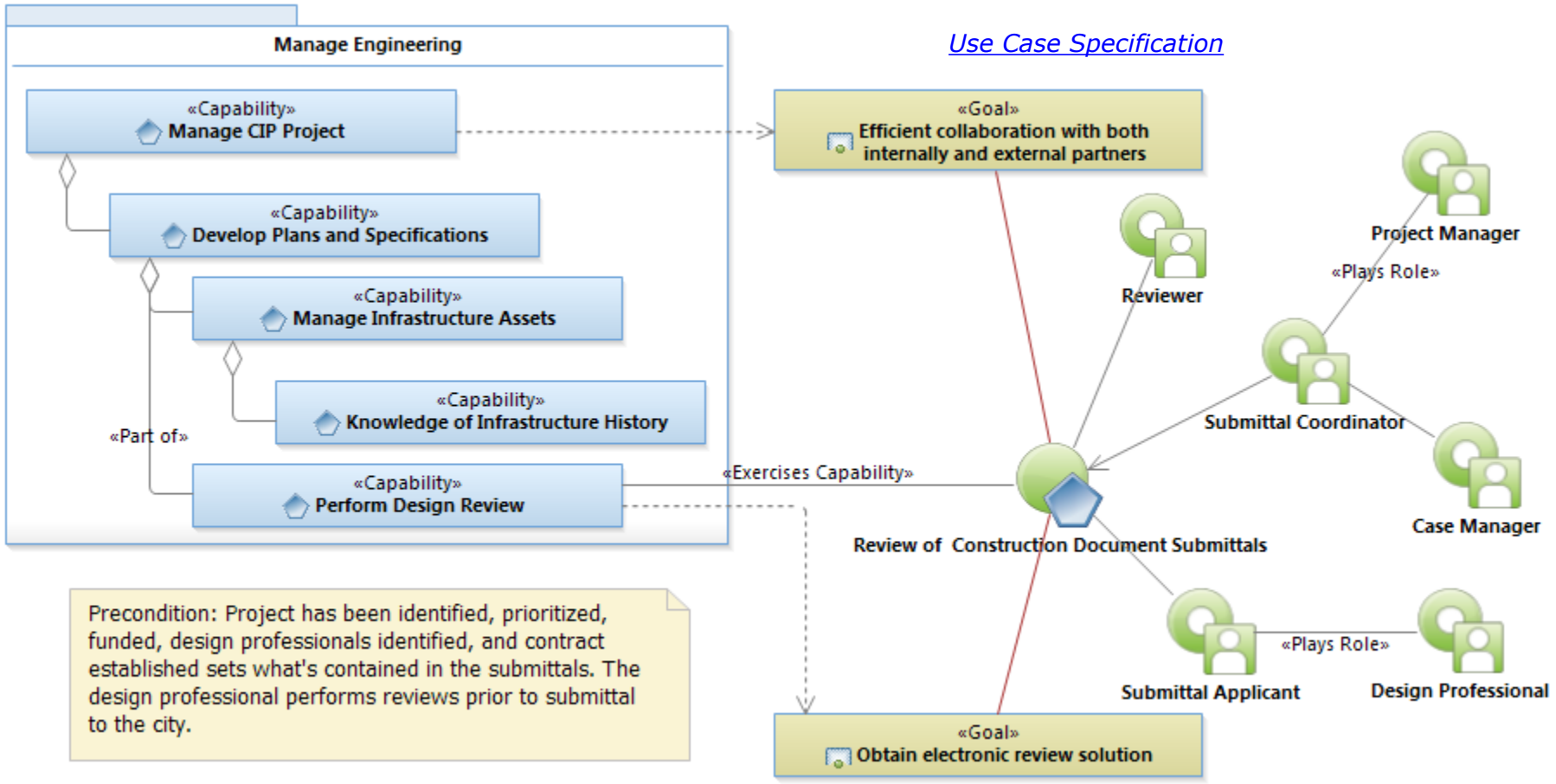
PDR Capabilities

PWD Capabilities

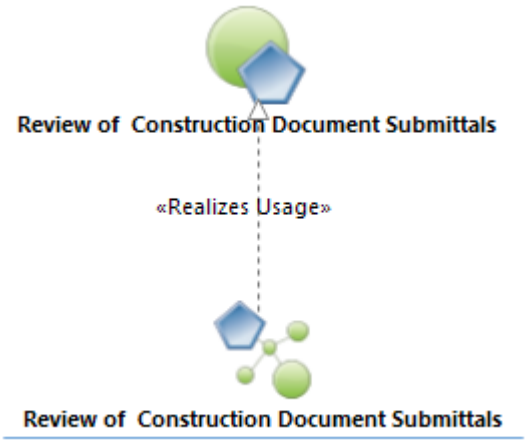
«Capability»
Inspect Construction

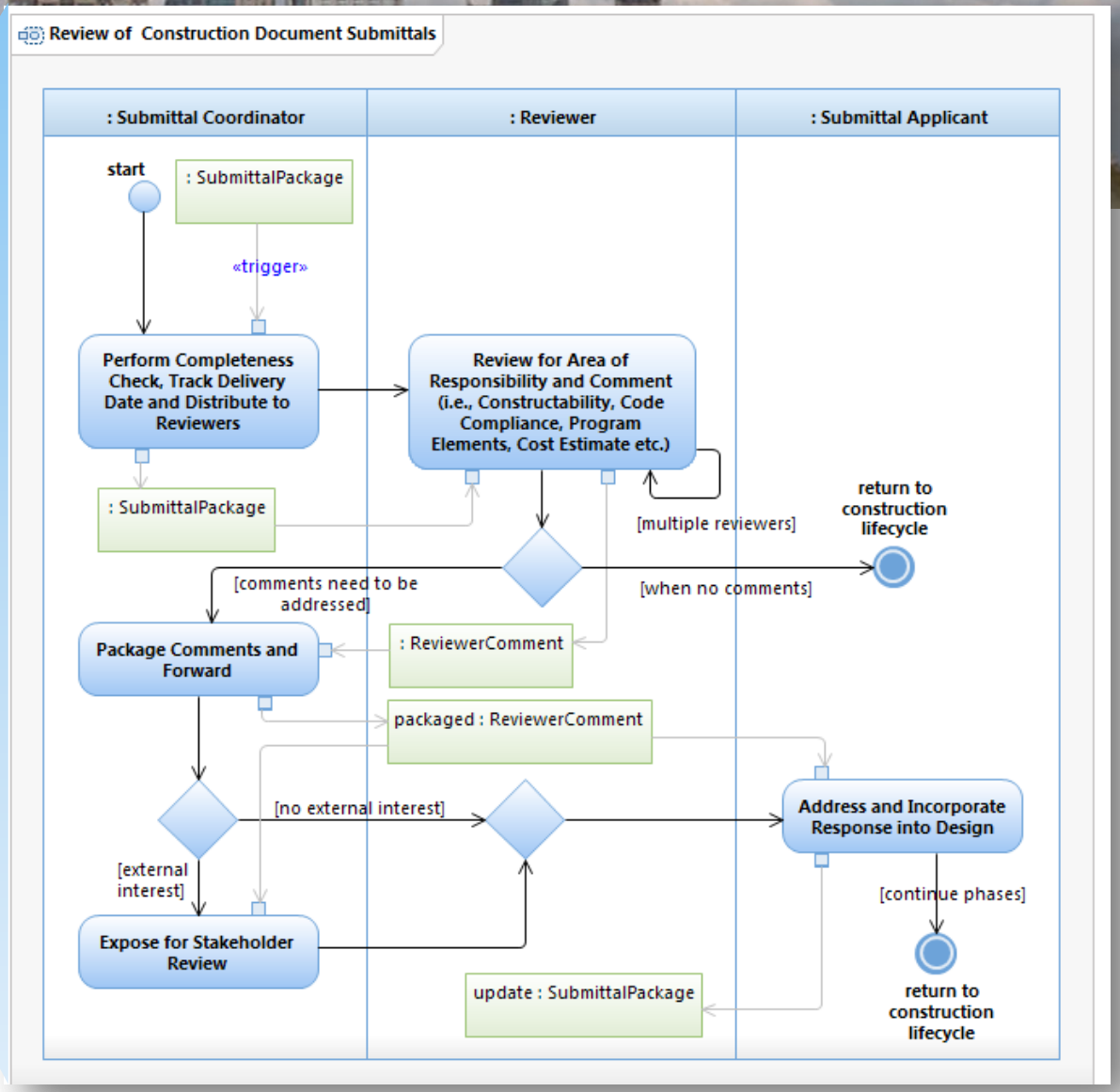
«Capability»
Perform Design Review

Use Case Diagram

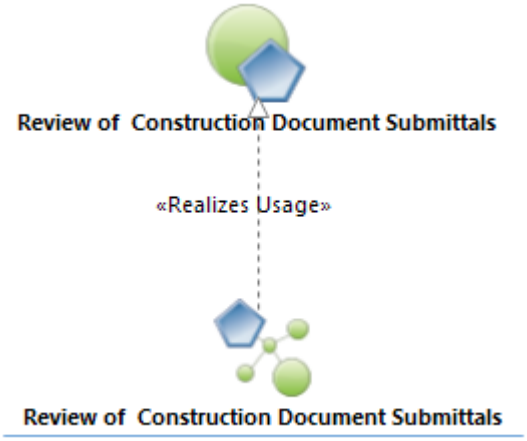


Use Case Realization

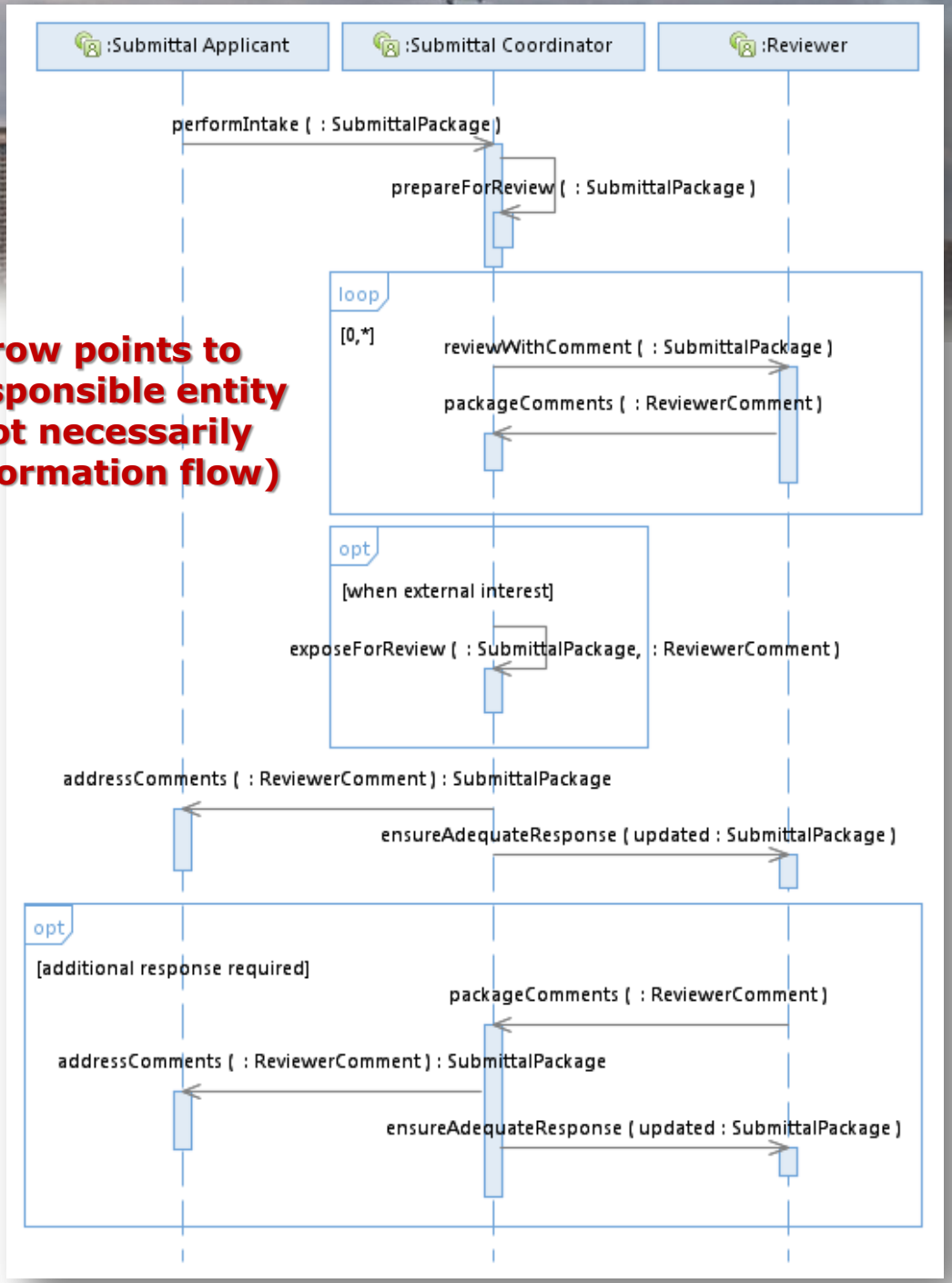




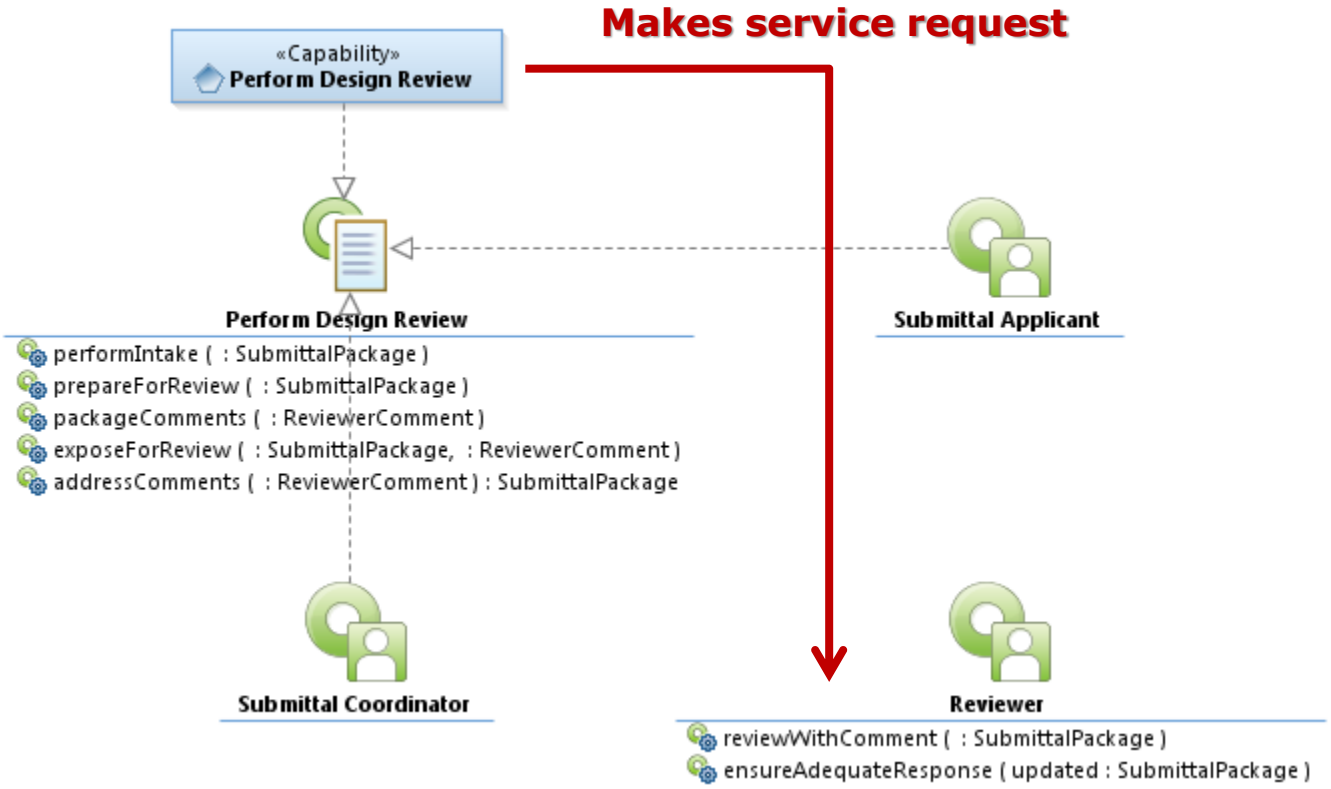
Interface Development



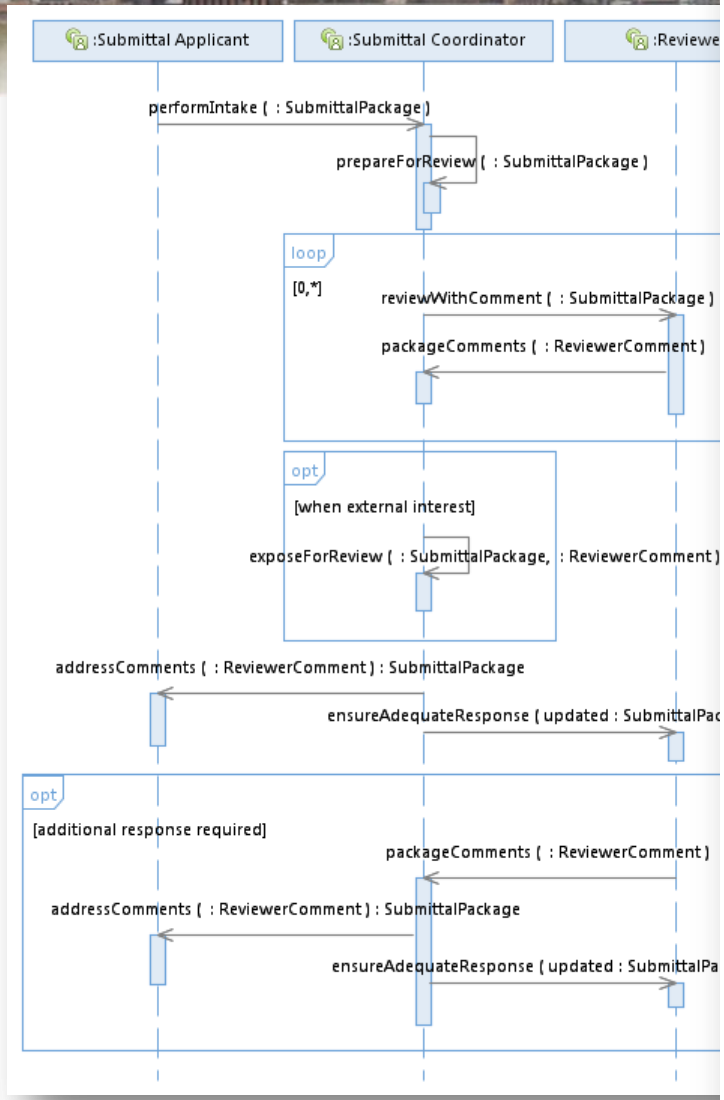
Arrow points to responsible entity (not necessarily information flow)



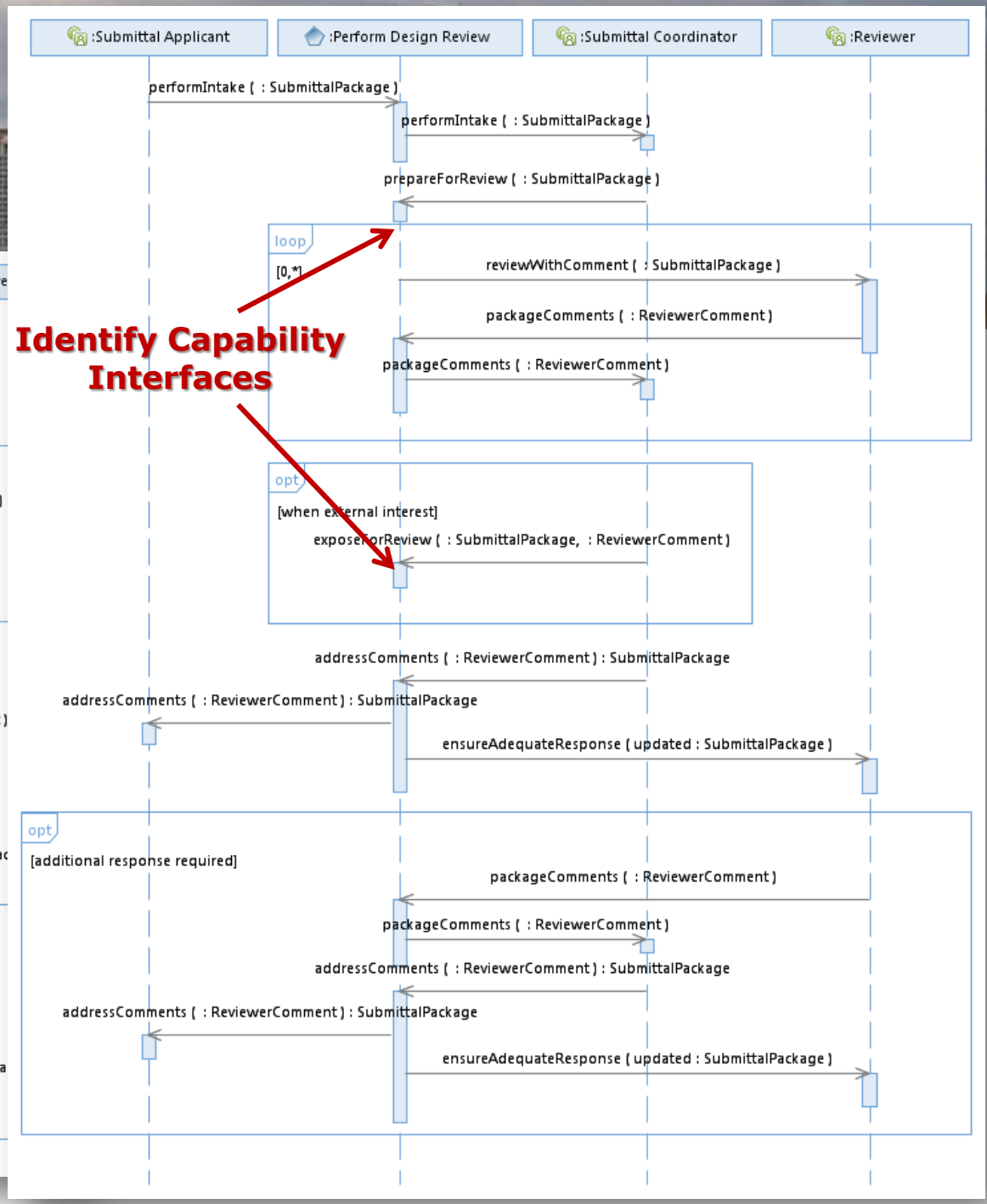
Interface Realization and Specification Development



System Functional Requirements (example)



Identify Capability Interfaces

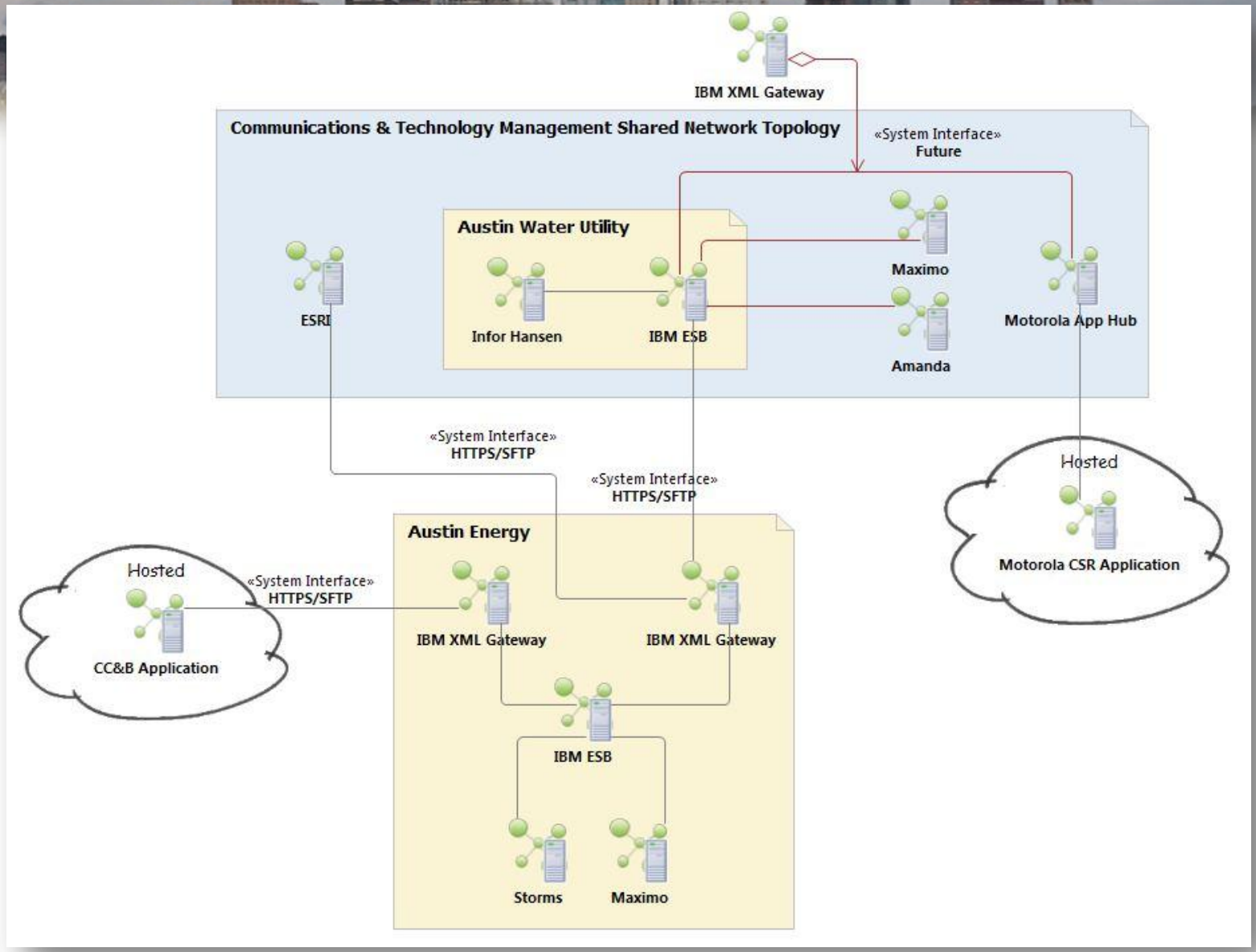


Functional Requirements

Future Electronic Review Process

Activity Name	Future Functional Requirement
Perform Completeness Check, Track Delivery Date and Distribute to Reviewers	Assisted using digital media, provides the ability to customize reviewers using templates, automatically provide date time stamping, edit standardized meta-data when appropriate, and ensure information is consistent with preceding submittals.
Review for Area of Responsibility and Comment (i.e., Constructability, Code Compliance, Program Elements, Cost Estimate etc.)	Using digital media, allow Reviewers to make digital, trackable (i.e., reviewer history, versions, etc.) comments overlaid on a digital package of the design views. **Reviewer ensures adequate response**
Package Comments and Forward	Electronically track comment status of Reviewers and provide means to consolidate comments for Submittal Applicant review.
Expose for Stakeholder Review	Provide electronic means to expose reviewer comments to external stakeholders.
Address and Incorporate Response into Design	The Submittal Applicant responds in an automated method to allow Reviewer confirmation of completeness of the solution.

Example UML/UPIA System Diagram



Data Dictionary

- **Follow link to the Austin Data Dictionary**

Summary

- Strategic Viewpoints provide a means to understand complex relationships – assists in decision-making – identifies measurable goals and milestones
- The Use Case provides a process to perform business analysis to derive business needs, identify interfaces and develop system solutions
- EA provides a comprehensive critical mass of understanding to maintain project momentum