



ITS Architecture Update Stakeholder Meeting

NOACA Meeting Room

September 23, 2009



ITS Architecture Overview



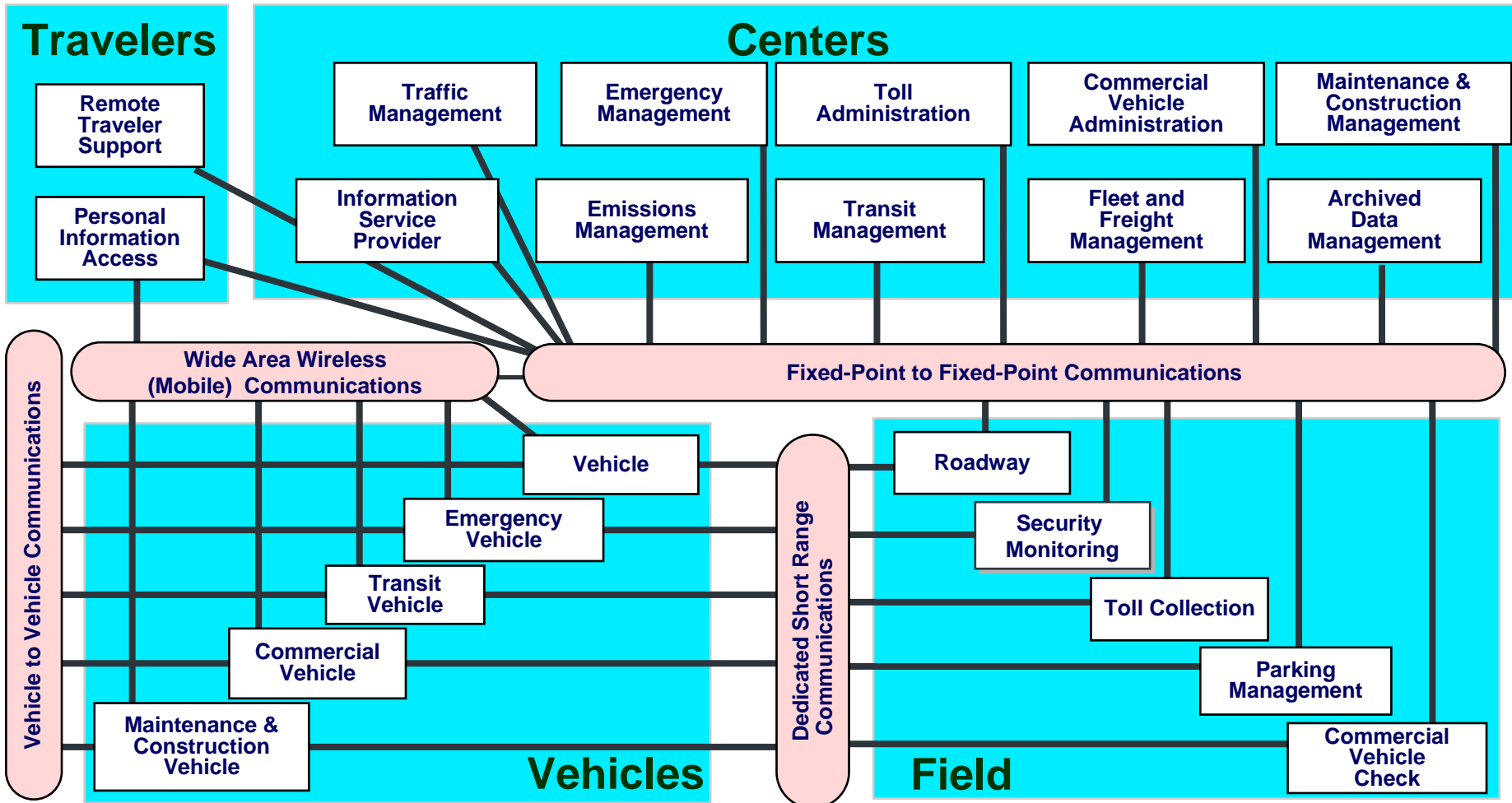
- **Intelligent Transportation System**

Could be:

- *Integrated* **Transportation System**
- One Definition:
 - “The application of *data processing* and *data communications* to surface transportation, to increase *safety* and *efficiency*.”

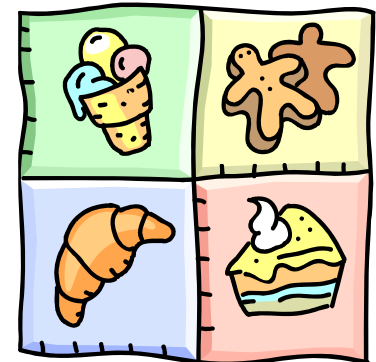
- **Is:**
 - Identifies the ITS stakeholders in a region and their elements
 - Identifies the information or control to be exchanged between stakeholder elements
 - Making policy decisions by including or not including specific information flows between stakeholder elements
 - Selects standards for information exchange
- **Isn't:**
 - Doesn't select specific technologies or design
 - How projects are selected or funded

National ITS Architecture- Framework and Template



- A plan for deployment of ITS in the Region
- Focus on integration of ITS in the Region

- National ITS Architecture (*the cookie cutter*)
 - a Framework or Template
 - a menu of possibilities
- Regional ITS Architecture (*the cookies*)
 - Specific instances, associated with local stakeholders and projects
 - Current inventory + future projects
 - Only the pieces you need
 - Put together based on local needs
 - Extensions, where necessary



- How will your systems evolve?
 - What new or enhanced services will you provide?
 - What systems will you connect to and what information will you share?
 - What agreements need to be in place to make it happen?
- The NOACA Regional ITS Architecture will provide the framework and plan for the evolution of your systems over the next 20 years.

- Transportation planning tool
 - Get a handle on where we are going with our Intelligent Transportation System
- Regional information sharing opportunities
 - Get early insight into what ITS information others have that can help you do your job better (or you can provide to others)
- Opportunities to leverage funding across multiple jurisdictions and agencies



- AND -- Addresses FHWA Rule/FTA Policy on ITS Architecture and Standards
 - Requires Development of a Regional ITS Architecture if using Highway Trust Fund money to fund deployment of projects containing ITS elements.
 - Intended to foster integration of ITS Systems
 - Defines requirements for ITS projects
 - Defines requirements for ITS agreements
- This workshop continues the process of updating the NOACA Regional ITS Architecture

1. Description of the region (Scope)
2. Identification of participating agencies and their systems (Inventory)
3. Operational concept
4. Agreements required for implementation
5. System functional requirements
6. Interface requirements
7. Identification of ITS standards
8. Sequence of projects required for implementation
9. Process for maintaining your ITS Architecture

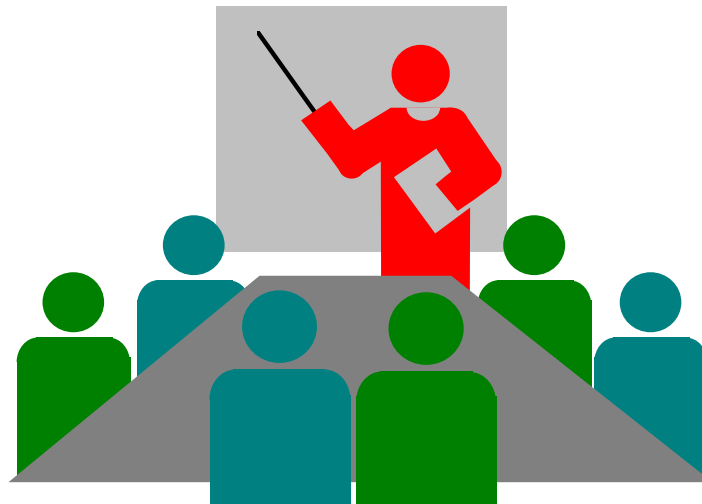


Architecture Scope



- Geographic
 - Covers systems and roads throughout the NOACA MPO region
- Time Frame
 - Existing Today → 20 years in the future?
- Scope of Services
 - Traffic, Maintenance, Transit, Emergency, Electronic Toll (statewide only?), Commercial Vehicles Operations (statewide only?), Planning

Discussion of NOACA Regional ITS Elements



What is an ITS Inventory?

- A list of ITS elements and the elements that interface with them
- And an ITS element is:
“The name used by stakeholders to describe high level parts of an ITS system.”



- Review current and planned elements
- Types of elements:
 - Centers - Traffic, Emergency, Transit
 - Field Devices - Traffic, Maintenance
 - Traveler Interfaces - Web sites
 - Data Systems - Planning, Archives
 - Vehicles - Transit, Emergency, Maintenance

Lets go to the inventory...



Transportation Needs



Transportation Needs

- What are Needs?
 - Regional necessities that address particular transportation issues
 - Some are ITS related, meaning the need can be satisfied with the incorporation of ITS in the transportation system
 - Some are not ITS related
- Needs are both qualitative and quantitative
 - Qualitative Needs – Identifies a general requirement
 - E.g. Improve incident response and remediation
 - Quantitative Needs – Identifies a specific requirement by which one can measure numerically if it has been met.
 - E.g. Install 12 CCTV Cameras on state highways



Why identify Needs for NOACA?

- Identification of ITS related needs will help make a connection between transportation planning and the ITS projects that are developed.
- Aids member agencies in developing financial strategies to deal with unmet needs
 - Identify possible future funding sources
 - Multi-year financing plan to leverage funding now

- Identify and extract ITS Needs identified by:
 - Past experience in architecture development
- Created first cut for discussion with Stakeholders
- Lets go to the Needs ...

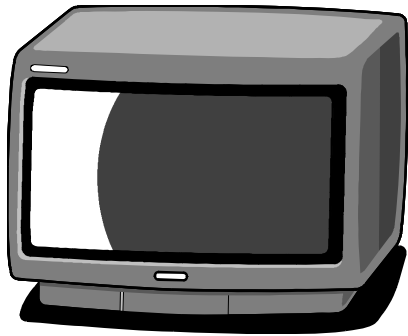
Discussion of ITS Services- Market Packages Overview/ Prioritization



- Traffic Management
- Traveler Information
- Transit Management
- Emergency Management
- Commercial Vehicle Operations
- Maintenance and Construction
- Archived Data Management
- Advanced Vehicle Safety

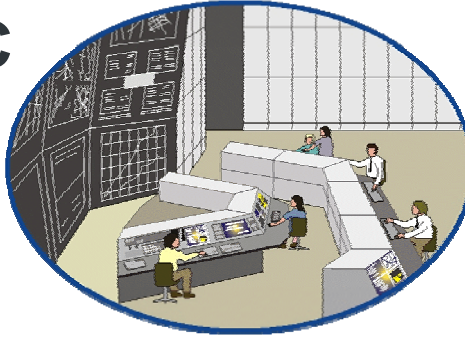


Traffic Information Dissemination



Television
Station

TMC



Dynamic Message
Signs

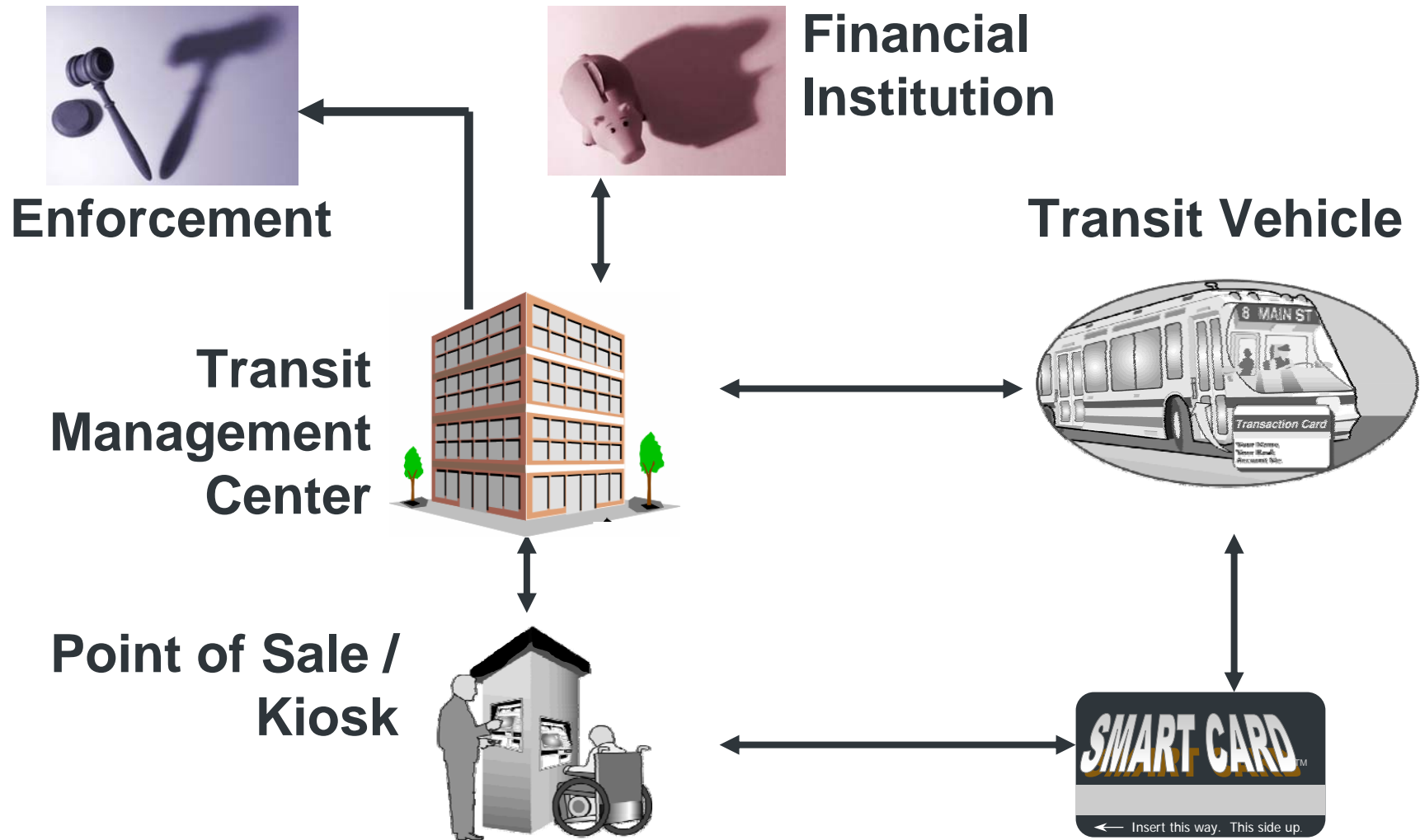


Web Site

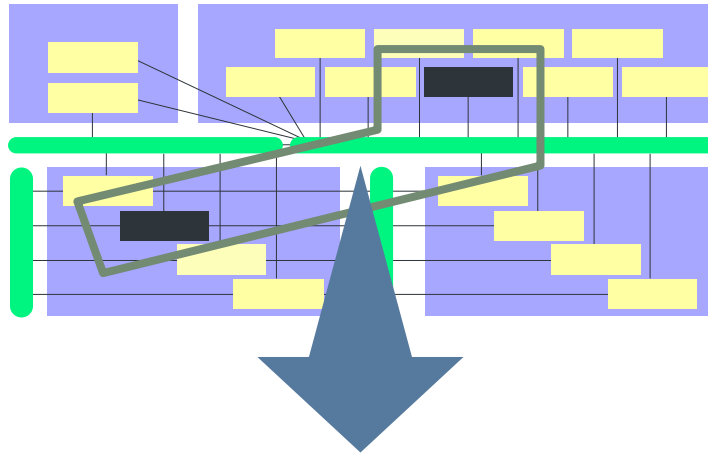


Motorist

Automated Transit Fare Payment



Market Packages



Architecture

Framework spanning all of ITS

Transit Vehicle



Transit Management

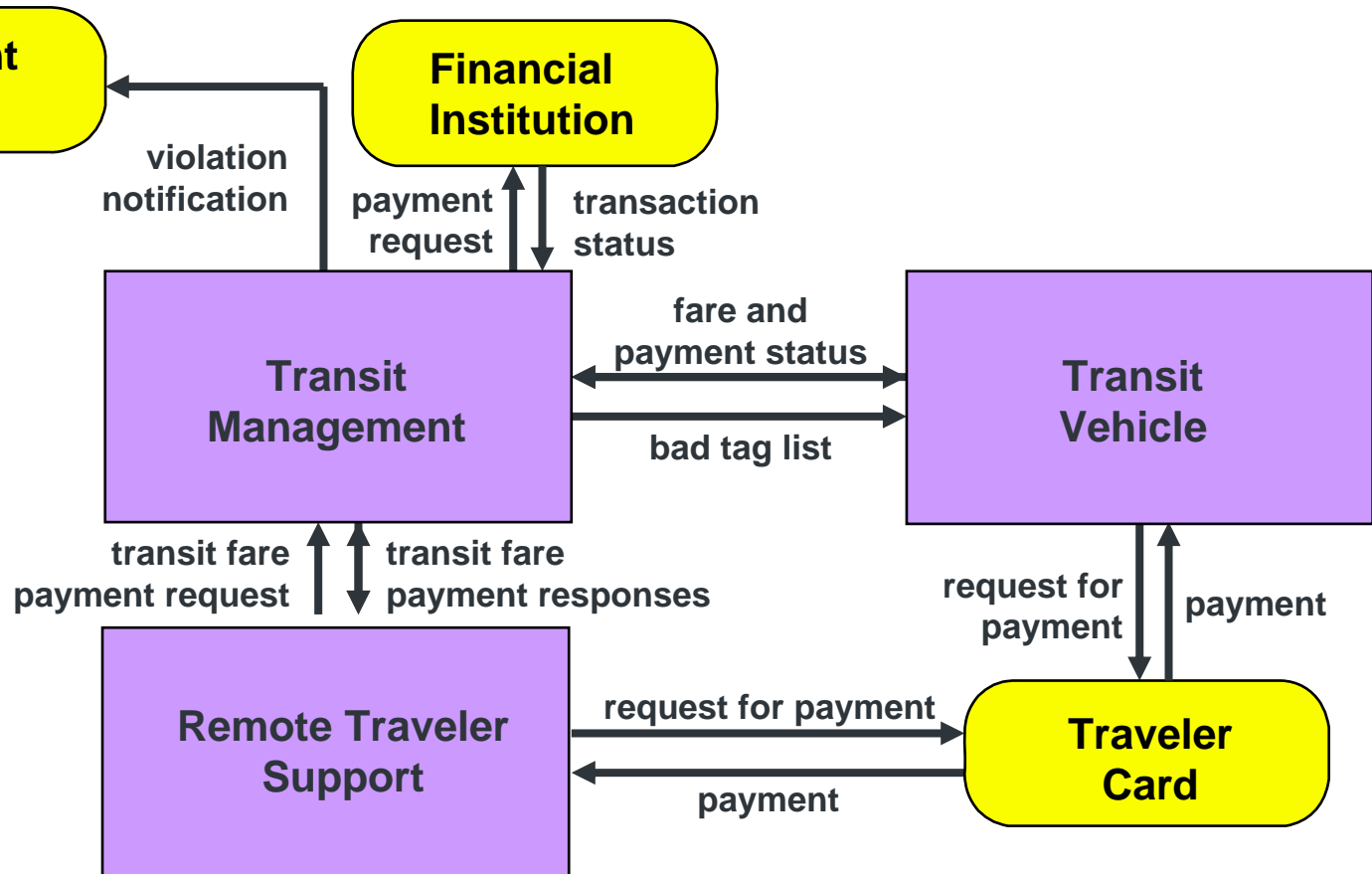


Market Packages

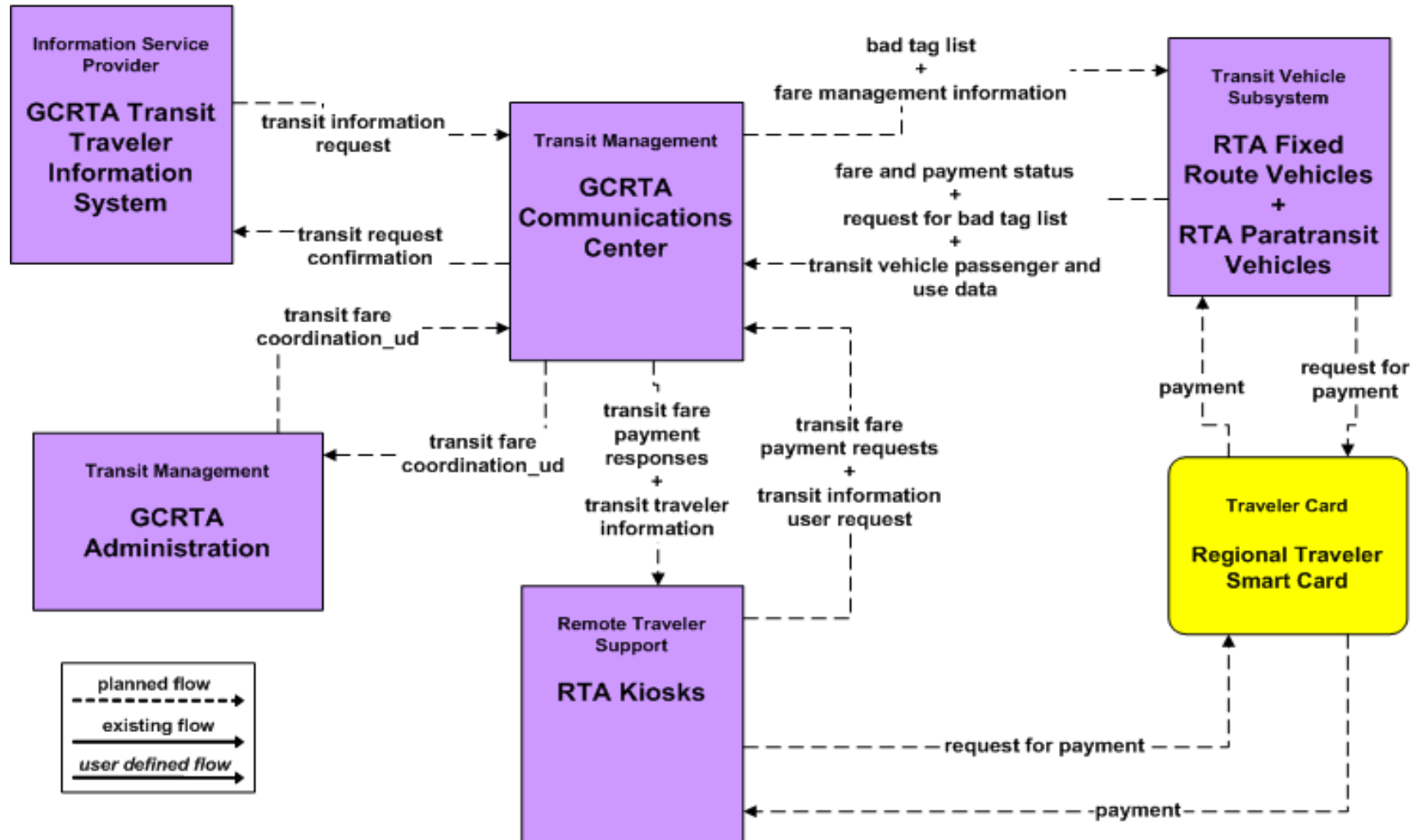
Pieces of the architecture that provide a particular transportation service.



APTS4 - Automated Fare Payment Market Package



APTS4 – Transit Passenger and Fare Payment (GCRTA)



- Draft set of Market Packages
 - Based on stakeholder interviews
- Identify Priority of the Market Package
 - High (Short to mid term implementations)
 - Medium (Mid term implementations)
 - Low (Long term implementations)
- Priority may vary by stakeholder group

- There is a Relationship between market packages and needs
 - The Market Package Prioritizations should be directly related to the Needs identified for the region
 - High Priority Needs should translate to High Priority Market Packages
- Lets go to the Services/Market Package Prioritizations...

Market Package Customization

- Market Packages are described by
 - Elements
 - Interconnections
- Now that we have identified priorities, lets look at the details of the market packages and customize the elements and interconnections...



Review of Projects for Strategic Plan Framework



Next Steps- Architecture Website

- Draft updated NOACA Regional ITS Architecture will be available on the project website:
 - Link to project website at www.consystec.com
- Email to all stakeholders when ready for review
- Please take the time to review your portion of the architecture and provide comments



Next Steps

- Your input from this workshop will be turned into an initial updated draft NOACA Regional ITS Architecture
- Your input on the NOACA Regional ITS Architecture website will be captured and reviewed at the remaining stakeholder meeting
- Thank you for your input today

