

US-75 INTEGRATED CORRIDOR MANAGEMENT: CONCEPT OF OPERATIONS AND REQUIREMENTS DEVELOPMENT



**OPERATE THE
US-75 CORRIDOR
IN A TRUE
MULTIMODAL,
INTEGRATED,
EFFICIENT, AND
SAFE FASHION
WHERE THE
FOCUS IS ON THE
TRANSPORTATION
CUSTOMER.**

1. Providing comparative travel time to the public and operating agencies for the freeway, high-occupancy vehicle lane, frontage roads, arterial streets, and light-rail transit line;
2. Using simulation to predict travel conditions for improved incident response;
3. Implementing joint response plans among agencies;
4. Diverting traffic to a strategic arterial with improved signal control; and
5. Shifting travelers to the light-rail system for major incidents on the freeway.

The Concept of Operations is intended as a high-level Con Ops for the US-75 Corridor in Dallas consisting of freeway, arterial, bus, and rail networks and serving a central business district. The purpose of this Con Ops is to answer the questions of who, what, when, where, why, and how for the application of an ICM within this corridor. Given that an ICM is a "system of systems," involving multiple agencies and stakeholders, this Con Ops also defines the roles and responsibilities of the participating agencies and other involved entities.

The purpose of a Con Ops is to define the current and future

The Integrated Corridor Management (ICM) Project fundamentally changes how transportation agencies in the US-75 corridor collaborate to move more people and vehicles through the corridor, respond to incidents, and provide better travel information to travelers, who can make better decisions about how and when to travel the corridor. The new practices for transportation operations include:

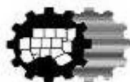
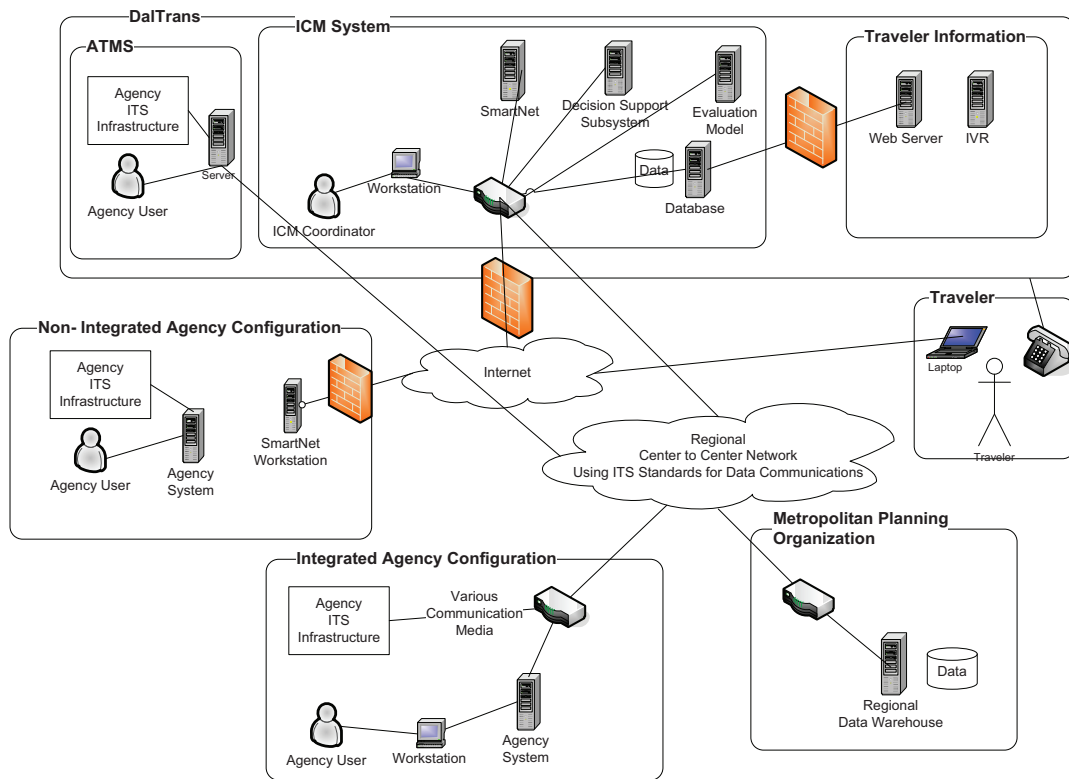


Figure 1. Overview of US-75 ICM System



Purpose of the Con Ops:

- To ensure that stakeholder needs and expectations are captured early
- To ensure that the implementation is linked to the agency mission, goals, and objectives
- To identify the existing operational environment and operations
- To identify where the system could enhance existing operations
- To illustrate the future environment with the system
- To establish a list of operational requirements
- To begin the traceability of the systems engineering process (the requirements will set benchmarks for system testing)

operational mission of the project and the operational requirements of the systems that will support and enable the project to achieve these missions. In essence, the Con Ops will define:

- Goals, objectives, and capabilities of each existing and planned system in the project corridor; and
- Roles and responsibilities of the participating agencies and stakeholders associated with the project.

The Con Ops is also the first step in the structured systems engineering process recommended by the Federal Highway Administration (FHWA) for intelligent transportation system (ITS) projects. The primary purposes of the Con Ops are listed in the side bar to the left.

For this project, the Con Ops provides a “snapshot” of the existing operations and a preview of what future systems could do to enhance this corridor’s operations.

Once the Con Ops was completed, the development of the system

requirements document began. The system requirements document is intended as a listing and discussion of the high-level requirements for the US-75 ICM in Dallas. The document describes what the system will do (the functional requirements), how well it should perform (the performance requirements), and under what conditions it will perform (non-functional and performance requirements). The requirements document does not define how the system is to be built; that is the province of the design document. The system requirements pull together requirements from a number of sources including but not limited to the Concept of Operations and constraints identified by the agencies. This document sets the technical scope of the system to be built.

FOR MORE INFORMATION

Ravi Gundimeda
Project Manager
Dallas Area Rapid Transit
rgundimeda@DART.org • 214-749-3685