ARC-IT V8 Workshop

ARC-IT FROM A NATIONAL ITS ARCHITECTURE PERSPECTIVE
Perspectives to Accessing ARC-IT

- ARC-IT covers all the content from both
  - National ITS Architecture v7.1
  - CVRIA v2.2
- “What’s New?” depends on your perspective
  - What's New in ARC-IT From the National ITS Architecture Perspective
  - What's New in ARC-IT From the CVRIA Perspective
What's New - National ITS Architecture Perspective

- **First Glance?** ARC-IT v8 completely different than v7.1
- **2nd Glance?**
  - Concepts & Features are there
  - Terminology & Graphics updated
  - Content expanded for all of ITS
- **What’s Changed – What Hasn’t**
  - Service Packages
  - Layers → Views
    - Enterprise
    - Functional
    - Physical
    - Communications
  - Security
Service Packages Are Still the "Front Door"

- SPs have always served as the primary entry point to the National ITS Architecture and they continue in that role in ARC-IT.
- Increased from 97 to 133 to cover all of the National ITS Architecture service packages and all of the connected vehicle applications.
- There was some consolidation and reorganization.
- Eight service areas became twelve service areas in ARC-IT.
  - New 'Support' and 'Sustainable Travel' service areas include Service Packages from CVRIA that will be mostly new to National ITS Architecture users.
# Service Package Areas

<table>
<thead>
<tr>
<th>V7.1 Service Area</th>
<th>ARC-IT Service Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Traffic Management Systems (ATMS)</td>
<td>Traffic Management (TM)</td>
</tr>
<tr>
<td>Advanced Traveler Information Systems (ATIS)</td>
<td>Traveler Information (TI)</td>
</tr>
<tr>
<td>Advanced Public Transportation Systems (APTS)</td>
<td>Public Transportation (PT)</td>
</tr>
<tr>
<td>Emergency Management (EM)</td>
<td>Public Safety (PS)</td>
</tr>
<tr>
<td>Commercial Vehicle Operations (CVO)</td>
<td>Commercial Vehicle Operations (CVO)</td>
</tr>
<tr>
<td>Maintenance and Construction (MC)</td>
<td>Maintenance and Construction (MC)</td>
</tr>
<tr>
<td>Archived Data (AD)</td>
<td>Data Management (DM)</td>
</tr>
<tr>
<td>Advanced Vehicle Safety Systems (AVSS)</td>
<td>Vehicle Safety (VS)</td>
</tr>
<tr>
<td></td>
<td>Support (SU)</td>
</tr>
<tr>
<td></td>
<td>Sustainable Travel (ST)</td>
</tr>
<tr>
<td>(Previously included in ATMS)</td>
<td>Parking Management (PM)</td>
</tr>
<tr>
<td>(Previously included in MC)</td>
<td>Weather (WX)</td>
</tr>
</tbody>
</table>
RAD-IT and SET-IT, will convert your National ITS Architecture service packages to ARC-IT service packages automatically.
'Layers' Are Now 'Views'

- Institutional → Enterprise
- Transportation – split into Functional (Logical) & Physical
- Communications expanded
What’s New in Enterprise

- User Services once guided development of Architecture
- Now Stakeholders’ Needs for all transportation services have been developed
- User Services as sources for v7.1 service packages
What's New in Functional View

- Will include a hierarchical set of processes and data flows
- Extended to cover all ARC-IT service packages and needs
- All functional Requirements are linked to Physical’s Functional Objects
What’s New in Physical View

- Some Name Changes
- Scope has expanded
- Basics are the same

RAD-IT and SET-IT, will convert your National ITS Architecture physical entities to ARC-IT physical objects automatically.
What’s New in Communications View

- Connection between physical information flows & standards is similar
- V7.1 mapped flows to standards
- V8.0 goes further
  - Organizes standards into 'Profiles' that identify standards at each layer of the OSI communications stack
  - Profile + Information Layer standard = Solution
Security

- Same basic security classification scheme in previous versions continues:
  - considered confidentiality, integrity, and availability requirements for each information flow and physical object

- Upgraded and revised for Version 8.0:
  - Every information flow triple now includes security classification ratings (C-I-A) which are used to provide device classification requirements for the physical objects
  - Explicitly supports security credentials management
  - References specific communications security standards
Take a Tour – Next Pit Stop

- Find the ARC-IT Equivalent of ATMS01 Network Traffic Surveillance
- What is the role of connected vehicle technology in this SP?
- What information flow carries video from the ITS Roadway Equipment to the Traffic Management Center?
- What information flow carries Bluetooth-sniffed speed data?
ARC-IT V8 Workshop

ARC-IT FROM A CVRIA PERSPECTIVE
What's New - National ITS Architecture Perspective

- First Glance? ARC-IT v8 looks like a refinement of CVRIA

- 2nd Glance?
  - Architecture structure is the same, but refined
  - Scope is significantly increased to cover all of ITS
  - Enterprise content?

- What’s Changed – What Hasn’t
  - Service Packages
  - Security
  - Background Documentation
  - Architecture Use
Applications were the entry point into CVRIA. SPs are the same.

- Increased from 96 to 133 to cover all of the National ITS Architecture service packages and all of the connected vehicle applications.
- There was some consolidation and reorganization.
- Four application types became eight service package types in ARC-IT.
## Service Package Types

<table>
<thead>
<tr>
<th>CVRIA Application Type</th>
<th>ARC-IT Service Package Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>Convenience</td>
</tr>
<tr>
<td>Mobility</td>
<td>Environmental</td>
</tr>
<tr>
<td>Safety</td>
<td>Informational</td>
</tr>
<tr>
<td>Support</td>
<td>Management</td>
</tr>
<tr>
<td></td>
<td>Mobility</td>
</tr>
<tr>
<td></td>
<td>Regulatory</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
</tr>
<tr>
<td></td>
<td>Support</td>
</tr>
</tbody>
</table>

From the Service Package page, click the 'Type Sort' link to view SPs by type.
### CVRIA 2.2 Heritage

The table below shows how the CVRIA 2.2 applications trace to ARC-IT 8.0 service packages.

<table>
<thead>
<tr>
<th>CVRIA 2.2 Application</th>
<th>ARC-IT 8.0 Service Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Short Name</td>
</tr>
<tr>
<td>Advanced Automatic Crash Notification Relay</td>
<td>PS04</td>
</tr>
<tr>
<td>Advanced Traveler Information Systems</td>
<td>PS14</td>
</tr>
<tr>
<td>Blind Spot Warning + Lane Change Warning</td>
<td>TI02</td>
</tr>
<tr>
<td>Border Management Systems</td>
<td>TI22</td>
</tr>
<tr>
<td>Connected Eco-Driving</td>
<td>SD09</td>
</tr>
<tr>
<td>Container Security</td>
<td>CV016</td>
</tr>
<tr>
<td>Container/Chassis Operating Data</td>
<td>CV002</td>
</tr>
<tr>
<td>Control Loss Warning</td>
<td>VS02</td>
</tr>
<tr>
<td>Cooperative Adaptive Cruise Control</td>
<td>VS14</td>
</tr>
<tr>
<td>Core Authorization</td>
<td>SU02</td>
</tr>
<tr>
<td>Curve Speed Warning</td>
<td>VS06</td>
</tr>
<tr>
<td>Data Distribution</td>
<td>SU03</td>
</tr>
<tr>
<td>Do Not Pass Warning</td>
<td>VS02</td>
</tr>
<tr>
<td>Dynamic Eco-Routing</td>
<td>TI03</td>
</tr>
<tr>
<td>Dynamic Ridesharing</td>
<td>TI04</td>
</tr>
</tbody>
</table>

SET-IT will convert your CVRIA applications to ARC-IT service packages automatically.
What’s New in Enterprise

- All new user needs
  - mapped to service packages
  - traceable to requirements
- Roles and Relationship Types defined: sufficient for SET-IT use
- Enterprise content in v8.1
What's New in Functional View

- Will include a hierarchical set of processes and data flows
- Extended to cover all ARC-IT service packages and needs
- All functional Requirements are linked to Physical’s Functional Objects
What’s New in Physical View

- Some Name Changes
- Scope has expanded
- Basics are the same

RAD-IT and SET-IT, will convert your National ITS Architecture physical entities to ARC-IT physical objects automatically.
What’s New in Communications View

- Updated to support changes in published standards