



ITS Architecture Update Project Review Meeting

NOACA Meeting Room

November 12, 2009

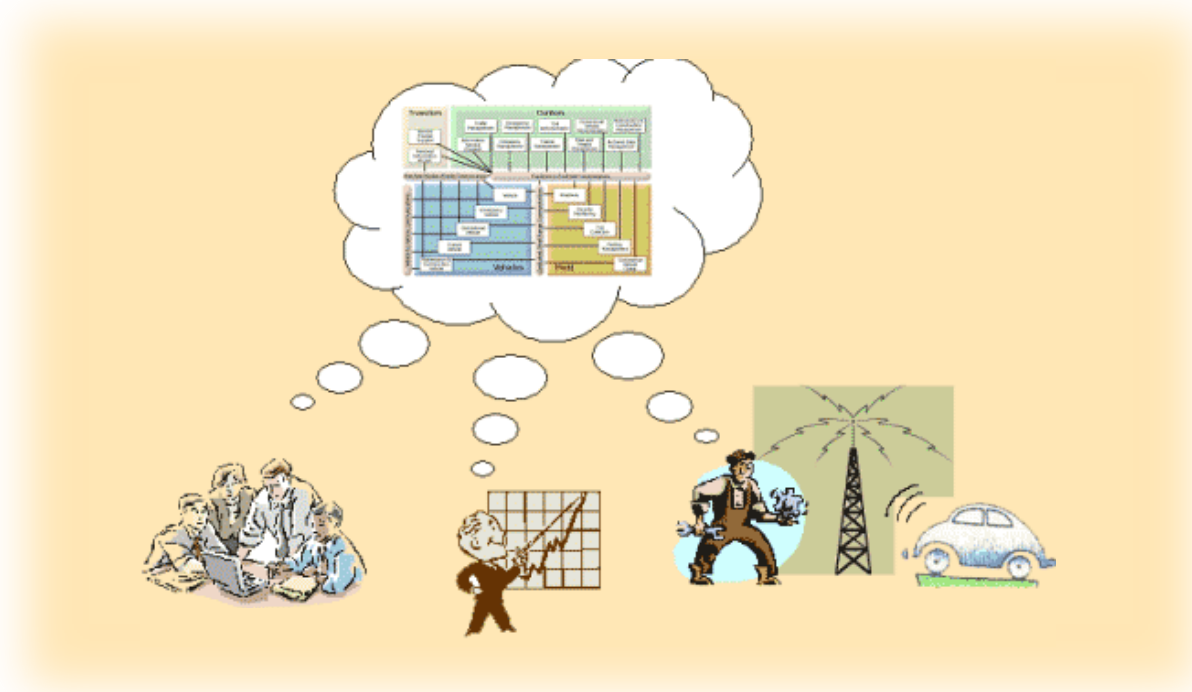


Agenda

- Welcome, Introductions & Overview
- Regional ITS Projects Discussion
- Operational Concept
- Website Overview
- Lunch Break
- Review & Update Customized Market Packages
- Use & Maintenance Summary
- Next Steps



Welcome, Introductions & Overview

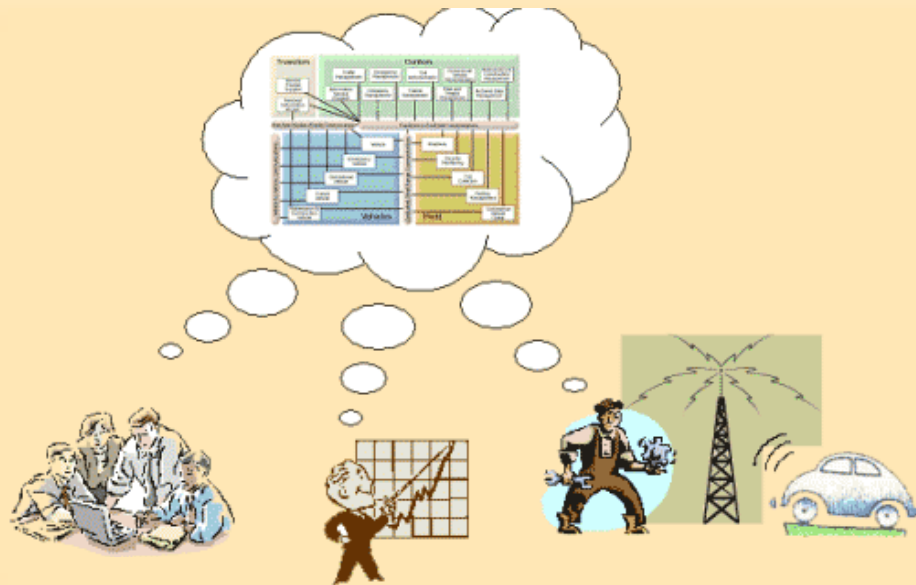


Project Overview Timeline

Task	August	September	October	November	December
Inventory Meetings					
Initial Architecture Update					
Workshop #1					
Market Packages					
Workshop #2					
Report					
Website					
Turbo					
Present to NOACA Board					



Regional ITS Projects Discussion



Needs Summary

- Prioritized needs based on Stakeholder input
 - High Priority
 - Improve work zone safety
 - Improve traffic safety
 - Improve traffic signal coordination to improve mobility
 - Improve real-time information about traffic, delay, road construction, and weather conditions
 - Identify alternate routes for emergency vehicles.
 - Improve emergency notification/dispatch and response times
 - Improve communications and informational sharing
 - Share archived data between agencies

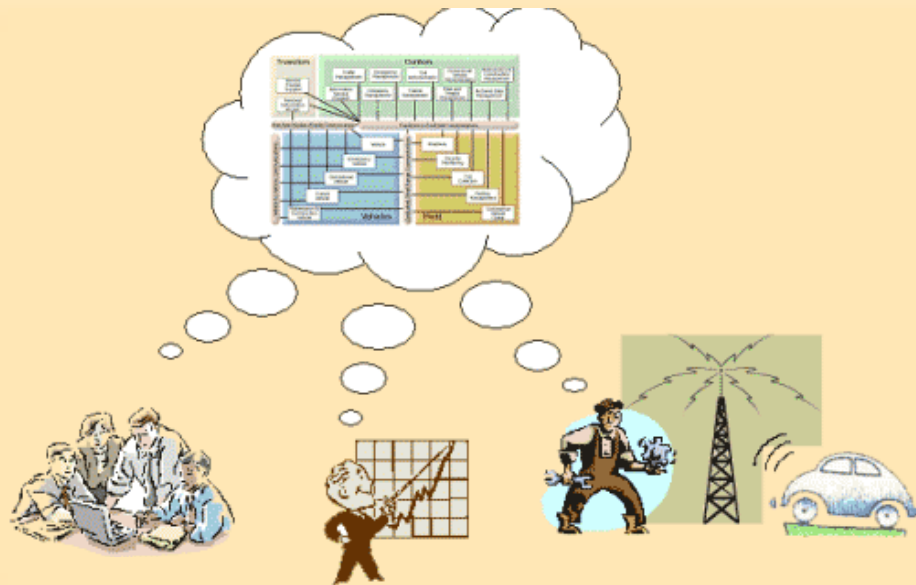


Projects List

- Include projects that will accommodate high priority needs
 - Work Zone Safety Improvements (ODOT)
 - Cleveland Freeway Management Systems (ODOT)
 - Signal System Upgrades (NOACA, municipalities)
 - GCRTA Surveillance Control (GCRTA)
 - 5-1-1 Information System (ODOT)



Review of Operational Concepts



Operational Concept

- Defines roles and responsibilities of stakeholders
- Organized by ITS Area
 - Traffic Signal Control
 - Highway Management
 - Incident Management
 - Emergency Management
 - Transit Management
 - Maintenance Management
 - Traveler Information
 - Archived Data



Operational Concept

NOACA Regional ITS Architecture - Mozilla Firefox

NOACA Regional ITS Architecture

NOACA

Cleveland Regional ITS Architecture

Operational Concept

An Operational Concept documents each stakeholder's current and future systems. The operational concept documents these roles and responsibilities.

Area

- [Archived Data Systems for Cleveland Regional Architecture](#)
- [Commercial Vehicle Operations for Cleveland Regional Architecture](#)
- [Electronic Toll Collection for Cleveland Regional Architecture](#)
- [Emergency Management for Cleveland Regional Architecture](#)
- [Freeway Management for Cleveland Regional Architecture](#)
- [Incident Management for Cleveland Regional Architecture](#)
- [Maintenance and Construction for Cleveland Regional Architecture](#)
- [Parking Management for Cleveland Regional Architecture](#)
- [Surface Street Management for Cleveland Regional Architecture](#)
- [Transit Services for Cleveland Regional Architecture](#)
- [Traveler Information for Cleveland Regional Architecture](#)

[Send Email Comments](#) 11/4/2009

Done

NOACA Regional ITS Architecture - Mozilla Firefox

NOACA Regional ITS Architecture

NOACA

Cleveland Regional ITS Architecture

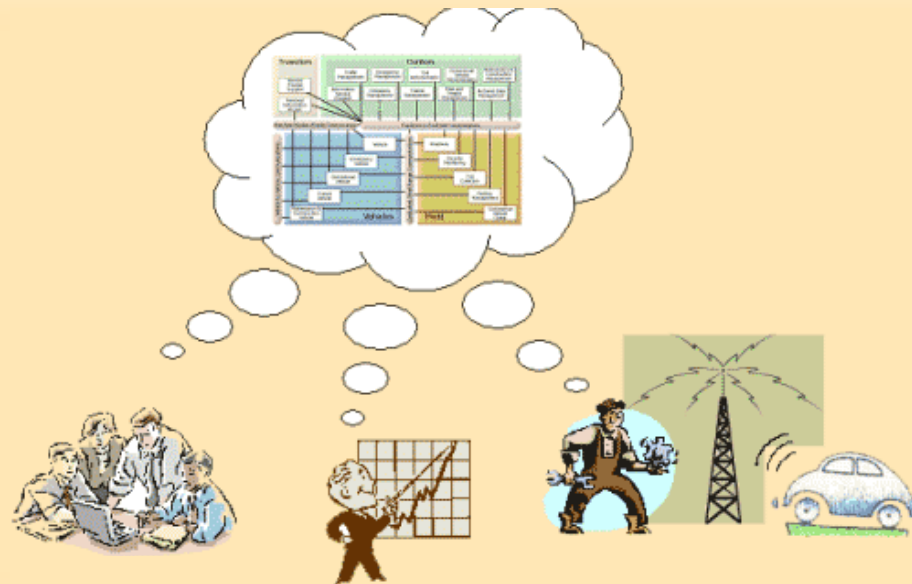
Maintenance and Construction for Cleveland Regional Architecture Roles and Responsibilities

Stakeholder	Role and Responsibility
City of Cleveland	Provide maintenance and construction information to ODOT maintenance and construction operations, regional maintenance and construction operations, and the traveling public through portable DMS devices.
	Perform maintenance for ITS field equipment owned by the agency.
	Distribute work zone information to local transit agencies, local emergency management agencies, private rail operations, the media, and multimodal service providers.
	Coordinate a maintenance or construction request from the local TOC.
	Manage work zones for all local maintenance and construction activities, and monitor work zone safety with local field devices and vehicles.
	Coordinate with other municipal and county maintenance and construction systems, as well as the ODOT maintenance and construction sections.
	Provide environmental data to private weather providers, regional traffic operations centers, regional emergency management agencies, regional transit agencies, and county and municipal maintenance sections.
	Receive automatic vehicle location (AVL) information from maintenance and construction vehicles.
	Maintenance vehicles provide automated maintenance status information to the local maintenance dispatch and equipment repair facility.
City of Cleveland Division of Traffic Engineering	Perform maintenance for ITS field equipment owned by the agency.
	Manage work zones for all local maintenance and construction activities, and monitor work zone safety with

Done

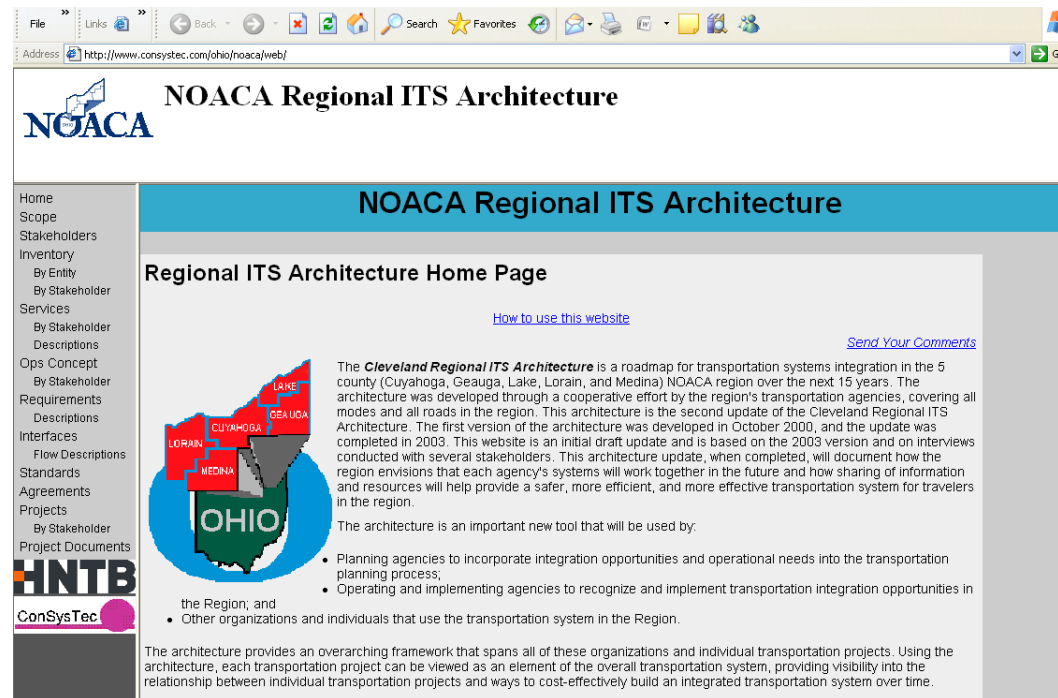
Website Overview

Review of Draft Architecture



NOACA Regional ITS Architecture

- Draft architecture details can be viewed at <http://www.consystec.com/ohio/noaca/web/>



Draft Architecture - Summary Statistics

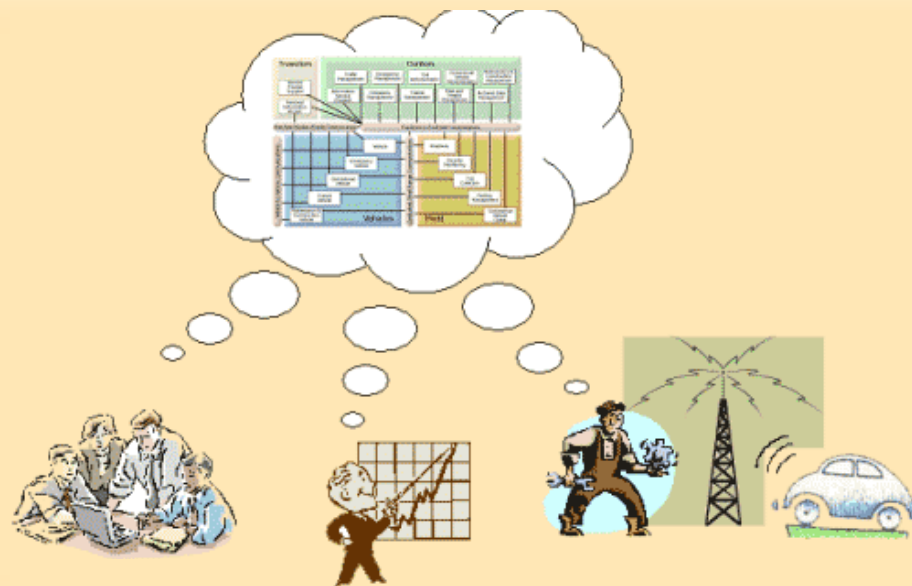
- 54 Stakeholders
 - NOACA, ODOT, GCRTA, City of Cleveland, etc.
- 157 Elements
 - ODOT CCTV, Buckeye Traffic, RTA Kiosks, etc.
- Services (Market Packages)/ Information Flows
 - 55 Market Packages
 - ATMS06: Traffic Information Dissemination
 - APTS04: Transit Fare Collection Management
 - 2798 Information flows connecting the elements to provide the services



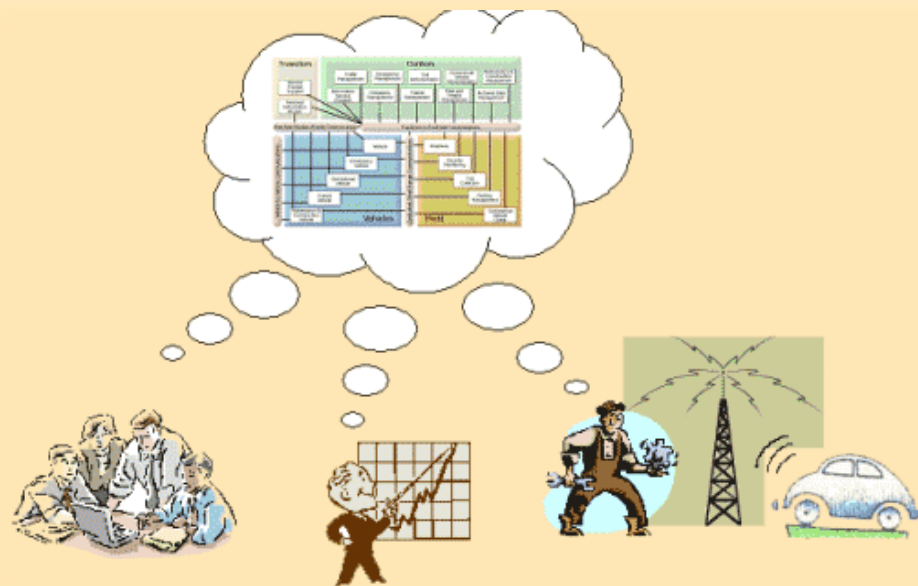
Comments Received

Comment	Disposition/ Discussion

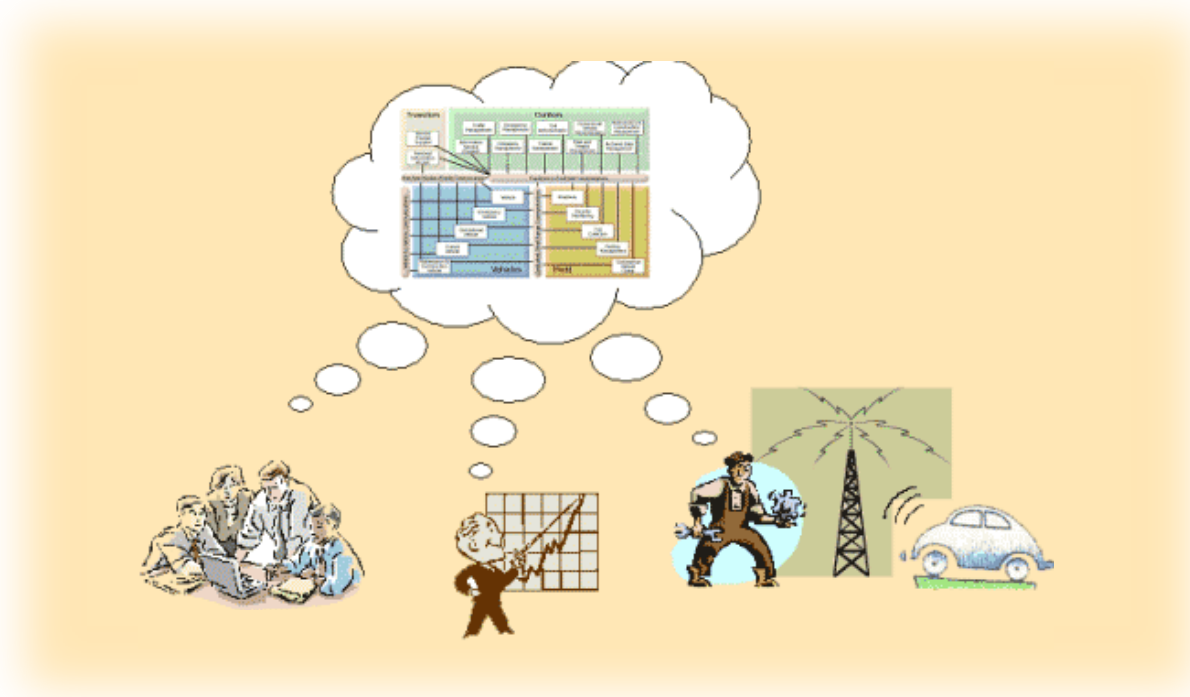
Lunch Break



Review and Update Customized Market Packages



Use & Maintenance Summary



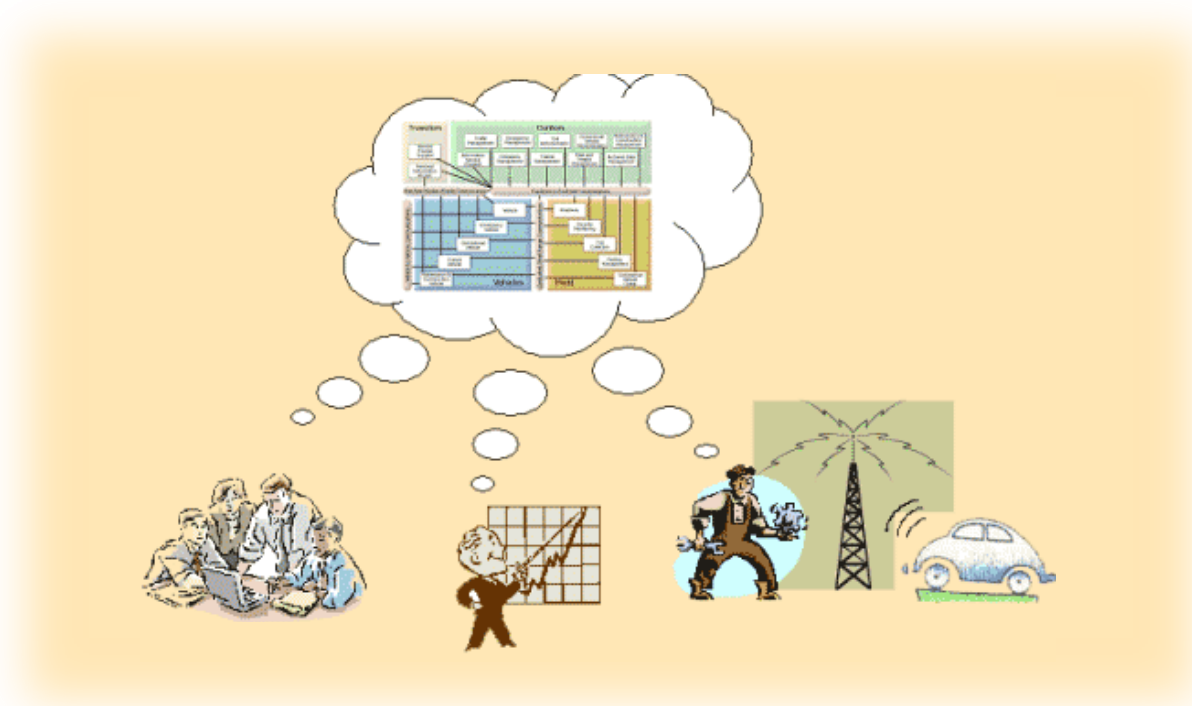
Use the ITS Architecture for:

- Transportation Planning
- Programming/Budgeting
- ITS Project Implementation

Architecture Use in Programming and Project Implementation

Maintaining the Architecture

Architecture Use in Programming



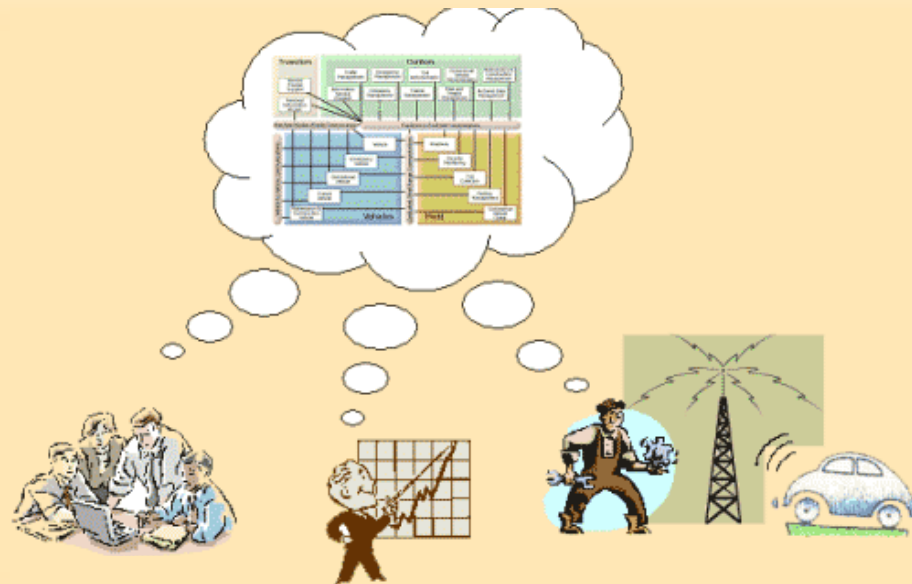
Architecture Use in Common Programming Process



- 1- MPO issues Request for Projects**
- 2 - Project Sponsors submit projects**
- 3 - Project are prioritized by the MPO**
- 4 - Projects are voted on/accepted by the MPO governing body.**



Architecture Use in Project Implementation



Example of Use on Project Submittals

Anchorage Metropolitan Area Transportation Solutions (AMATS) Checklist

Step One: Planning / TIP Development:

Project Agency Sponsors Agree to Comply with Federal ITS Regulations

When a project is nominated or added to the AMATS Transportation Improvement Program (TIP), project agency sponsors will provide answers to the following questions in the Project Information Packet during the project nomination process:

- a. Does my project include any ITS elements? *
- b. Does my project use funds from the federal highway trust fund (including the mass transit account) now and/or in the future?
If you are not sure, consult with the AMATS Coordinator.
- c. Does the project sponsor agree to comply with the federal ITS requirements?

If the answer is YES to the first two questions, then your project must comply with federal requirements or AMATS could be subject to loss of funding. Project agency sponsors must agree to comply with the federal requirements. The agreement will be documented as specified by AMATS. Proceed to Step Two. If the answer is yes to the first question, but no to the second, project agency sponsors are *encouraged* to use the steps recommended in this Checklist to foster a more efficient system.

*ITS means electronics, communications, or information processing used singly or in combination to improve the efficiency of a surface transportation system.

Example of Use on Project Submittals

Maricopa Association of Governments (MAG)

26-Aug-05

FY 2007 - 2011 TIP - Programming only 2011 MAG ITS Project Data Form

Please enter project data in highlighted cells, save the file with the lead agency name in it --ie. Mesa-ITSProj1.xls, and email the Excel f
The numbers shown in highlighted cells are for illustrative purposes only. Please use one worksheet per project.

Please enter required information in highlighted cells

Lead Agency

Other Partnering Agencies

ITS Project Title:

ITS Market Package:

A. ITS Strategic Plan (40 Points Max):

ID#

Need Score

First user need that best matches the project

3

68

Second user need that matches the project

9

47

Third user need that matches the project

27

21

Total User Need Score

136

Total Estimated Points for ITS Plan

0.0

Determine whether the proposed ITS project is an arterial project OR an intersection/s project. Enter data under B1 or B2 -- NOT BOTH
B 1. Segment Congestion (30 Points Max):

Example of Use during Project Prioritization

Rhode Island State Planning Commission Addition of new criteria

g. Enhances Intelligent Transportation System network

5 points: provides hardware and / or monitoring equipment to implement Rhode WAYS Strategic Deployment Plan or RIPTA ITS Plan (bus fareboxes, vehicle locators, etc.)

1-4 points: installation of fiber-optic cable on off-system highway; enhances dissemination of information; provides for shared use of equipment already in place

0 points: no ITS elements are part of the project

negative points: project is on a RhodeWAYS route that calls for ITS equipment, but equipment not provided

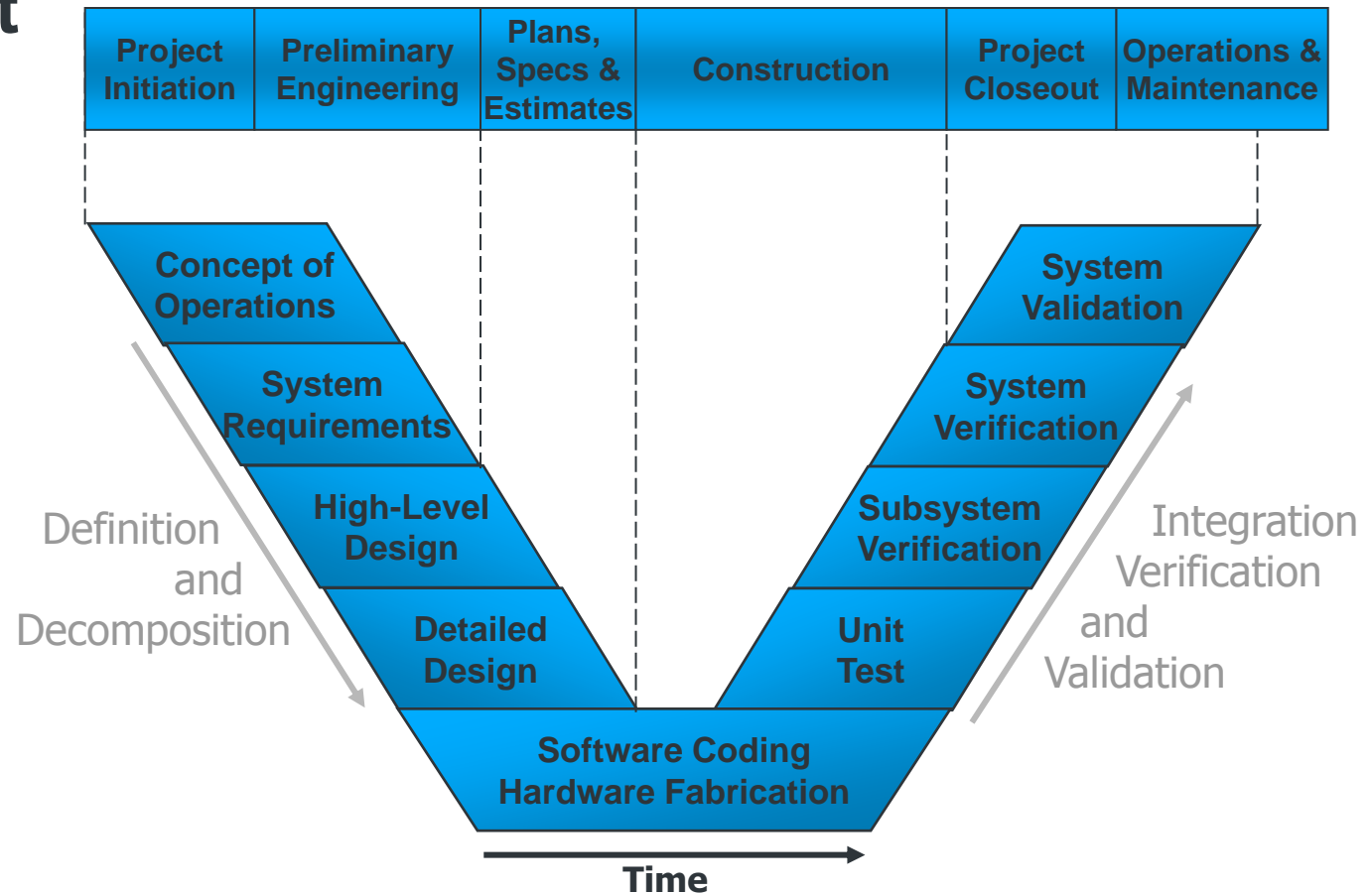


What is the Purpose of Systems Engineering?

- Reduce risk
 - Control costs and schedule
 - Satisfy users' needs
- Meet the requirements of the Federal Rule

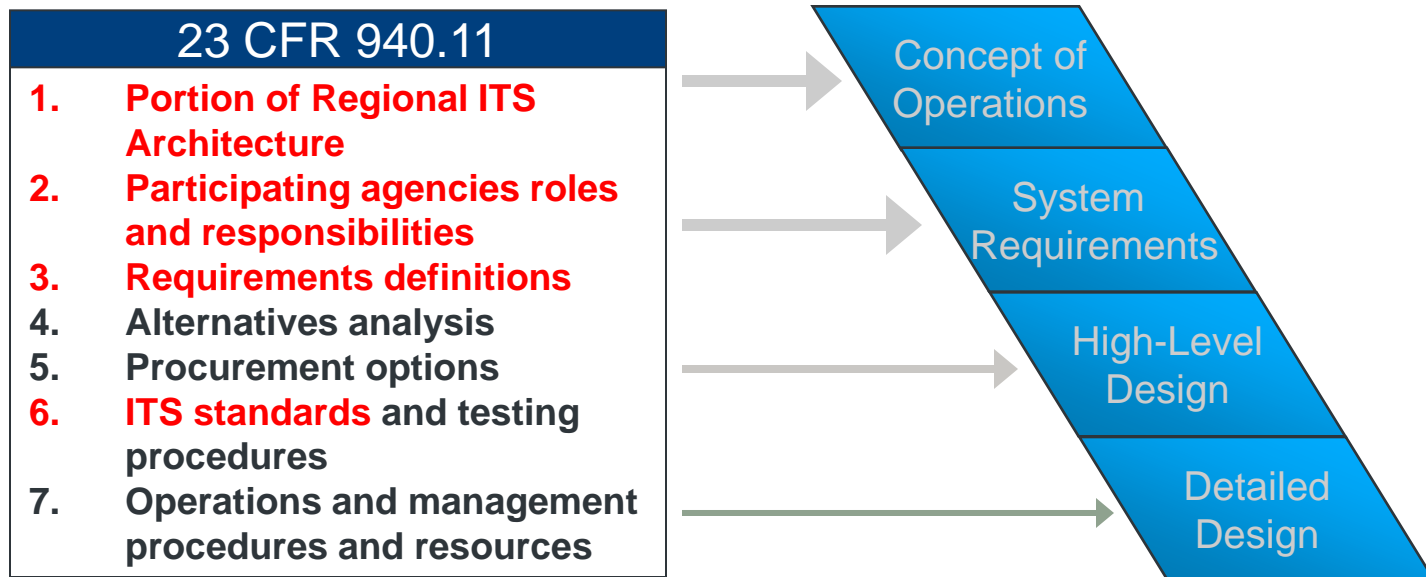


Systems Engineering and Traditional Project Development



Systems Engineering Analysis Requirements

- Rule/Policy requires all HTF-funded projects to be based on a systems engineering analysis
 - Scale commensurate with project scope
 - Identifies seven requirements “at a minimum”



Two Methods

- If a project architecture has been created, look at the Projects web page.
- If a project architecture has not been created, look at the regional architecture and find the appropriate web pages.



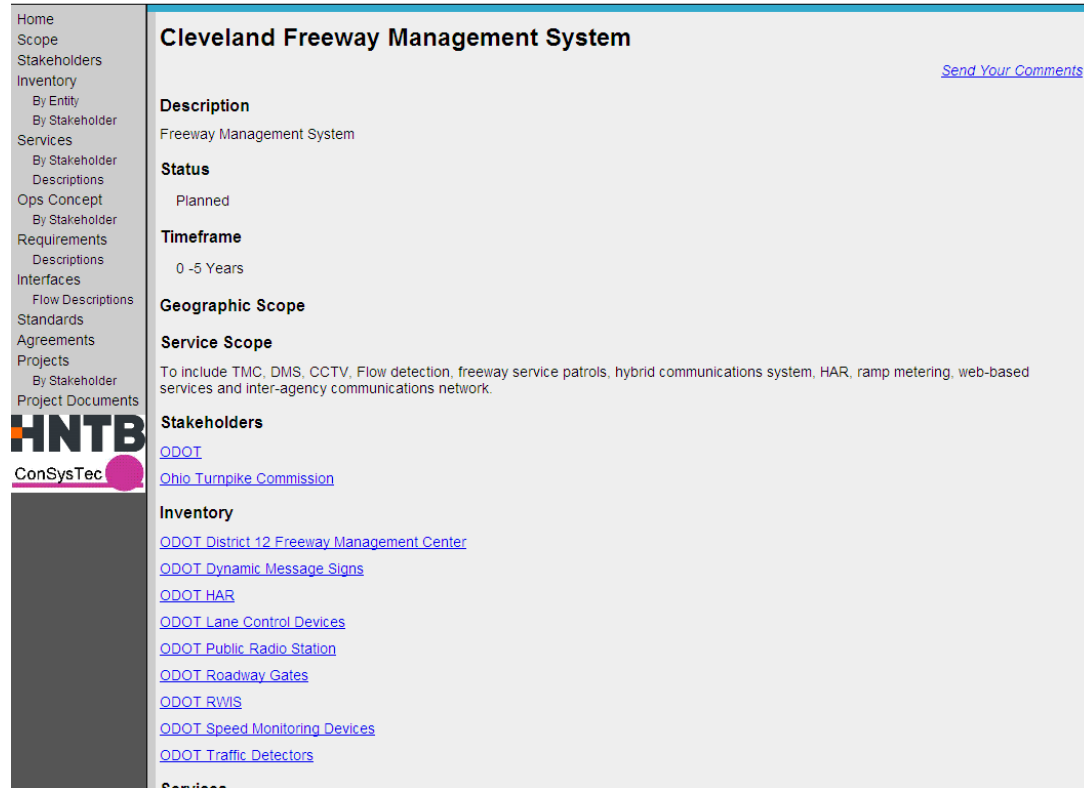
Portion of the Regional ITS Architecture

1

- Go to Projects page, then click on the Project.
- Project Details:
 - Project Description
 - Status
 - Timeframe
 - Stakeholders
 - Inventory
 - Services
 - Requirements
 - Operational Concepts



NOACA Regional ITS Architecture



The screenshot displays the 'Cleveland Freeway Management System' project page. On the left is a navigation menu with links: Home, Scope, Stakeholders, Inventory (By Entity, By Stakeholder), Services (By Stakeholder, Descriptions), Ops Concept (By Stakeholder), Requirements (Descriptions), Interfaces (Flow Descriptions, Standards, Agreements), Projects (By Stakeholder, Project Documents), and logos for HNTB and ConSysTec. The main content area has a title 'Cleveland Freeway Management System' with a 'Send Your Comments' link. Below the title are sections for Description (Freeway Management System), Status (Planned), Timeframe (0 -5 Years), Geographic Scope, Service Scope (To include TMC, DMS, CCTV, Flow detection, freeway service patrols, hybrid communications system, HAR, ramp metering, web-based services and inter-agency communications network.), Stakeholders (ODOT, Ohio Turnpike Commission), Inventory (ODOT District 12 Freeway Management Center, ODOT Dynamic Message Signs, ODOT HAR, ODOT Lane Control Devices, ODOT Public Radio Station, ODOT Roadway Gates, ODOT RWIS, ODOT Speed Monitoring Devices, ODOT Traffic Detectors), and Services.

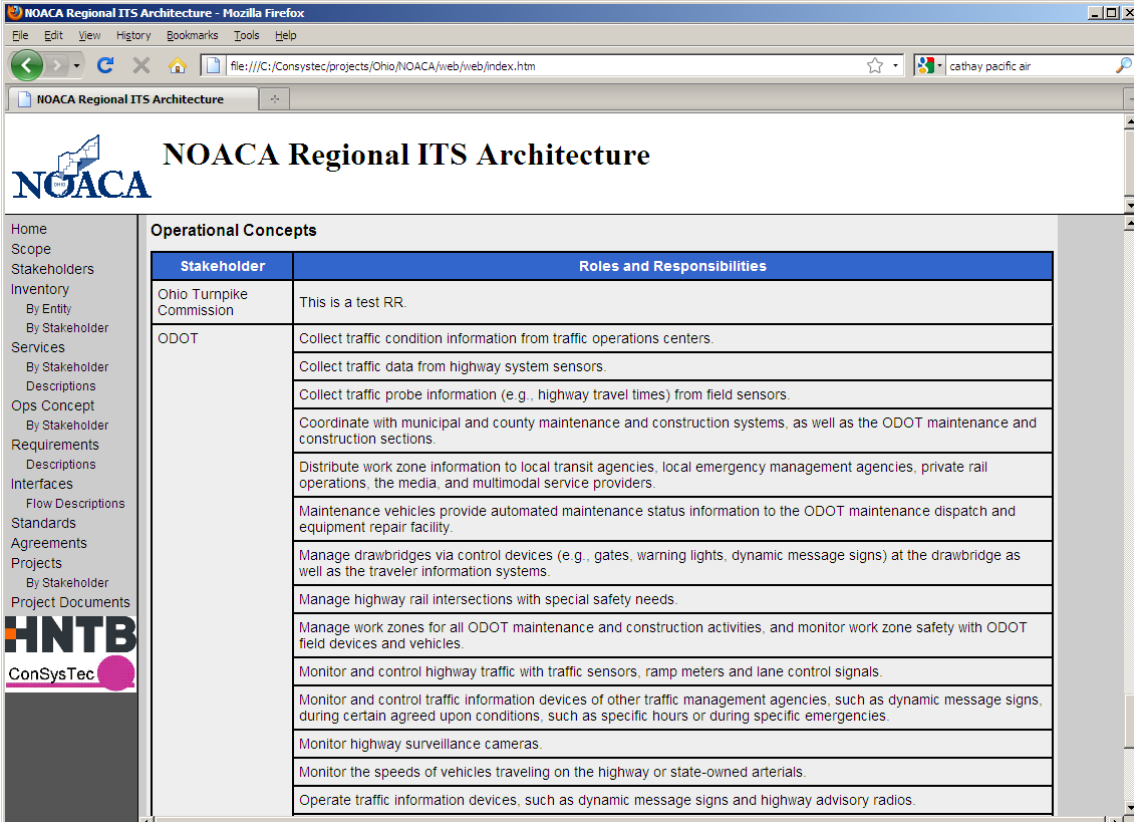
Concept of Operations

Concept of
Operations

2

System

- Includes Agencies Roles and Responsibilities.
- Go to Projects Page, click on Project and scroll down to Operational Concepts.

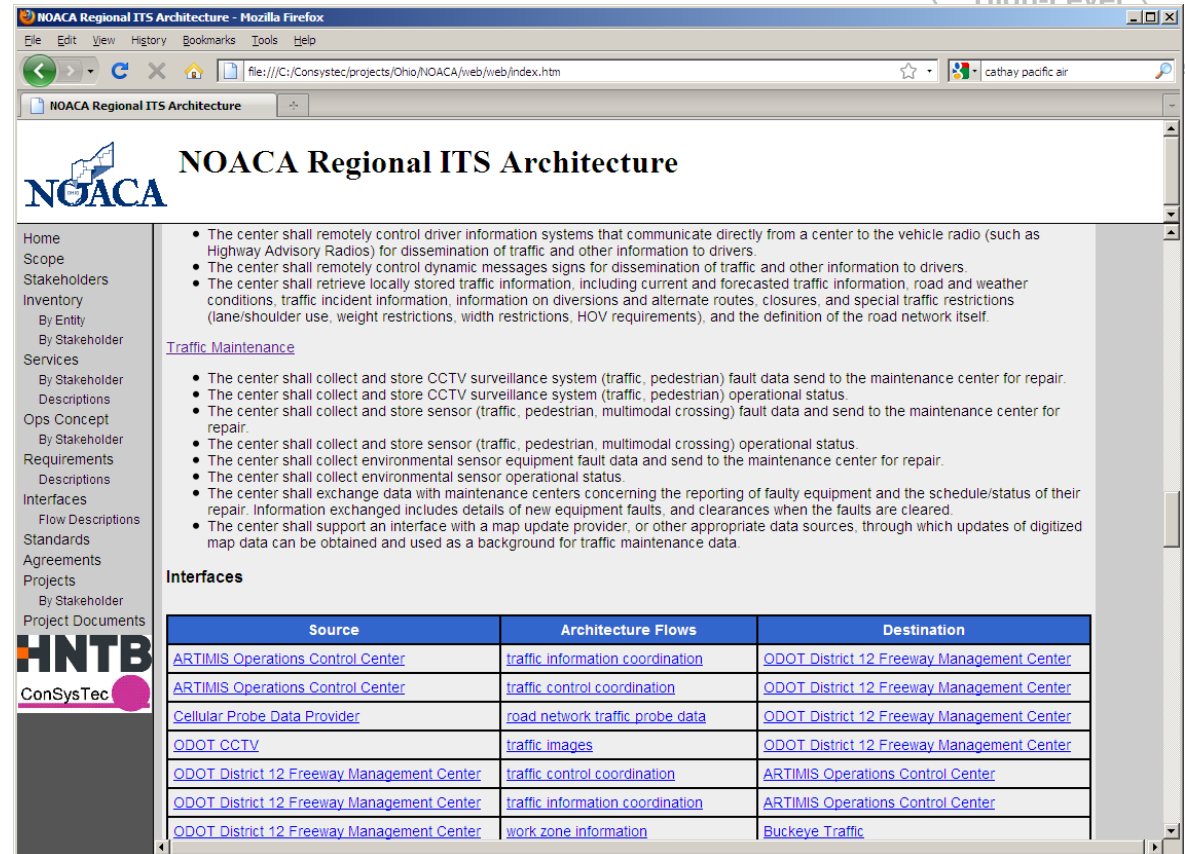


The screenshot shows a web browser displaying the NOACA Regional ITS Architecture website. The page title is "NOACA Regional ITS Architecture". The left sidebar contains a navigation menu with the following items: Home, Scope, Stakeholders, Inventory, Services, Ops Concept, Requirements, Interfaces, Standards, Agreements, Projects, and Project Documents. The main content area is titled "Operational Concepts" and contains a table with two columns: "Stakeholder" and "Roles and Responsibilities".

Stakeholder	Roles and Responsibilities
Ohio Turnpike Commission	This is a test RR.
ODOT	Collect traffic condition information from traffic operations centers.
	Collect traffic data from highway system sensors.
	Collect traffic probe information (e.g., highway travel times) from field sensors.
	Coordinate with municipal and county maintenance and construction systems, as well as the ODOT maintenance and construction sections.
	Distribute work zone information to local transit agencies, local emergency management agencies, private rail operations, the media, and multimodal service providers.
	Maintenance vehicles provide automated maintenance status information to the ODOT maintenance dispatch and equipment repair facility.
	Manage drawbridges via control devices (e.g., gates, warning lights, dynamic message signs) at the drawbridge as well as the traveler information systems.
	Manage highway rail intersections with special safety needs.
	Manage work zones for all ODOT maintenance and construction activities, and monitor work zone safety with ODOT field devices and vehicles.
	Monitor and control highway traffic with traffic sensors, ramp meters and lane control signals.
	Monitor and control traffic information devices of other traffic management agencies, such as dynamic message signs, during certain agreed upon conditions, such as specific hours or during specific emergencies.
	Monitor highway surveillance cameras.
	Monitor the speeds of vehicles traveling on the highway or state-owned arterials.
	Operate traffic information devices, such as dynamic message signs and highway advisory radios.

System Requirements

- Go to Projects Page, click on Project and scroll down to Requirements.
- Then continue scrolling down to Interfaces.



NOACA Regional ITS Architecture

Traffic Maintenance

- The center shall remotely control driver information systems that communicate directly from a center to the vehicle radio (such as Highway Advisory Radios) for dissemination of traffic and other information to drivers.
- The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.
- The center shall retrieve locally stored traffic information, including current and forecasted traffic information, road and weather conditions, traffic incident information, information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements), and the definition of the road network itself.

Interfaces

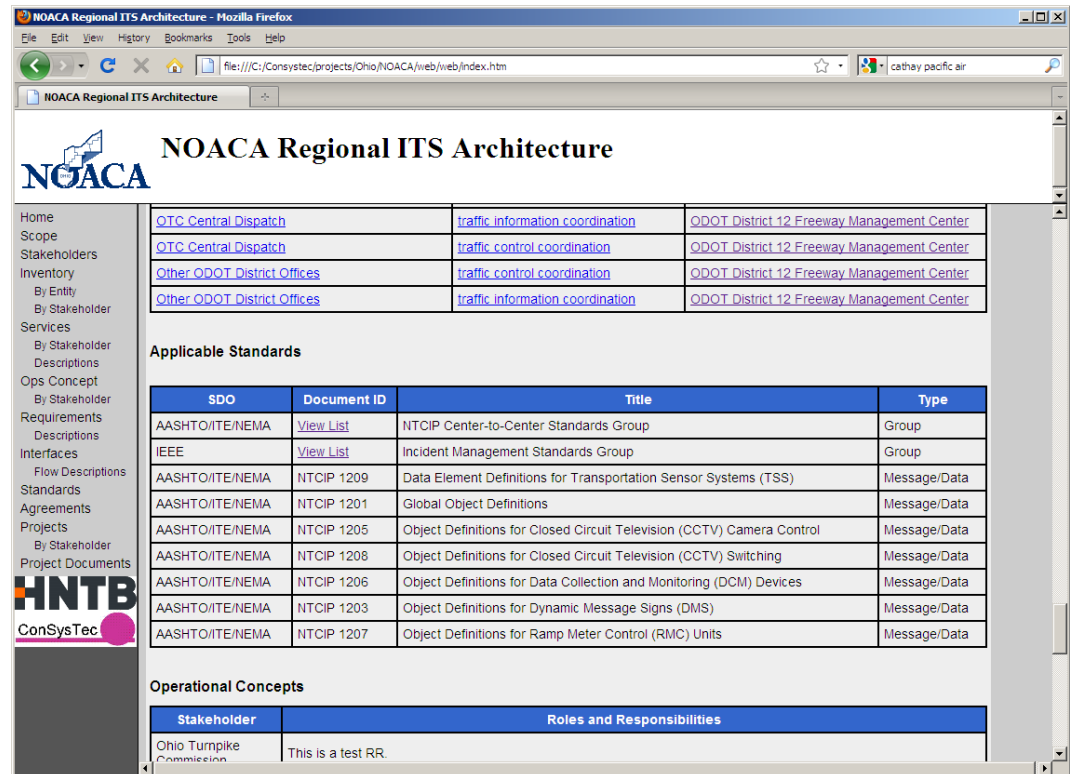
Source	Architecture Flows	Destination
ARTIMIS Operations Control Center	traffic information coordination	ODOT District 12 Freeway Management Center
ARTIMIS Operations Control Center	traffic control coordination	ODOT District 12 Freeway Management Center
Cellular Probe Data Provider	road network traffic probe data	ODOT District 12 Freeway Management Center
ODOT CCTV	traffic images	ODOT District 12 Freeway Management Center
ODOT District 12 Freeway Management Center	traffic control coordination	ARTIMIS Operations Control Center
ODOT District 12 Freeway Management Center	traffic information coordination	ARTIMIS Operations Control Center
ODOT District 12 Freeway Management Center	work zone information	Buckeye Traffic

ITS Standards

- Go to the Projects Page and scroll down to Applicable Standards

High-Level
Design

4

Detailed
Design

The screenshot displays the NOACA Regional ITS Architecture web application. The browser window title is "NOACA Regional ITS Architecture - Mozilla Firefox". The address bar shows the file path: "file:///C:/Consystec/projects/Ohio/NOACA/web/web/index.htm". The page features the NOACA logo and a navigation menu on the left. The main content area is titled "NOACA Regional ITS Architecture" and contains a table of links, a section for "Applicable Standards", and a section for "Operational Concepts".

SDO	Document ID	Title	Type
AASHTO/ITE/NEMA	View List	NTCIP Center-to-Center Standards Group	Group
IEEE	View List	Incident Management Standards Group	Group
AASHTO/ITE/NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1201	Global Object Definitions	Message/Data
AASHTO/ITE/NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data
AASHTO/ITE/NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
AASHTO/ITE/NEMA	NTCIP 1206	Object Definitions for Data Collection and Monitoring (DCM) Devices	Message/Data
AASHTO/ITE/NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data
AASHTO/ITE/NEMA	NTCIP 1207	Object Definitions for Ramp Meter Control (RMC) Units	Message/Data

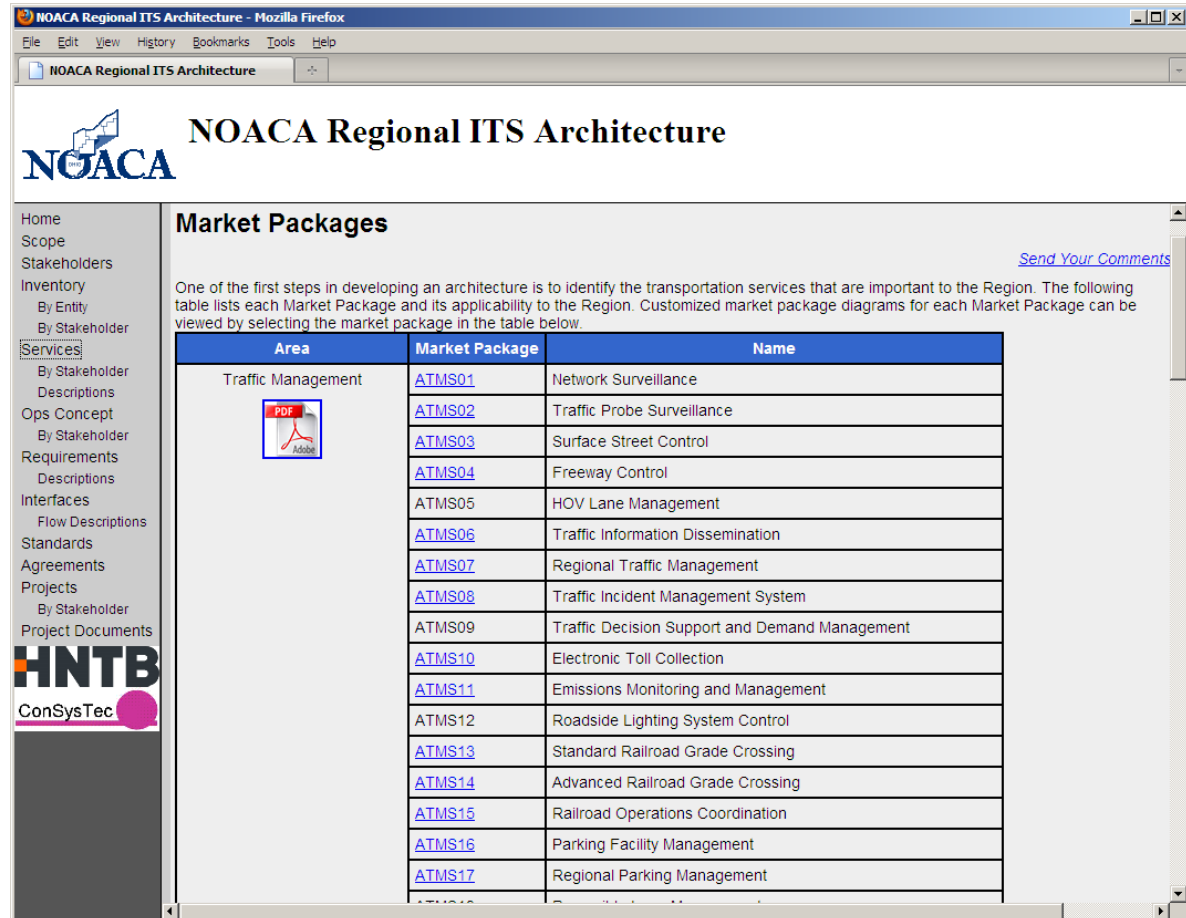
Operational Concepts

Stakeholder	Roles and Responsibilities
Ohio Turnpike Commission	This is a test RR.

Portion of the Regional ITS Architecture

1


- Go to the Services page, and find the customized market package diagram(s) that represents the project.



NOACA Regional ITS Architecture

Market Packages

One of the first steps in developing an architecture is to identify the transportation services that are important to the Region. The following table lists each Market Package and its applicability to the Region. Customized market package diagrams for each Market Package can be viewed by selecting the market package in the table below.

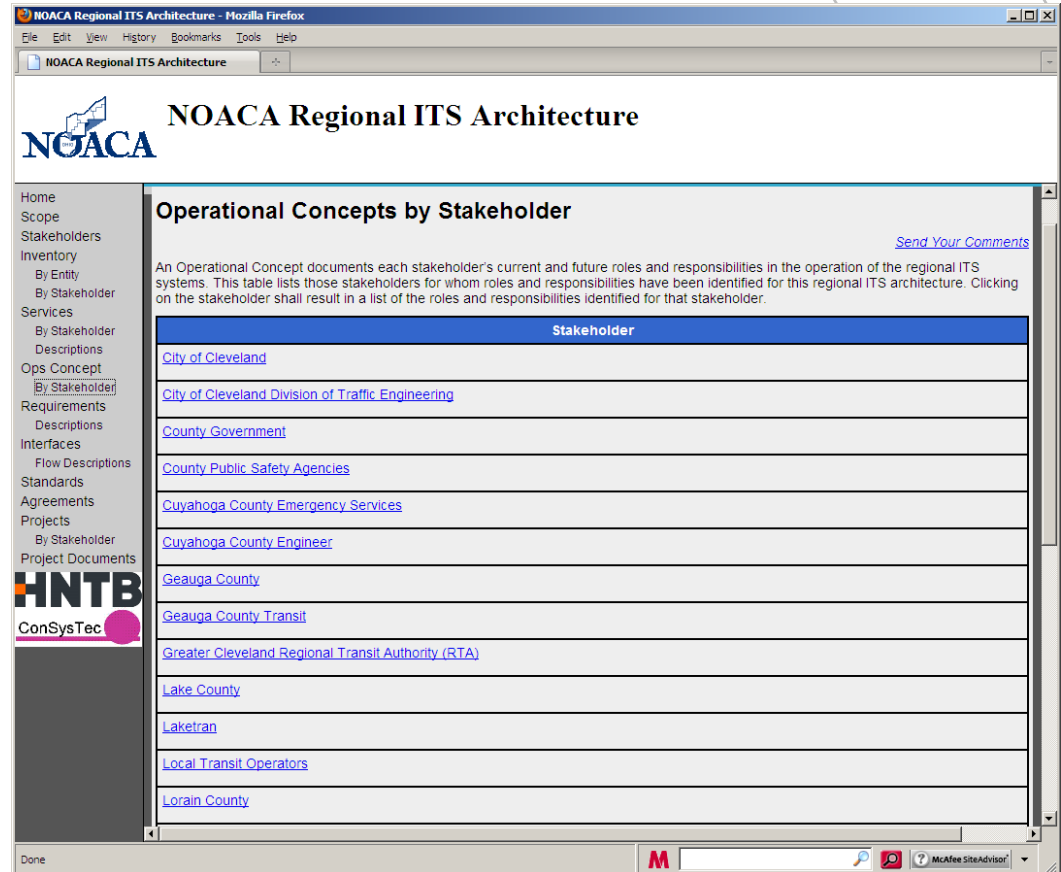
Area	Market Package	Name
<p>Traffic Management</p> 	ATMS01	Network Surveillance
	ATMS02	Traffic Probe Surveillance
	ATMS03	Surface Street Control
	ATMS04	Freeway Control
	ATMS05	HOV Lane Management
	ATMS06	Traffic Information Dissemination
	ATMS07	Regional Traffic Management
	ATMS08	Traffic Incident Management System
	ATMS09	Traffic Decision Support and Demand Management
	ATMS10	Electronic Toll Collection
	ATMS11	Emissions Monitoring and Management
	ATMS12	Roadside Lighting System Control
	ATMS13	Standard Railroad Grade Crossing
	ATMS14	Advanced Railroad Grade Crossing
	ATMS15	Railroad Operations Coordination
	ATMS16	Parking Facility Management
	ATMS17	Regional Parking Management

Concept of Operations

Concept of
Operations

2

- Go to Operational Concepts Page and click on the appropriate Area(s), or
- Go to Operational Concepts by Stakeholder, and select the appropriate stakeholder



The screenshot shows a web browser window titled "NOACA Regional ITS Architecture - Mozilla Firefox". The page header includes the NOACA logo and the title "NOACA Regional ITS Architecture". The left sidebar contains a navigation menu with the following items: Home, Scope, Stakeholders, Inventory (By Entity, By Stakeholder), Services (By Stakeholder, Descriptions), Ops Concept (By Stakeholder, Descriptions), Requirements (Descriptions), Interfaces (Flow Descriptions), Standards, Agreements, Projects (By Stakeholder), and Project Documents. The main content area is titled "Operational Concepts by Stakeholder" and includes a link "Send Your Comments". Below this is a table listing stakeholders:

Stakeholder
City of Cleveland
City of Cleveland Division of Traffic Engineering
County Government
County Public Safety Agencies
Cuyahoga County Emergency Services
Cuyahoga County Engineer
Geauga County
Geauga County Transit
Greater Cleveland Regional Transit Authority (RTA)
Lake County
Laketran
Local Transit Operators
Lorain County

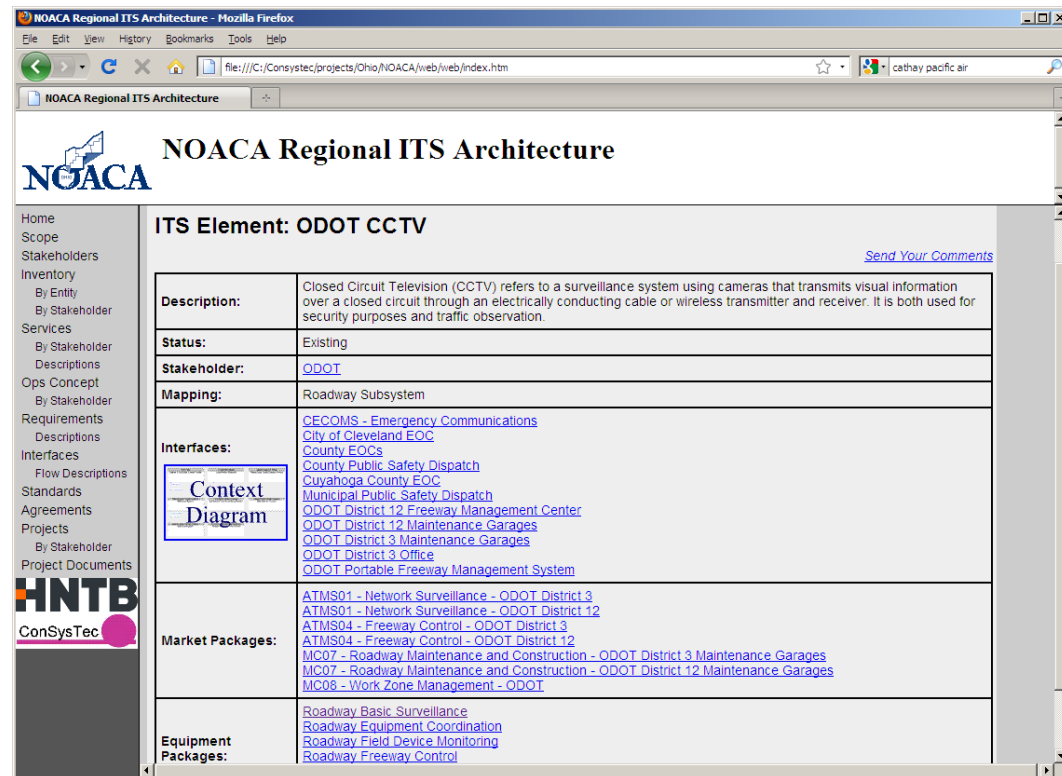
System Requirements

- Go to the Inventory page and click on an element.
- Click on an interface to view the flows.
- Click on an Equipment Package to view requirements.

System
Requirements

3

High-Level
Design



NOACA Regional ITS Architecture

ITS Element: ODOT CCTV

[Send Your Comments](#)

Description:	Closed Circuit Television (CCTV) refers to a surveillance system using cameras that transmits visual information over a closed circuit through an electrically conducting cable or wireless transmitter and receiver. It is both used for security purposes and traffic observation.
Status:	Existing
Stakeholder:	ODOT
Mapping:	Roadway Subsystem
Interfaces:	CECOMS - Emergency Communications City of Cleveland EOC County EOCs County Public Safety Dispatch Cuyahoga County EOC Municipal Public Safety Dispatch ODOT District 12 Freeway Management Center ODOT District 12 Maintenance Garages ODOT District 3 Maintenance Garages ODOT District 3 Office ODOT Portable Freeway Management System
Market Packages:	ATMS01 - Network Surveillance - ODOT District 3 ATMS01 - Network Surveillance - ODOT District 12 ATMS04 - Freeway Control - ODOT District 3 ATMS04 - Freeway Control - ODOT District 12 MC07 - Roadway Maintenance and Construction - ODOT District 3 Maintenance Garages MC07 - Roadway Maintenance and Construction - ODOT District 12 Maintenance Garages MC08 - Work Zone Management - ODOT
Equipment Packages:	Roadway Basic Surveillance Roadway Equipment Coordination Roadway Field Device Monitoring Roadway Freeway Control

ITS Standards

- Go to the Inventory page and click on an element.
- Click on an interface to view the flows.
- Click on a flow to view applicable ITS standards.

High-Level
Design

4

Detailed
Design

NOACA Regional ITS Architecture - Mozilla Firefox

file:///C:/ConsysTec/projects/Ohio/NOACA/web/web/index.htm

NOACA Regional ITS Architecture

NOACA

Home
Scope
Stakeholders
Inventory
By Entity
By Stakeholder
Services
By Stakeholder
Descriptions
Ops Concept
By Stakeholder
Requirements
Descriptions
Interfaces
Flow Descriptions
Standards
Agreements
Projects
By Stakeholder
Project Documents

HNTB
ConSysTec

Architecture Flow: roadway information system data

[Send Your Comments](#)

Description:

Information used to initialize, configure, and control roadside systems that provide driver information (e.g., dynamic message signs, highway advisory radio, beacon systems). This flow can provide message content and delivery attributes, local message store maintenance requests, control mode commands, status queries, and all other commands and associated parameters that support remote management of these systems.

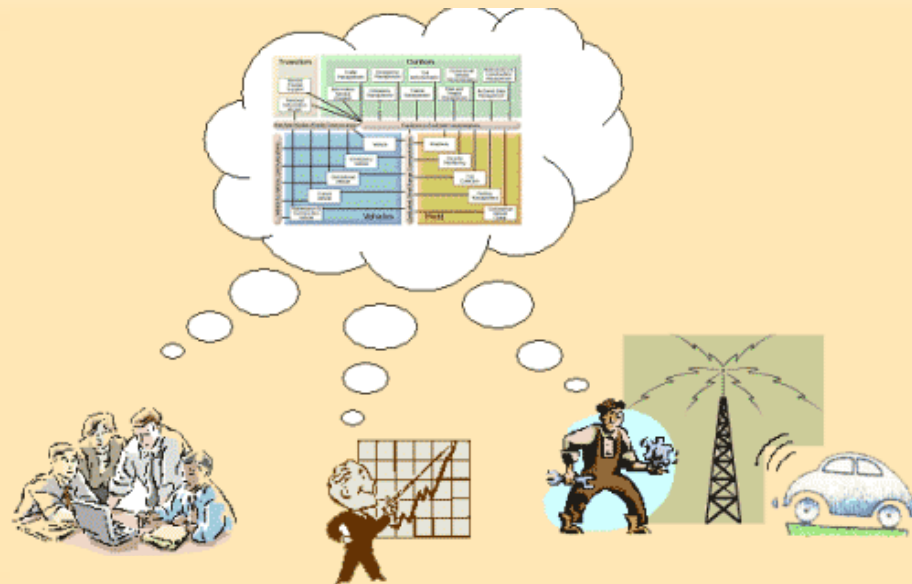
Communications Standards:

NTCIP C2F	AASHTO-17	File Transfer Protocol (FTP) Application Profile	NTCIP 2303
NTCIP C2F	AASHTO-18	Trivial File Transfer Protocol (TFTP) Application Profile	NTCIP 2302
NTCIP C2F	AASHTO-21	Octet Encoding Rules (OER) Base Protocol	NTCIP 1102
NTCIP C2F	AASHTO-28	Ethernet Subnetwork Profile	NTCIP 2104
NTCIP C2F	AASHTO-30	Point-to-Point Protocol Over RS-232 Subnetwork Profile	NTCIP 2103
NTCIP C2F	AASHTO-31	Transportation Transport Profile	NTCIP 2201
NTCIP C2F	AASHTO-38	Transportation Management Protocols (TMP)	NTCIP 1103
NTCIP C2F	AASHTO-47	Point to Multi-Point Protocol Using FSK Modem Subnetwork Profile	NTCIP 2102
NTCIP C2F	NEMA-TS3.p	Point to Multi-Point Protocol Using RS-232 Subnetwork Profile	NTCIP 2101
NTCIP C2F	S-85	Simple Transportation Management Framework (STMF) Application Profile	NTCIP 2301
NTCIP C2F	S-88	Internet (TCP/IP and UDP/IP) Transport Profile	NTCIP 2202

Message Standards:

NEMA TS3.4	NEMA TS3.4	Global Object Definitions	NTCIP 1201
NEMA-TS3.6	NEMA-TS3.6	Object Definitions for Dynamic Message Signs (DMS)	NTCIP 1203

Maintaining the Architecture



NOACA Regional ITS Architecture Maintenance

- Why Changes Occur
- Maintenance Models
- Roles and Responsibilities
- Baseline
- Change Management Process



Why Changes Occur

- **Projects**

- Additions/Deletions – new projects or dropped projects
- Status – change in status (planned/existing)
- Definition – change in details, scope, e.g., information flows, standards
- Priorities – change in goals, budgets
- Agreements – institutional change



Why Changes Occur

- **Regional**
 - Goals – changes in regional needs
 - Stakeholders – New stakeholders
 - Other architectures – changes to interfaces with adjoining regions
 - National ITS Architecture – changes to the National ITS Architecture

Maintenance Models

- **Two models**
 - Periodic Basis
 - Fixed time periods
 - Event Driven
 - As changes occur



Roles & Responsibilities

- Responsible Agency
- Maintenance Manager
- Stakeholders
- Maintenance Working Group



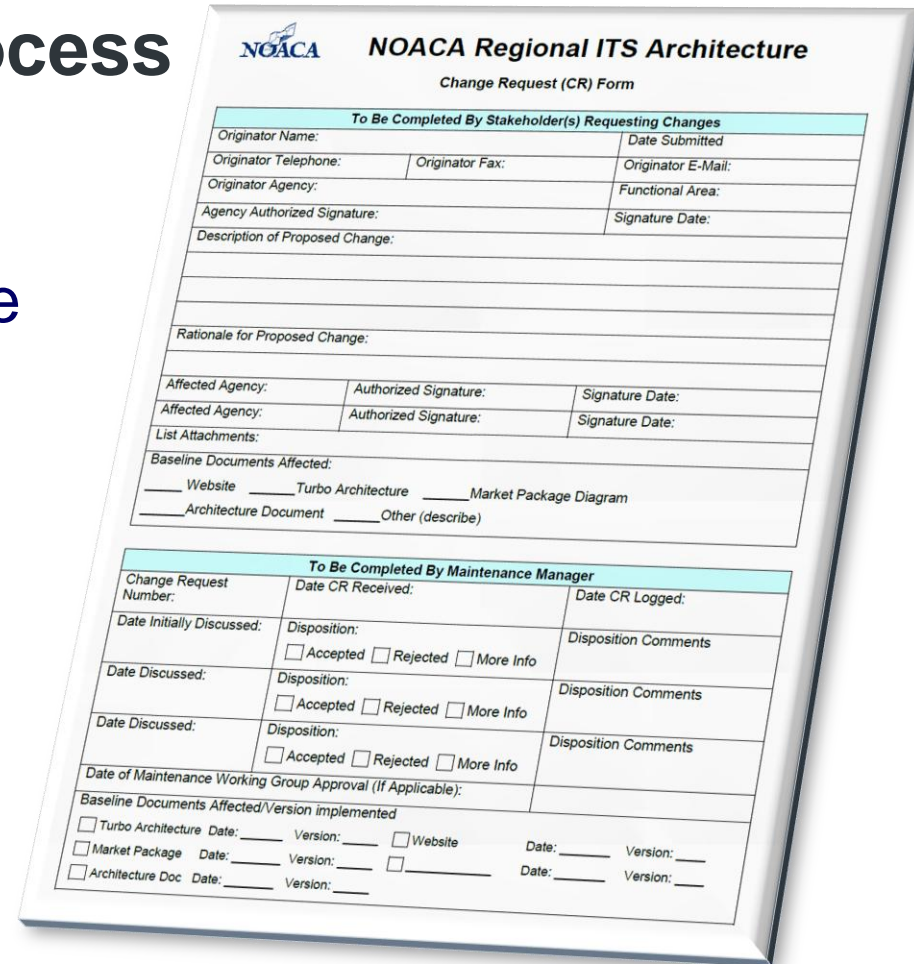
Baseline

- Architecture document
- Turbo Architecture database
- Architecture web pages
- Change request database



Change Management Process

- Submit a Change Request
- Define the Proposed Change
- Assess the impact
- Approving the Change
- Implementing the Change



NOACA **NOACA Regional ITS Architecture**
Change Request (CR) Form

To Be Completed By Stakeholder(s) Requesting Changes		
Originator Name:	Date Submitted:	
Originator Telephone:	Originator Fax:	Originator E-Mail:
Originator Agency:	Functional Area:	
Agency Authorized Signature:	Signature Date:	
Description of Proposed Change:		
Rationale for Proposed Change:		
Affected Agency:	Authorized Signature:	Signature Date:
Affected Agency:	Authorized Signature:	Signature Date:
List Attachments:		
Baseline Documents Affected:		
<input type="checkbox"/> Website <input type="checkbox"/> Turbo Architecture <input type="checkbox"/> Market Package Diagram <input type="checkbox"/> Architecture Document <input type="checkbox"/> Other (describe)		

To Be Completed By Maintenance Manager		
Change Request Number:	Date CR Received:	Date CR Logged:
Date Initially Discussed:	Disposition: <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> More Info	Disposition Comments
Date Discussed:	Disposition: <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> More Info	Disposition Comments
Date Discussed:	Disposition: <input type="checkbox"/> Accepted <input type="checkbox"/> Rejected <input type="checkbox"/> More Info	Disposition Comments
Date of Maintenance Working Group Approval (if Applicable):		
Baseline Documents Affected/Version implemented		
<input type="checkbox"/> Turbo Architecture	Date: _____ Version: _____	<input type="checkbox"/> Website Date: _____ Version: _____
<input type="checkbox"/> Market Package	Date: _____ Version: _____	<input type="checkbox"/> Architecture Doc Date: _____ Version: _____

Current Maintenance Plan

- Comprehensive update will be made every 3 years several months prior to the formal TIP update
- Interim updates: every 6 months if necessary
- Actively solicit changes annually
- Maintenance Working Group: Cleveland FMS Advisory Committee

Implementation

- Make agreed changes to baseline
- Update Change Request Database
- Inform Stakeholders
- Distribute changes
- Update website

Next Steps

- Please provide any additional comments by 12/1
- Your input will be used to create:
 - Update Turbo Database
 - Update Website
 - Distribute Draft Report
 - Receive Comments
 - Draft Final NOACA Regional ITS Architecture Document
- Formal adoption of the ITS Architecture by the NOACA Board

Thank you for your input today!

Katie Ott Zehnder, P.E., kott@hntb.com

Sarah Brown, sebrown@hntb.com

Robert S. Jaffe, Ph.D., CSEP, rsj@consystec.com

Patrick Chan, P.E., patrick.chan@consystec.com

