UNITED STATES
DEPARTMENT OF TRANSPORTATION

Technical Policy Analysis: Core Systems

Volker Fessmann
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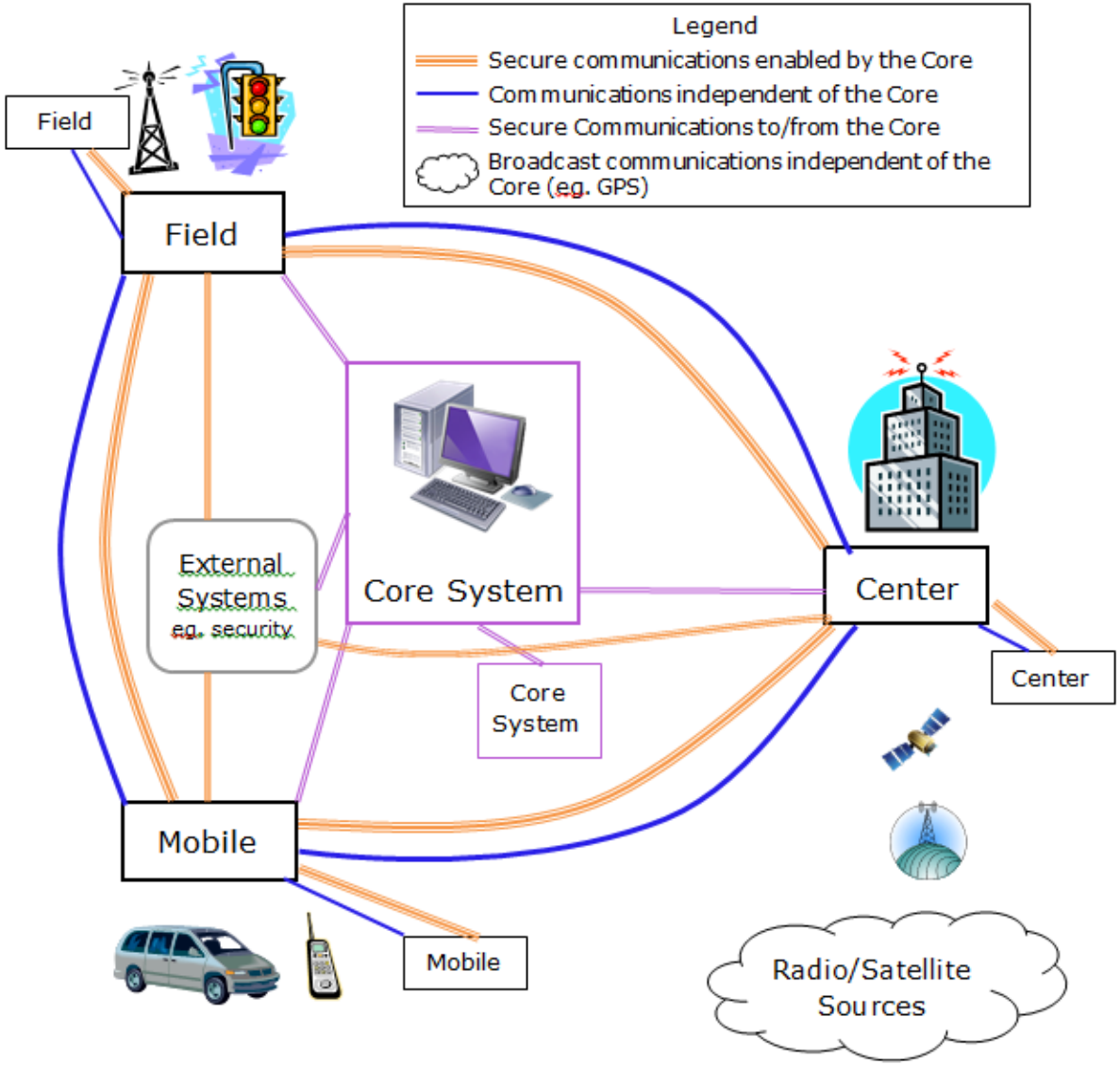
Connected Vehicle Environment

Core System enabled capabilities

- Enables three capabilities not resident in systems today:
  - **Secure exchange of trusted data** between users and applications without pre-existing relationship or entering into a permanent relationship.
  - **Assurance of privacy** between users and from third parties.
  - **More efficient data collection** from various sources and **distribution** to many users.

Core System Concept:



Today's capabilities:

- **Separate agreements** to access data from organizations
- Applications navigate to organizations individually to find accessible data—**slow**
- **Island solutions** – no easy data exchange
- Gains still possible but **some capabilities and functionalities will remain out of reach**

Capabilities with a core system:

- Can request any data **without having a relationship to the data provider –** no need for existing contracts or agreements
- Data is readily **accessible and trusted from multiple sources; rapid access in real-time; and of consistent format/quality**.

Core System Policy Research Questions:

- **Development of policy options:**
  - What is the role of a core system in supporting a connected vehicle environment? Is it necessary or optional?
  - What are the costs? Risks? Opportunities?
  - Will devices, applications, equipment need to be certified to connect with the core? Do specific standards apply?
  - Who will certify that a system meets the requirements to be a core system?
- **Business Case research questions:**
  - Why would any organization want to implement a core system or procure core system services?
  - Can organizations leverage their systems and equipment?
    - Do elements/functions of a core need to remain separate?
    - What is the costs/impact of implementing a core?

Outstanding Research Questions

- How do we implement the core system concept with connected vehicle environment deployers and users?

- Need to develop a more in-depth understanding of:
  - Why needed
  - How to implement
  - Resources needed for implementation
- Need to develop policy for use

Core System Policy Research

- **Research Actions:**
  - Using the System Architecture Documents, develop three case studies/ business models for implementing a core system:
    1. A consortium of public sector entities within a region
    2. A private sector, data provider firm
    3. A national trucking/logistics company

Hypothesis: These three case studies are likely to apply the SAD differently and have different needs for core system functionality. Case Studies will:

- Identify the needed core system functions from each perspective
- Identify the resource gap—what is needed for: costs, workforce/personnel, organizational changes (if any), or other institutional requirements

Timeline for Case Studies

- Fall of 2012:
  - Apply system architecture to three organizational/business models
  - Study gap in institutional resources
- Early 2013:
  - **Engage stakeholders** for review and feedback on case studies
  - Finalize case studies and develop policy options
- Relationship to other activities:
  - Will inform and be informed by Connected Vehicle Reference Implementation Architecture effort (Fall 2012-June 2013)
  - Certification needs and policy option development (Fall 2012-Early 2013)