

ITS Architecture Made Easier Using Turbo Architecture: An Overview of NHI's New Web-based Turbo Architecture Course

T3 Webinar



Transit Management

Traffic Management

TRAVEL INFO

ITS Architecture Made Easier Using Turbo Architecture:
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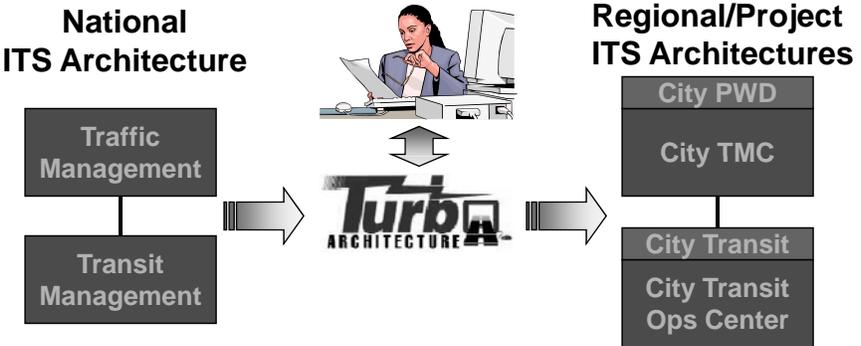
Introduction to Turbo Architecture



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What Turbo Does

Turbo is a software tool that automates use of the National ITS Architecture



National ITS Architecture

- Traffic Management
- Transit Management

Turbo ARCHITECTURE

Regional/Project ITS Architectures

- City PWD
- City TMC
- City Transit
- City Transit Ops Center

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Purpose of Turbo Architecture

- Just a tool to systematically create and update regional and project architectures
- Leverage the National ITS Architecture to help create and maintain regional and project ITS architectures
- Does not guarantee consistency with National ITS Architecture or compliance with FHWA Rule or FTA Policy

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Turbo Supports ITS Architecture Development & Maintenance Process

STEP #1: GET STARTED
Need Scope Champions Stakeholders

STEP #2: GATHER DATA
Inventory Systems Operational Concept
Needs and Services Functional Requirements

STEP #3: DEFINE INTERFACES
Interconnects Information Flows

STEP #4: IMPLEMENTATION
Project Sequencing ITS Standards
List of Agency Agreements

STEP #5: USE THE ARCHITECTURE

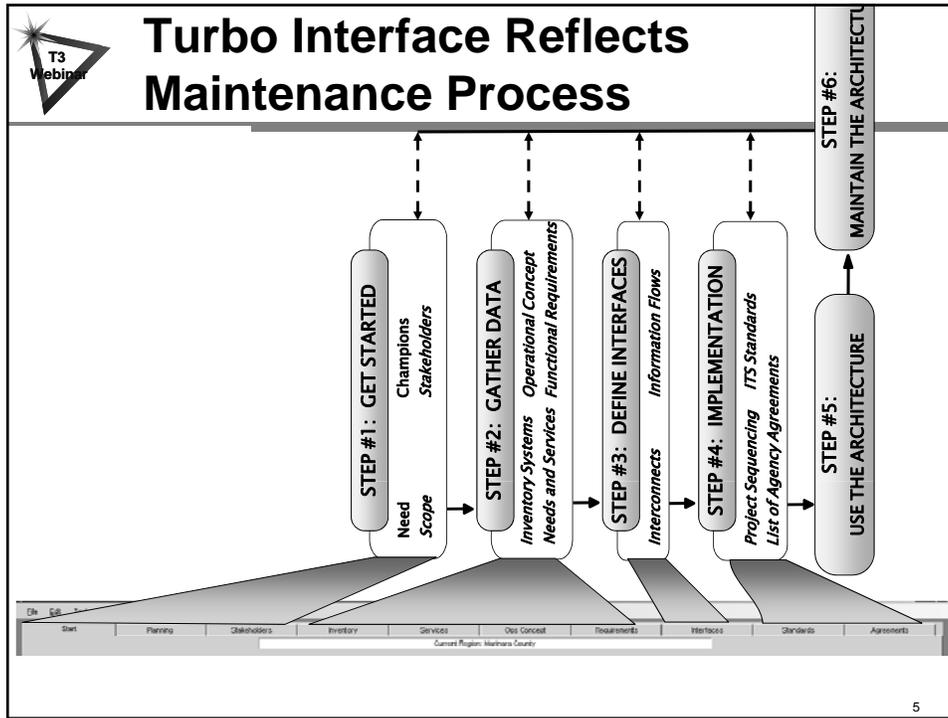
STEP #6: MAINTAIN THE ARCHITECTURE

Iterative Process

Regional ITS Architecture Guidance
Developing, Using, and Maintaining an ITS Architecture for Your Region
Version 2.0
July 2006
Revised and expanded with added focus on Use and Maintenance
U.S. Department of Transportation
Federal Highway Administration
www.fhwa.dot.gov

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Introduction to NHI Web-based Turbo Architecture Course



Course Outcomes

At the end of the training, you will be able to use Turbo to create and modify a regional or project architecture including:

- Providing link to planning
- Entering stakeholders
- Entering inventory data
- Selecting ITS services
- Creating operational concepts
- Tailoring functional requirements
- Building and customizing interfaces
- Customizing standards mappings
- Entering agreements
- Creating outputs
- Applying features to new projects

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Course Features

- Modular design
- Adobe Connect
- Animations
- Exercises

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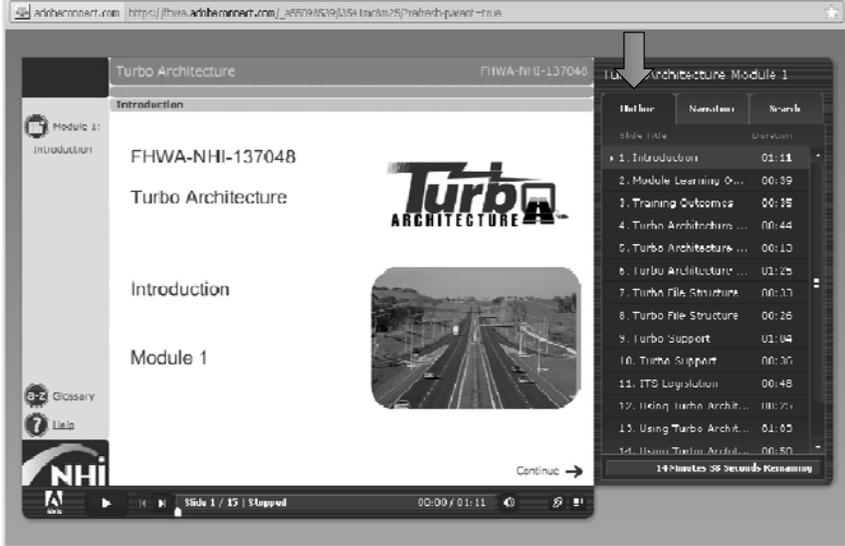
Course Modules

1. Introduction
2. Start Turbo
3. Link to Planning
4. Stakeholders
5. Inventory
6. Services
7. Operational Concept
8. Requirements
9. Interfaces
10. Standards
11. Agreements
12. Reports, Diagrams & Web Pages
13. Projects
14. Wrap Up

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Course Module in Adobe Connect with Outline



The screenshot shows an Adobe Connect session titled "Turbo Architecture" with ID "FHWA-NHI-137048". The main content area displays "Introduction" and "Module 1" with a "Turbo Architecture" logo and a video thumbnail. A right-hand sidebar shows a table of contents for "Architecture Module 1".

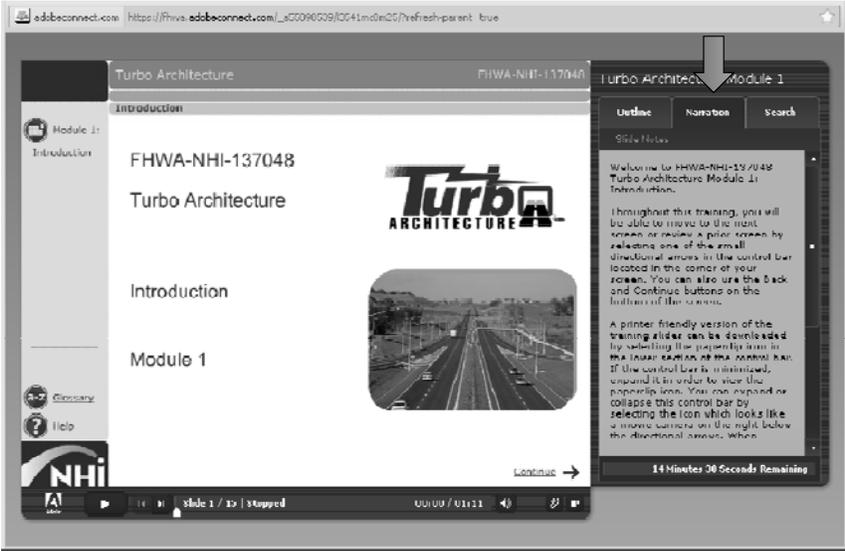
Outline	Navigation	Search
Slide Title		Duration
1. Introduction		01:11
2. Module Learning O...		00:39
3. Training Outcomes		00:18
4. Turbo Architecture ...		00:44
5. Turbo Architecture ...		00:10
6. Turbo Architecture ...		01:25
7. Turbo File Structure		00:33
8. Turbo File Structure		00:26
9. Turbo Support		01:04
10. Turbo Support		00:37
11. ITS Legislation		00:48
12. Using Turbo Archi...		00:21
13. Using Turbo Archi...		01:00
14. Using Turbo Archi...		00:50

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Course Module in Adobe Connect with Narration



The screenshot shows a web browser window displaying an Adobe Connect course. The main content area is titled 'Turbo Architecture' and includes a video player showing a road scene. A sidebar on the left contains navigation links for 'Introduction', 'Module 1', 'Glossary', and 'Help'. On the right, a 'Turbo Architecture Module 1' pane is open, showing a 'Narration' tab with text describing the training content and navigation controls. A 'Continue' button is visible at the bottom right of the main content area.

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Course Module in Adobe Connect with Search



The screenshot shows the same Adobe Connect course interface as above, but with the 'Search' tab selected in the right-hand pane. The search pane includes a search input field, a search icon, and a table with columns for 'Slide Title' and 'Duration'. A 'Continue' button is also present at the bottom right of the main content area.

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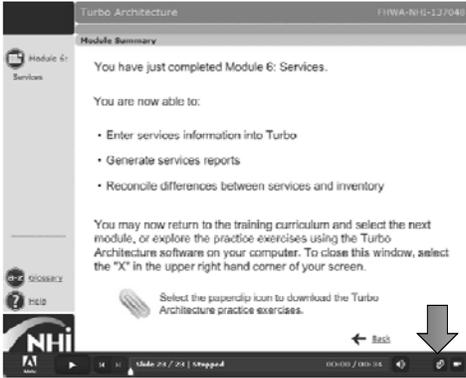
 **Course Animations**

- Guided demonstrations of the Turbo software during course

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 **Course Exercises**

- Performed offline using Turbo software and sample database
- Download instructions

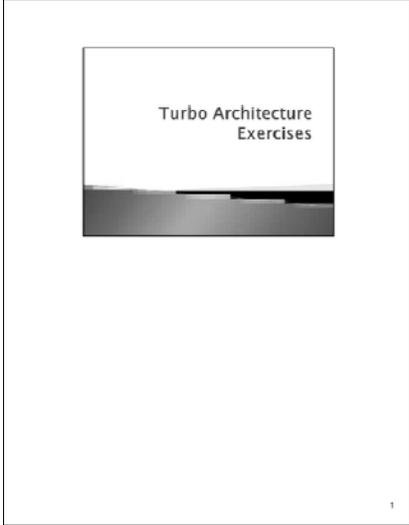


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 **Course Exercise File**

**File =
137048_Exercise.pdf**



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 **Course Exercise File (cont.)**

Starting Turbo Exercise

- Information about road weather information gathering and dissemination in Marinara County will be added to the Marinara County Regional Architecture. (through the exercises of this course)

Let's do an exercise where you actual open and work in Turbo. Do not start the exercise yet. This slide presents a summary of the exercise then we will look at the objective for it. Then you can perform the exercise following step-by-step instructions.

Throughout the sessions of the course, you will perform exercises with the same architecture to include information about road weather information gathering and dissemination in Marinara County.

Image Description: A symbol identifying this slide as part of a hands-on exercise is shown.

Start

Exercise - Objective

- Open the Turbo database for Marinara County
- In the Marinara County Regional Architecture, add a new status
- Add an entry in the Change Log regarding our changes to the database

When you installed Turbo, a sample database named marinaraV5.0.tbo was copied. The database contains the Marinara County regional architecture and several project architectures.

In this exercise we will open the Turbo database for Marinara County, add a new status for use in the Marinara County Regional Architecture and add an entry in the Change Log regarding our changes to the database.

Image Description: A symbol identifying this slide as part of a hands-on exercise is shown.

Start

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Course Exercise File (cont.)

Exercise – Steps

- Open marinarav5.0.tbo database
- Save database as marinaraforexercises.tbo
- Select Marinara County regional architecture
- Add new status value of "Funded" (between Existing & Planned)

Now, please perform the exercise.

The steps to complete the exercise are:

- Open the marinarav5.0.tbo database. The database was installed with Turbo Version 5.0. As we saw earlier, the database can be located from the Windows Start menu by selecting All Programs>National Architecture>Database Localizable.
- To prevent us from overwriting the existing file, we save as the database is called save it as marinaraforexercises.tbo. You do this by selecting File>Save As on the Turbo menu. (To save the file, you must have rights to do so on the computer. If you have problems saving the file, confirm that you have rights to write to the hard drive.)
- Select the Marinara County regional architecture.
- Add a new status value named "Funded" located between the Existing & Planned statuses. This database already has a user-defined status filed "Funded" so we will be adding a fourth status.

Image Description: A symbol identifying this slide as part of a hands-on exercise is shown.

Start

Exercise – Steps (cont.)

- Add new entry to Change Log regarding changes to be made with:
 - Date/Time = Today's date & time (& apply to Start Tab)
 - Log Updated By = You
 - Version = 2.4 (& apply to Start Tab)
 - Description = Included regional road weather information gathering and dissemination

Add a new entry to the Change Log regarding the changes to be made to the Marinara County regional architecture. **Start**

Date/Time = Today's date & time (& apply to Start Tab)

Log Updated By = Your name

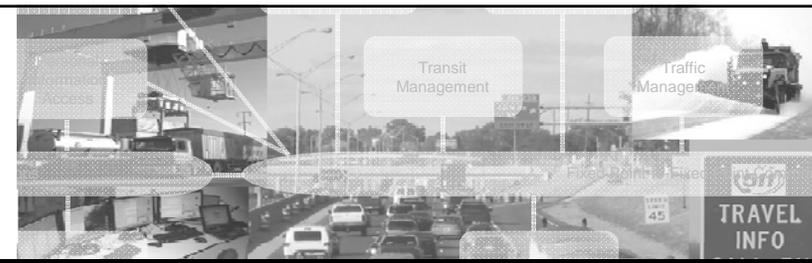
Version = 2.4 (& apply to Start Tab)

Description = Included regional road weather information gathering and dissemination

Image Description: A symbol identifying this slide as part of a hands-on exercise is shown.

Start

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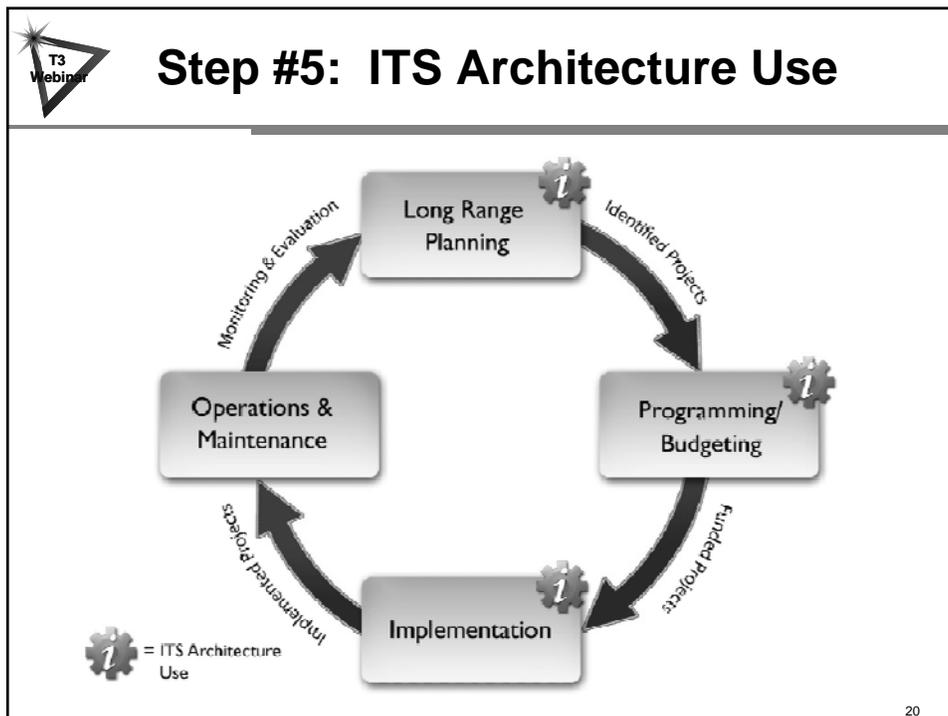
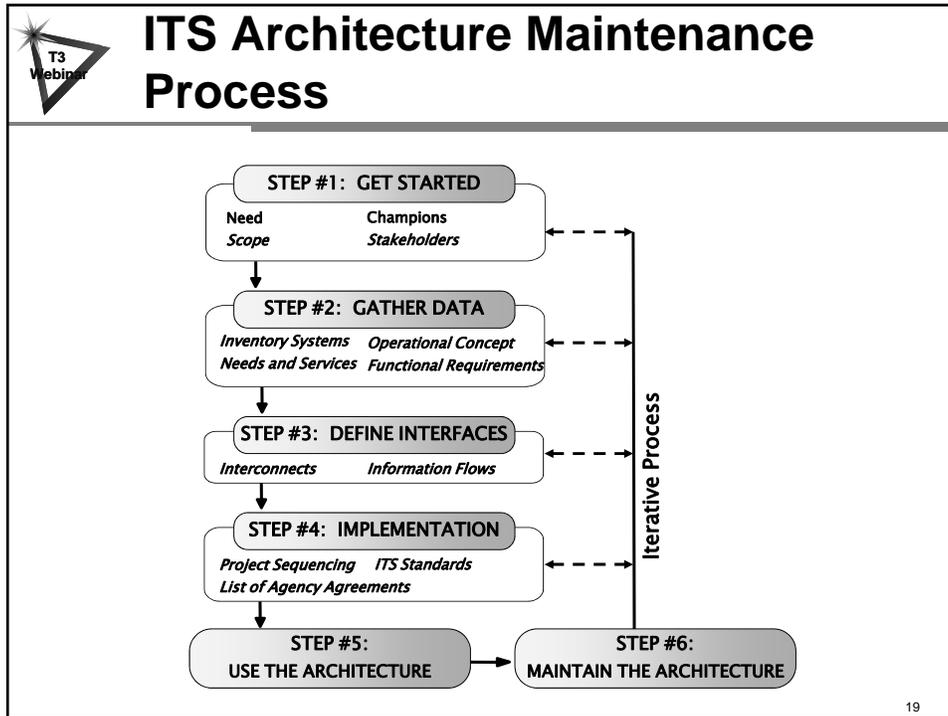



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Walk Through of Turbo Architecture Course Modules



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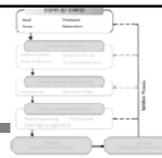
Course Walk Thru

Architecture Maintenance Step	Related Course Module
Step #1 – Scope & Champions	2 – Start Turbo
Step #1 – Stakeholders	4 – Stakeholders
Step #2 – Inventory Systems	5 – Inventory
Step #2 – Needs	3 – Link to Planning
Step #2 – Services	6 – Services
Step #2 – Operational Concept	7 – Operational Concept
Step #2 – Functional Requirements	8 – Requirements
Step #3 – Interconnects & Information Flows	9 – Interfaces
Step #4 – Project Sequencing	2 – Start Turbo
Step #4 – List of Agency Agreements	11 – Agreements
Step #4 – ITS Standards	10 – Standards
Step #5 – Use	14 – Wrap Up
Step #5 – Use	13 – Projects
Step #5 – Use	12 – Reports, Diagrams & Web Pages
Step #6 – Maintenance	2 – Start Turbo

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Course Walk Thru: Maintenance Step #1



Architecture Maintenance Tasks	Related Course Material
Step #1 – Scope & Champions <ul style="list-style-type: none"> Refine architecture scope Change architecture champions 	2 – Start Turbo <ul style="list-style-type: none"> How to define attributes of an architecture How to define the architecture developer & maintainer
Step #1 – Stakeholders <ul style="list-style-type: none"> Add a new stakeholder Delete a stakeholder Rename a stakeholder 	4 – Stakeholders <ul style="list-style-type: none"> How to add a stakeholder How to delete a stakeholder How to edit stakeholder attributes

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Course Walk Thru: Maintenance Step #2



Architecture Maintenance Actions	Related Course Material
Step #2 – Inventory Systems <ul style="list-style-type: none"> Add a new inventory element Delete an inventory element Change the status of an element from planned to existing Change the stakeholder associated with an element Revise the function(s) of an element 	5 – Inventory <ul style="list-style-type: none"> How to add an element How to delete an element How to change the status of an element How to associate a stakeholder with an element How to map an element to entities of the National Architecture
Step #2 – Needs <ul style="list-style-type: none"> Identify needs/goals & objectives from which the ITS services were selected Define needs/goals & objectives that ITS projects will address Identify ITS services that will address the defined goals & objectives 	3 – Link to Planning <ul style="list-style-type: none"> How to define goals and/or objectives and associate ITS services How to define goals and/or objectives and associate ITS projects How to identify ITS services to meet goals & objectives

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Course Walk Thru: Maintenance Step #2 (cont.)



Architecture Maintenance Actions	Related Course Material
Step #2 – Services <ul style="list-style-type: none"> Add a new ITS service Delete an ITS service Change the status of a service Revise the stakeholders (& their inventory elements) to be involved in a service Compare planning goals & objectives with service selections 	6 – Services <ul style="list-style-type: none"> How to add a Market Package (MP) How to delete a MP How to change the status of a MP How to associate elements with a MP How to create the Planning Gap Analysis report

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Course Walk Thru: Maintenance Step #2 (cont.)



Architecture Maintenance Actions	Related Course Material
Step #2 – Operational Concept <ul style="list-style-type: none"> • Develop an operational concept • Add and/or revise roles and responsibilities of stakeholders 	7 – Operational Concept (Op Con) <ul style="list-style-type: none"> • How to complete the two-step process for creating an Op Con • How to add & revise roles and responsibilities
Step #2 – Functional Requirements <ul style="list-style-type: none"> • Define functional requirements of inventory elements • Add and/or revise functional requirements of inventory elements 	8 – Requirements <ul style="list-style-type: none"> • How to identify then tailor functional requirements of elements • How to add, delete & tailor functional requirements

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Course Walk Thru: Maintenance Step #3



Architecture Maintenance Actions	Related Course Material
Step #3 – Interconnects & Information Flows <ul style="list-style-type: none"> • Add interfaces for new inventory elements • Remove interfaces between elements • Change the status of information flows from planned to existing 	9 – Interfaces <ul style="list-style-type: none"> • How to perform a “build” to identify potential interfaces & how to view and tailor them based upon the agreed upon needs of the region • How to view interfaces and tailor them • How to change the status of flows

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Course Walk Thru: Maintenance Step #4



Architecture Maintenance Actions	Related Course Material
Step #4 – Project Sequencing	2 – Start Turbo
<ul style="list-style-type: none"> • Define a sequence of projects • Change the status of a project from planned to existing 	<ul style="list-style-type: none"> • How to add project architectures & how to define status values • How to define attributes of a project architecture
Step #4 – List of Agency Agreements	11 – Agreements
<ul style="list-style-type: none"> • Define a list of agreements • Add or delete an agreement • Change the status of an agreement from planned to existing • Change the stakeholders involved in an agreement 	<ul style="list-style-type: none"> • How to add agreements • How to add & delete agreements • How to define attributes of an agreement • How to associate stakeholders with an agreement

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Course Walk Thru: Maintenance Step #4 (cont.)



Architecture Maintenance Actions	Related Course Material
Step #4 – ITS Standards	10 – Standards
<ul style="list-style-type: none"> • Identify the applicable ITS standards • Identify the standards applicable to a specific interface • Add a standard to be used • Identify the version of a standard to be used 	<ul style="list-style-type: none"> • How to include standards in an architecture • How to view standards by interface • How to add a standard • How to modify a standard

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Course Walk Thru: Maintenance Step #5



Architecture Maintenance Actions	Related Course Material
Step #5 – Use <ul style="list-style-type: none"> Use in long-range planning, transportation improvement programming/budgeting and/or project implementation 	14 – Wrap Up <ul style="list-style-type: none"> Overview of architecture use
Step #5 – Use <ul style="list-style-type: none"> Develop a project architecture 	13 – Projects <ul style="list-style-type: none"> How to create a project architecture from scratch or from a regional architecture
Step #5 – Use <ul style="list-style-type: none"> Document updated architecture Prepare presentations for stakeholders, decision-makers, etc. 	12 – Reports, Diagrams & Web Pages <ul style="list-style-type: none"> How to create architecture document & web pages How to create & tailor reports & diagrams

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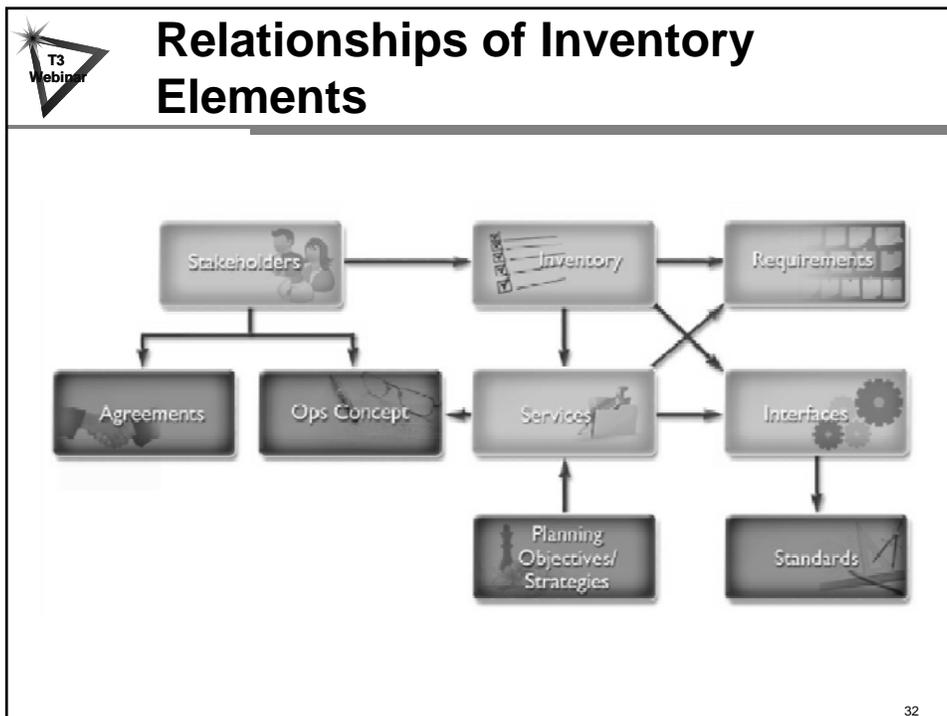
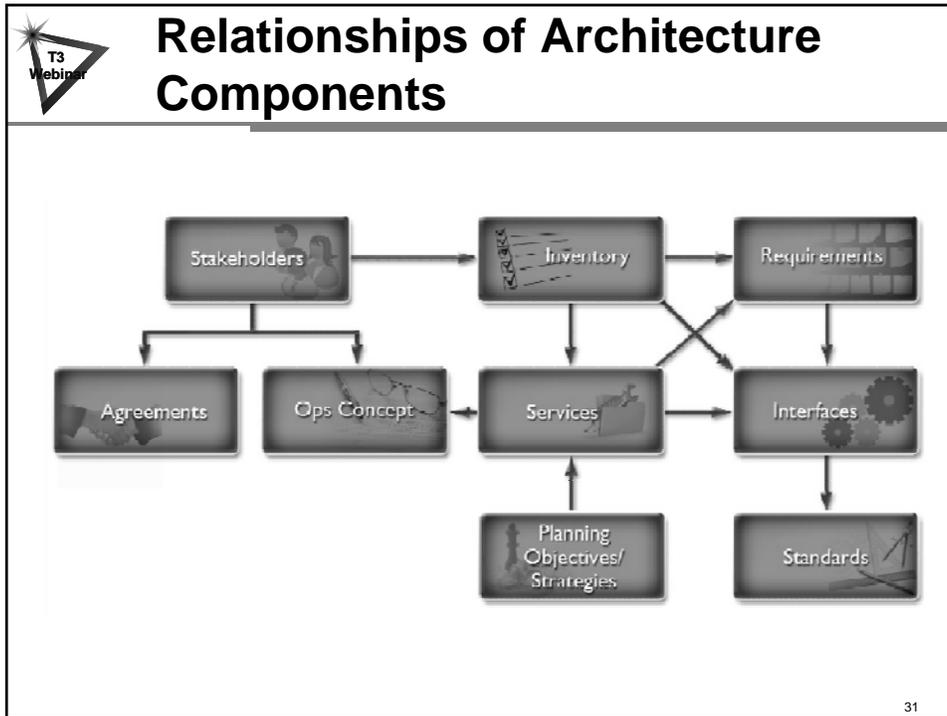


Course Walk Thru: Maintenance Step #6

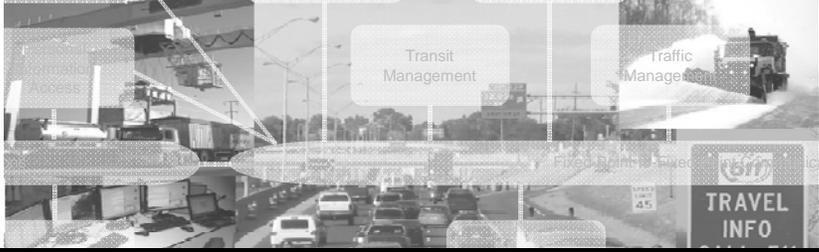


Architecture Maintenance Actions	Related Course Material
Step #6 – Maintenance <ul style="list-style-type: none"> Assign a version number to the updated architecture Keep a list of items revised in the architecture 	2 – Start Turbo <ul style="list-style-type: none"> How to define attributes of an architecture How to add an item to the Change Log

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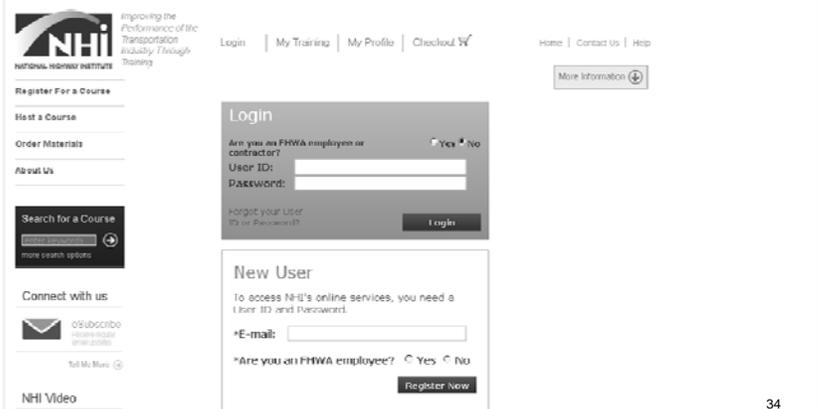
**ITS Architecture Made Easier Using Turbo Architecture:
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Where to Find Out More



NHI Course Registration

- www.nhi.fhwa.dot.gov
- Course Number = FHWA-NHI-137048



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- + Where can I find course descriptions?
- + What is instructor-led training (ILT)?
- + What is Web-conference training (WCT)?
- + What equipment do I need to participate in a WCT?
- + What is Web-based training (WBT)?
- + How does a WBT course work?
- + What equipment do I need to take an asynchronous WBT?
- + Do I have to finish a WBT course in one sitting?
- + Can I take the final exam for a WBT more than once?

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- + How do I host a course session?

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NHI Course Help

The screenshot displays the Turbo Architecture web application. The main content area is titled 'Street View - Demonstration' and contains several sections: 'ATTRIBUTES', 'DESCRIPTION', 'COORDINATES', and 'STATUS'. The left sidebar shows 'Module 2: Getting Started' with 'Glossary' and 'Help' options. The right sidebar, titled 'Turbo Architecture Module 2', includes a search bar and text explaining the interface. A video player at the bottom indicates 'Slide 8 / 20 | Stopped'.

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Turbo Architecture Availability

- Free download from <http://www.its.dot.gov/arch>

The logo for Turbo Architecture features the word 'Turbo' in a large, stylized font with a speedometer graphic, and 'ARCHITECTURE' in a smaller font below it. To the right, there is a graphic with the text 'Free Download Available!' and 'Have *'.

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 **Turbo User Support**

- 800 Number (800-260-1001) 
- E-Mail (turbo@iteris.com) 
- Web (www.its.dot.gov/arch) 

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Preview of Turbo Architecture Version 7.0





Changes in Turbo Architecture Version 7.0

- Compatibility with National ITS Architecture V7.0
 - Active Transportation Management
 - VMT Road User Payment
 - Wireless Roadside Inspection
- Compatibility with the new "Service Package" terminology
- Bug fixes

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Contact Information

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Questions & Answers

