Technical Memorandum

Jacksonville and Southwest Florida Advanced Traveler Information System (ATIS) Project

Southwest Florida ATIS Operational Support Plan

May 15, 2006
Version 2

Prepared for:

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List of Acronyms

ATIS ..... Advanced Traveler Information System

CSV ..... Comma-separated Value

FDOT.....Florida Department of Transportation

GC..... General Consultant

I-4..... Interstate 4

I-75..... Interstate 75

ITS ..... Intelligent Transportation System

IVR ..... Interactive Voice Response

TEOO.....(FDOT) Traffic Engineering and Operations Office

TIC..... (GEWI) Traffic Information Centre

1. Overview

This *Operational Support Plan* for the Southwest Florida Advanced Traveler Information System (ATIS) project describes the necessary tasks, responsibilities, and controls used to ensure that the following activities take place in the appropriate manner and sequence to allow the project to be successfully implemented.

- Operational Issues
    - Contractor training needs
    - Contractor access to the data fusion and operator interface software
    - Use of appropriate law enforcement resources for data collection
- PBS&J Issues
    - Completion of the data fusion system
    - Completion of the Web page
    - Florida Department of Transportation (FDOT) District 5 input into the IVR redesign
- Automated Data Collection Issues
    - Incorporation of automated traffic data collected from sensors and cell phone-based technologies into the southwest Florida Web site and interactive voice response (IVR) systems, including all associated design, equipment, labor, and maintenance
    - Incorporation of automated traffic data collected from sensors and cell phone-based technologies into the Tampa Web site and IVR systems, including all associated design, equipment, labor, and maintenance

The primary objective of this plan is to ensure that all project elements come together appropriately.

2. Reference Documents

The following documents of the exact issue shown form a part of this document to the extent specified herein. In the event of a conflict between the documents referenced herein and the contents of this document, this document shall be considered the superseding requirement.

- *Technical Memorandum – Jacksonville and Southwest Florida Advanced Traveler Information System Project – Southwest Florida Advanced Traveler Information System Systems Engineering Management Plan* (Final Version 2, May 2006)
- *Technical Memorandum – Jacksonville and Southwest Florida Advanced Traveler Information System Project – Final Southwest Florida 511 Concept Report* (Final Version 2, October 2005)
- *Technical Memorandum – Jacksonville and Southwest Florida Advanced Traveler Information System (ATIS) Project – Final Southwest Florida 511 ATIS Concept of Operations* (Final Version 3, December 2005)

The documentation identified above, along with other applicable information, is available online at http://www.floridaits.com/ATIS_Proj_Sup.htm.

3. System Description

The southwest Florida ATIS project incorporates the following elements:

- Procurement of an automated data collection system to provide speed or travel-time data in Charlotte, Collier, and Lee counties, which are referred to herein as the southern counties; and in Polk, Manatee, and Sarasota counties, which are referred to herein as the northern counties, on Interstate 4 (I-4) in Polk County, and Interstate 75 (I-75) in Manatee and Sarasota counties
- Procurement of an operations staff to support the collection and fusion of transportation data in the southern counties
- Procurement, through the FDOT Intelligent Transportation Systems (ITS) General Consultant (GC), of a data fusion system and Web page to process automated and manual data; to prepare it for dissemination over a phone system; and to disseminate it via a Web page
- Modification of the statewide IVR to accommodate improvements in the data from the southern counties
- Increased operational coverage in the northern counties and modification to the Tampa 511 system to accommodate the improved coverage.

More detail is contained in the reference documents identified in *Section 2*.

4. Operational Support Plan

This section describes the interactions of the various components described in *Section 1* of this document.

4.1 Operational Issues

This section addresses the issues related to the operations staff.

- All data fusion and operator interface software will be provided by PBS&J and its subcontractor, GEWI. The data fusion software is known as the Traffic Info Centre (TIC) Server and the operator interface is known as the TIC Editor.
- Once the operations contract has been executed and the operations contractor has procured its operator workstations along with a T1 connection to access the TIC Server, PBS&J will install the TIC Editor on those workstations.
- After the software has been installed and the operations contractor has hired its staff, PBS&J will train the staff to use the TIC Editor.
- The operations contractor will ensure that its staff uses scanners, law enforcement Web sites, and paging services, as well as any other available information sources to collect traffic information on the covered facilities.
- The operations contractor will be responsible for the daily operations of the system as described in more detail in the documents referred to in *Section 2* above.

4.2 PBS&J Issues

This section addresses the PBS&J issues identified above. They will be addressed as follows:

- The data fusion system is currently in the system design phase, based on requirements developed by PBS&J developed and reviewed by FDOT District 1. Upon completion of the design, development will begin and will be followed by testing. Because the data fusion system is an existing system, it is anticipated that these milestones will be substantially completed before the operational contractor is ready to begin operations.

- The Web page is also under development. District 1 has seen the first prototype, and PBS&J will complete the final prototype during the week of May 1, 2006. After the FDOT approves the prototype, final development will begin.

- PBS&J has negotiated with LogicTree to complete a scope of work for the modifications needed to the statewide IVR system. Once the scope is completed, PBS&J will coordinate with both the FDOT Central Traffic Engineering and Operations Office (TEOO) ITS Section and District 5 to complete the documentation required for work to commence.

4.3 Automated Data Issues

This section describes the automated data feed requirements to ensure that both detector data and cell phone-generated data can be used by both the Tampa and southwest Florida systems.

- For the southwest Florida systems, both types of data must conform to GEWI's *TIC Sensor CSV Specification – Release 15*, dated August 31, 2005, and included as *Appendix A* of this document. The interface requires that all data:

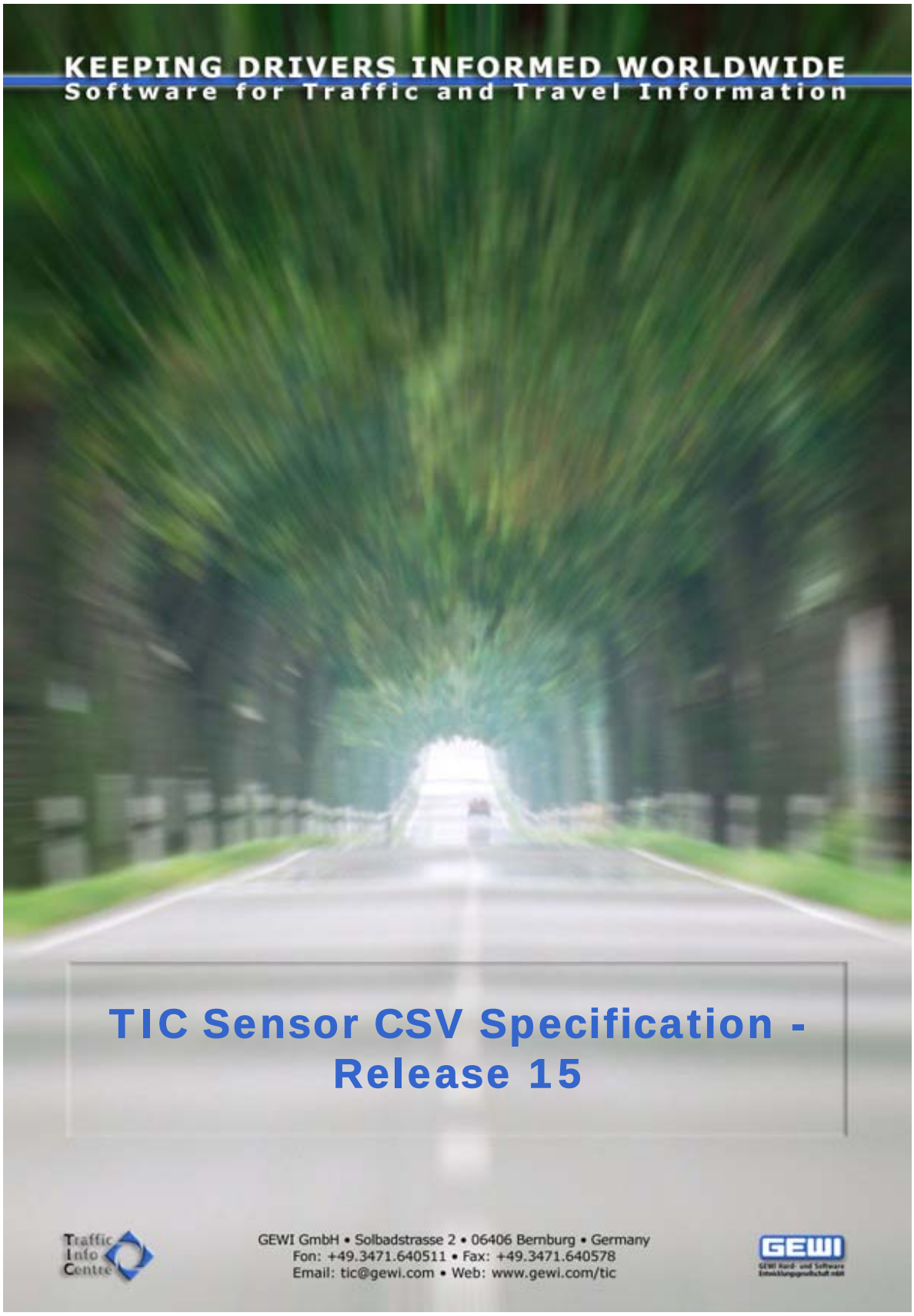
    - Be comma separated value (CSV) formatted
    - Include the acquisition time
    - Include a unique geographic identifier
    - Include a forecast offset variable, which is usually set to 0
    - Include any of a series of optional data fields, including speed

- For the Tampa system, both types of data must be compatible with the existing Traffic.com data fusion system.

- For both systems, the contractor is responsible for all design, equipment, labor, and maintenance needed to build, operate, and maintain the data collection system.

Appendix A

GEWI's Traffic Info Centre Sensor CSV Specification



TIC Sensor CSV Specification - Release 15

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1 Document

1.1 General

Project	GEWI TIC2 (00-00-012-071.02)

1.2 History

Date	Author	Comment
25.04.05	Mathias Müller	Created, 2.14.0.1
01.06.05	Mathias Müller	Updated, 2.14.0.2
31.08.05	Uwe Stump	Updated, 2.15.0.1

1.3 Reference

Document	Date

2 Overview

This document explains the conversion between TIC Sensor CSV and TIC Sensor data format as implemented in the converter named “TIC Sensor CSV”.

2.1 Release History

Release	Description
2.14.0.1	• First time published
2.14.0.2	• Mapping “VMZ” added
2.15.0.1	• Bug fixed: Conversion of sensor CSV files has started at the second data record. The first data record has been skiped.

3 Input

3.1 General

Converter file name	TIC_Sensor_CSV_In.xsl

3.2 Data format

The file format is CSV. In the first row the mandatory element “Acquisition time” must be given. The second row contains the name (see “Column name”) and the order (free configurable) of the columns.

2005-03-24T09:51:41;
ID;ForecastOffset;SpeedAll;VolumeAll;LOS;TravelTime;DelayTime;
B43/20RN_1;0;73;36;1;7;0;
B43/20RN_2;0;92;14;1;3;0;
B43/20RS_1;0;64;70;2;8;0;
B43/20RS_2;0;49;47;3;1;2;
B43/21RN_1;0;57;13;3;3;2;
B43/21RS_1;0;56;41;3;2;2;
B43/21RS_2;0;75;15;1;6;0;
B43/23RN_1;0;47;10;3;1;3;
B43/22RS_1;0;45;50;4;4;5;
B43/22RN_1;0;38;28;4;2;6;

Column name	Description	Status
AcquisitionTime	Acquisition time, this element must be set always in the first row	Mandatory
ID	Unique identifier	Mandatory
ForecastOffset	Forecast offset	Mandatory
SpeedTrucks	Speed trucks	Optional
SpeedCars	Speed cars	Optional

SpeedAll	Speed all	Optional
VolumeTrucks	Volume trucks	Optional
VolumeCars	Volume cars	Optional
VolumeAll	Volume all	Optional
DensityTrucks	Density trucks	Optional
DensityCars	Density cars	Optional
DensityAll	Density all	Optional
LOS	LOS	Optional
TravelTime	Travel time	Optional
DelayTime	Delay time	Optional
Occupancy	Occupancy	Optional
Congestion	Congestion	Optional
Temperature	Temperature	Optional
Rain	Rain	Optional
SnowDepth	Snow depth	Optional
Condition	Condition	Optional
WindIntensity	Wind intensity	Optional
WindDirection	Wind direction	Optional
Gusts	Gusts	Optional
Visibility	Visibility	Optional
SunshineDuration	Sunshine duration	Optional
Humidity	Humidity	Optional
AirPressure	Air pressure	Optional
OccupiedCarParks	Occupied car parks	Optional
WaitingSpace	Waiting space	Optional

3.3 Mapping “Standard”

TIC Sensor CSV element	TIC Sensor element	Comment
ID	ExternalID	
SpeedTrucks SpeedCars SpeedAll VolumeTrucks VolumeCars VolumeAll DensityTrucks DensityCars DensityAll LOS TravelTime DelayTime Occupancy Congestion	ExternalNumber SensorValueLong	See section “Conversion of element “ExternalNumber” in the appendix

Temperature Rain SnowDepth Condition WindIntensity WindDirection Gusts Visibility SunshineDuration Humidity AirPressure OccupiedCarParks WaitingSpace		
ForecastOffset	ExternalForecastOffset	
	SensorValueQuality	Is set to “100”
AcquisitionTime	AcquisitionTime	
	ForecastOffset	Is set to “0”

3.4 Mapping “VMZ”

TIC Sensor CSV element	TIC Sensor element	Comment
ID	ExternalID	
SpeedTrucks SpeedCars SpeedAll VolumeTrucks VolumeCars VolumeAll DensityTrucks DensityCars DensityAll LOS TravelTime DelayTime Occupancy Congestion Temperature Rain SnowDepth Condition WindIntensity WindDirection Gusts Visibility SunshineDuration	ExternalNumber SensorValueLong	The TIC Sensor CSV element “LOS” is transferred to the TIC Sensor element “esvtSpeedAll”. See section “Conversion of element “ExternalNumber” in the appendix

Humidity AirPressure OccupiedCarParks WaitingSpace		
ForecastOffset	ExternalForecastOffset	
	SensorValueQuality	Is set to “100”
AcquisitionTime	AcquisitionTime	
	ForecastOffset	Is set to “0”

4 Output

4.1 General

Converter file name	TIC_Sensor_CSV_Out.xsl

4.2 Data format

The file format is CSV. In the first row the mandatory element “Acquisition time” must be given. The second row contains the name (see “Column name”) and the order (free configurable) of the columns.

2005-03-24T09:51:41;
ID;ForecastOffset;SpeedAll;VolumeAll;LOS;TravelTime;DelayTime;
B43/20RN_1;0;73;36;1;7;0;
B43/20RN_2;0;92;14;1;3;0;
B43/20RS_1;0;64;70;2;8;0;
B43/20RS_2;0;49;47;3;1;2;
B43/21RN_1;0;57;13;3;3;2;
B43/21RS_1;0;56;41;3;2;2;
B43/21RS_2;0;75;15;1;6;0;
B43/23RN_1;0;47;10;3;1;3;
B43/22RS_1;0;45;50;4;4;5;
B43/22RN_1;0;38;28;4;2;6;

Column name	**Description**	**Status**
AcquisitionTime	Acquisition time, this element must be set always in the first row	Mandatory
ID	Unique identifier	Mandatory
ForecastOffset	Forecast offset	Mandatory
SpeedTrucks	Speed trucks	Optional
SpeedCars	Speed cars	Optional
SpeedAll	Speed all	Optional
VolumeTrucks	Volume trucks	Optional
VolumeCars	Volume cars	Optional
VolumeAll	Volume all	Optional

DensityTrucks	Density trucks	Optional
DensityCars	Density cars	Optional
DensityAll	Density all	Optional
LOS	LOS	Optional
TravelTime	Travel time	Optional
DelayTime	Delay time	Optional
Occupancy	Occupancy	Optional
Congestion	Congestion	Optional
Temperature	Temperature	Optional
Rain	Rain	Optional
SnowDepth	Snow depth	Optional
Condition	Condition	Optional
WindIntensity	Wind intensity	Optional
WindDirection	Wind direction	Optional
Gusts	Gusts	Optional
Visibility	Visibility	Optional
SunshineDuration	Sunshine duration	Optional
Humidity	Humidity	Optional
AirPressure	Air pressure	Optional
OccupiedCarParks	Occupied car parks	Optional
WaitingSpace	Waiting space	Optional

4.3 Mapping “Standard”

TIC Sensor element	TIC Sensor CSV element	Comment
ExternalID	ID	
AcquisitionTime	AcquisitionTime	
ExternalForecastOffset	ForecastOffset	ExternalForecastOffset
ExternalNumber SensorValueLong	SpeedTrucks SpeedCars SpeedAll VolumeTrucks VolumeCars VolumeAll DensityTrucks DensityCars DensityAll LOS TravelTime DelayTime Occupancy Congestion Temperature Rain	See section “Conversion of element “ExternalNumber” in the appendix

	SnowDepth Condition WindIntensity WindDirection Gusts Visibility SunshineDuration Humidity AirPressure OccupiedCarParks WaitingSpace	

5 Appendix

5.1 Conversion of element “ExternalNumber”

TIC Sensor CSV element	Value of TIC XML Sensor element “ExternalNumber” SED/XID/ENR
SpeedTrucks	esvtSpeedTrucks
SpeedCars	esvtSpeedCars
SpeedAll	esvtSpeedAll
VolumeTrucks	esvtTrafficVolumeTrucks
VolumeCars	esvtTrafficVolumeCars
VolumeAll	esvtTrafficVolumeAll
DensityTrucks	esvtTrafficDensityTrucks
DensityCars	esvtTrafficDensityCars
DensityAll	esvtTrafficDensityAll
LOS	esvtLos
TravelTime	esvtTravelTime
DelayTime	esvtDelay
Occupancy	esvtOccupancy
Congestion	esvtCongestion
Temperature	esvtTemperature
Rain	esvtRain
SnowDepth	esvtSnowDepth
Condition	esvtCondition
WindIntensity	esvtWindIntensity
WindDirection	esvtWindDirection
Gusts	esvtGusts
Visibility	esvtVisibility
SunshineDuration	esvtSunshineDuration
Humidity	esvtHumidity
AirPressure	esvtAirPressure
OccupiedCarParks	esvtOccupiedCarParks
WaitingSpace	esvtWaitingSpace