



**Small Urban &  
Rural Transit Center**

# **ITS Architecture in Rural Transit Systems: The Case of Kearney, Nebraska**

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## **Motivation and Outline of Today's Presentation**

- Case Study on Coordination in Small Urban and Rural Transit Systems in the United States
- Terminology
- Designing and Implementing a Regional ITS Architecture
- Experiences of Kearney, Nebraska



# Architecture in the Context of ITS

- A framework within which a system can be built
- Defines the pieces of the system and how information is exchanged between them
- Not a specific technology



# Standards

- Standards specify how various technologies, products, and components interconnect and interact within a system framework
- Example: telephone



# Coordination in Transit

The harmonious functioning of parts for most effective results

- Parts: users, providers, technology, vehicles, highway infrastructure
- Effective Results: any of a number of performance measures



# The Regional ITS Architecture Development Process

- Get Started (1/6)
  - Identify Need
  - Define Region
  - Identify Stakeholders
  - Identify Champions
  
- Gather Data (2/6)
  - Inventory Systems
  - Determine Needs and Services
  - Develop Operational Concept
  - Define Functional Requirements



# The Regional ITS Architecture Development Process cont.

- Define Interfaces (3/6)
  - Identify Interconnects
  - Define Information Flows
  
- Implementation (4/6)
  - Define Project Sequencing
  - Develop List of Agency Agreements
  - Identify ITS Standards
  
- Use the Regional Architecture (5/6)
- Maintain the Regional Architecture (6/6)



## **Kearney, Nebraska**

- City of nearly 28,000 located on the Platte River in central Nebraska
- R.Y.D.E. (Reach Your Destination Easily) provides demand response service to Kearney and surrounding areas



# What's been happening in Kearney

Implementing technology...

Coordinating information and resources  
between organizations...

...to increase the efficiency of the local  
demand response system



## What's been happening in Kearney

- Routing & dispatch software
- Computer aided billing
- AVL/GIS Technology
- MDT Technology
- Established and maintain relationships between those within the system



## **Kearney's First Steps**

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- Looked at big picture including areas outside current area of operation
- Identified large number of stakeholders including:
  - Private transportation providers
  - Health Services
  - Schools
  - Emergency Agencies

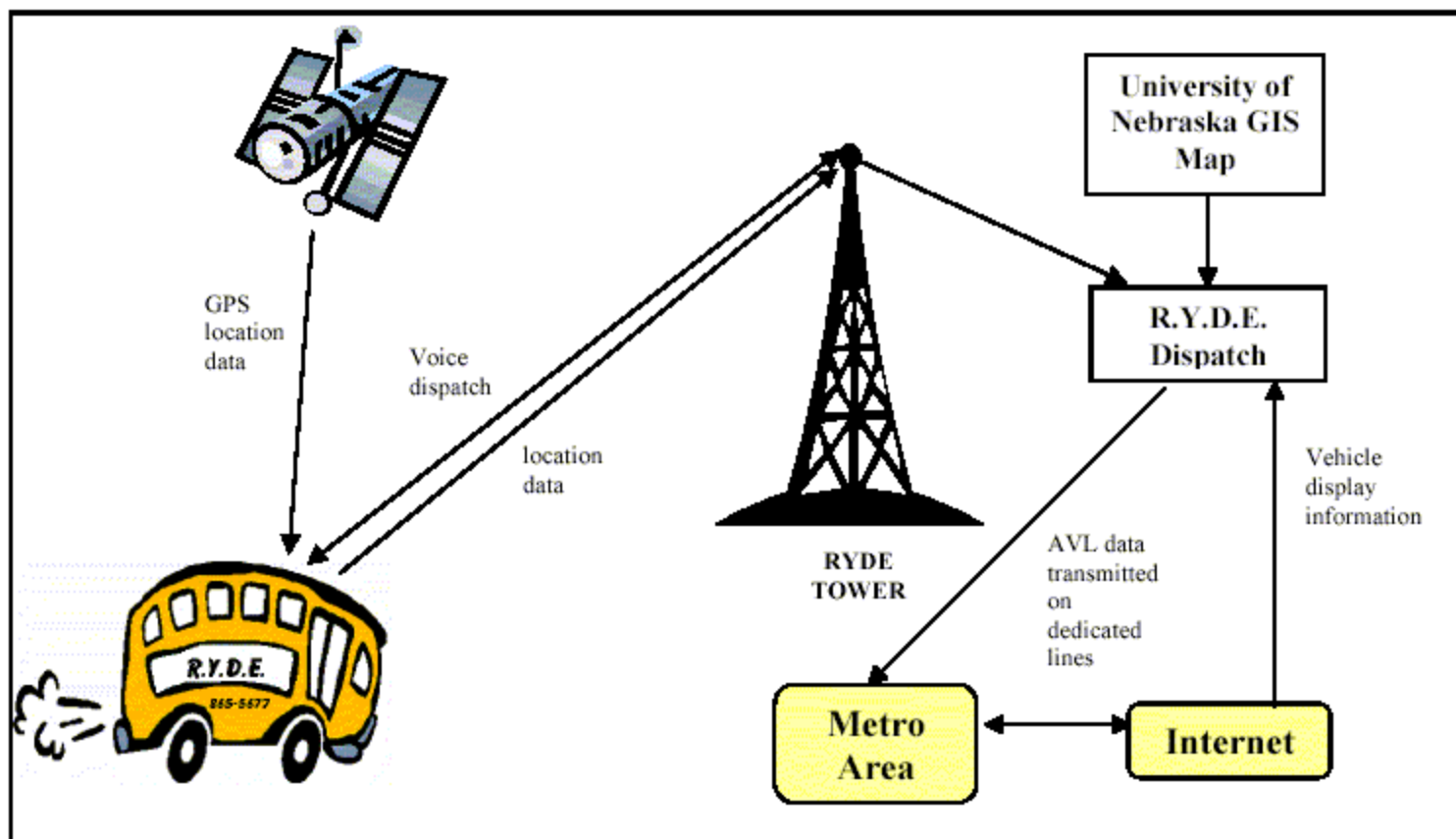


# Kearney's Needs & Services

- Improved Paratransit Management
- Advancing the Use and Coordination of AVL and GIS Systems
- **Enhance Data Sharing**
- Maintenance and Storage Facility
- Improving Incident Management
- **Emergency Response and Routing**



# Kearney's Operational Concept...





## Define Sequencing

- Scheduled conservative pace of introduction of new technology to system
- RYDE is implementing its system over the course of four years, 2003-2006



## Identify Standards

- RYDE identified 80 different national ITS standards that may apply to its projected operations
- It then reviewed a large number of documents to make sure that pieces of its new transit system were compliant with all applicable standards



## Summary

- There are definite advantages in implementing a regional architecture using the FHWA/FTA process
- The experiences of Kearney are evidence of this in a small urban context



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