

ETMS/ATMS System Requirements

Name: Bob Sharick

Date: 9/23/2003

Feature Described: Early Intent Enhancements

Document Version: 1.3

Remarks:

Reviewers/CSC: Ken Howard, Ken Drum, Sylvia Toderro, Melia Stefanescu

Reviewers/Volpe: Rick Oiesen

Reviewers/Other:

Reviewers/FAA:

Revision History

Revision	Date	Authors Initials	Description of the Change
Version 1.0	April 2, 2003	RS	Initial version of System Requirements
Version 1.1	July 2, 2003	KH	Updated the speed requirements and corrected the numbering.
Version 1.2	August 7, 2003	KH	Added requirement 4.3 to include the "NOACK" keyword.
Version 1.3	September 23, 2003	KH	Addresses AUA_700 comments,

1. Background Starting in version 7.6 of ETMS, users can send early intent messages. The routes, altitudes, and speeds in these messages are stored in the flight database until replaced by the actual route in an FZ message. The data flow currently implemented for this transmittal does not allow for any reply back to the sender to inform them that their submission succeeded or failed. Version 7.7 will add a reply back to the submitting airline to inform them of the processing of early intent messages.

- An early intent message consists of two parts: A header indicating that this is an "EI" packet.
- An "FP" message, which is the early intent flight plan.

The terms "EI packet" and "FP message" will both be used in the description of these requirements.

The requirements are numbered and shown in boldface. Unbolded text is included for clarification and is not, strictly speaking, part of the requirements.

2. Functional Requirements

This item has no functional changes for ETMS with respect to how EI packets are processed. ETMS should continue to do error checking and update the database as it currently does. The only changes are with respect to generating a reply message.

- 1. When ETMS receives an EI packet from an airline, it shall send a reply back to the sender informing it of the success or failure of the message.**
 - 1.1. A “success” message shall indicate to the user that the ETMS database has been updated to reflect the new data.** In other words, the data will be reflected in monitor/alert, ADLs, FCA lists, and in all other ETMS outputs.
 - 1.2. A “failure” message shall indicate that the database has not been updated in any way from the EI packet.**
- 2. In the case of a failure, ETMS shall indicate a specific reason for the failure.** The specific messages can be worked out during design, but a minimal set should include:
 - Bad message syntax (indicate specific problem as possible).
 - Bad route syntax.
 - Flight plan already processed.
 - Flight active.
 - Flight completed.
- 3. In the case that ETMS adds a flight to the database, it shall send an informational message to the user indicating that the flight was not found and has been added.**
- 4. ETMS shall send replies back using the CDM message protocol conventions defined in *CDM Message Formats version 1.3*. Specifically:**
 - 4.1. If the user submits an EI packet through a socket over CDMNET, ETMS shall send the reply message back over the same socket. If that socket is not longer open, ETMS shall not send the reply.**
 - 4.2. If the user submits an EI packet over ARINC,**
 - 4.2.1. If the user has indicated a specific reply address, ETMS shall send the reply to that ARINC address.**
 - 4.2.2. Otherwise, ETMS shall send the reply to the ARINC address from which the message came.**
 - 4.3. If the user specifies the keyword “NOACK” on the packet header line, ETMS shall only send a reply if there is an error.**
- 5. ETMS shall format the replies according to the CDM conventions defined in *CDM Message Formats version 1.3*. Specifically:**

- 5.1. The reply will first indicate the “packet” response: e.g., “EI0402182700.01 PROCESSED. 1 OK, 0 ERRORS, 0 WARNINGS”,
- 5.2. If there is an error, ETMS shall follow the packet response with the FP message that caused the error, followed by the error message.

3. Performance Requirements

Accuracy

No special requirements.

Recoverability

No special requirements.

Reliability

No special requirements.

Size

No special requirements.

Speed

6. Under normal operating conditions, ETMS shall generate a reply to the user within 10 seconds of the receipt of an EI packet.
7. If ETMS is unable to process a message after 30 seconds, it shall generate a reply to the user indicating that the message cannot be processed.

4. Hardware Requirements

No special requirements.

5. Security

No special requirements.

6. Training

Operator

No special requirements.

User

7. ETMS shall provide documentation to the user community describing the error messages and their meanings.

7. Metrics

No special requirements.

8. Design Issues/Suggestions

None.

Allocation of Requirements to Releases

All of the requirements in this document are new and will be included in ETMS 7.8.