Change Management Board Meeting

Local: 850-410-5667

Toll-Free: 866-374-3368 Ext. 5667

Welcome and Introductions

Steve Corbin, CMB Chairman

Change Management Board

Time	Item		Lead	Supporting Materials
10:30 – 10:35	Welcome and Introductions		Corbin	
10:35 – 10:45	Previous Meeting Recap and Action Item Review		Corbin	April 5, 2007 Meeting Notes
10:45 – 11:10	SunGuide^{SM} Software Release 3	Statewide Performance Measures Reporting Requirements *(Vote)*	Bonds	Ballot
		FHP CAD Interface	Tillander	Concept of Operations Draft V1.1
11:10 – 11:30	SunGuide^{SM} Software Release 4	ATIS Data Fusion Subsystem Requirements *(Vote)*	Glotzbach	Functional Specification v3.2, Requirements Tracking Log v1.1, 3/3/07 Cost Estimate
11:30 – 11:55	SunGuide^{SM} Map Alternatives		Tillander	SunGuide Alternative Map Approaches v1.01, Responses to Map Questionnaire
11:55 – 12:00	Closing and Action Item Review		Corbin	

Previous Meeting Recap and Action Item Review

Steve Corbin

Change Management Board

Action Items – 1/2

1. Gene Glotzbach, Trey Tillander, and Steve Corbin will have a teleconference to decide on the edits to the CMB charter and then send the revised version to CMB members for review.
2. Trey Tillander will look into Safety Program's software which can provide the mapping of FHP roadway.
3. Trey Tillander will update/modify the FHP CAD ConOps documents, including:
   - Flowchart
   - RCC coverage map
4. Jennifer Heller will check with FHP regarding the information of disable vehicle (DAV) and abandoned vehicle.

Change Management Board

Action Items - 2/2

5. Steve Corbin will provide the Red tag information (based on event type, duration) in SunGuide R 2.2.
6. Districts will provide comments of FHP CAD ConOps document by 4/26/2007.
7. Districts will provide comments of AMBER Alert ConOps document by 4/26/2007.
8. Trey Tillander and Steve Corbin will review and circulate the document of *Using SunGuide Software at Multiple TMCs Currently* before next CMB meeting. The next CMB meeting will be scheduled at late May in video-conference format.

SunGuide℠ Software Release 3.0

Statewide Performance Measures Reporting Requirements

John Bonds

Performance Measures Reporting Requirements p 1/4

		CMB Vote
TM007D15	SunGuide shall calculate and store a notification time performance measure for each event by taking the time that the TMC was notified and subtracting from it the time the FHP or FDOT is notified.	Y / N
TM007D16	SunGuide shall calculate and store a verification time performance measure for each event by subtracting the time when an incident is confirmed from the time when the TMC was notified.	Y / N
TM009D3	SunGuide shall calculate the Response Time for each confirmed incident by subtracting the date/time of initial SunGuide incident confirmation from the date/time that law enforcement or road ranger is dispatched. Response Timeincident ID = tLE/RR Dispatched - tconfirmed.	Y / N
TM010D2	SunGuide shall calculate the Incident Clearance Time (ICT) by subtracting the date/time that law enforcement or road ranger vehicle arrive on scene from the time that the lanes are cleared. ICT = tlanescleared - tLE/RR Arrives.	Y / N
TM010D4	SunGuide shall calculate the total incident duration time defined as the difference in time from when FDOT or FHP is notified until the travel lanes are cleared. and associate it with the incident.	Y / N

Performance Measures Reporting Requirements p 2/4

		CMB Vote
TM017D	SunGuide shall calculate the rate that secondary incidents occur over a date-time period specified by the SunGuide operator for specified roadway segments or for the entire District.	Y / N
TM017D1	The reduction in rate of secondary crashes performance measure shall be: Rate of Secondary Crashes = (Number of Secondary Crashes for a Date-Time period X 1,000,000) / (Total Vehicle Volume for a Date-Time period X Road Segment Length in miles).	Y / N
TM018D	SunGuide shall track the primary way in which an incident was detected and associate that information with the incident for performance measure reporting.	Y / N
TM018D1	Detection methods to be recorded by SunGuide are: by surveillance camera (CCTV), speed detector (by type), Road Ranger stop, FHP notification.	Y / N
TM018D2	SunGuide shall be able to generate a report listing the number of incident detections by device type over a SunGuide operator specified date-time period.	Y / N

Performance Measures Reporting Requirements p 3/4

		CMB Vote
TM018D3	SunGuide shall be able to sort the incidents by level of incident severity.	Y / N
TM019D	For performance measures purposes, SunGuide shall calculate Vehicle Miles Traveled (VMT) expressed as million vehicle miles for any date-time period specified by the person requesting a performance measures report from SunGuide that deals with VMT.	Y / N
TM019D1	For the volumes needed to calculate vehicle miles traveled (VMT) for presenting crash statistics, SunGuide shall use either TSO data provided in tabular form to calculate VMT or VMT shall be calculated by SunGuide off-line using the volume from detectors multiplied by the segment length.	Y / N

Performance Measures Reporting Requirements p 4/4

- The Requirements will be covered at Reporting Subsystem
- No additional cost needed.

CMB Vote

Questions?

Change Management Board

FHP CAD Interface

Trey Tillander

FHP CAD - ConOps

Concept of Operations

Florida Department of Transportation

Florida Highway Patrol Computer-aided Dispatch Data in SunGuide℠ Software

March 28, 2007
Draft Version 1.1

Prepared for:

Florida Department of Transportation
Traffic Engineering and Operations Office
Intelligent Transportation Systems Section
605 Suwannee Street, M.S. 90
Tallahassee, Florida 32399-0450
(850) 410-5600
Revised: March 28, 2007

Questions and Next Steps?

SunGuide℠ Software Release 4.0

ATIS Data fusion Subsystem Requirements

Gene Glotzbach

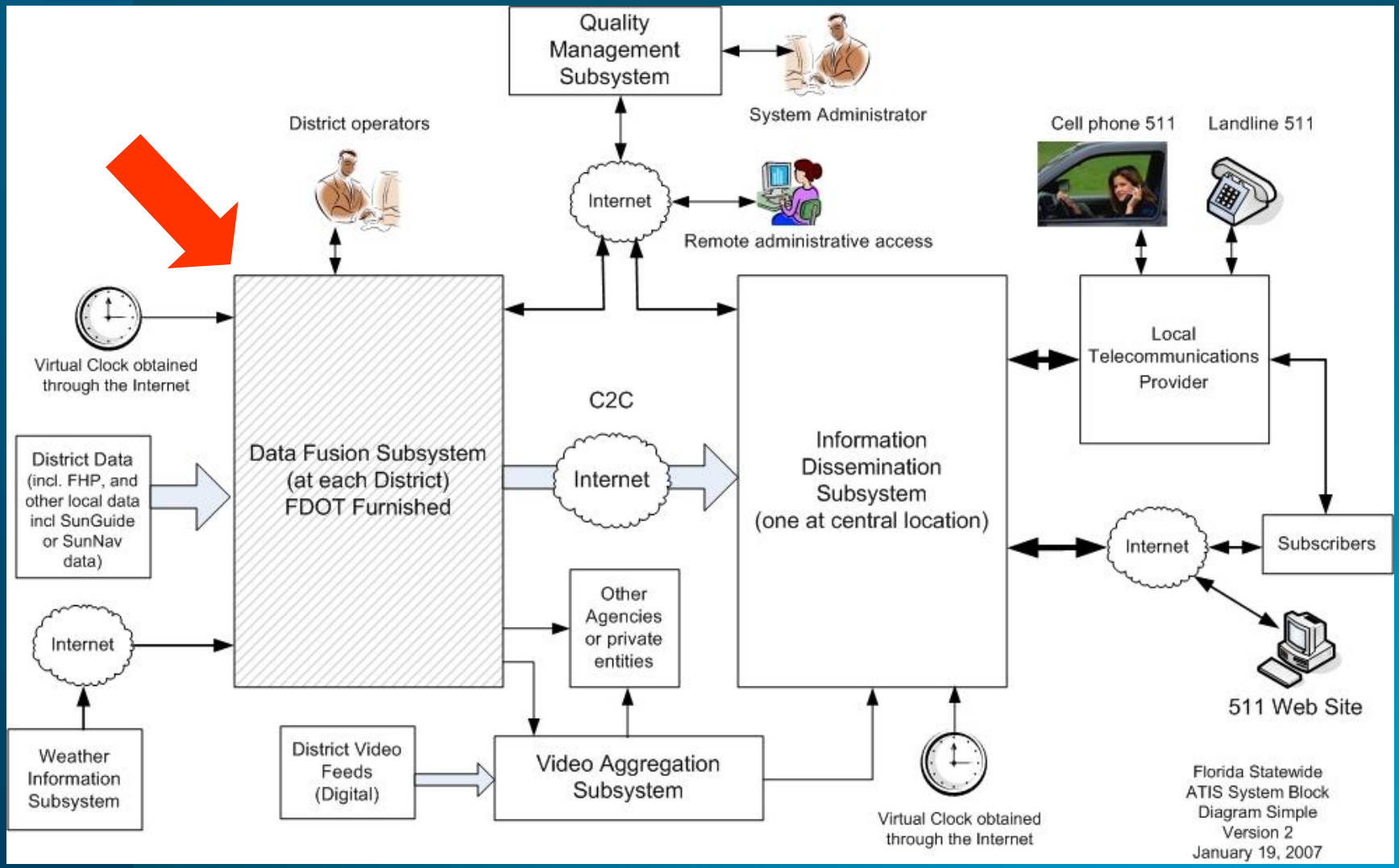
Change Management Board

SunGuide℠ Software Release 4.0

ATIS Requirements Discussion and Vote

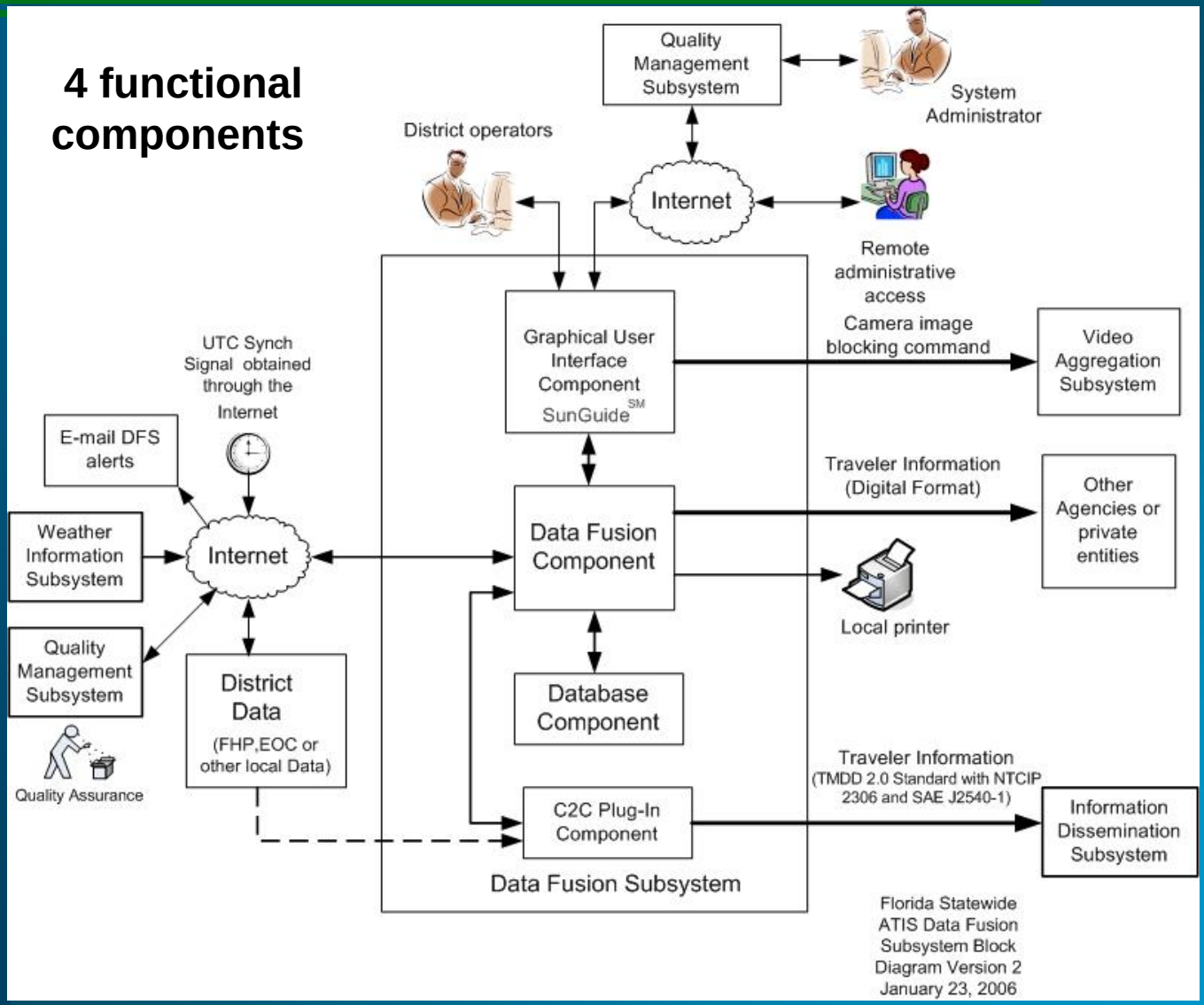
Gene Glotzbach

Statewide 511 ATIS Block Diagram



Statewide 511 ATIS DFS Block Diagram

4 functional components



Statewide 511 ATIS Data Fusion Requirements

- 137 Data Fusion Subsystem Requirements
- Contained is a separate database
  - Florida 511 Requirements database
- Requirements specified in:
  - ITN #: ITN-DOT-06/08-9053-JP,
  - Title: Statewide Advanced Traveler Information System (ATIS)
- Cost Basis Documented in:
  - SunGuideSM ATIS Budgetary Estimate - March 3, 2007
- Cost Estimate in two parts
  - SunGuide Changes (modifications to exiting)
  - Data Fusion Subsystem (new)

SunGuide Changes
DFS GUI Requirements and Cost Pg 1/4

Priority	ReqID	Requirement Text
1	DF019	The Data Fusion subsystem shall be controlled and managed through the SunGuide graphical user interface.
3	DF023	The Data Fusion Subsystem shall provide context sensitive help for operators and administrators of the subsystem.
1	DF001G1	The GUI component shall enable a SunGuide operator with appropriate permissions to be able to block video from third parities.
3	DF001R	The data fusion subsystem shall be able to display a report within 10 seconds of when the last report criteria was entered by the operator and a report was requested.
1	DF007F	For automated speed and/or travel time reports, the Data Fusion component shall include the following fields: • Latitude • Longitude • District • Roadway affected • Segment affected • Lane blockage • Nearest interchange or cross street or mile marker • Direction of travel • Source of the data (metadata) • Travel speed • Travel Time

DFS GUI Requirements and Cost Pg 2/4

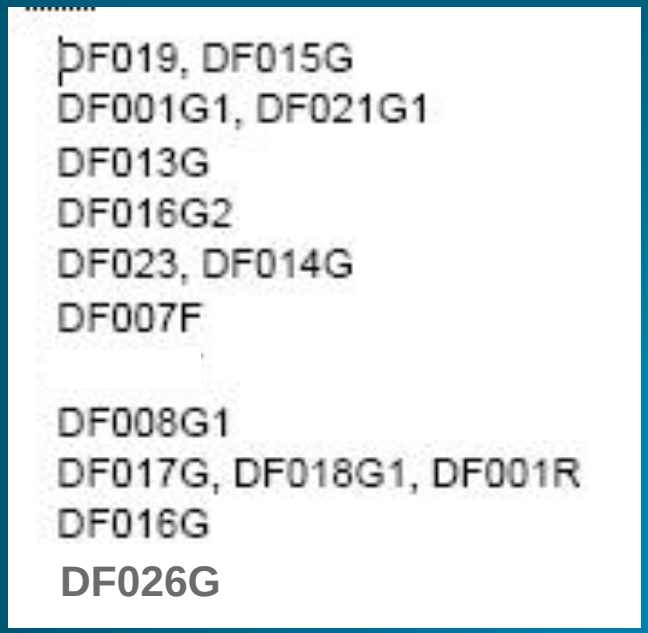
Priority	ReqID	Requirement Text
2	DF008G1	Default time duration shall be configurable for each event created for the data fusion component.
1	DF013G	The Graphical User interface map shall be configured to indicate operational boundaries to guide the operators in managing traveler information for their operational area.
3	DF014G	The Graphical User Interface shall provide context sensitive help to the SunGuide operator or administrator when requested for traveler information functions.
1	DF015G	The Graphical User Interface component shall support the configuration and administration of the system.
1	DF016G	A monitoring display shall display the current Floodgate (or recorded message) status for each “slot,” allowing the operators to see which slots have messages and their status (barge-in on/off) as well as any other parameters that they might be able to set.
1	DF016G2	The GUI shall be configured so that a supervisor or administrator can enter information for another District provided the other District agrees.

DFS GUI Requirements and Cost Pg 3/4

Priority	ReqID	Requirement Text
2	DF017G	The GUI shall have the capacity to support 20 simultaneous users internal and external for each District without degrading the system latency per site.
2	DF018G1	The system capacity shall be expandable to support 40 users without purchasing additional servers or licenses per site.
1	DF021G1	The GUI component shall enable a SunGuide operator with appropriate permissions to be able to block video from public dissemination.
1	DF026G	A monitoring display shall display the current Floodgate status for each “floodgate category,” allowing the operators to see which floodgate categories have messages and their status (barge-in on/off) as well as any other parameters that they might be able to set.

SunGuide Changes
SwRI Cost Estimate GUI Pg 4/4

- **GUI Operator Map $22,517.48**



CMB Approval Yes _____ No _____

SunGuide Changes
Admin Editor Pg 1/3

Priority	ReqID	Requirement Text
2	DF015	The Data Fusion subsystem shall allow periodic addition, reconfiguration or redefinition of roadway segments and ITS devices without any loss of current or past data.
3	DF014	The Data Fusion subsystem shall be able to generate reports according to parameters selected by the system administrator.
1	DF019	The Data Fusion subsystem shall be controlled and managed through the SunGuide graphical user interface.
2	DF002D	The Database Component shall save only the data designated by the SunGuide operator as archive data.
1	DF006F1	The information shall be passed to the IDS using SAE, FDOT Location codes and other standard traveler information codes to the maximum extent possible.
3	DF011G1	The GUI shall alert the operator when wind gusts from specific reporting stations exceed a configurable threshold.

Admin Editor Pg 2/3

Priority	ReqID	Requirement Text
1	DF012G	The Graphical user interface shall allow a system administrator to indicate what data is to be archived.
1	DF016F2	The Data Fusion component shall alert the operator to a possible duplication or conflict of events if two or more events are within a configurable distance of each other.
2	DF019G	The GUI component shall support a SunGuide operator with appropriate permissions to define the instrumented road segments to be used to calculate travel times.
2	DF019G1	The SunGuide operator with appropriate permissions may indicate that the IDS shall provide delay times rather than travel times.
2	DF021F1	The confidence index value and source of the event shall be able to be configured through the SunGuide Admin Editor.

SunGuide Changes
SwRI Cost Estimate Admin Editor Pg. 3/3

- **Admin Editor $23,451.20**

DF019
DF014, DF002D
DF021F1
DF015, DF019G, DF019G1
DF006F1
DF012G, DF016F2
DF011G1

CMB Approval Yes _____ No _____

SunGuide Changes
Traffic Sensor Subsystem (TSS) Pg 1/2

Priority	ReqID	Requirement Text
1	DF007F	For automated speed and/or travel time reports, the Data Fusion component shall include the following fields: • Latitude • Longitude • District • Roadway affected • Segment affected • Lane blockage • Nearest interchange or cross street or mile marker • Direction of travel • Source of the data (metadata) • Travel speed • Travel Time
2	DF011F4	For sites that are SunGuide equipped, the DFS shall obtain travel time and speeds from SunGuide.

SunGuide Changes
SwRI Cost Estimate TSS Pg 2/2

- **TSS $17,588.40**

DF011F4, DF007F

CMB Approval Yes _____ No _____

SunGuide Changes
Reporting Subsystem Pg 1/2

Priority	ReqID	Requirement Text
3	DF012F	The data fusion component shall generate a minimum of fifteen standard reports to view archived data.
3	DF012F1	The content and format of the reports shall be specified by FDOT.
3	DF014F	Users shall be able to generate custom reports using an SQL interface embedded within the archived data page.

SunGuide Changes
SwRI Cost Estimate Reporting Subsystem Pg 2/2

- **Reporting Subsystem $55,245.60**

DF012F, DF012F1, DF014F

CMB Approval Yes _____ No _____

C2C Plug-in Pg 1/2

Priority	ReqID	Requirement Text
1	DF001C	The Center-to-Center Plug-in component of the Data Fusion subsystem shall use the TMDD 2.0 Standard modified to use the SAE J 2540-1 July 2002 Table 2 and Table 11 message data sets for data transmission to the Information Dissemination Subsystem.
1	DF003C	Fused traveler information shall be formatted and transmitted in accordance with NTCIP 2306 protocol and the J2540-1 July 2002 Tables 2 and 11 message set.
1	DF007F	For automated speed and/or travel time reports, the Data Fusion component shall include the following fields: • Latitude • Longitude • District • Roadway affected • Segment affected • Lane blockage • Nearest interchange or cross street or mile marker • Direction of travel • Source of the data (metadata) • Travel speed • Travel Time

SunGuide Changes
SwRI Cost Estimate C2C Plug-in Pg 2/2

- C2C Plug-in $26,899.52

DF001C, DF003C
DF007F

CMB Approval Yes _____ No _____

SwRI Cost Estimate for SunGuide Changes

- Integration Testing $24,855.76
- Documentation Updates $12,829.08

Data Fusion Subsystem Pg 1/3

General Requirements

Priority	ReqID	Requirement Text
1	DF003	The Data Fusion subsystem shall provide data for the Information Dissemination Subsystem in synch with that which is disseminated through the third party data feed.
2	DF007	The Data Fusion subsystem shall contain metadata necessary to interpret the data and shall have an identifier of the source of the data.
1	DF008	The Data Fusion subsystem shall not degrade the accuracy of the received data.
1	DF011	The Data Fusion subsystem shall provide the latest information on the current status of transportation services that at a minimum include Strategic Intermodal System (SIS) facilities identified in Florida's Strategic Intermodal System Plan and other FDOT designated roads.
1	DF017	The Data Fusion Subsystem shall be able to monitor system performance, status of interfaces and alert the operator and designated personnel to system problems.
1	DF002G	The GUI component shall support the capability for the system administrator to perform quality checks and modify input data from external sources.

Data Fusion Subsystem Pg 2/3

Priority	ReqID	Requirement Text
3	DF011G2	The GUI shall allow the operator to view and edit weather information received from an automated feed such as the National Weather Service before allowing it to become part of the DFS output to the IDS.
1	DF016G1	SunGuide operator access to traveler information to manage the information shall be based on permissions and level of access the same as SunGuide Transportation Management Center software.
1	DF024	The Data Fusion Subsystem shall use location tables specified by FDOT that can be redefined or added to while the system is operating.
1	DF004C	The Center-to-Center interface shall provide the FDOT location table to be used for a District by the Information Dissemination Subsystem.
1	DF025	The Data Fusion Subsystem shall be synchronized to a universal time standard obtained through the internet.
3	DF013F	The Data Fusion component shall provide automatic checks for simple logic within the input data feed.
3	DF013F1	Simple logic shall be defined as verification that received data is of the format expected such as an integer number is received that is within the bounds defined by the ICD, that data received that indicates a series of related data points be consistent such as a series of speed reports be contiguous with no data greater than two times the difference between previous data points.

SwRI Cost Estimate DFS General Pg 3/3

- **General DFS $167,153.80**

DF025
DF011F4
DF017F
DF006

DF011
DF008, DF013F, DF013F1,
DF016G1, DF002G, DF011G2
DF004C, DF024
DF028
DF003
DF007
DF017

CMB Approval Yes _____ No _____

Data Fusion Engine Tasks Pg 1/8

Priority	ReqID	Requirement Text
1	DF016F	The Data Fusion component shall alert the operator when there is a conflict between two or more different data sources resporting what is apparently the same event.
1	DF016F1	The Data Fusion component shall compare the latitude and longitude of an event with other event latitude and longitudes and calculate a flat earth straight line distance between the events.
1	DF016F2	The Data Fusion component shall alert the operator to a possible duplication or conflict of events if two or more events are within a configurable distance of each other.
1	DF004	The Data Fusion subsystem shall provide a third party feed that supports both public- and private-sector services.
2	DF018F1	A SunGuide operator with appropriate permissions shall be able to designate what data will be accessible as a limited data feed to thrid parties.
1	DF006	The Data Fusion subsystem shall provide synchronous data from various sources having no duplicate information within a single status report on a segment.
1	DF001F	The Data Fusion component shall associate any other real-time information within 200 feet of a current event on a roadway segment with that current event. If no data is available, a null value or blank shall be provided.

Data Fusion Engine Tasks Pg 2/8

Priority	ReqID	Requirement Text
1	DF002F	The Data Fusion component shall associate real-time information within 200 feet of a road construction event with the road construction event, if no data is available, a null value or blank shall be provided.
1	DF004F	The Data Fusion component shall associate real-time emergency events such as police, fire and rescue events that are within 1,000 feet to one or more incidents or events on the same roadway to the incident or event. if no data is available, a null value or blank shall be provided.
1	DF005F	The Data Fusion subsystem shall be able to identify conflicting or duplicate event reports for the same facility and be able to inform operators.
2	DF012	The Data Fusion Subsystem shall locally archive selected data and messages.
2	DF001D	The Database Component shall maintain a log of all events.
1	DF003C	Fused traveler information shall be formatted and transmitted in accordance with NTCIP 2306 protocol and the J2540-1 July 2002 Tables 2 and 11 message set.

Data Fusion Engine Tasks Pg 3/8

Priority	ReqID	Requirement Text
1	DF006F	For incidents and events, the Data Fusion component shall include the following fields in its output where available: • Category of event • Latitude • Longitude • District reporting • City • County • Metro Area • Roadway affected • Segment affected • Lane blockage • Nearest interchange or cross street or mile marker. • Direction of travel affected • Length of backup • Priority of the event • Other effects of the incident • Estimated duration (optional at operator's discretion) • Incident start time • Incident update time(s)Incident clearance time • Suggested traveler behavior (optional at operator's discretion) • Operator ID • Source of the data (metadata).
1	DF006F2	If the information for a field is not available, a null value or blank shall be provided.
1	DF008F	The data fusion component shall have an SMTP server to allow e-mail messages to be sent to designated addresses.
2	DF024G	The SunGuide GUI shall use a popup alert to remind the operator that one or more events are still active after 24 hours.

Data Fusion Engine Tasks Pg 4/8

Priority	ReqID	Requirement Text
1	DF024G1	The popup alert shall be visible to all operators logged on to the SunGuide system.
1	DF024G2	The popup alert shall remain visible on the SunGuide operator's display until at least one operator confirms acknowledgement of the alert by clicking on a button on the popup that will cause the popup to disappear for a configurable amount of time after which it will reassert itself until an operator again acknowledges it.
1	DF006G	A window on the SunGuide GUI shall display the interpreted text of the traveler information message as the operator selects the roadways and SAE codes.
1	DF008G	The Graphical User Interface component shall allow a SunGuide operator to enter a time duration for each event created for the data fusion component that after expiration of the time will remind the operator of an ongoing traveler information event.
2	DF008G1	Default time duration shall be configurable for each event created for the data fusion component.
1	DF010G	Ownership rules shall apply to events created by the operator for the traveler information function.

Data Fusion Engine Tasks Pg 5/8

Priority	ReqID	Requirement Text
2	DF010G1	The operator who created an event shall be identified in the event information available through the SunGuide GUI.
1	DF010G2	Events must be owned by one of the operators logged into SunGuide.
1	DF010G3	When an operator logs off SunGuide, any events owned by that operator become un-owned and the events are highlighted and alerts are sent to all logged on SunGuide workstations that there is an un-owned event(s) in the system.
1	DF010G4	Only the owner of an event can edit or delete the event.
3	DF011G1	The GUI shall alert the operator when wind gusts from specific reporting stations exceed a configurable threshold.
2	DF020	The Data Fusion Subsystem shall incorporate weather conditions by exception when an event is of such critical nature that it needs to be included in the Traveler Information.
3	DF017F	The Data Fusion Subsystem shall incorporate weather conditions received through an automatic feed.
3	DF020F	The Data Fusion component shall correlate geo-located weather events with covered roads and provide the weather event as a part of a SunGuide event that can an the operator with appropriate permissions can edit or block the weather portion of the event from being sent to the IDS.

Data Fusion Engine Tasks Pg 6/8

Priority	ReqID	Requirement Text
2	DF009G2	The DFS shall transmit a file listing the busiest travel direction on covered roadways by time of day to the IDS at least 4 times a day.
1	DF010F	The Data Fusion Component shall associate events with their priority and process the events in order of the most important first and the routine last.
3	DF019F	The Data Fusion component shall provide data to third parties that is secure behind a firewall that prohibits unauthorized access and manipulation of the information.
1	DF026	The Data Fusion Subsystem shall calculate travel time and speeds along instrumented roadways for FDOT defined links.
1	DF003F	Travel time information for dissemination shall never be less than the travel time computed using the posted speed limit, if no data is available, a null value or blank shall be provided.
2	DF011F1	For non-SunGuide sites, if travel time is not directly available but traffic sensor data is, the Data Fusion Component shall calculate travel times from road sensor data and average the travel time across all lanes of traffic for each direction of travel based an FDOT approved algorithm.

Data Fusion Engine Tasks Pg 7/8

Priority	ReqID	Requirement Text
2	DF011F2	The Data Fusion Component shall calculate delay times based on posted speed limits for the defined road segments.
2	DF011F3	The Data Fusion components shall be able to incorporate predictive travel information if available.
2	DF011F4	For sites that are SunGuide equipped, the DFS shall obtain travel time and speeds from SunGuide.

SwRI Cost Estimate Data Fusion Engine Pg 8/8

- **Data Fusion Engine $153,202.94**

DF004, DF019F
DF018F1
DF009G2
DF017, DF010F
DF008F

DF011F4
DF011F1

DF026, DF003F, DF011F2,
DF011F3

DF006F, DF006F2
DF006, DF001F, DF002F,
DF004F, DF016F1
DF006, DF016F, DF005F,
DF016F2
DF006F1, DF003C
DF006G
DF008G, DF008G1
DF010G, DF010G1-4
DF024G, DF024G1, DF024G2

DF017F
DF020, DF020F
DF011G1

DF001D
DF012

CMB Approval Yes _____ No _____

GUI Tasks Pg 1/6

Priority	ReqID	Requirement Text
2	DF005	The Data Fusion subsystem shall support the capability for the operator or other authorized users to perform quality checks and modify input data from external sources.
2	DF012	The Data Fusion Subsystem shall locally archive selected data and messages.
1	DF017	The Data Fusion Subsystem shall be able to monitor system performance, status of interfaces and alert the operator and designated personnel to system problems.
1	DF019	The Data Fusion subsystem shall be controlled and managed through the SunGuide graphical user interface.
3	DF021	The Data Fusion Subsystem shall identify the reliability of each traveler information event reported by automatically assigning a confidence index based on the source of the event report.
1	DF027	The data fusion subsystem shall allow an operator with appropriate permissions to selectively filter traveler information going to the IDS.
1	DF001G	The GUI component shall allow an operator to mark events for selective dissemination to third parties or both where third parties mean other state and local agencies or private entities.
1	DF002G	The GUI component shall support the capability for the system administrator to perform quality checks and modify input data from external sources.

GUI Tasks Pg 2/6

Priority	ReqID	Requirement Text
1	DF003G	The Graphical User Interface component shall provide a SunGuide operator the ability to assign at least one and up to four SAE codes to any SunGuide event obtained from the SAE Surface Vehicle Standard J-2540-1 issued July 2002.
1	DF003G1	Up to three SAE codes shall be able to be selected from Table 2 Body Elements of the Non-Nested RDS Table (in ASCII) of SAE J-2540-1 standard.
1	DF003G2	A fourth SAE code shall be able to be selected from Table 11 Body Elements of the Non-Nested Extended Phrases Table of SAE J-2540-1 standard.
1	DF004G	The Graphical User Interface component shall allow a SunGuide operator to create an event by selecting a location from a menu of covered locations and selecting the appropriate SAE codes that describe the event.
1	DF004G1	An event may be geographically located at a point location by selecting a main road and the nearest cross street from a drop down menu of covered roads.
1	DF004G2	An event may be geographically located as a section of roadway from a beginning point to an ending point specified by the operator clicking on the section of roadway of interest. This would typically be used to indicate a section of highway closed due to flooding.
1	DF004G3	An event may be geographically located in an area location by selecting a defined geographic area from a drop down menu of covered roads. The coordinates of the area will be the center of the area and would typically be used to indicate a city wide event effecting traffic.
1	DF005G	Events entered into the system designated as being traveler information events shall be displayed on the SunGuide map using a unique icon that is different from the SunGuide traffic management event icons.

GUI Tasks Pg 3/6

Priority	ReqID	Requirement Text
1	DF005G1	The icon shall be able to visually indicate the priority or severity of the incident.
1	DF006G	A window on the SunGuide GUI shall display the interpreted text of the traveler information message as the operator selects the roadways and SAE codes.
1	DF007G	An event created by the SunGuide operator for the traveler information shall have a field where the operator can select from a drop down list to be specified by FDOT of how long the event is expected to last.
1	DF008G	The Graphical User Interface component shall allow a SunGuide operator to enter a time duration for each event created for the data fusion component that after expiration of the time will remind the operator of an ongoing traveler information event.
2	DF008G1	Default time duration shall be configurable for each event created for the data fusion component.
2	DF009F	The system administrator shall be able to generate a report using any of the database fields, or combination of fields, as filters.
1	DF009G	The Graphical User Interface component shall allow a SunGuide operator to enter a priority for the event created for the Data Fusion Component.
1	DF009G1	Event priority shall be one of 3 values with the default as routine (3): 1 = Critical 2 = Important 3 = Routine

GUI Tasks Pg 4/6

Priority	ReqID	Requirement Text
3	DF011G	Weather information shall be included by operator selection and shall pertain to specific events or areas selected by the operator.
3	DF011G1	The GUI shall alert the operator when wind gusts from specific reporting stations exceed a configurable threshold.
3	DF011G2	The GUI shall allow the operator to view and edit weather information received from an automated feed such as the National Weather Service before allowing it to become part of the DFS output to the IDS.
3	DF012F	The data fusion component shall generate a minimum of fifteen standard reports to view archived data.
3	DF012F1	The content and format of the reports shall be specified by FDOT.
3	DF014F	Users shall be able to generate custom reports using an SQL interface embedded within the archived data page.
1	DF018G	The GUI component shall allow an operator with appropriate permissions to edit the District FDOT location tables without having to stop the system.
2	DF019G1	The SunGuide operator with appropriate permissions may indicate that the IDS shall provide delay times rather than travel times.

GUI Tasks Pg 5/6

Priority	ReqID	Requirement Text
1	DF020G	The GUI shall alert the operator when there are conflicting or duplicate events.
1	DF021G	The GUI component shall allow an operator to mark events for selective dissemination to the public.
3	DF022G	Users shall be able to select the reports to be generated based on a drop down list from a separate archive data page.
1	DF023G	The Data Fusion GUI component shall alert the operator with a pop up or similar mechanism when there is a conflict between two or more different data sources reporting what is apparently the same event.
1	DF023G1	The pop up box or similar mechanism shall contain sufficient information about the event conflict to allow an operator to resolve the conflict.
2	DF024G	The SunGuide GUI shall use a popup alert to remind the operator that one or more events are still active after 24 hours.
1	DF024G1	The popup alert shall be visible to all operators logged on to the SunGuide system.
1	DF024G2	The popup alert shall remain visible on the SunGuide operator's display until at least one operator confirms acknowledgement of the alert by clicking on a button on the popup that will cause the popup to disappear for a configurable amount of time after which it will reassert itself until an operator again acknowledges it.
2	DF025G	The SunGuide GUI shall provide the means for a SunGuide operator with appropriate permissions to be able to designate who will have limited access and which shall have full access to the third party data feed.

SwRI Cost Estimate GUI Tasks Pg 6/6

- **GUI Tasks $91,291.28**

DF012F, DF012F1, DF022G DF009F, DF014F DF019 DF005G/1 DF027, DF001G	DF025G DF020G, DF023G/1 DF012, DF027, DF021G DF017 DF002G, DF011G2 DF024G/1/2 DF021, DF005, DF003G/1/2,	DF004G/1/2/3, DF006G, DF007G, DF008G, DF011G, DF009G/1, DF006G DF008G/1 DF018G DF019G1 DF011G1

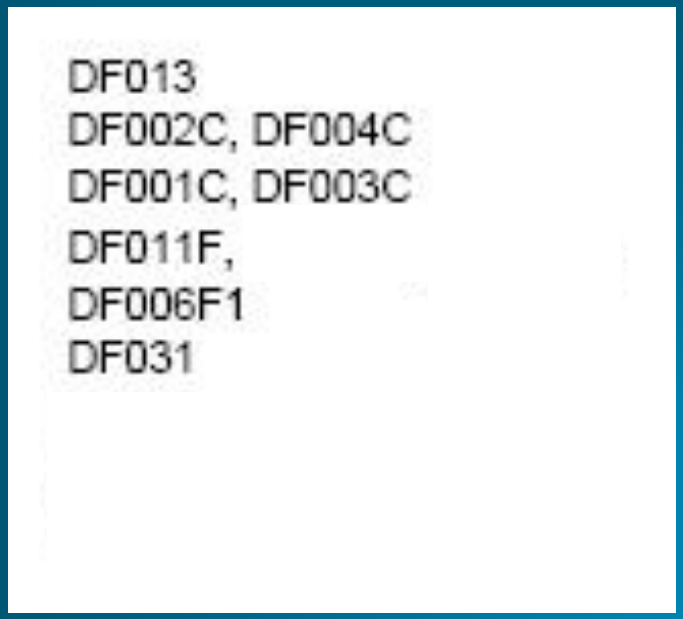
CMB Approval Yes _____ No _____

C2C Plug-in Tasks Pg 1/2

Priority	ReqID	Requirement Text
1	DF013	The Data Fusion subsystem shall use a modified SunGuide Center-to-Center Plug-in component to make fused traveler information available to the Information Dissemination Subsystem.
1	DF031	The Operator shall be able to create a floodgate message using the SunGuide GUI which will be distributed on the SunGuide C2C infrastructure.
1	DF001C	The Center-to-Center Plug-in component of the Data Fusion subsystem shall use the TMDD 2.0 Standard modified to use the SAE J 2540-1 July 2002 Table 2 and Table 11 message data sets for data transmission to the Information Dissemination Subsystem.
1	DF002C	Each fused traveler information event shall be associated with a latitude and longitude.
1	DF003C	Fused traveler information shall be formatted and transmitted in accordance with NTCIP 2306 protocol and the J2540-1 July 2002 Tables 2 and 11 message set.
1	DF004C	The Center-to-Center interface shall provide the FDOT location table to be used for a District by the Information Dissemination Subsystem.
1	DF006F1	The information shall be passed to the IDS using SAE, FDOT Location codes and other standard traveler information codes to the maximum extent possible.
2	DF011F	The Data Fusion component shall provide travel times or travel delays to the IDS.

SwRI Cost Estimate C2C Plug-in Tasks Pg 2/2

- **C2C Plug-in Tasks $71,137.28**



CMB Approval Yes _____ No _____

Data Base Tasks Pg 1/

Priority	ReqID	Requirement Text
1	DF024	The Data Fusion Subsystem shall use location tables specified by FDOT that can be redefined or added to while the system is operating.
3	DF003D	The database component shall contain a repository for all data collected by or generated by the data fusion system.
3	DF004D	Information shall be accessible from the database for a period of one year
1	DF016F1	The Data Fusion component shall compare the latitude and longitude of an event with other event latitude and longitudes and calculate a flat earth straight line distance between the events.
2	DF021F	The Data Fusion component shall assign the following confidence index value (CIV) to an event based on the source reporting the event as follows: 100 Operator verified via CCTV 80 Road Ranger verified 60 Notified via FHP (CAD Interface) 40 Incident Detection through TSS Alert 20 FDOT Construction or Maintenance 10 Public call-in via 511 feedback
2	DF021F1	The confidence index value and source of the event shall be able to be configured through the SunGuide Admin Editor.

SwRI Cost Estimate Database Tasks Pg 2/2

- **Database Tasks $36,082.16**

DF003D, DF004D,
DF003D, DF021F,
DF021F1, DF016F1

CMB Approval Yes _____ No _____

Reporting tasks Pg 1/2

Priority	ReqID	Requirement Text
3	DF014	The Data Fusion subsystem shall be able to generate reports according to parameters selected by the system administrator.
3	DF029	The data fusion subsystem shall be able to generate reports based on data saved.
1	DF007F	For automated speed and/or travel time reports, the Data Fusion component shall include the following fields: • Latitude • Longitude • District • Roadway affected • Segment affected • Lane blockage • Nearest interchange or cross street or mile marker • Direction of travel • Source of the data (metadata) • Travel speed • Travel Time
3	DF012F	The data fusion component shall generate a minimum of fifteen standard reports to view archived data.
3	DF012F1	The content and format of the reports shall be specified by FDOT.
3	DF014F	Users shall be able to generate custom reports using an SQL interface embedded within the archived data page.
3	DF015F	All reports shall be able to be exported in a minimum of XML or CSV format.

Reporting tasks Pg 2/2

- **Reporting Tasks $25,796.80**

DF014, DF029, DF007F, DF012F, DF012F1, DF015F

CMB Approval Yes _____ No _____

Integration Testing Pg 1/2

Priority	ReqID	Requirement Text
1	DF002	The Data Fusion subsystem shall assemble and fuse traveler information within 1 minute of receipt of applicable data from external sources including operator entered events.
2	DF009	The Data Fusion subsystem shall be able to process 10,000 active events with a maximum latency of 1 minute.
2	DF018	The Data Fusion subsystem shall be able to fuse at a minimum 2,500 automated traffic sensor input every minute.
3	DF001R	The data fusion subsystem shall be able to display a report within 10 seconds of when the last report criteria was entered by the operator and a report was requested.
3	DF005D	Information from the database shall be retrieved and presented to the operator within 12 seconds of the submission of the request for data.

SwRI Cost Estimate Integration Testing Pg 2/2

- Performance Testing (Integration Testing) $76,992.32

DF002, DF009, DF018, DF001R, DF005D

CMB Approval Yes _____ No _____

Other Costs

- DFS Documentation $22,859.84
- FAT (Optional) $36,322.96
- Deployment Support $24,035.44
- Data Management $21,103.20
- ATIS Contractor Coord. $69,951.00

Grand Total (incl. option) $981,316.06

CMB Approval Yes _____ No _____

DFS Requirements Not Priced

Identified which requirement was grouped in what cost by SwRI in the requirements database.

HW	2	DF010	The Data Fusion subsystem availability shall have an operational availability annually of at least 99.93% over an operating cycle of 24 hours starting at midnight.
HW	1	DF030	The Data Fusion subsystem shall operate normally in a sheltered environment with a controlled temperature ranging from 60 degrees Fahrenheit (° F) to 90° F, and a non-condensing humidity ranging from 30 percent to 80 percent
HW	3	DF006D	The database component shall support archiving of data to external media for long term storage.
N/C	1	DF007D	The database component shall be a relational database.
HW	2	DF008D	The database component shall have an operational availability annually of at least 99.99% over an operating cycle of 24 hours starting at midnight.
N/C	1	DF008D1	The Database hardware component shall use RAID 5 Technology.
?	2	DF018F	The Data Fusion subsystem shall provide at least two different levels of access to public and private agencies called limited access and full access.

Change Management Board

SunGuide^{SM} Map Alternatives

Trey Tillander

Closing and Action Item Review

Steve Corbin, CMB Chairman