

CITY OF AUSTIN, TEXAS

INFORMATION TECHNOLOGY

Transforming your city with best-managed technology



Aligning IT Services with Business Needs

Session Number: 1243

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City of Austin, Texas

austintexas.gov/information-technology



EA Purpose and Value

- **Identify important business needs using a data-driven, decision-making framework**
- **Align information technology services to produce maximum business value**
- **Deliver “horizontally” integrated enterprise solutions while recognizing innovative strategies**
- **Identify risk early to mitigate decisions and solutions**

We've evolved to a culture where there's plenty of time and money to do it over, but never enough time and money to do it right...

EA = Business Requirements

No Blueprint = Disjointed Understanding



Blueprint = Mutual Understanding



critical
momentum = mass x velocity in a given direction
understanding

Importance of Design

What the business user wanted...



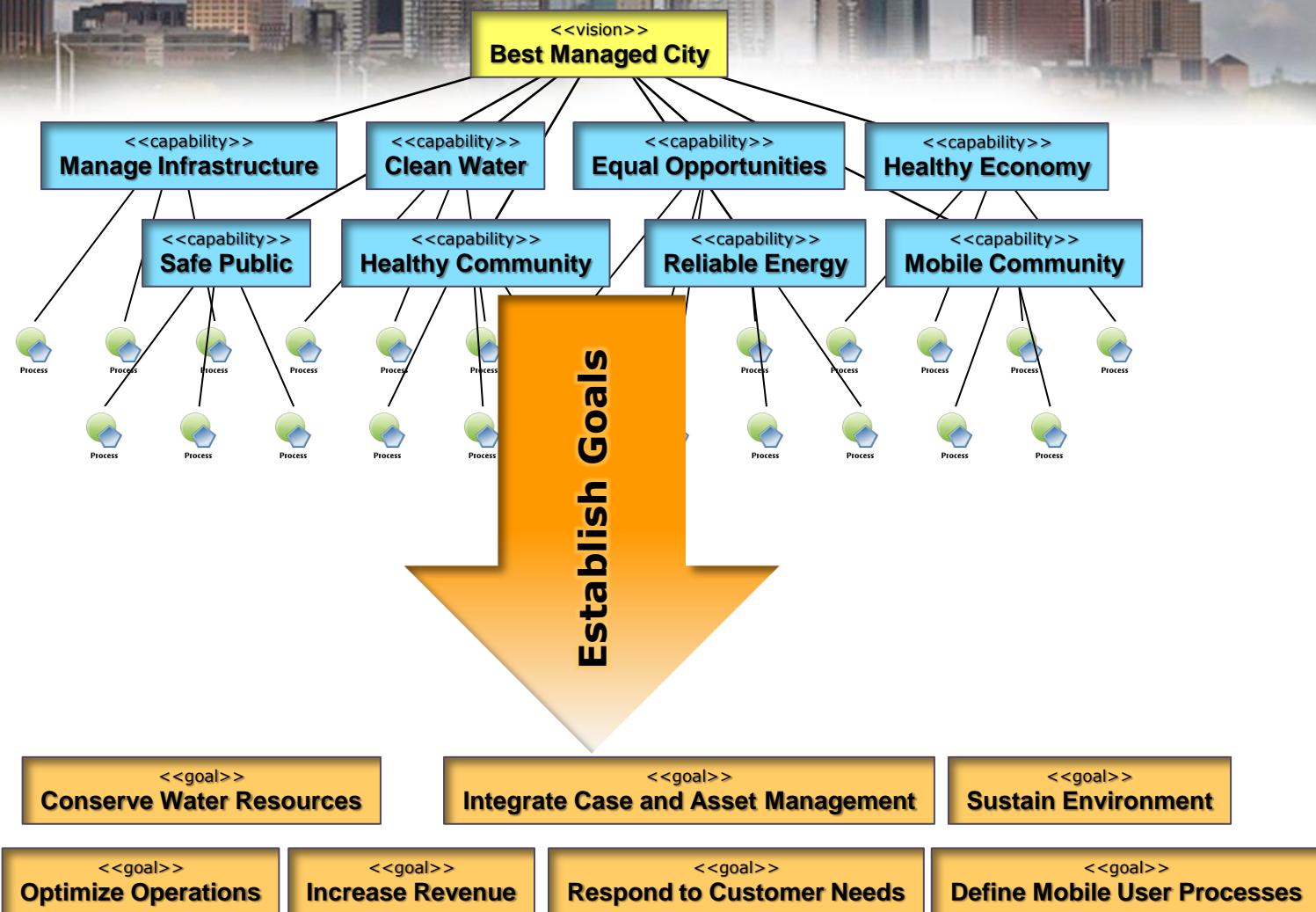
What the business user got...



Capability Understanding Drives Successful Solutions

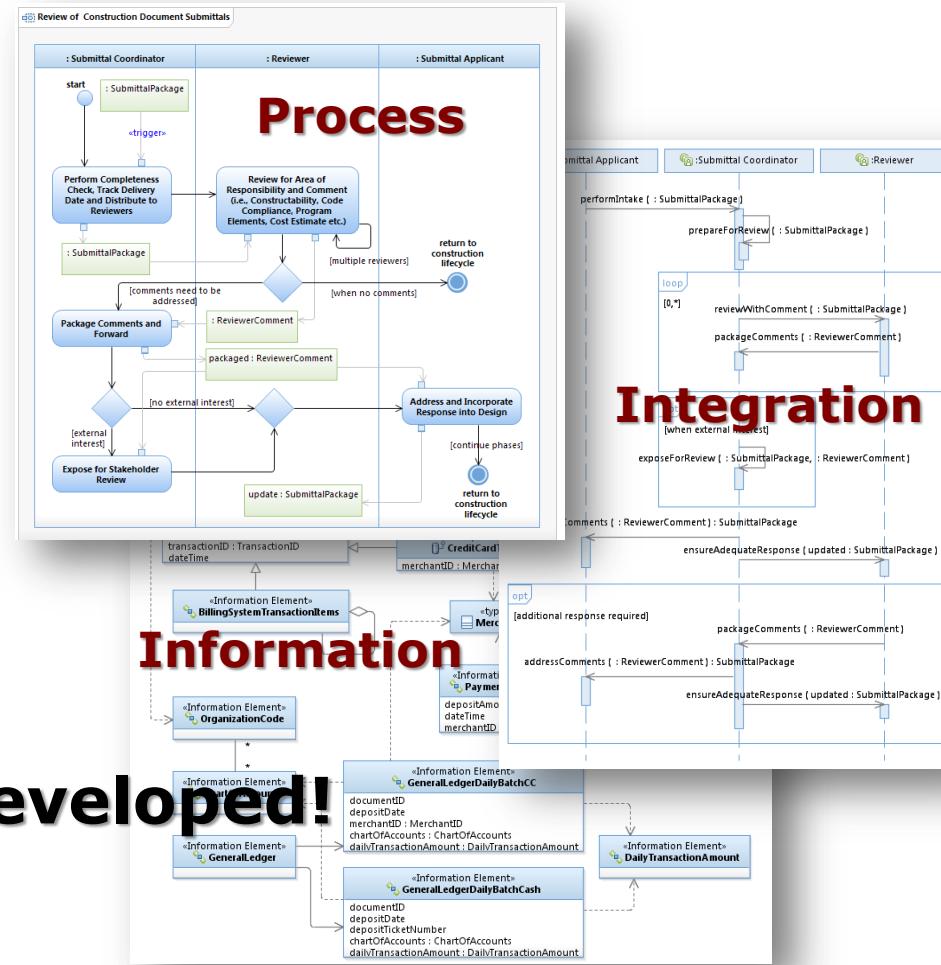
- **Capability: People, processes and technology delivering value for a specific purpose. The quality of being capable; to have the capacity or ability to do something, achieve specific outcomes, effects or declared goals and objectives**
- **Understand enterprise-wide capabilities...**

Managing Complexity



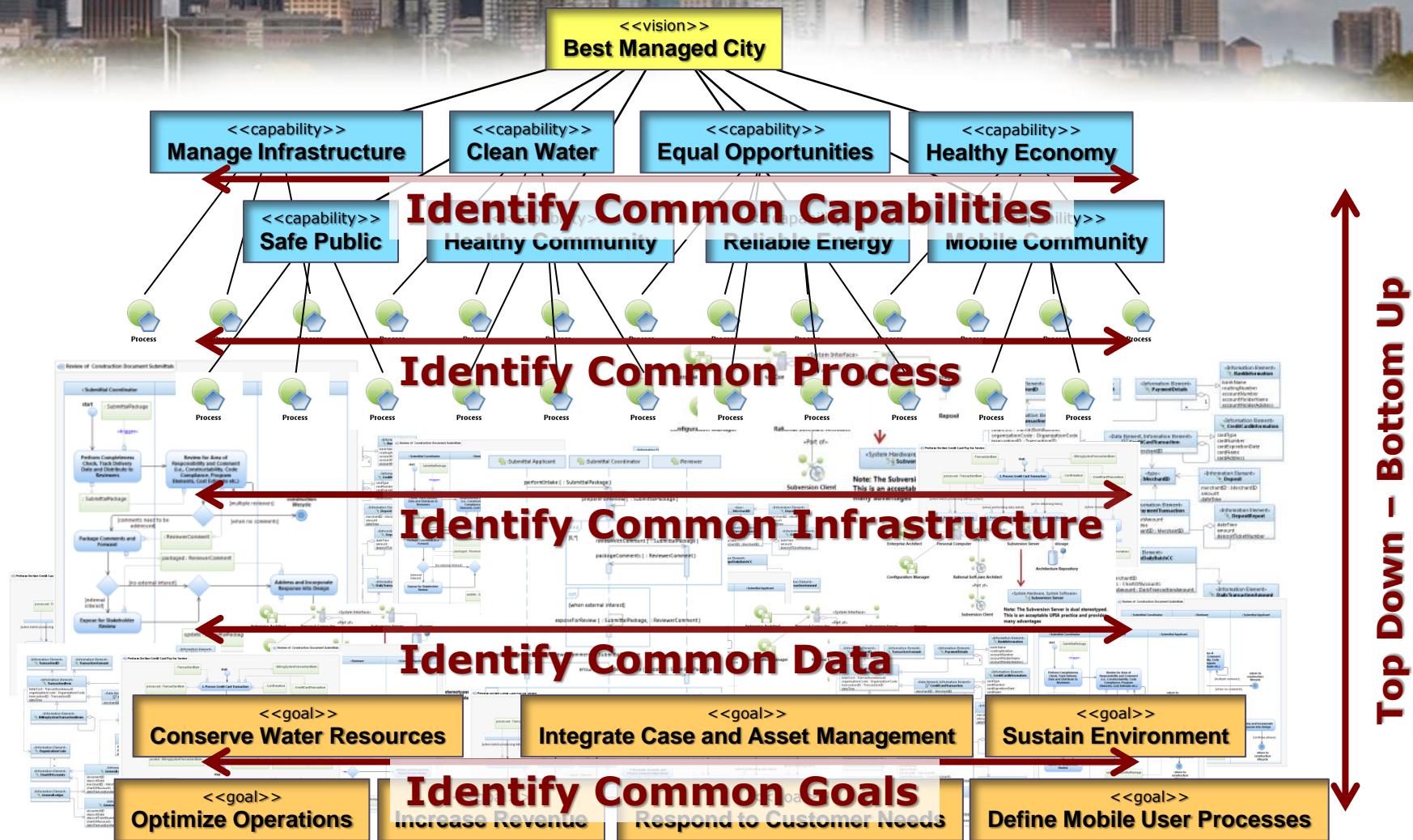
Managing Complexity

Capability Usage



Business developed!

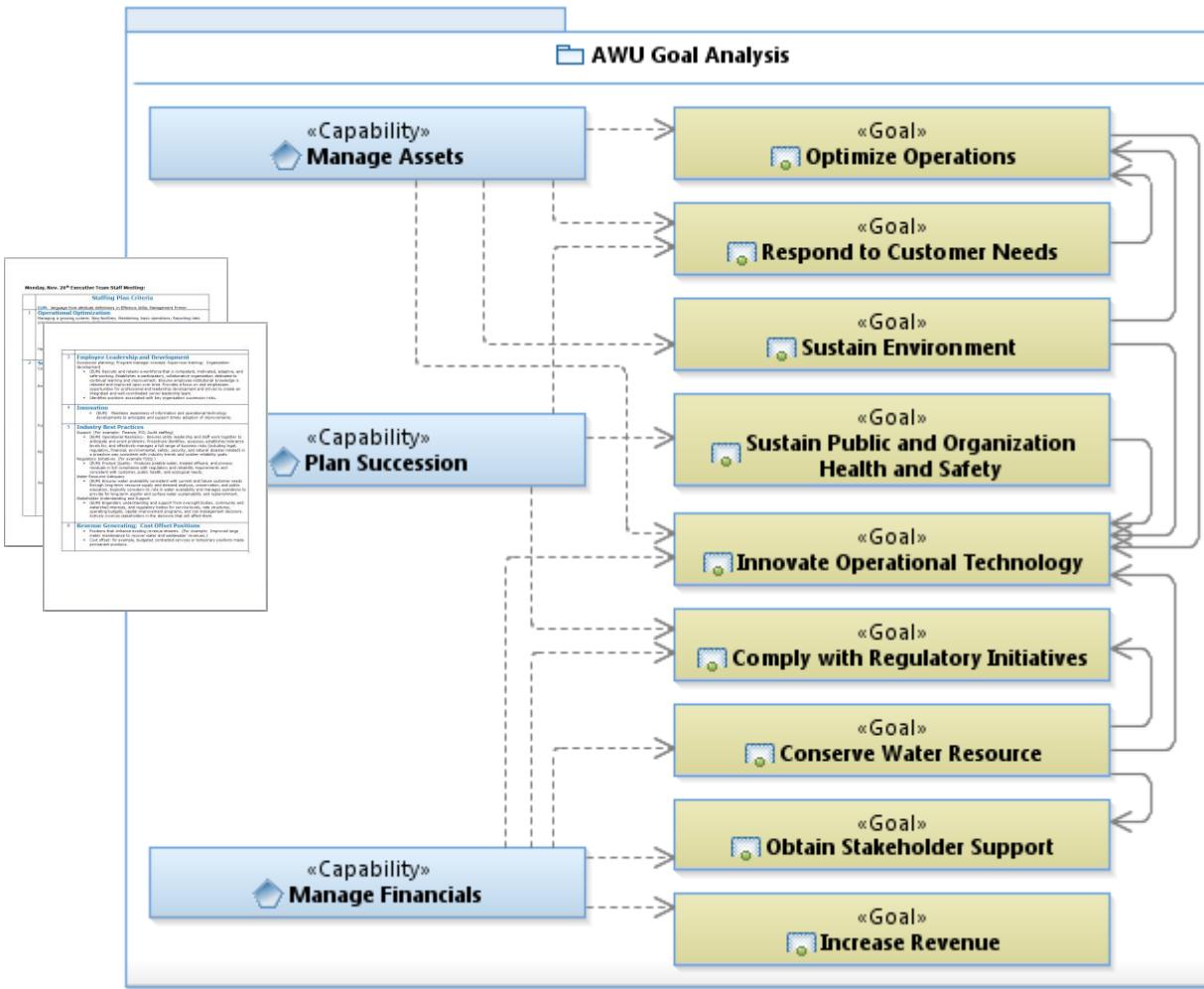
Identifying Common Opportunities



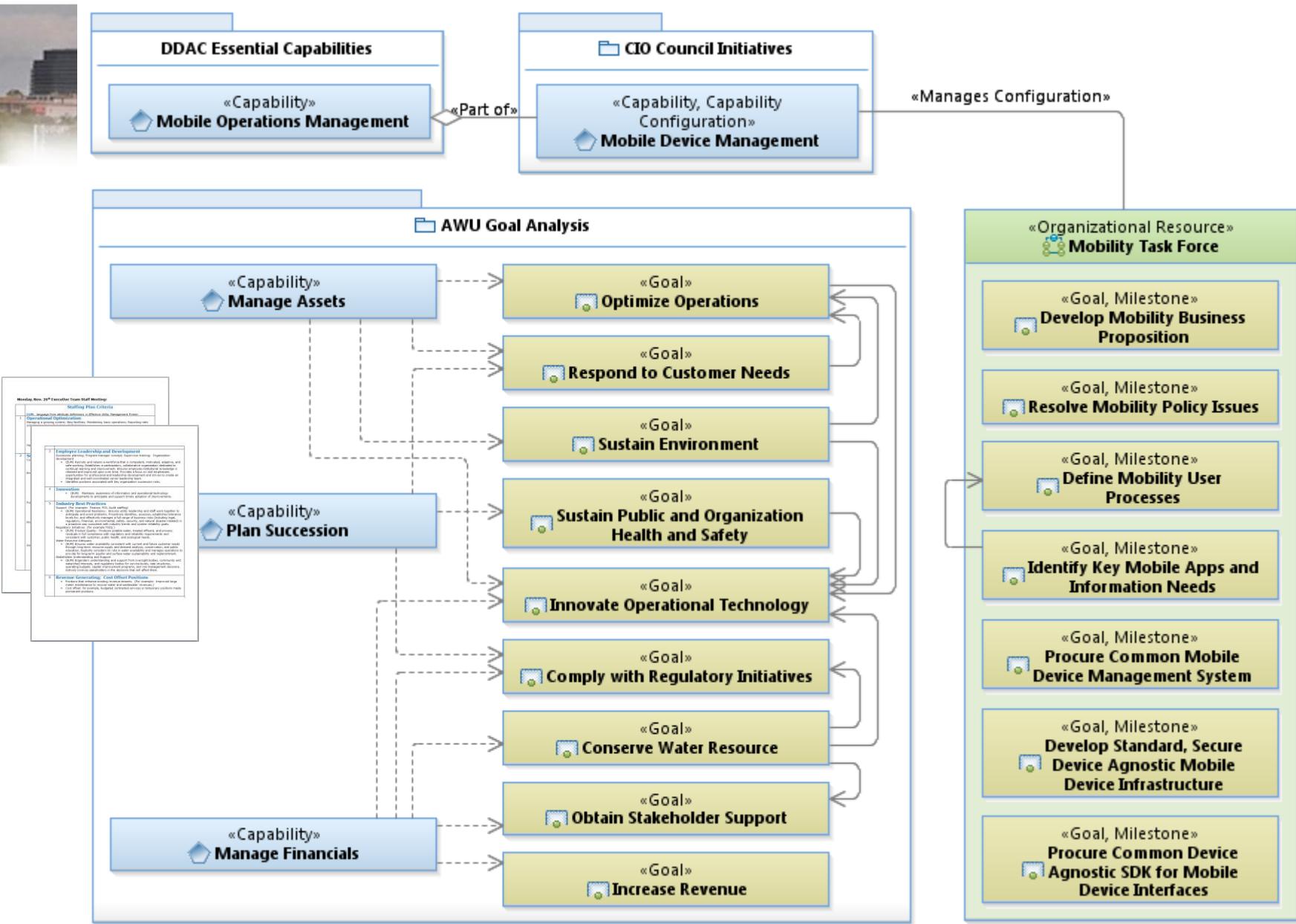
Identifying Common Opportunities



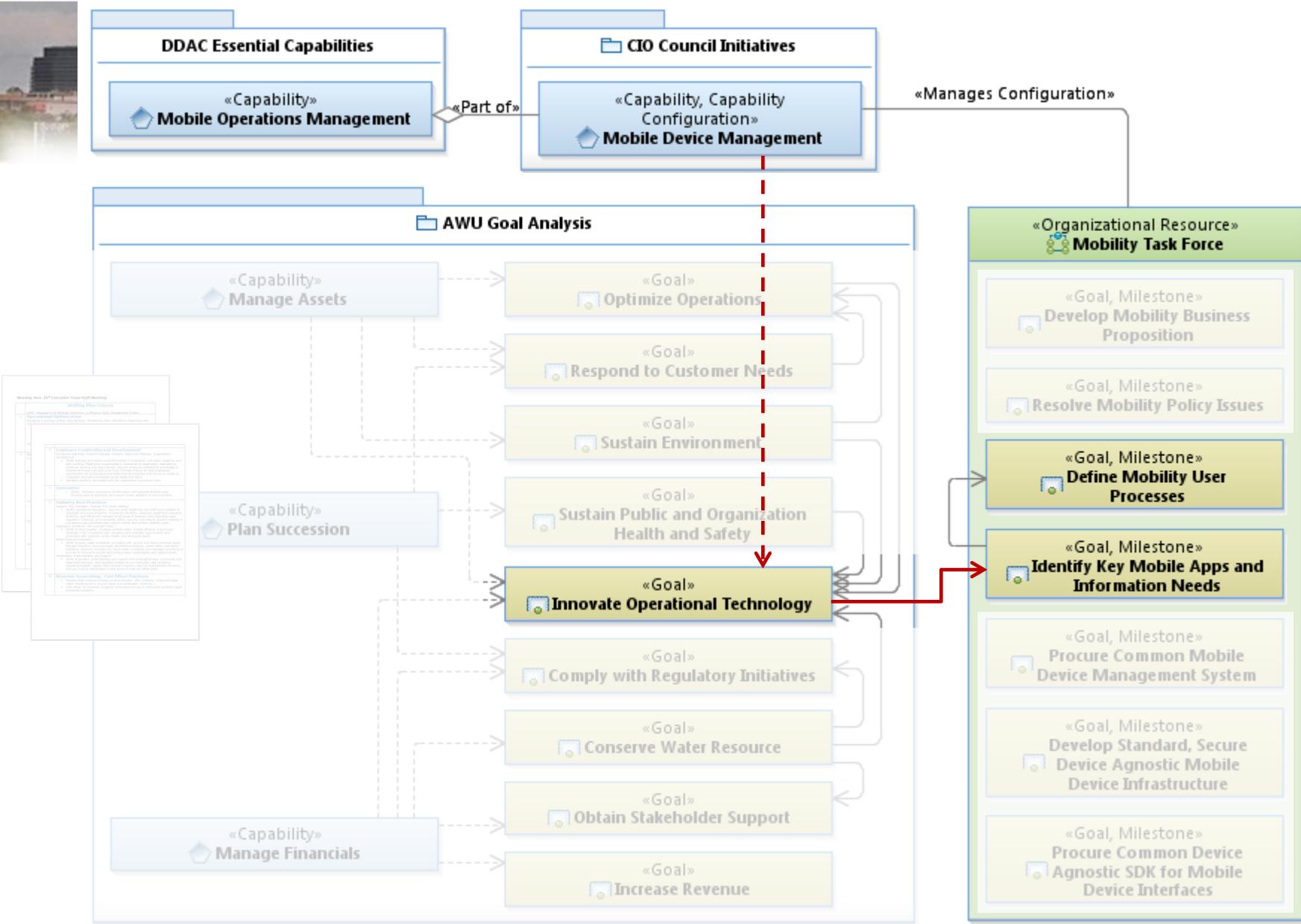
Connecting Business Needs to IT Solutions



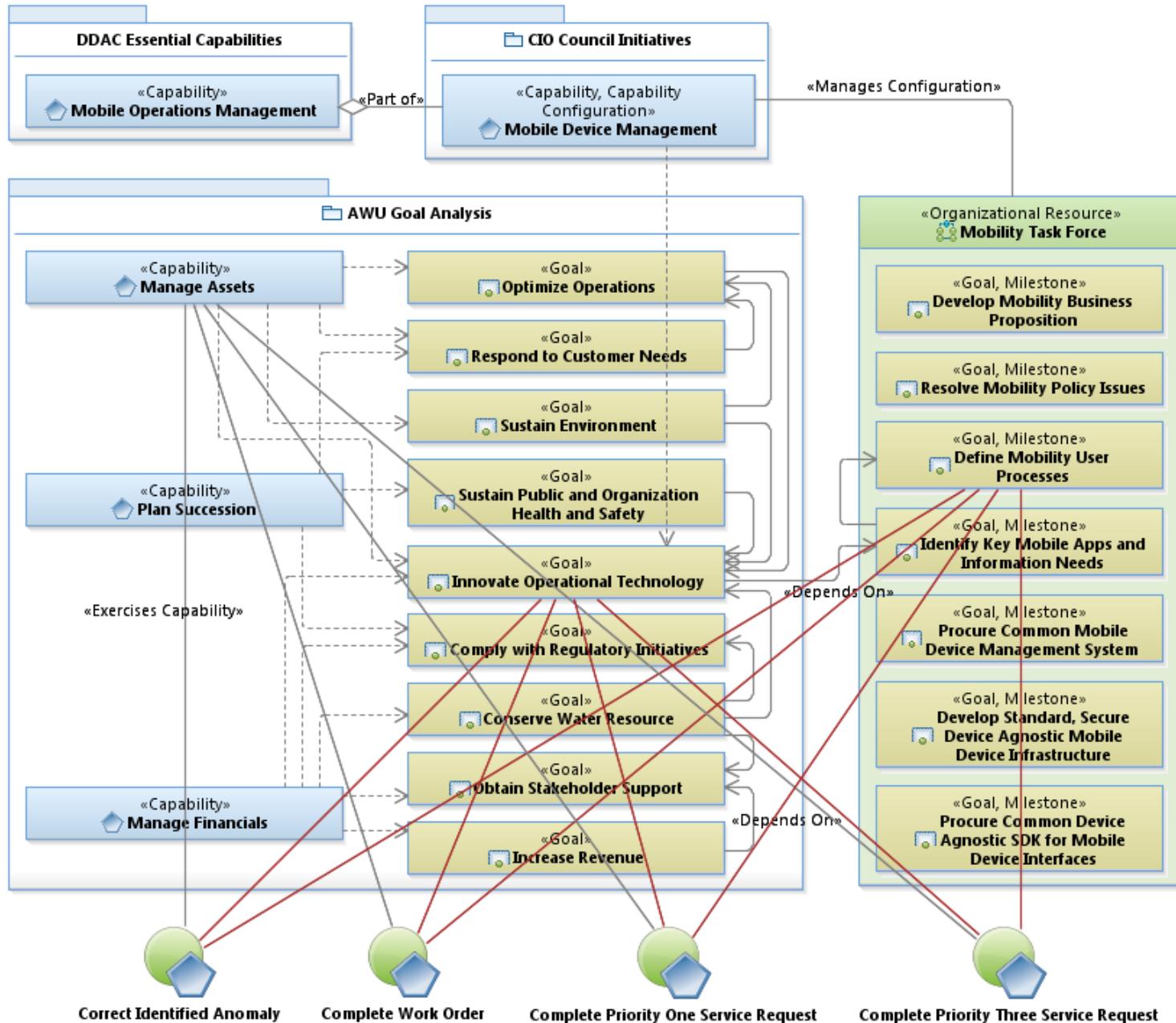
Connecting Business with IT Solutions



Connecting Business with IT Solutions



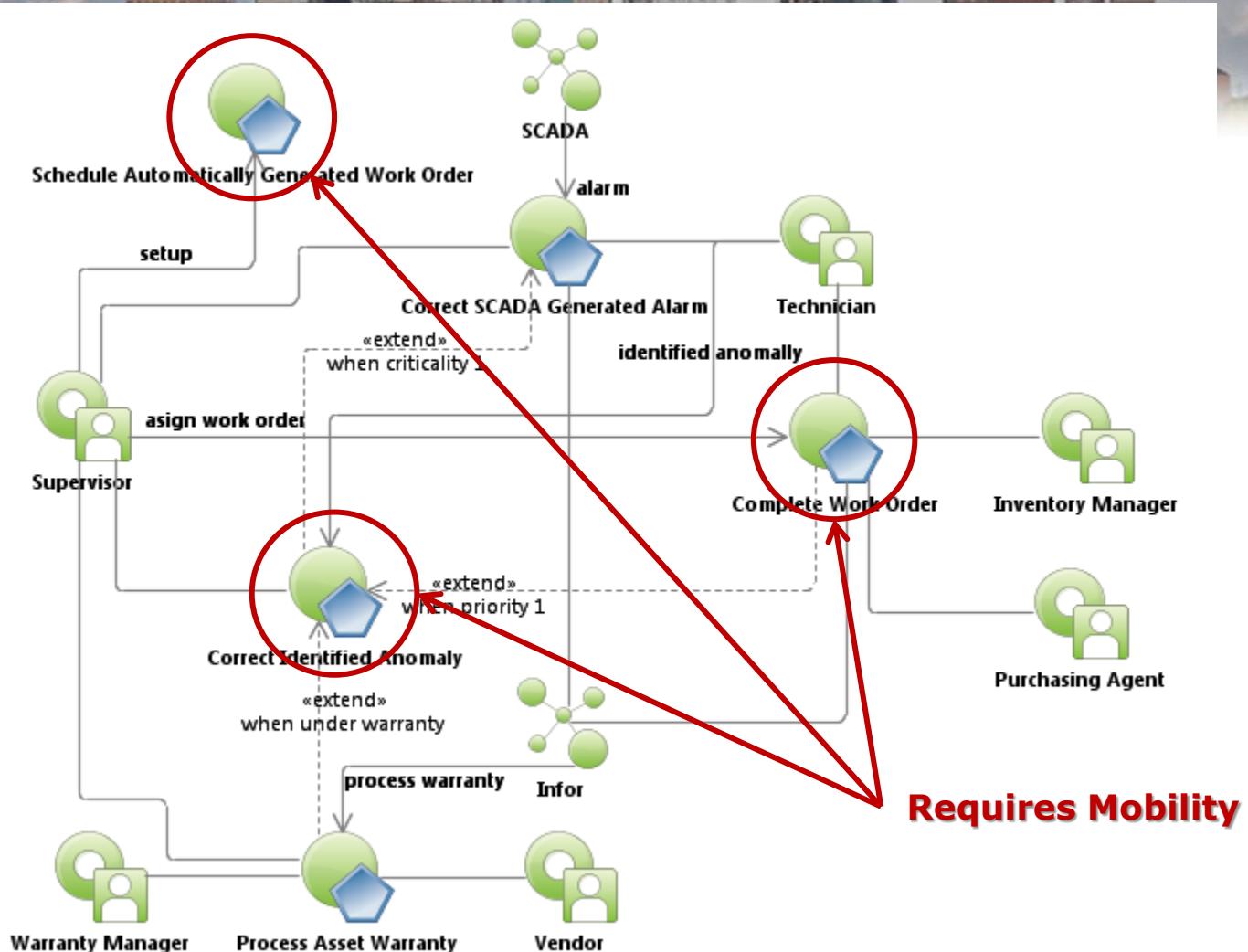
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AWU Architecture Principles

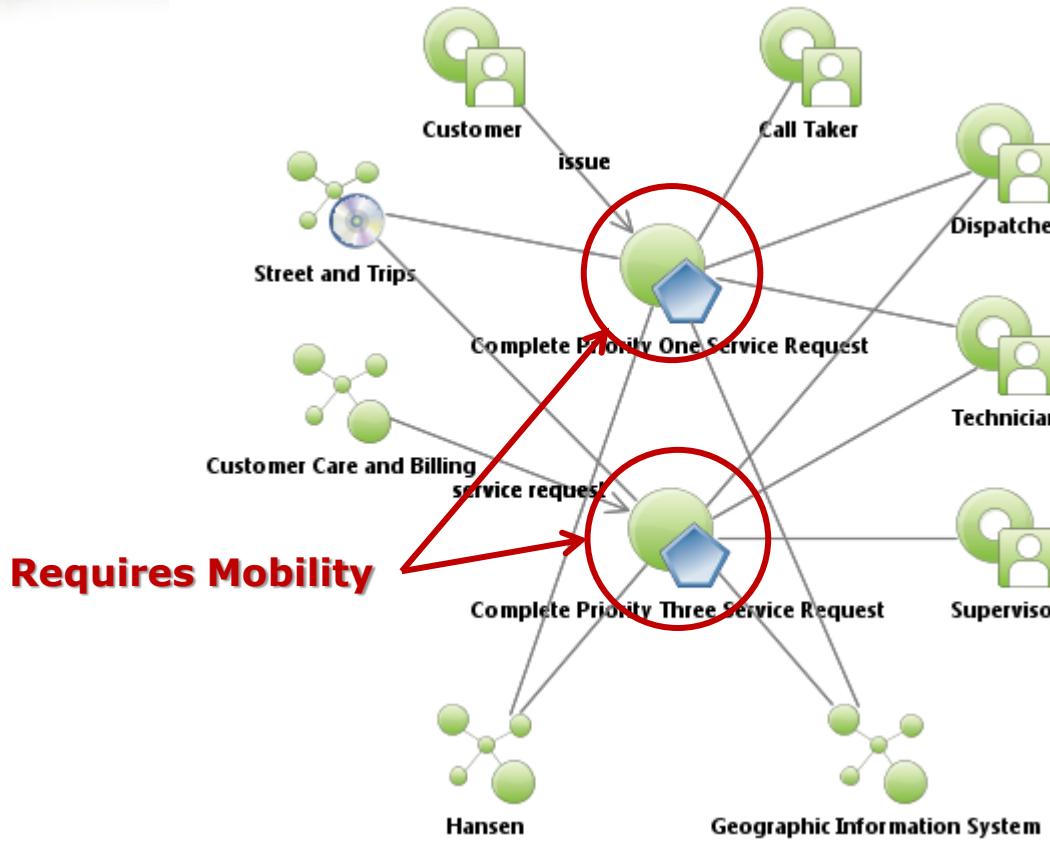
- **Use architecture to identify important interfaces to define mobile application and information needs**
- **Collaborate and vet architecture with stakeholders**
- **Define mobile application specifications for inclusion in statement of work**

Treatment Plant Work Order Use Case Relationships



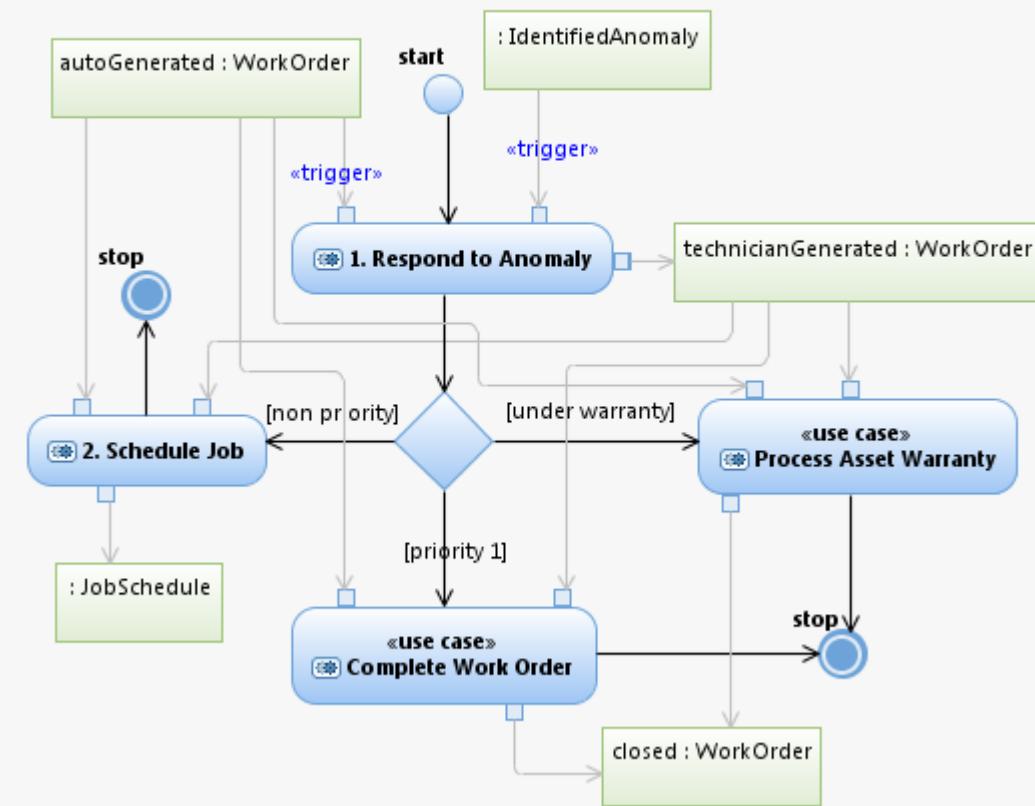
Requires Mobility

Water Distribution Field Service Request Use Case Relationships



Correct Identified Anomaly

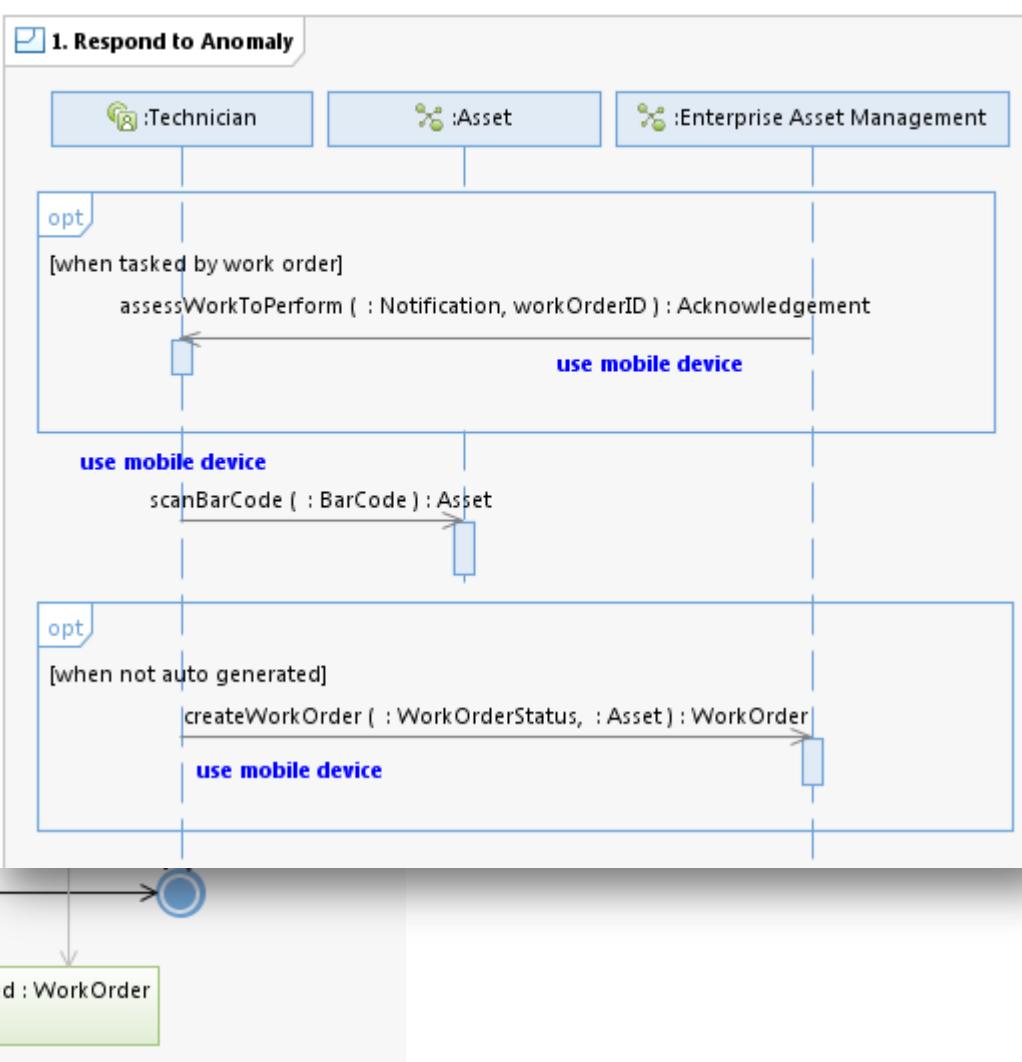
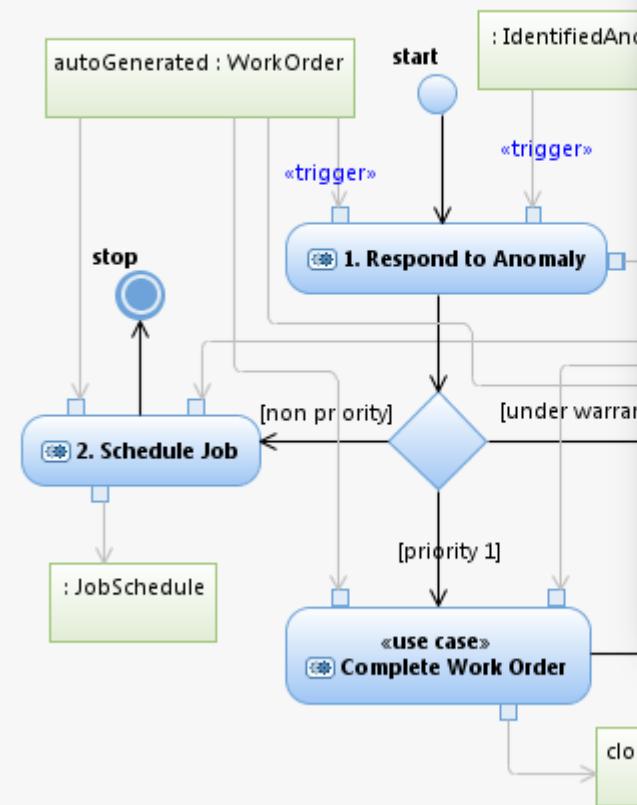
Correct Identified Anomaly



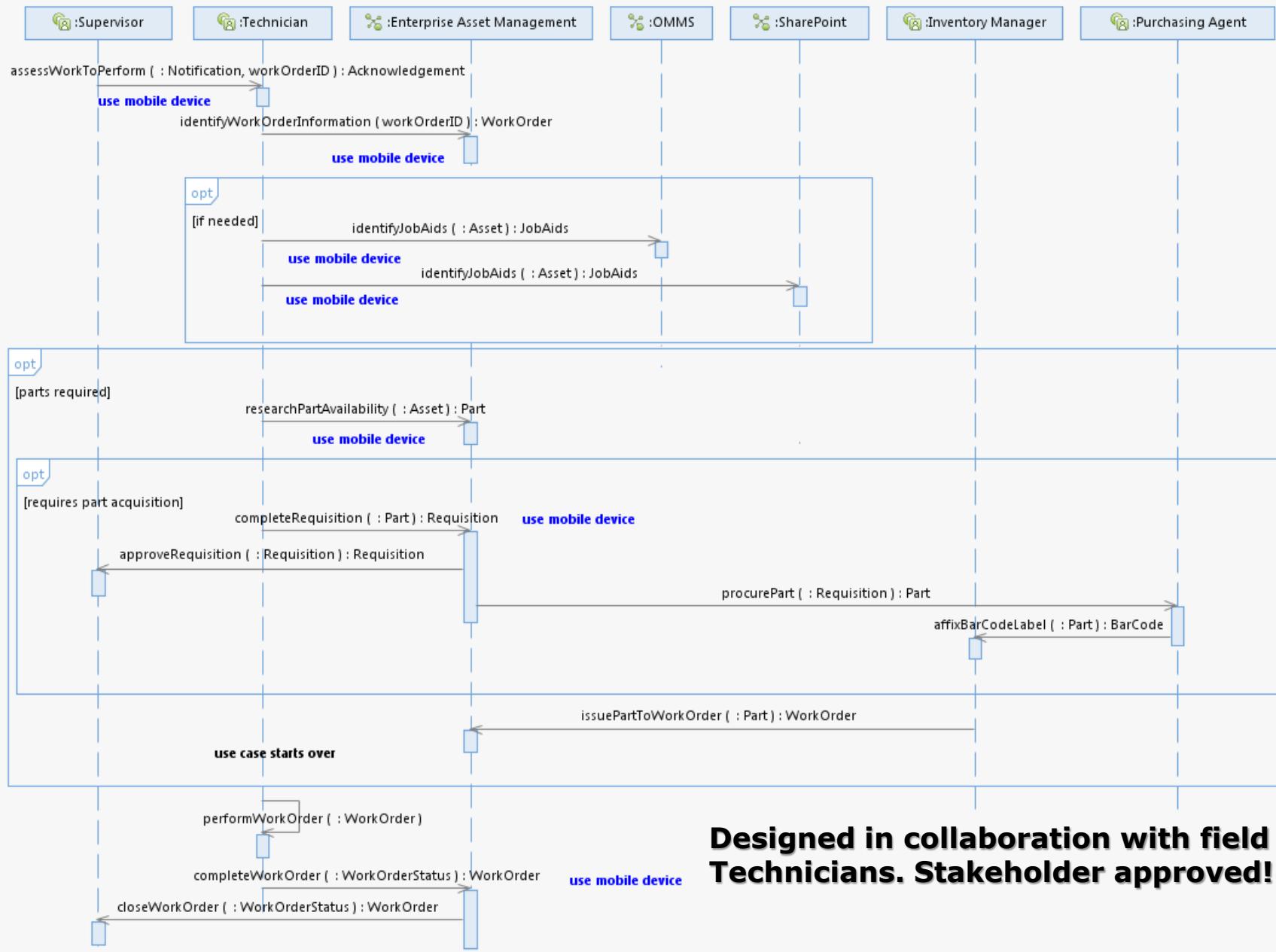
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Correct Identified Anomaly

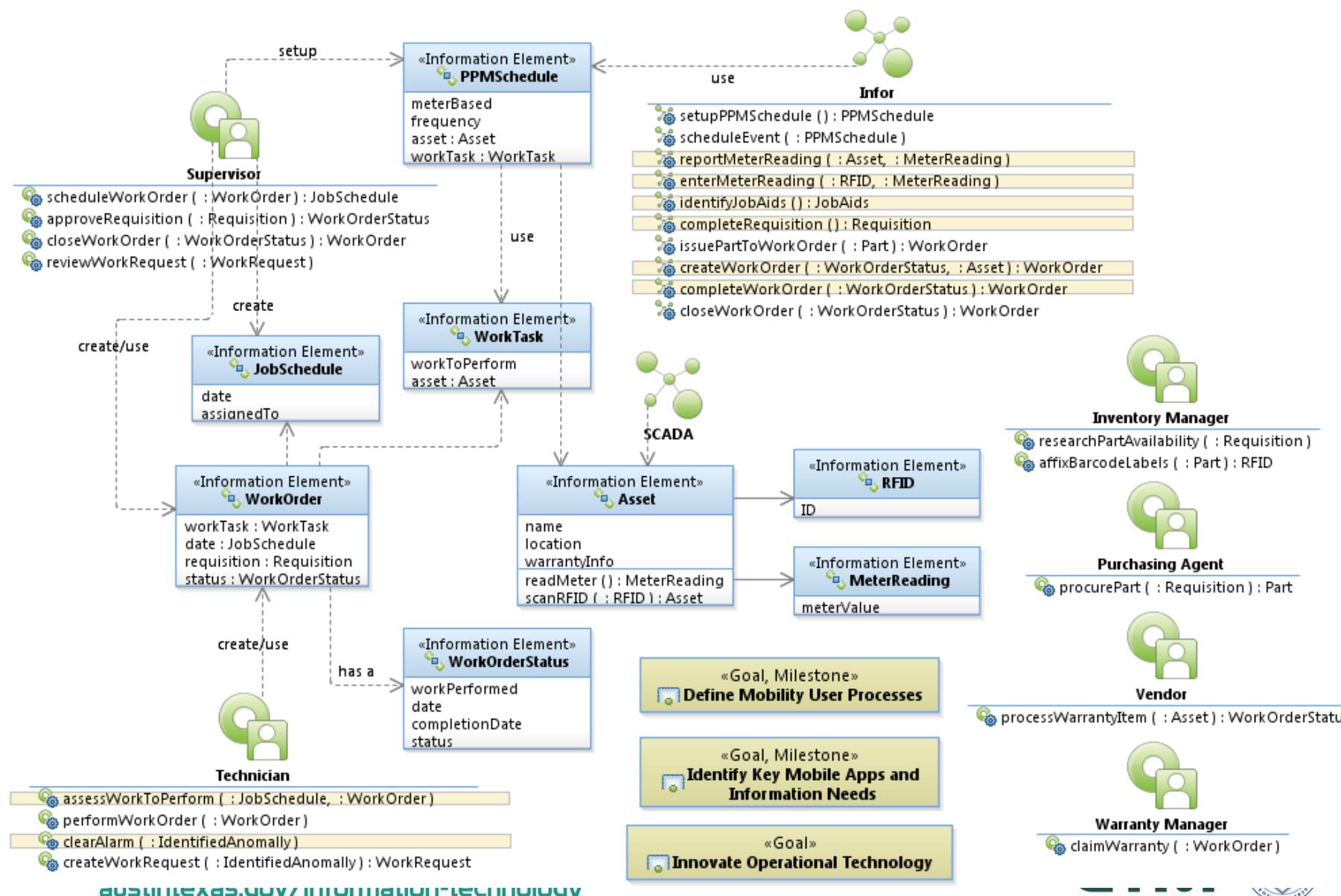


Complete Work Order

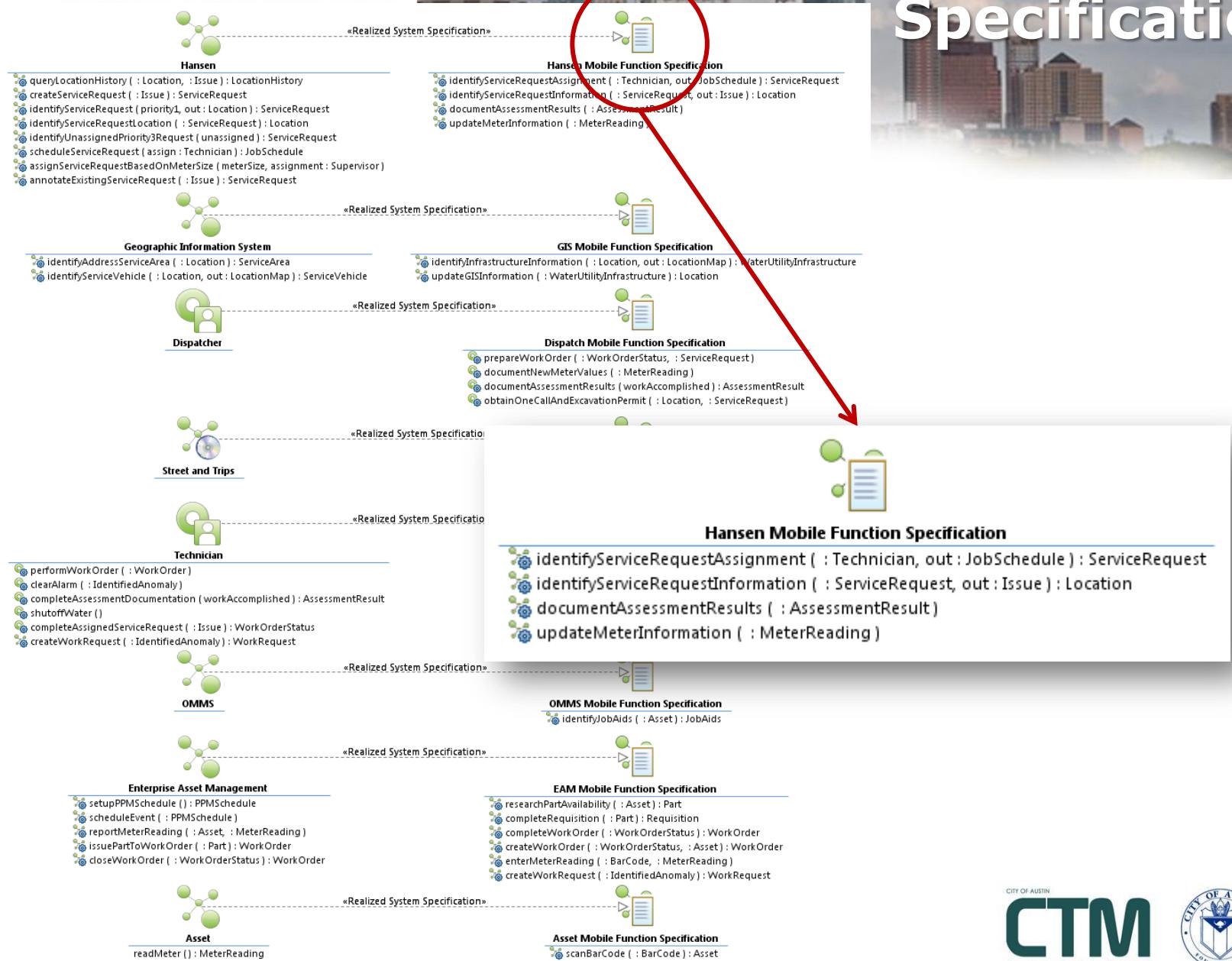


**Designed in collaboration with field
Technicians. Stakeholder approved!**

Work Order Logical Data Model



Mobile Function Specification



Interface Specification

Austin Water Utility Mobility Interface Description

Type	Function	Description
Hansen Mobility Function Specification	identifyServiceRequestAssignment	The field Technician shall be able to identify Service Request assignment based on a current Job Schedule.
Hansen Mobility Function Specification	identifyServiceRequestInformation	The field Technician shall be able to identify the Issue and Location of any given Service Request along with other pertinent information. The Service Request information shall be retrieved from the Service Request Job Schedule providing a link to the Service Request information on Hansen. The Location object shall provide a link to the Navigational Route application.
Hansen Mobility Function Specification	documentAssessmentResults	On completion of a Service Request, the Technician shall be able to document work accomplished, hours expended, parts used, etc. and close Service Request if applicable.
Hansen Mobility Function Specification	updateMeterInformation	When a new meter is installed, the Technician shall be able to enter the new meter values into Hansen.
GIS Mobile Function Specification	identifyInfrastructureInformation	The field Technician shall be able to identify Water Utility Infrastructure information identified by Geographic Information System on a Location Map linked from a particular Location object/attribute from the Service Request.
GIS Mobile Function Specification	updateGISInformation	The field Technician shall be able to input updated GIS Information regarding Water Utility Infrastructure to correct incorrect location information or other relevant and modifiable GIS attributes.

Develop Statement of Work

AWU Mobile Function Specification

Date: 05/20/2013

1.0 Mobile Specification Realization

Working closely with the water utility field Technicians, Austin Water Utility (AWU) identified interfaces relevant to the pilot scope. The blue box "mobile device" targeted elements are the only application functions in scope for this pilot. These elements are diagrammed throughout this appendix to identify the system interface mobile function specification and are further defined in the Pilot Use Case Scope and the table Austin Water Utility Mobility Interface Description at the end of the appendix. Mobile platform includes any mobile device such as laptop, smart phone, pad device, etc. Mobile device ruggedness depends on cost and other operating environment considerations. Where appropriate, an enterprise service bus (ESB) solution shall be proposed to interface with relevant water utility applications such as Hansen, Infor and Geographical Information System (GIS), etc. Currently, the City of Austin uses an IBM WebSphere ESB; however, we're exploring other ESB alternatives.

The following descriptions, diagrams, and tables identify the relevant interfaces in scope of the AWU Mobility Pilot. They are identified in two categories: Water Treatment Plant and Water Distribution. Water Treatment Plant mobile pilot primarily involve Work Order management and mobile application interfaces with AWU's enterprise asset management (EAM) system (Infor) and operations maintenance and management system (OMMS). Water Distribution primarily involves Service Request processing using AWU's asset management system Hansen. The following paragraphs define the interface requirements in more detail.

1.1 Water Treatment Plant

During the process of performing routine monitoring of treatment plant assets, the field Technician scans barcodes of various assets and enters their meter values into the system. In the process of correcting an identified water utility system anomaly, there are three processes important to Water Treatment Plant mobile pilot. They include Create Work Order, Respond to Anomaly and Complete Work Order. The sequence diagrams identify the mobile interfaces required. The Interface Realization diagram provides a summary of the required mobile interfaces for this pilot and described in the table Austin Water Utility Mobility Interface Description. Their corresponding operational context can be found on the sequence diagram.

1.2 Water Distribution

There are two processes for Water Distribution mobile pilot. One is based on Service Request priority and contains Service Request and Complete Priority 3 Service Request mobile interfaces in operational context. Summary of the pilot required mobile interfaces.

2.0 Pilot Use Case Scope

*Note: See associated use case sequence diagram
2.1 Schedule Automatically Generated Work Order
 During routine scheduled asset assessment, a file Barcodes affixed to the Asset to retrieve Asset in links to job aids, service schedules, open Work Order. This provides the Technician the ability to select an open algorithm to automatically notify the Supervisor scheduling.

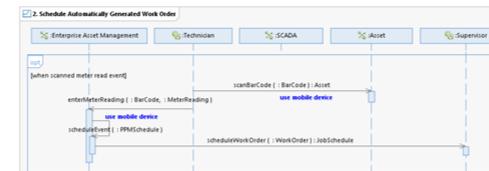
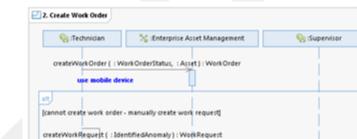


Figure 1: Schedule Automatically Generated Work Order

2.2 Create Work Order

When the Technician identifies a water utility system anomaly, the Technician creates a Work Order relevant to the Asset. Currently, when the Technician is unable to create a Work Order, a Work Request is generated manually and sent to the Supervisor to create the Work Order using the Enterprise Asset Management (EAM) system (Infor). For mobility, the Technician requires a mobile device to create a Work Request on the EAM.



2.3 Respond to Anomaly

When there's a high priority response required, the Enterprise Asset Management (EAM) system notifies the Technician on a mobile device. When the Technician identifies an anomaly, the Technician uses a mobile device to create a Work Order.

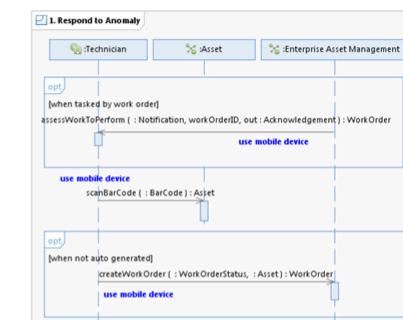


Figure 3: Respond to Anomaly

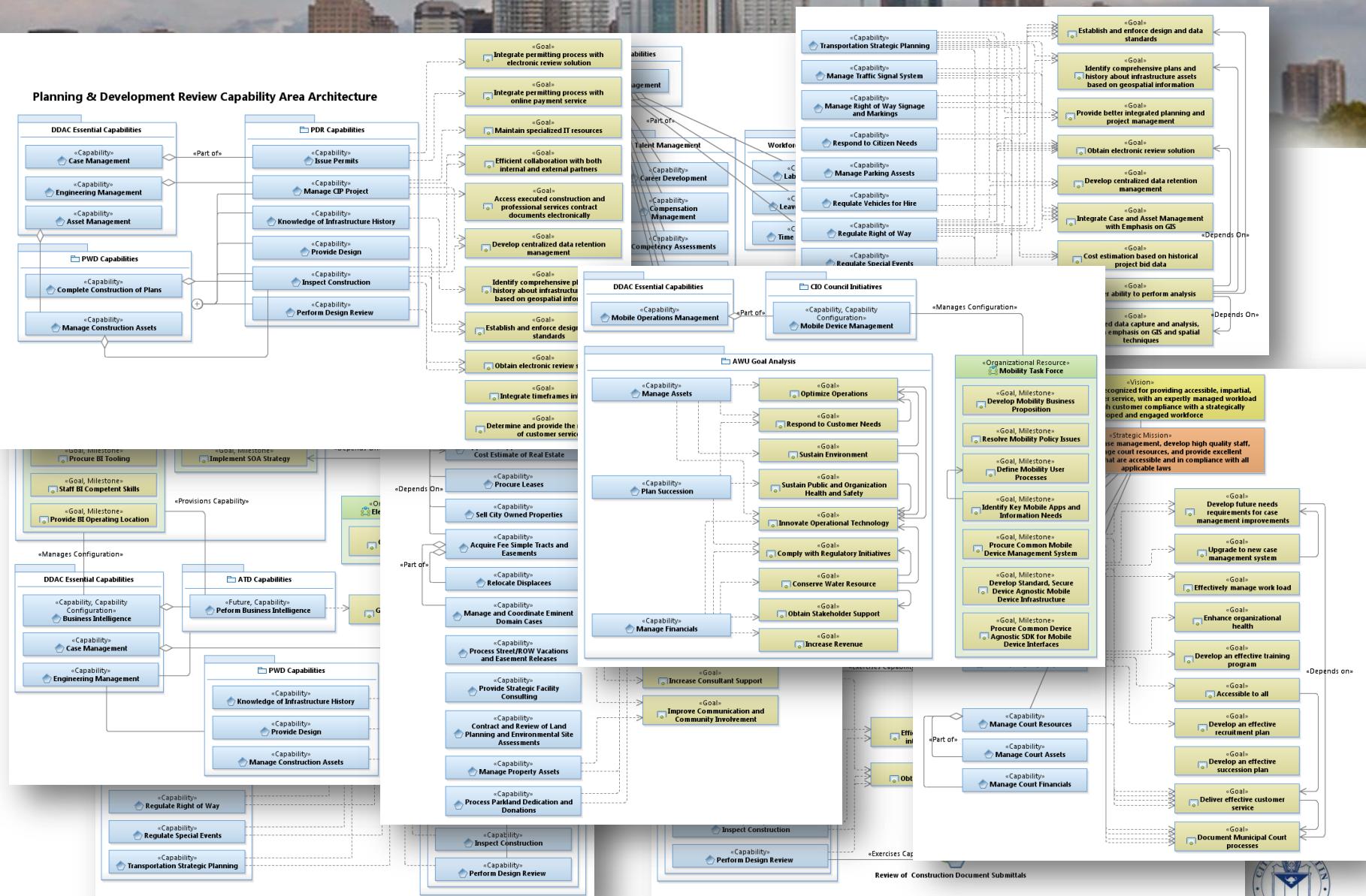
2.4 Complete Work Order

; the Technician may identify any relevant job position. On completion, the Technician updates

“This is the best written SOW that we have ever seen.” Esri

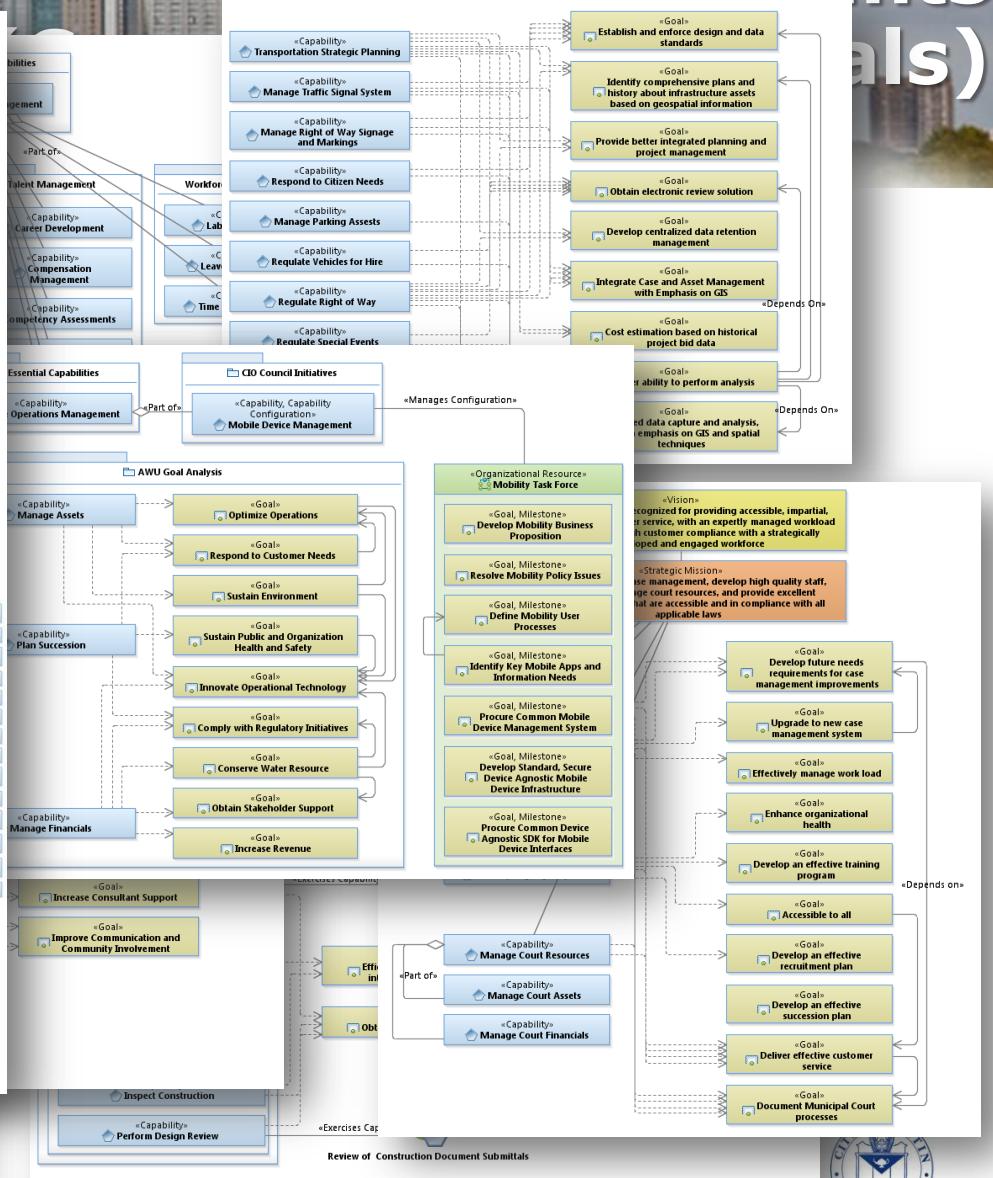
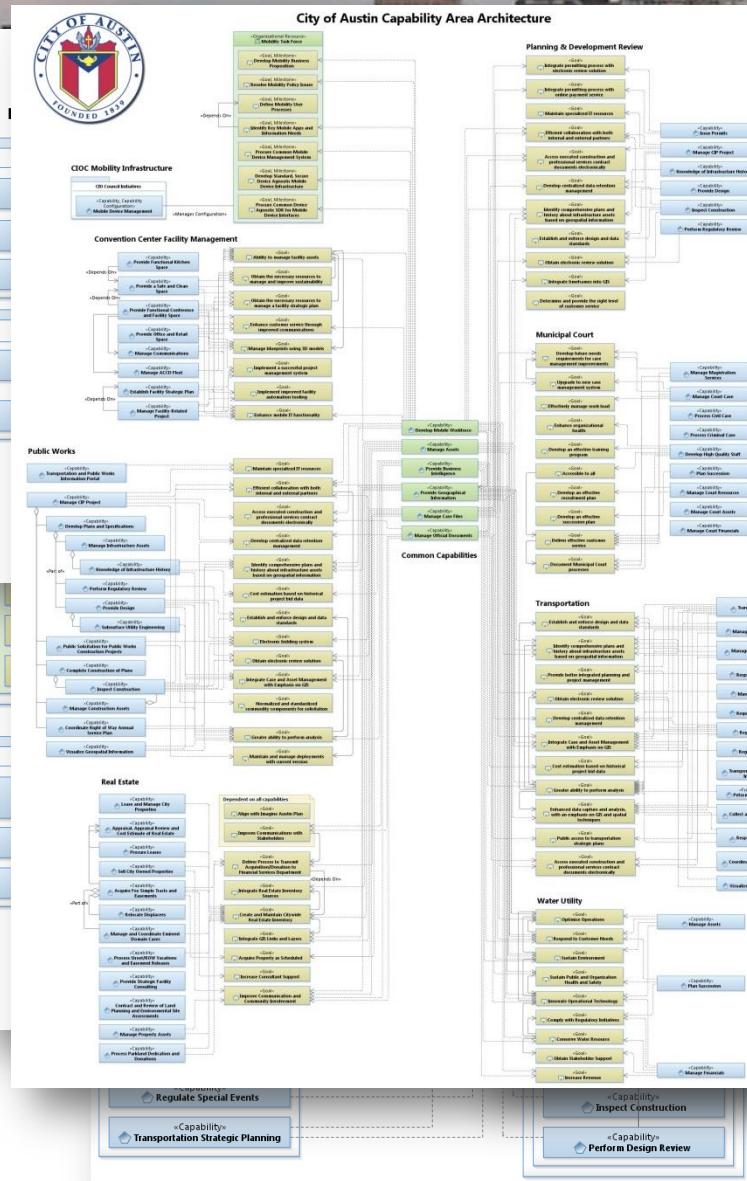
- **Identifies clearly understood scope - provides means to scope level of effort and ensured pilot includes relevant technologies**
- **Reduces contractor risk resulting in reduced cost**
- **Yields additional cost savings because contractor did not perform the business analysis**
- **Needs identified by user community – increased buy in**

Business Strategic Viewpoints



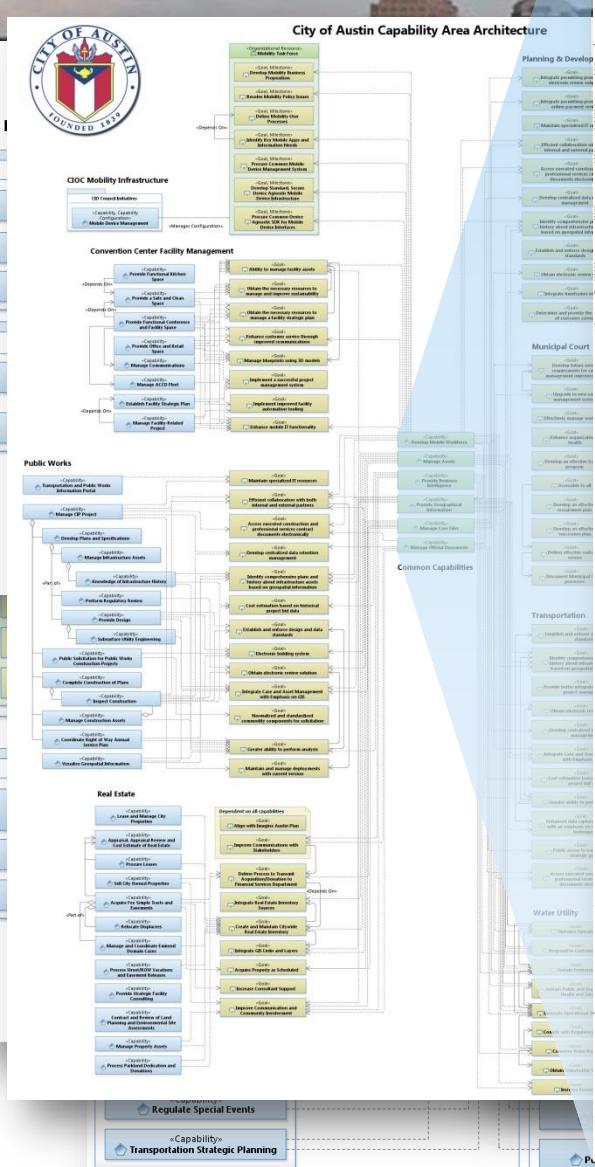
Business Strategic Viewpoints

(Goals)



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Strategic Objectives (Goals)

«Capability»
Develop Mobile Workforce

«Capability»
Manage Assets

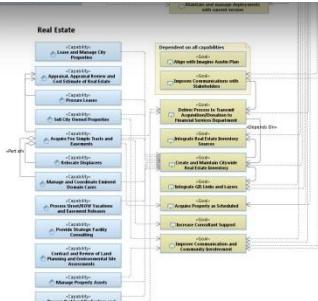
«Capability»
Provide Business Intelligence

«Capability»
Provide Geographical Information

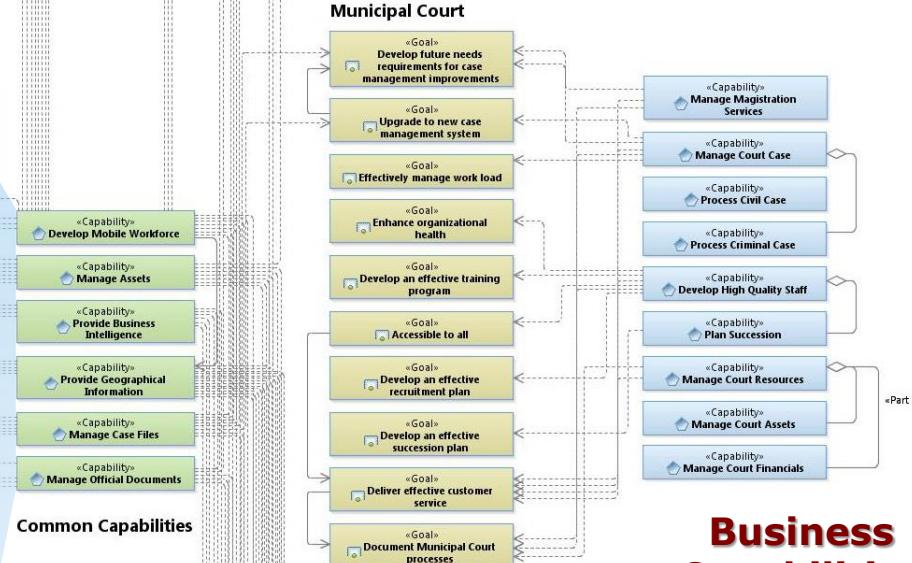
«Capability»
Manage Case Files

«Capability»
Manage Official Documents

Common Capabilities IT Services...

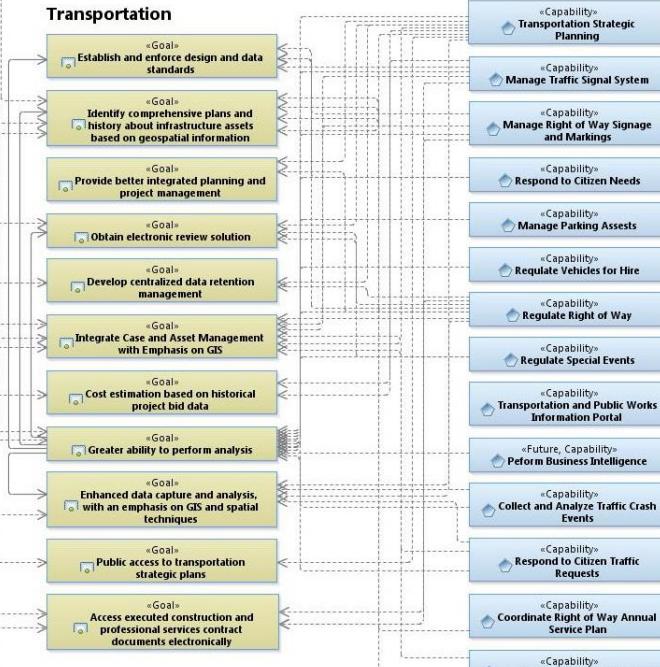


Common Capabilities

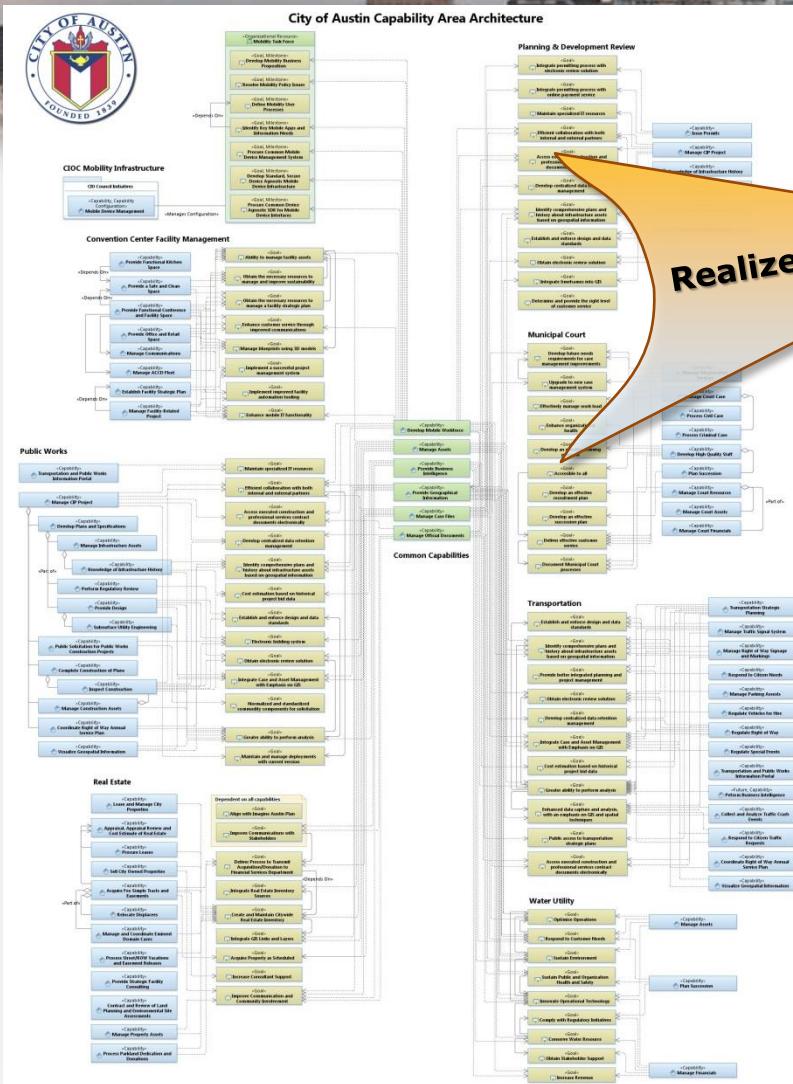


Business Goals

Transportation



Goal Realization – EA Sequencing Plan



Realize the Goals

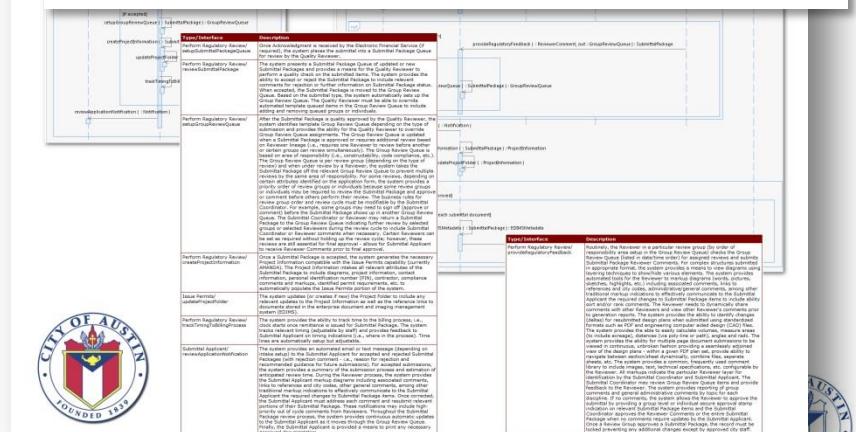
Perform Regulatory Review

Use Case Scope: The Submitter Applicant inputs information and documents representing a Submittal Package and processes a Remittance with the city approved Electric Financial Services. A Quality Reviewer is required to review the Submittal Package is reviewed by a Quality Reviewer for acceptance or rejection for non-compliance and subsequent resubmission. Accepted Submittal Packages are added to a Group Review Queue managed by a Submittal Applicant. The system provides a means to manage the Group Review Queue and provides feedback to the Submittal Applicant based on Reviewer comments until Submittal Package approval.

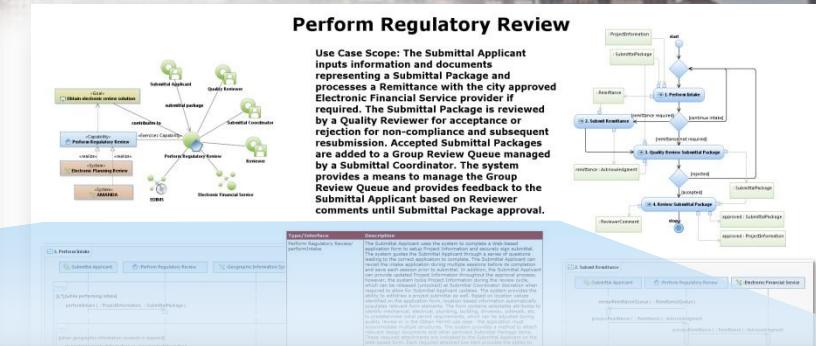
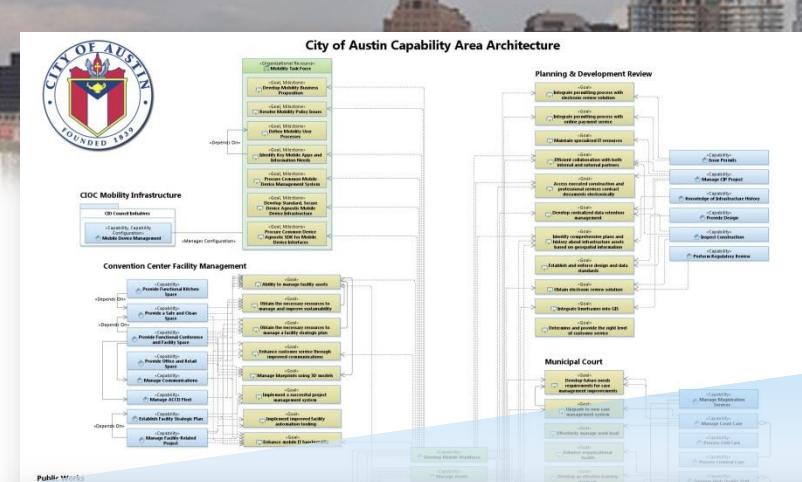


EA Sequencing Plan

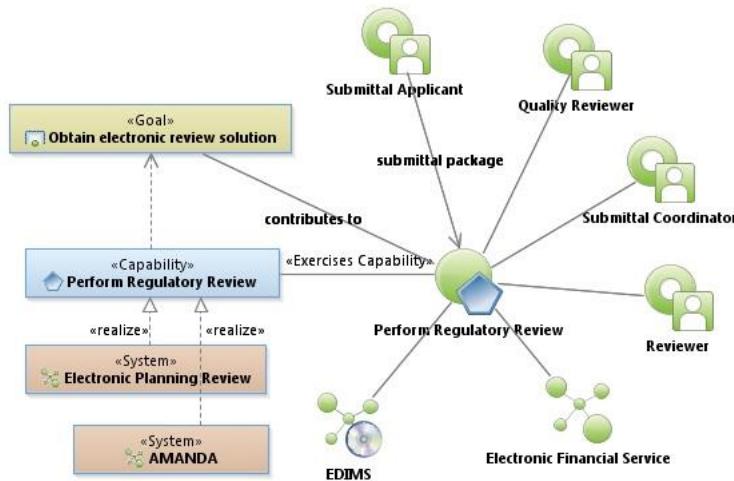
- Integrates the business need
- Defines the customer experience
- Capture the business rules
- Provides 'contract' with the stakeholder



EA Sequencing Plan



Common Capability - Common Goal
Develop scope...

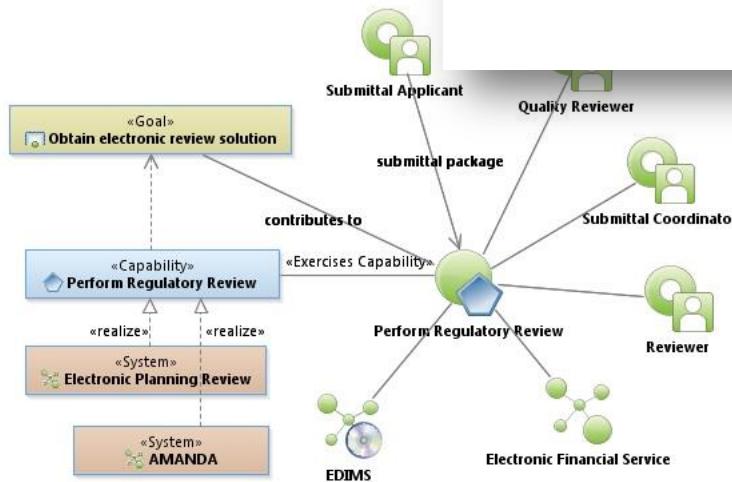


Perform Regulatory Review

Use Case Scope: The Submittal Applicant inputs information and documents representing a Submittal Package and processes a Remittance with the city approved Electronic Financial Service provider if required. The Submittal Package is reviewed by a Quality Reviewer for acceptance or rejection for non-compliance and subsequent resubmission. Accepted Submittal Packages are added to a Group Review Queue managed by a Submittal Coordinator. The system provides a means to manage the Group Review Queue and provides feedback to the Submittal Applicant based on Reviewer comments until Submittal Package approval.

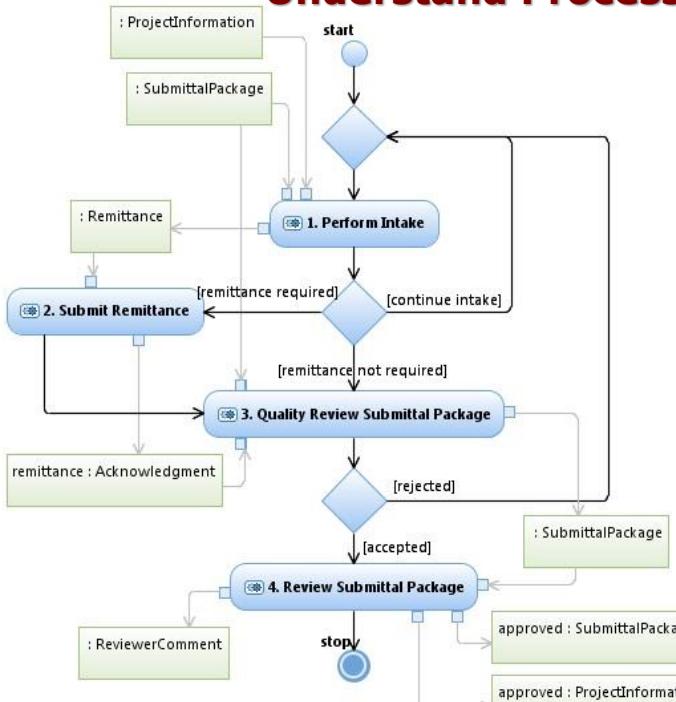


Common Capability Develop scope...



FA Sequencing Plan

Understand Process...



Regulatory Review

The Submittal Applicant initiates a Submittal Package and Remittance with the city approved Electronic Financial Service provider if required. The Submittal Package is reviewed by a Quality Reviewer for acceptance or rejection for non-compliance and subsequent resubmission. Accepted Submittal Packages are added to a Group Review Queue managed by a Submittal Coordinator. The system provides a means to manage the Group Review Queue and provides feedback to the Submittal Applicant based on Reviewer comments until Submittal Package approval.

Regulatory Review

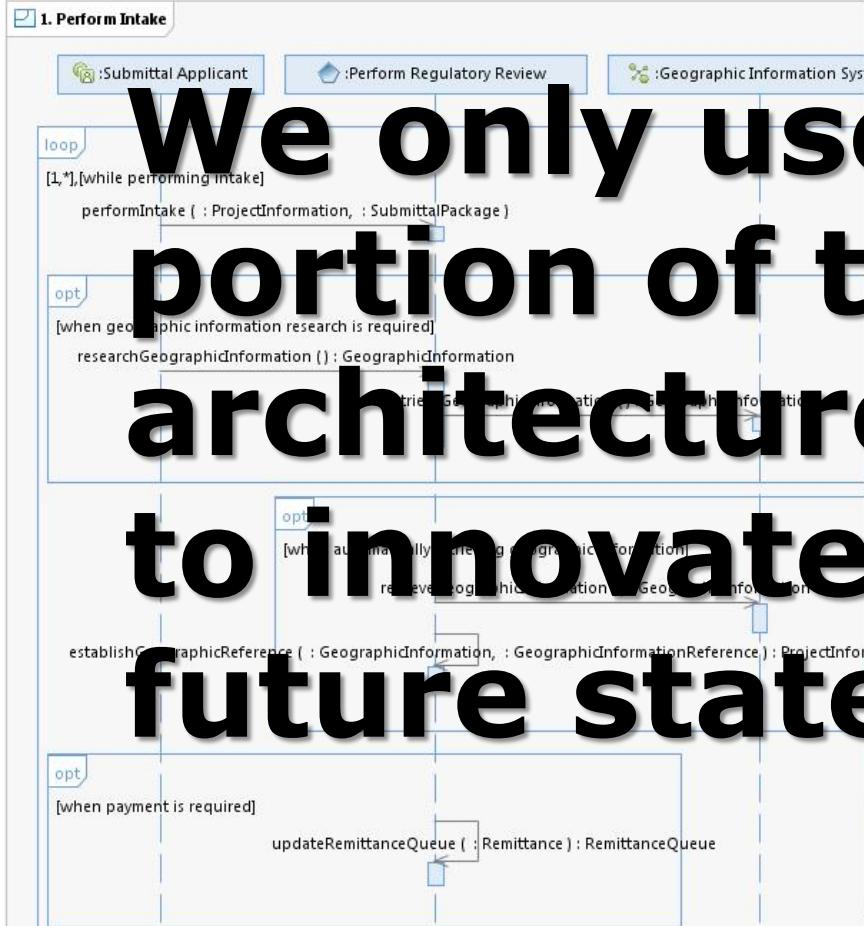
The Submittal Applicant and documents

Submit a Submittal Package and

The Submittal Applicant and documents processes a Remittance with the city approved Electronic Financial Service provider if required. The Submittal Package is reviewed by a Quality Reviewer for acceptance or rejection for non-compliance and subsequent resubmission. Accepted Submittal Packages are added to a Group Review Queue managed by a Submittal Coordinator. The system provides a means to manage the Group Review Queue and provides feedback to the Submittal Applicant based on Reviewer comments until Submittal Package approval.

Define the Customer Experience

Integrate Business Need...

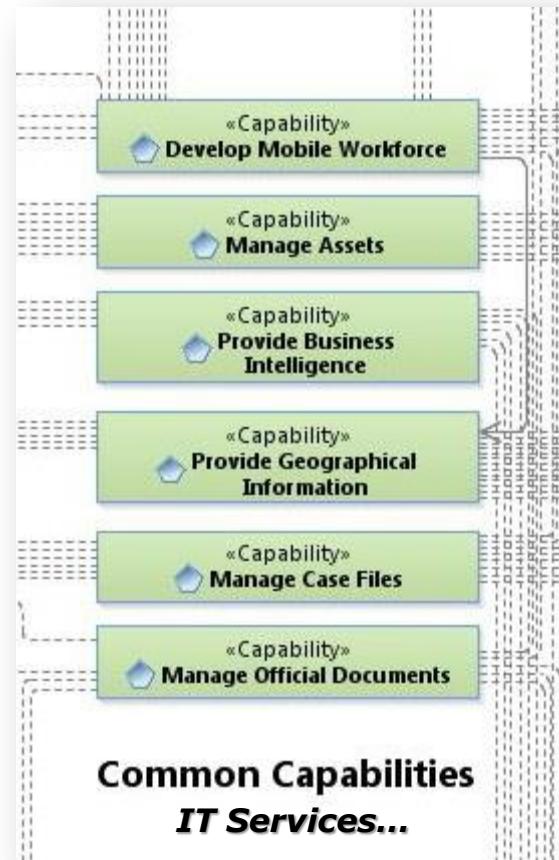


We only use the portion of the “as-is” architecture necessary to innovate to the future state!

Type/Interface	Description
Perform Regulatory Review/performIntake	The Submittal Applicant uses the system to complete a Web-based application form to setup Project Information and securely sign submittal. The system guides the Submittal Applicant through a series of questions leading to the correct application to complete. The Submittal Applicant can revisit the intake application during multiple sessions before its completion and save each session prior to submittal. In addition, the Submittal Applicant can provide updated Project Information throughout the approval process; however, the system locks Project Information during the review cycle, which can be released (unlocked) at Submittal Coordinator discretion when required to allow for Submittal Applicant updates. The system provides the ability to withdraw a project submittal as well. Based on location values identified on the application form, location-based information automatically populates relevant form elements. The form contains selectable attributes to identify mechanical, electrical, plumbing, building, driveway, sidewalk, etc. to determine initial permit requirements, which can be adjusted during plan review or in the build Permit use case - the application must accommodate multiple structures. The system provides a method to attach required documents to other pertinent Submittal Package items. These required attachments are indicated to the Submittal Applicant on the Web-based form. Each required attached line item provides the ability to browse and upload the file and ensures all required attachments to include approved document format (such as PDF). The required items must be submitted and included in the Submittal Package items for any given submittal item in the downloadable approved checklist.
researchGeographicInformation	For certain intake items, the system uses city available Geographic Information System to retrieve and populate Project Information. Can be used to explore and/or research the Geographical Information System.
retrieveGeographicInformation	When geographic information is retrieved from the Geographic Information System, the system creates a Geographic Information Reference and stores it with the Project Information for future reference.
Perform Regulatory Review/establishGeographicReference	
Perform Regulatory Review/updateRemittanceQueue	

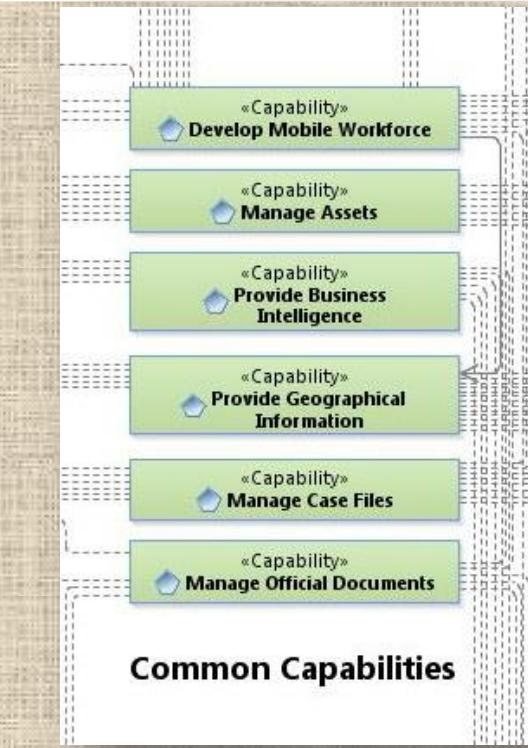
Develop Strategy

- **Examine IT service delivery to identify repurposing opportunities – train where needed**
- **Establish and enforce enterprise solutions**
- **Understand how business thinks to identify BI report needs**
- **Integrate IT capabilities**



- **Pursue opportunities from enterprise viewpoint**
- **Insist on vetted architecture prior project approval and funding**
- **Understand risk and include in decision-making**
- **Obtain leadership support!**

EA Derived IT Strategy

Vision	<ul style="list-style-type: none"> ➤ Recognized business partner ➤ One City IT 	Imagine Austin E A20 - Improve government efficiency through technology (software and hardware) investments and by developing and retaining information technology staff
Principles	<ul style="list-style-type: none"> • Demonstrate value as business partner • Employ Enterprise Architecture in governance • Integrate strategic plans • Maximize use of common information system 	<ul style="list-style-type: none"> • Identify enterprise shared service opportunities • Share common IT staff • Identify reusable technology assets • Provide business continuity
Common Capability	IT Imperatives	Future State
 <p>Common Capabilities</p>	<ul style="list-style-type: none"> ➤ Build an end-to-end service model using Enterprise Architecture processes to align IT services to business needs ➤ Align IT services with required competencies – repurpose staff to increase business solutions – train to fill gaps ➤ Increase technical staff for high-value enterprise tools such as Maximo and Amanda ➤ Move toward mobile solutions ➤ Share services, not just data, with partnering agencies ➤ Integrate GIS with mobile and enterprise applications ➤ Mature service-oriented architecture using enterprise service bus (ESB) ➤ Exploit extract, translate and load (ETL) tooling for data warehousing and business intelligence – remove impediments to information 	<ul style="list-style-type: none"> ✓ Empowered leadership and citizens ✓ Service-oriented provider ✓ Capable and competent staff ✓ Established systems of record ✓ Cross-department integration ✓ Policies, standards and practices ✓ Conduct business online ✓ Work anywhere online ✓ Open access to information



- **Analyze and redefine IT service delivery**
- **Establish IT service managers responsible for Common IT Capabilities delivery**
 - Clearly define IT service manager role and responsibilities aligned with Enterprise Architecture
 - Emphasize EA Sequencing Plan as business need
- **Increase EA Sequencing Plan delivery**
- **Include EA in governance decision-making**

Thank You!

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laptop or conference kiosk.**