

Intelligent Transportation Systems

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CTMS/CTIS

UC CTMS 9.00 - Integrate with co-trip web

Version 1.3

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Revision History

Date	Version	Description	Author
April 29, 2004	1.0	Initial Version	Raj Chaudhuri
July 27, 2004	1.0	Added data elements, Post Condition and Special Requirements	Raj Chaudhuri
August 31, 2004	1.1	Added Alt Flow, updated data elements	Raj Chaudhuri
November 24, 2004	1.2	Updated Alt flow, data elements, added basic flow. Removed extra connection logic and related special requirements. Added issues	Raj Chaudhuri
December 1, 2004	1.3	Revised Basic flow and error handling based on discussion with John	Raj Chaudhuri
December 2, 2004	1.3	Added another panel (page) data element as CoTrip VMS can have 4 pages	Raj Chaudhuri
January 17, 2005	1.3	Removed all references to alarms being generated.	Nancie Fay

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1. Use Case

1.1 Abstract

This UC defines the interface requirements between CTMS/CTIS and the CoTRIP web site

1.2 Actor(s)

Actor	Description
CTMS Subsystem	The CTMS application subsystem
CoTRIP Web	The CoTRIP Web application subsystem

2. Flow of Events

2.1 Basic Flow

1. The CoTrip system attempts to connect to CTMS's DB and establishes a Data link
2. The data in the CoTrip system is updated in real-time from the CTMS system. The following data elements for all DMSs are requested: Device ID, Device Common Name, Poll Time, Sign Status, Message Page 1, Line 1, Message Page 1, Line 2, Message Page 1, Line 3, Message Page 2, Line 1, Message Page 2, Line 2, Message Page 2, Line 3, Message Page 3, Line 1, Message Page 3, Line 2, Message Page 3, Line 3, Message Page 4, Line 1, Message Page 4, Line 2, Message Page 4, Line 3
3. Every 5 minutes, the CTMS system queries the CoTrip system and checks to see if the Data link is valid (see Special Requirements for more)
4. In the event the Data link is valid, the CTMS system logs this event. It passes the following elements to UC Log User Activity: Task Name (Integrate with Co-trip), Time (current time), Owner (CTMS), ID (), Device Type (blank), Message Text (blank), Username (), Instruction ID (blank), Notes ("Co-Trip Data Link :: OK")
5. Go to step 2 (recursive, continuous process)

2.2 Alternate Flow

1. The CoTrip system attempts to connect to CTMS's DB and establishes a Data link
 - 1.1. In the event, a Data link is unable to be establishes, the CoTrip system continues to attempt to connect.
 - 1.2. Go to step 1.
2. The data in the CoTrip system is updated in real-time from the CTMS system. The following data elements for all DMSs are requested: Device ID, Device Common Name, Poll Time, Sign Status, Message Page 1, Line 1, Message Page 1, Line 2, Message Page 1, Line 3, Message Page 2, Line 1, Message Page 2, Line 2, Message Page 2, Line 3, Message Page 3, Line 1, Message Page 3, Line 2, Message Page 3, Line 3, Message Page 4, Line 1, Message Page 4, Line 2, Message Page 4, Line 3.
3. Every 5 minutes, the CTMS system queries the CoTrip system and checks to see if the Data link is valid (see Special Requirements for more).
4. In the event the Data link is valid, the CTMS system logs this event. It passes the following elements to UC Log User Activity: Task Name (Integrate with Co-trip), Time (current time), Owner (CTMS), ID (), Device Type (blank), Message Text (blank), Username (), Instruction ID (blank), Notes ("Co-Trip Data Link :: OK").
 - 4.1. In the event the CTMS system is unable to determine whether or not the Data link is not valid within the timeout period, the system logs this event with the

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additional data that this task was not successful.

4.1.1. In the event the CTMS system determines the Data link is not valid, the system logs this event with the additional data that this task was not successful.

5. Go to step 2 (recursive, continuous process)

3. Special Requirements

1. The Data link is considered to be valid if the Consecutive Materialized View is current
2. The CTMS System converts the Message Multi-String text (in the Message table) to ASCII text and further divides the Message Text into separate fields, one for each line on a page (hence, there will up to 12 fields for Message Text from Page 1 Line 1 to Page 4 Line 3. In the event there is no data in a particular line, a 'NULL' will be inserted

4. Assumptions

1. The two systems (CTMS and CoTRIP) will be setup such that they can communicate through the data layer

5. Pre-Conditions

6. Post-Conditions

Data from CTMS pertaining to DMSs are synced up in real-time between CTMS and the CoTRIP System

7. Extension Points

8. Issues / Constraints / Questions

9. Data Elements

Refer to UC Poll DMS for details on data elements

Name	Description	Validation	Example
Device ID		Unique. Integer. Not null. Size=10	
Device Common Name		String. Unique. Not null. Size=250	
Poll Time		Date/time	
Sign Status	0=OK, 1=Service, 2=Failed, 3=New, 4=Offline	Enumerated Type. Not null	
Message Page 1 Panel 1	The first page, first line data in ASCII format	String. Size=255	
Message Page 1 Panel 2	The first page, second line data in ASCII format	String. Size=255	
Message Page 1 Panel 3	The first page, third line data in ASCII format	String. Size=255	
Message Page 2 Panel 1	The second page, first line data in ASCII format	String. Size=255	

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Message Page 2 Panel 2	The second page, second line data in ASCII format	String. Size=255	
Message Page 2 Panel 3	The second page, third line data in ASCII format	String. Size=255	
Message Page 3 Panel 1	The third page, first line data in ASCII format	String. Size=255	
Message Page 3 Panel 2	The third page, second line data in ASCII format	String. Size=255	
Message Page 3 Panel 3	The third page, third line data in ASCII format	String. Size=255	
Message Page 4 Panel 1	The fourth page, first line data in ASCII format NOTE – currently no signs in the CDOT ITS world have 4 pages, but CoTrip may have other signs that have this	String. Size=255	
Message Page 4 Panel 2	The fourth page, second line data in ASCII format NOTE – currently no signs in the CDOT ITS world have 4 pages, but CoTrip may have other signs that have this	String. Size=255	
Message Page 4 Panel 3	The fourth page, third line data in ASCII format NOTE – currently no signs in the CDOT ITS world have 4 pages, but CoTrip may have other signs that have this	String. Size=255	