

**DISTRICT THREE INTERSTATE REGIONAL  
INTELLIGENT TRANSPORTATION SYSTEMS  
ARCHITECTURE**

**EXECUTIVE SUMMARY**

**PREPARED FOR:**

**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT THREE**

**PREPARED BY:**

**TEI ENGINEERS & PLANNERS**

**July 2001**

## Referenced Documents

**Tech Memo 1      Data Review and Stakeholder Determination**

**Tech Memo 2      Determining User Services and Stakeholder Needs**

Appendix 2.A:      ITS Questionnaire

Appendix 2.B:      Stakeholder List

Appendix 2.C:      ITS Questionnaire Responses (not electronic)

Appendix 2.D:      ITS Workshop Presentation

Appendix 2.E:      ITS Workshop Attendees

Appendix 2.F:      User Service/Market Package Glossary

**Tech Memo 3      Develop Criteria for Performance Evaluation**

Appendix 3.A:      Performance Criteria Definitions

**Tech Memo 4      Develop ITS Architecture**

Appendix 4.A:      Regional Stakeholders

Appendix 4.B:      Regional Architecture Elements

Appendix 4.C:      Regional Subsystem Interconnects

Appendix 4.D:      Standards Report

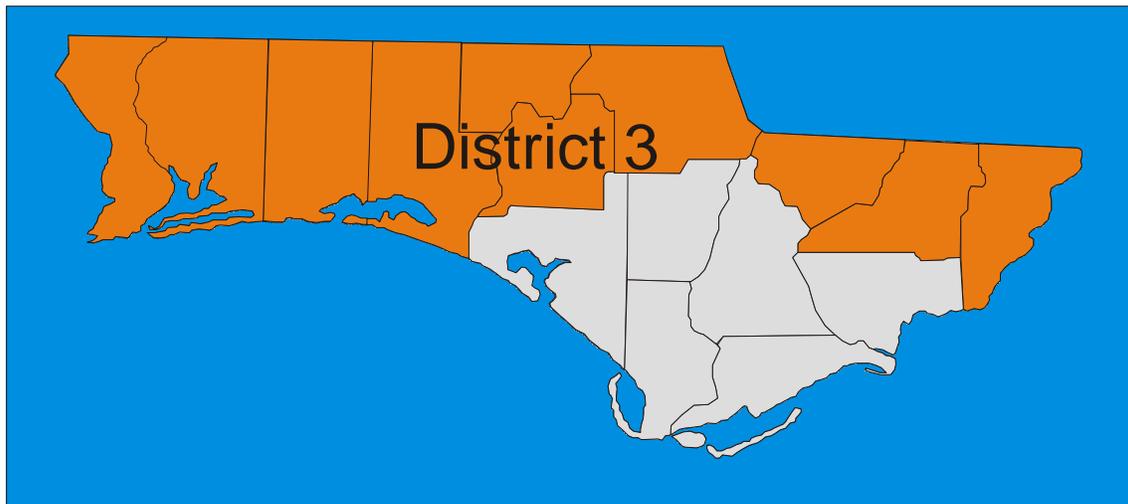
## I Introduction

The Florida Department of Transportation (FDOT) District Three has recognized the importance of Intelligent Transportation Systems (ITS) technologies and the ITS National Architecture (NA) in guiding regions in developing an efficient and effective transportation network. This project was a comprehensive study to develop a Regional Architecture for the deployment of ITS along the Interstate System within FDOT District Three.

Through a series of projects, the Department is addressing the needs for and capabilities of Intelligent Transportation Systems for the various Districts and facilities throughout the State. This project builds upon the recently completed Statewide and District-wide ITS Architectures.

## II Project Overview

District Three is composed of 16 counties that cover a roughly rectangular area 230 miles long and 40-80 miles wide as shown below (counties through which the interstates run are highlighted). Interstate 10 (I-10) runs the length of the district. Interstate 110 (I-110) links I-10 with downtown Pensacola in Escambia County (western portion of the District).



The majority of the District is rural, though there are four major urban areas: Pensacola, Fort Walton Beach, Panama City, and Tallahassee, the State Capitol. In addition, three of Florida's 14 seaports, Pensacola, Panama City, and Port St Joe, lie along the southern coast. There is one international airport and two regional airports. Major tourist destinations include almost 100 miles of Gulf Coast beaches, stretching from Pensacola to Panama City, and a number of state

parks. The Department of Defense maintains a number of military installations within the District, including Pensacola Naval Air Station, Eglin Air Force Base, and Tyndall Air Force Base. Three rail lines serve the region: CSX, Bayline, and Alabama Gulf Coast (AGC). The region is traversed by Interstate 10 (I-10), as well as a number of regional corridors, including US 29, US 331, US 231, and US 319. Many of these corridors are important in that they serve as the primary evacuation routes during hurricane season. Major bridge facilities along I-10 include the Escambia Bay Bridge, the Blackwater River Bridge, the Appalachicola River Bridge, and the Ochlockonee River Bridge. The interstates in this region serve two basic purposes: as commuter routes within the urban areas of the region; and as major linkages for goods and services, and people between these urban areas.

This project was initiated to address a number of regional issues, including

- Emergency Evacuation
- Traffic Congestion
- Incident Management
- Transportation System Coordination

In addition to the above issues, Federal funding for Intelligent Transportation System (ITS) projects requires adoption of a regional architecture.

### **III Discussion**

A number of characteristics are critical to the success of this and future regional ITS projects. Following is a discussion of three such project aspects.

#### **III.1 Stakeholder Involvement**

The regional transportation network serves the needs of many different groups, including local residents, tourists, and emergency services. In addition, many other groups are involved in the construction, operations and maintenance, and general functioning of the network, such as traffic operations, public works, and law enforcement. Each of these groups, or stakeholders, has some vested interest in the quality and effectiveness of the transportation system. Stakeholder

involvement is a key element in determining user needs and identifying the roles and responsibilities of operating an ITS along the District Three Interstate system.

## **III.2 Evaluation Guidelines**

As defined by the ITS Joint Program Office (JPO) of the US DOT, “performance evaluation is the process of determining how well project goals and objectives are being achieved.” The process is centered around the performance criteria used for evaluating the various ITS technologies and services implemented to achieve the goals and objectives identified in the regional architecture. The results of the evaluation process will be used to suggest changes, as necessary, in a project concept to optimize performance; to improve operations and maintenance processes; and to assist in making decisions regarding future deployments within the region.

Several general ITS goal areas have been established by the US DOT and documented in the 1992 National ITS Strategic Plan and are relevant to any ITS deployment. These goal areas include:

1. Safety
2. Mobility
3. Efficiency
4. Productivity
5. Energy and the Environment

It is recommended that regional ITS deployments be evaluated, at a minimum, according to their impact on these general goal areas. It is important that criteria relating to each of these goal areas be identified early in the ITS planning process so that data necessary for evaluation (before and after studies) can be collected prior to actual deployment.

The ultimate objective of ITS evaluation is to determine how well goals and objectives are being achieved by deployment. The results of the evaluation of ITS deployments will also assist in making decisions regarding future system expansions and deployments.

### III.3 Mission Statement

The following mission statement was developed to establish a guiding philosophy from which to operate. In general, the purpose of a regional architecture is to provide a framework within which a transportation system can develop and evolve in an efficient and effective manner. In addition, each region has its own unique set of needs and goals.

*“The goal of the District Three Interstate ITS Architecture is to establish a guiding framework that will aid decision makers in their efforts to identify, plan, develop, and implement ITS solutions that enhance the appeal and quality of life of the region.”*

## IV ITS Architecture Development

The ITS National Architecture was developed for the Federal Highway Administration (FHWA) to provide a common framework for planning, defining, and integrating intelligent transportation systems. The District Three Interstate Regional Architecture developed in this project is based on the National Architecture CD-ROM version 3.0, and was created using the Turbo Architecture software program version 1.0 (also developed for FHWA). Occasional updates will be necessary as newer versions of the NA are developed and released, or as the ITS needs of the region change and develop.

The District Three architecture database developed as part of the Statewide effort served as the basis for the District Three Interstate Regional Architecture. The regional architecture can be thought of as a subset of the District Three architecture. Development of the regional architecture was based predominantly on the efforts completed as part of Task B – Determining User Services and Stakeholder Needs. These are the driving force behind what a regional architecture should be – what needs to be done, for whom, and through what methods. The development of a customized architecture for the region was critical in order to provide a level of detail adequate to aid in ITS planning and implementation efforts.

This project will serve as a foundation for future ITS implementation efforts. The list of regional stakeholders identified in Task B will grow and change over time as the region grows. Additionally, not all stakeholders will be involved in every ITS project implementation, nor will these organizations necessarily be involved in the process equally. However, keeping all

organizations informed, regardless of their level of commitment or involvement, can help overcome those institutional, resource, or other factors that make active or sustained participation problematic.

## **V Conclusion**

The regional architecture developed as part of this project for the interstate system within District Three is a “living document”, a work in progress. It serves as a framework within which new transportation projects, both ITS and traditional, can be designed and implemented within the region. It is not, however, set in stone. Assumptions made regarding relationships between various regional elements may have lacked the detail necessary, the detail that would result from in-depth system engineering analyses, to correctly assess those relationships.

As the region’s transportation system moves into the future, and new projects are put into development, the interactions and relationships among the applicable elements should be investigated thoroughly; relevant stakeholders should be brought to the table to discuss how their agencies relate to each other, and to the transportation network as a whole. This will enable the region to implement transportation systems that benefit the residents of and visitors to the region, as well as enable the implementing agencies to save lives, time, and money.