Network Manager

EUROCONTROL

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REFERENCES

1. ATS Data Exchange Presentation (ADEXP), edition 3.1, edition 25 October 2011. Document identifier: EUROCONTROL-SPEC-0107.
2. IFPS and RPL Dictionary of Messages, edition 18.000, 04 Feb 2014
3. NM Handbook - ATFCM Users Manual, ATFM_MAN, Part Edition 15.0, 15/03/2011.
4. Not used.
5. Not used.
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8. IFPS User Manual, IFPS_MAN, edition 18.0, 18/03/2014.
9. DPI Implementation Guide, ref URB/USD/DPI_Impl_Guide, edition 1.800, 19/03/2015

DEFINITION OF TERMS

ACC Sector Configuration – The operational configuration of the sectors in an ACC i.e. the grouping/collapsing of sectors.

Actual Position — The position of a flight as received from ATC or AO (see also definition of Current Position).

Aerodrome Runway Configuration – The collection of runways and corresponding Taxi-Times for an airfield.

Anticipated — Anticipated is used to describe a time that is in the near future. An Anticipated time is considered to be more reliable than an Expected time.

AOBT — AOBT refers to the Actual Off-Block-Time of a flight.

ATOT — ATOT refers to the Actual Take-Off Time of a flight. It is the time at which the flight has taken off.

Current Position — The position of a flight as can be derived from the flight profile.

Position Report — A position in space at a point in time of a flight derived from sensor equipment.

TTOT — TTOT refers to the Target Take-Off Time of a flight.

1 INTRODUCTION

1.1 PURPOSE

(1) This document contains a description of messages from and to systems external to the NM which have been identified as Flight Progress Messages. It contains both messages from/to the Integrated initial Flight Plan Processing System (IFPS) to/from the Enhanced Tactical Flow Management System (ETFMS) and the Centralised SSR Code Assignment and Management System (CCAMS).

(2) Flight Progress Messages are messages, which inform the NM about the progress of airborne or almost airborne flights. It also includes message such as AFP, APL, FSA, EFD, DPI, CAM, COR…

(3) The purpose of this document is to provide users outside the NM with a detailed description of the NM Flight Progress Messages.

(4) The intended audience is Air Navigation Service Providers (ANSPs), Aircraft Operators (AOs) and others who plan to implement message exchange with the NM in ATM systems.

(5) This document will be distributed to who ever wishes to have a description of these NM messages.

1.2 SCOPE

(1) This document contains only the messages that are part of the set of data-interchange messages between ATC or AO and NM systems.

(2) This document does not contain messages that are exchanged between NM systems. For example Query-messages from/to ETFMS and RCA systems located at the user sites are considered to be NM internal messages and are therefore not included.

(3) This document contains the description of the standard interface for the provision of Correlated Position Report data to the ETFMS. However further technical specifications are part of separate Interface Control Documents with each Air Navigation Service provider (ANSP).

1.3 OVERVIEW OF DOCUMENT

(1) This document can be split into four major parts:

1. Description of messages corresponding to the NM release that is currently in Operation.
2. Description of messages for future NM releases
   This part contains the description of the messages for future NM releases. The messages contained in this document have been endorsed by the NM working structures (ODSG).
3. Procedure for testing changes to the interface with NM systems.
4. For a detailed description of message fields a reference is made to the EUROCONTROL ADEXP Standard.

(2) The definition of each message contains a short description, the purpose, the events for transmission, the semantics and some examples. The full syntax description can be found in other documents that will be referenced when appropriate.

(3) The definition of the messages for future releases has basically the same contents, but for each message, the implementation status or implementation plans from NM side will be added. Making reference to the appropriate ECIP objective and the corresponding Stakeholder Lines of Actions (SLoAs) will indicate the implementation plans of systems external to the NM.

(4) The procedure for testing new and changed interfaces is summarised in this document and an example of a test procedure is included.

***Important note**: Messages described in this document shall never be transmitted without prior coordination and testing with the NM.*

(5) Section 1.4 "Message Description Method" contains the formal syntax methodology used.

1.4 MESSAGE DESCRIPTION METHOD

(1) Each message syntax is described using a notation similar to BNF (Backus Nauer Form) notation. Each data element consists of a number of tokens, which can be an identifier, a literal or an operator.

(2) An identifier can be up to 64 characters long. It is used to reference the name of a constituent data element.

(3) A literal is a number of characters enclosed in double quotes.

(4) An operator is a token reserved to denote one of the following operations:

*a) **selection** : The operator '|' is used to denote the selection. The notation [A | B] means "either A or B are present"*

*b) **iteration** : The operators '{','}' are used to denote the iteration. The notation X{ A }Y means "A can be repeated equal or greater than X times and equal or less than Y times". X and Y are integers equal or greater than zero. If X is not present it is assumed to be zero. If Y is not present it is assumed to be the infinity.*

*c) **option** : The operators '(', ')' are used to denote the option. The notation (A) means "A can be optionally present"*

*d) **concatenation** : The operator '+' is used to denote the concatenation. The notation A + B means "B follows A sequentially". As a rule, throughout this document this operator indicates a strict concatenation, meaning that no separator is implied between A and B. Wherever there is a need to imply a separator for readability purposes, this will be explicitly mentioned in the description of each data element as "loose concatenation".*

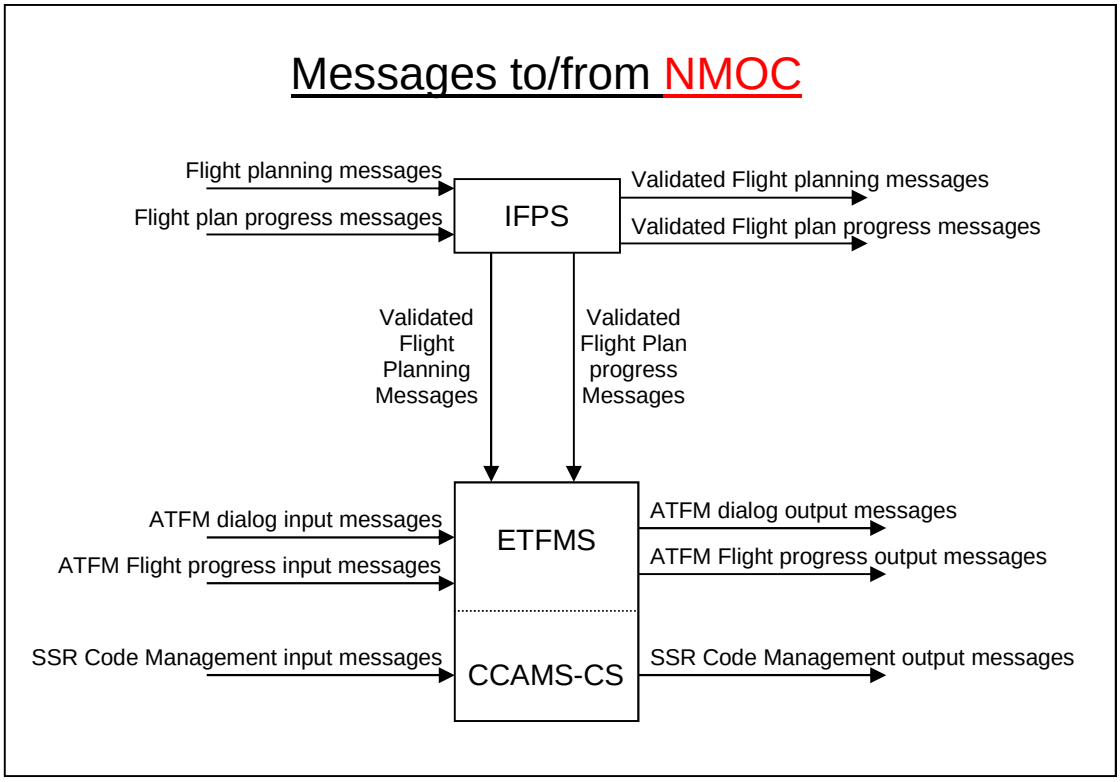
2 PART A – NM RELEASE 18.0

2.1 NM SYSTEMS OVERVIEW

2.1.1 Purpose

(1) This part contains a description of all the Flight Progress messages that can be sent to and by the NM systems that are currently in operation.

(2) The following diagram shows the main types of messages to and from NM.



2.1.1.2 Inputs

(1) In its role of central flight plan processor and distributor in ECAC, IFPS will receive all flight plan related messages. These messages are split into the following categories:

- Flight plan filing related messages such as FPL, DLA, CHG,
- Flight plan status reporting messages such as DEP and ARR
- Flight plan progress messages such as FNM, MFS and AFP

Only the flight plan progress message AFP is described in this document. The FNM and MFS messages are reserved for use by Oceanic centres only.

(2) Flight plan progress messages:
AFP – ATC Flight plan Proposal Message

(3) ETFMS will receive all ATFM related messages. These can be divided into two categories; ATFM dialogue messages and Flight progress messages. Only ATFM Flight progress messages are described in this document.

(4) ATFM Flight Progress messages:
- APR - Aircraft (operator) Position Report message
- DPI - Departure Planning Information message
- FSA - First System Activation message

(5) SSR Code Management Input Messages:
CCAMS-CS will receive all flight plan data and ATFM data through ETFMS. CCAMS-CS will receive SSR Code Management Messages from ATS Units. The following SSR Code Management messages exist:
- COR - Code Request Message
- CRE - Code Release Message

(6) ATFM & CCAMS input/reply error messages:
- ERR - ERRor message

2.1.1.3 Outputs

(1) IFPS will distribute all flight plan processing related messages to both ETFMS and to addresses external to the NM. These messages are also split into the following categories:
- Flight plan filing related messages such as FPL, DLA, CHG,
- Flight plan status reporting messages such as DEP and ARR
- Flight plan progress messages such as APL and ACH

Only the flight plan progress messages are described in this document

(2) Flight plan progress messages such as APL and ACH
- ACH - ATC flight plan CHange message
- APL - ATC flight PLan message

(3) ETFMS will send all ATFM related messages. These can be divided into two categories; ATFM Dialogue output messages and Flight progress messages.

(4) ATFM Flight Progress messages:
- EFD - ETFMS Flight Data message
- FUM - Flight Update Message

(5) SSR Code Management Output Messages:
CCAMS-CS will send all SSR Code Management related messages to ATS Units. The following messages exist:
- CAM - Code Assignment Message
- CCM - Code Cancellation Message

(6) ATFM & CCAMS output/reply error messages:
- ERR - ERRor message

2.2 MESSAGE DESCRIPTIONS

2.2.1 Messages to/from IFPS

2.2.1.1 IFPS Input

2.2.1.1.1 AFP – ATC Flight plan Proposal message

2.2.1.1.1.1 Purpose

(1) The objectives of AFP messages are to:

a) Enable the NMOC to provide ATC Units downstream with more accurate flight plan information, improving their traffic situation awareness and reducing the workload and disruption caused by last minute updates or missing flight plans;

b) Update the ETFMS with flight plan information in order to reflect as accurately as possible the current and future trajectory of the flight, providing accurate sector load calculations thus improving the ATFCM performance

c) Update CCAMS with flight plan data for missing flight plans such that directional codes can be assigned instead of omni directional codes.

2.2.1.1.1.2 Transmission events and circumstances

Important note: *No new systematic transmission of AFP messages to IFPS shall begin without prior coordination and test validation by NMOC. NMOC contact details to organise an AFP validation session and a basic validation plan are available in Annex 2 at then end of this document.*

(1) An AFP message shall be sent for both domestic and international flights.

(2) An AFP message shall only be sent for airborne flights.

(3) An AFP shall be sent by an ATC Unit to IFPS in ADEXP format (FCM-ASP10), including the IFPLID (FCM-ASP11) when one of the following events occurs:

a) For a missing flight plan, (automatically (FCM-ASP05))

b) For a change of route, (automatically (FCM-ASP06))

c) For diversion, (automatically (FCM-ASP07))

d) For a change of requested cruising level

e) For a change of aircraft type, (automatically (FCM-ASP13))

f) For a change of flight rules (VFR/IFR)

g) For a change of flight type (OAT/GAT)

h) For a change of aircraft equipment, (automatically (FCM-ASP14))

(4) An AFP message shall be sent only for flights for which the message originator ATC unit has assumed control of the flight. AFP messages for a missing flight plan may be transmitted before assuming control of the flight, under the conditions indicated in paragraph 2.2.1.1.1.2(7) below.

(5) An ATC unit shall stop transmitting AFP messages at the moment it has transferred control of the flight.

Missing flight plan

(6) An AFP message shall be sent to IFPS automatically in ICAO or ADEXP format by an ATC centre for a missing flight plan.

(7) A flight plan for a flight is considered to be missing when all the following conditions are met:
- an estimate for the flight is received by the ATC centre;
- no flight plan information was received by the ATC centre from IFPS;
- IFPS does not have a flight plan for the flight.

Note: If the flight plan is available in IFPS, then IFPS has full flight plan information on the flight. It is very unlikely that an ATC centre, unless it has received the flight plan information from IFPS, will have full information on the flight. Differences between the flight plan information stored in IFPS and the flight plan information sent by the ATC centre in an AFP message will be treated by IFPS as updates to the flight plan information and processed as such. This may cause for example a possibly incorrect alteration of the flight plan equipment information.

(8) In order to check if a flight plan for the flight is available with IFPS an RQP message shall be sent by the ATC centre to IFPS.

Note: It is however recognised that there might be cases where, due to operational constraints, sending an RQP message before filing an AFP message might not be possible.

(9) In case a flight plan for the flight is stored in IFPS, the flight plan shall be returned to the RQP originator in reply to the RQP message.

Note: RQP messages for flights that contain the EUR/PROTECTED indicator in the flight plan are processed manually and the flight plan will only be transmitted to ATC units that are concerned by the flight.

(10) In case a flight plan for the flight is not stored in IFPS, a REJ message shall be returned to the RQP originator.

Change of route

(11) An AFP message shall be sent to IFPS automatically in ADEXP format by an ATC centre when a change of route where the exit point from the flight data processing area (FDPA) has changed.

Diversion

(12) An AFP message shall be sent to IFPS automatically in ADEXP format for a flight that has diverted to another aerodrome of destination compared to the one included in the filed flight plan.

Change of requested cruising level

***Important note**: AFP messages for changes of requested cruising level shall not be transmitted unless the following two conditions have been satisfied:*

a) Local system support is provided to allow storing and updating of requested cruising levels by ATC;

b) Associated operational procedures are put in place for the usage and updating of requested cruising levels by ATC.

(13) A requested cruising level is a level requested by the operator/pilot of a flight to be maintained for a significant portion of the flight.

(14) An AFP message shall be sent to IFPS automatically in ADEXP format by an ATC centre when the requested cruising level on exit from the AoR (Area of Responsibility) of the centre is changed compared to the last route information received from IFPS.

Note: This requirement refers to a permanent change of a Reqeuested Cruising Level and not to flight level changes allocated on a tactical basis by ATC to the flight.

(15) An AFP message shall be transmitted only for requested cruising level changes that are applicable from a point before the top of descent of the flight.

Change of aircraft type

(16) An AFP message shall be sent to IFPS automatically in ADEXP format by an ATC centre that has identified that a flight is operated with another aircraft type compared to the one indicated in the latest flight plan data received from IFPS.

Change of flight rules (IFR/VFR)

(17) An AFP message shall be sent to IFPS automatically in ADEXP format when the flight rules of a flight for part or the whole route are changed compared to the information included in the latest flight plan data received from IFPS.

Change of flight type (OAT/GAT)

***Important note**: This requirement does not refer to a change of the type of flight information contained in the ICAO Field 8b but to a change from General Air Traffic (GAT) to Operational Air Traffic (OAT) or from OAT to GAT that can be indicated in the route field.*

(18) An AFP message shall be sent to IFPS automatically in ADEXP format when the flight type of a flight for part or the whole route are changed compared to the latest information included in the flight plan data received from IFPS.

Change of aircraft equipment

(19) An AFP message shall be sent to IFPS automatically in ADEXP format by an ATC centre that has identified that the equipment/capabilities of a flight are different compared to the latest information received in a flight plan message from IFPS.

2.2.1.1.1.3 IFPS reply messages and configuration options

(1) If required, IFPS may send an Operational Reply Message (ORM) in reply to an AFP message. The transmission of ORMs can be configured in the NMOC ENV database for each AFP originator ATC centre. The same settings are used for all flight plan messages originated by the ATC centre.

(2) A description of ORMs can be found in Doc Ref 8. The syntax of ORMs is included in Doc Ref 2.

2.2.1.1.1.4 Implementation plans and ESSIP Objectives & SLoAs

(1) The implementation of the AFP message types described above is covered by the following ESSIP/SLoAs:

- FCM03-ASP05 – Automatically provide AFP for missing flight plans
- FCM03-ASP06 – Automatically provide AFP message for a change of route
- FCM03-ASP07 – Automatically provide AFP messages for a diversion
- FCM03-ASP08 – Provide AFP message for a change of flight rules or flight type
- FCM03-ASP09 – Provide AFP message for a change of requested cruising level
- FCM03-ASP10 – Provide AFP messages in ADEXP format
- FCM03.ASP13 – Automatically provide AFP messages for a change of aircraft type
- FCM03.ASP14 – Automatically provide AFP messages for a change of aircraft equipment

(2) The table below contains the implementation time scales for AFP messages as indicated in the ESSIP. A description of the AFP SLoAs is also included in the ESSIP. Although every effort is made to maintain the dates in the table below aligned with dates contained in the ESSIP, the ESSIP documents should be used as the official reference for planning.

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM03-ASP05	Mar 1998	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP06	Mar 2003	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP07	Mar 2008	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP08	Mar 2003	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP09	Mar 2003	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP10	Mar 1998	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP13	Mar 2003	Dec 2015	Endorsed by PC Aug 2013
FCM03-ASP14	Mar 2008	Dec 2015	Endorsed by PC Aug 2013

2.2.1.1.1.5 Message description

2.2.1.1.1.5.1 Format

(1) An AFP message for a missing flight plan can be sent to IFPS in either ICAO or ADEXP format.

(2) An AFP message for all other trigger events shall be sent to IFPS in ADEXP format.

Note: It is recommended to use the ADEXP format for AFP messages for a missing flight plan as well as it provides more flexibility in what concerns the content of the message. In addition, transmission of AFP messages in ADEXP format to IFPS is linked to processing of flight plan data in ADEXP format received from IFPS (FCM-ASP03). Moreover the final aim, set in the ESSIP objectives, is to have all AFP messages transmitted to IFPS in ADEXP format.

2.2.1.1.1.5.2 ***Syntax***

(1) The syntax of an AFP message is described in Doc Ref 2.

2.2.1.1.1.5.3 Semantics

Missing flight plan

(1) An AFP message for a missing flight plan should contain all flight plan information available with the originator ATC centre.

(2) As a minimum, an AFP message for a missing flight plan shall contain the following information:

- Message title
- Aircraft identification
- Type of aircraft
- Equipment information (compulsory only for ICAO format)
- Departure aerodrome
- Estimate data
- Route
- Destination aerodrome
- PBN (if R is present in Equipment information)

Note 1: Information that is specified 'compulsory only for ICAO format' is included only for message parsing reasons in the minimum content definition. In ADEXP format this information may be omitted.

Note 2: Although equipment information is compulsory only in ICAO format it is recommended that all available equipment/capabilities information is included in an AFP message for a missing flight plan. In particular, RVSM capabilities, 8.33 kHz and, for non-8.33 equipped State flights, UHF equipage status should be confirmed by ATC with the pilot and included in the AFP message.

Note 3: Although the type of aircraft is an optional field in ADEXP format, it is compulsory information in an AFP for a missing flight plan. Without the type of aircraft, the profile of a flight cannot be calculated by IFPS.

(3) If not provided in the AFP message, IFPS shall assume the following information:

- flight rules = I
- flight type = G
- communications equipment = S
- surveillance equipment = C

Change of route

(4) As a minimum, an AFP messages for a change of route shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Departure aerodrome
- Estimate data

- Route
- Destination aerodrome

Note: Detailed information on the content of the Route field in an AFP message is provided in paragraph 2.2.1.1.1.6.4(4).

Diversion

(5) As a minimum, an AFP messages for a diversion shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Departure aerodrome
- Estimate data
- Route
- New destination aerodrome
- Original destination aerodrome

(6) The new destination aerodrome shall be included in the ADEXP primary field ADES.

(7) The original destination aerodrome shall be included in the ADEXP primary field ADESOLD.

(8) In case a flight is subject to multiple diversions, all related diversion AFP messages shall contain in the ADESOLD field the original destination aerodrome, as provided in the original filed flight plan, for message association purposes.

(9) If used, the DESTZ ADEXP field shall contain the name of the new destination aerodrome.

(10) The route field shall contain the route segment planned to be flown inside the airspace of the originator ATC centre towards the new destination aerodrome.

Change of requested cruising level

(11) As a minimum, an AFP messages for a change of requested cruising level shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Departure aerodrome
- Estimate data
- Route
- Destination aerodrome

(12) The route field shall include the new requested cruising level(s) inserted at the point(s) from which it is applicable.

(13) A new requested cruising level that is applicable to the entire AFP route shall be included within the Route description.

Change of aircraft type

(14) As a minimum, an AFP messages for a change of aircraft type shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Type of aircraft
- Departure aerodrome
- Estimate data
- Destination aerodrome

(5) Normally, the aircraft equipment should also change together with the aircraft type. It is required that when a change of aircraft type is noted, the aircraft equipment is also confirmed by the ATC originator centre, and is included in the AFP message. At least the following equipment and capabilities should be confirmed where possible:

- 8.33kHz equipment status.
- UHF equipment status.
- RVSM approval status.
- PBN if CEQPT contains the letter 'R'.

Change of flight rules (IFR/VFR)

(15) As a minimum, an AFP messages for a change of flight rules shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Flight rules
- Departure aerodrome
- Estimate data
- Route
- Destination aerodrome

(16) The route field shall include the appropriate flight rules indicator(s) (IFR/VFR) and any necessary associated speed or level information inserted at the point(s) where a change of flight rules is planned to take place.

Change of flight type (OAT/GAT)

***Important note**: This requirement does not refer to a change of the type of flight information contained in the ICAO Field 8b but to a change from General Air Traffic (GAT) to Operational Air Traffic (OAT) or from OAT to GAT that can be indicated in the route field.*

(17) As a minimum, an AFP messages for a change of flight type shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Departure aerodrome
- Estimate data
- Route
- Destination aerodrome

(18) The route field shall include the appropriate flight type indicator(s) (GAT/OAT) and any necessary associated speed or level information inserted at the point(s) where a change of flight type is planned to take place.

Aircraft equipment change

(19) As a minimum, an AFP messages for a change of aircraft equipment shall contain the following information in ADEXP format:

- Message title
- Aircraft identification
- Type of aircraft
- Wake turbulence catagory
- Revised aircraft equipment
- Departure aerodrome
- Estimate data
- Destination aerodrome

(20) The revised aircraft equipment shall start with –BEGIN EQCST and finish with –END EQCST and in between, each addition or deletion of equipment when compared to the equipments of the stored flight plan shall be preceded with -EQPT.

2.2.1.1.1.6 Fields description

The syntax definition of the various fields included in an AFP message is included in Doc Ref 2. The semantics are descriebed in the Doc Ref 8. Additional details on the use of fields in the various types of AFP messages are included in this section.

2.2.1.1.1.6.1 Flight rules

(1) The flight rules should be included in an AFP message for a missing flight plan.

(2) In case of an AFP message for a change of flight rules, the flight rules field shall contain the new flight rules of the flight.

(3) In case the flight rules do not change, this field can be omitted in an AFP message.

2.2.1.1.1.6.2 Type of aircraft

(1) The aircraft type is a compulsory field in an AFP message for a missing flight plan.

(2) In case of an AFP message for a change of aircraft type, the aircraft type field shall contain the new type of the aircraft the flight is operated with.

(3) In case the aircraft type does not change, this field can be omitted in an AFP message.

2.2.1.1.1.6.3 Equipment

ICAO format

(1) All available equipment information should be included in an AFP message for a missing flight plan.

Note: IFPS shall process equipment information received in AFP messages in ICAO format only in case of a flight plan missing in IFPS.

ADEXP format

(2) All available equipment/capabilities information shall be included in an AFP message for a missing flight plan within either the CEQPT and SEQPT fields or the EQCST field, as well as within the PBN, NAV, COM, SUR and DAT fields.

Note: IFPS shall process equipment information included in an AFP message in ADEXP format within the CEQPT and the SEQPT fields only in case the flight plan is missing in IFPS. In case IFPS already has a flight plan for the flight, this information will be ignored.

(3) Aircraft equipment/capabilities updates shall be transmitted within the primary field EQCST and/or, where necessary, within the PBN, NAV, COM, SUR and DAT fields.

(4) Surveillance equipment status is described at the level of the type or class of surveillance i.e. Mode A/C, Mode S, ADS-B, ADS-C. When the status is indicated as 'EQ' an indication of the complete capability for the class is expected. When the status is indicated as 'NO' or 'UN' no further information for that class is expected.

2.2.1.1.1.6.4 Estimate data

(1) The estimate data field is a compulsory field in all types of AFP messages.

(2) The estimate data field shall contain the estimated or the actual time and level over the estimate point.

(3) The estimate point shall be explicitly or implicitly included in the route field.

Note: The estimate point is implicitly included in the route field when it is a point on one of the route segments that are included in the route description but the point name is not mentioned in the route field.

(4) The estimate point shall be any point along the AFP route with the following exceptions:

a) It shall not be a point located on a SID or STAR procedure included in the AFP route apart from the point where the SID or STAR is connected to the en-route part of the route;

b) It shall not be a point described with geographical coordinates or as bearing and distance from a navigation aid that is considered to be implicitly included in the AFP route as being located along one of the airways in the AFP route. It may be a point described with geographical coordinates or as bearing and distance from a navigation aid if it is explicitly included in the AFP route;

c) It shall not be a point located in a VFR or OAT portion of the flight.

(5) Aerodromes shall not be included as estimate points within AFP messages.

2.2.1.1.1.6.5 Route

(1) The route field of an AFP message shall only contain the route part on which the flight has been cleared or is about to be cleared by the AFP originator ATC unit. This part of the route of the flight is called within this document the AFP route.

(2) The AFP route shall not contain the upstream part of the route compared to the area of responsibility of the AFP originator ATC unit.

(3) The AFP route shall implicitly or explicitly contain the AFP estimate point.
Note: The AFP estimate point is implicitly included in the AFP route when it is a point on one of the route segments that are included in the route description but the point name is not mentioned in the route field.

(4) The AFP route description shall comply with the ICAO Doc 4444 specifications regarding the content of the Field Type 15 of a flight plan message.

Note: If not provided in the AFP route, IFPS shall automatically insert between two consecutive significant points either an airway that is available at the requested cruising level or, in case it does not find an airway, a DCT route. This automatic processing is not applied in case the significant points are described using geographical coordinates or as bearing and distance from a navigation aid.

(5) Requested cruising levels, flight rules changes (IFR/VFR) and flight type changes (GAT/OAT) shall be inserted in the route field at the point(s) from which they become applicable.

(6) Except in the case of an AFP for a change of requested cruising level, the route field shall contain the original requested cruising level(s) within the airspace of the AFP originator ATC centre as included in the filed flight plan before departure.

(7) The first and last elements of an AFP route shall be:

a) A significant point or

b) A DCT route, in case of a flight that is cleared directly from its aerodrome of departure to the first point of the route / to the aerodrome of destination or from the last point of the route to the aerodrome of destination.

(8) The first and last elements of an AFP route shall not be an airway designator.

(9) An AFP route shall not contain internal, unpublished and non-ICAO point/route designators.

(10) Where route information is required to be included in an AFP message in ADEXP format, the ADEXP primary field ROUTE shall always be included in the message.

(11) IFPS shall consider the AFP route as valid and flown as indicated in the AFP message.

Note: IFPS will therefore accept a flight that will penetrate closed airspaces, fly along closed routes and against RAD restrictions on the AFP route.

Note: It should be noted that incorrect use of this facility may lead to invalid routes within the airspace of downstream ATC units being accepted and distributed by IFPS having a potential significant impact on the downstream ATC units.

2.2.1.1.1.6.6 Aerodrome of destination

(1) In case of an AFP message for diversion, the aerodrome of destination field shall contain the new destination of the flight.

(2) For all other AFP trigger events, the aerodrome of destination field shall contain the aerodrome of destination included in the filed flight plan.

2.2.1.1.1.6.7 Old aerodrome of destination

(1) The old aerodrome of destination field (ADEXP primary field ADESOLD) shall be used to indicate that a flight has diverted from the original aerodrome of destination included in the filed flight plan.

(2) The old aerodrome of destination field shall contain the original aerodrome of destination as included in the filed flight plan.

2.2.1.2 IFPS Output

2.2.1.2.1 APL – ATC flight plan message

2.2.1.2.1.1 Purpose

(1) The objectives of APL messages are to:

a) Enable the NMOC to provide ATC Units downstream with more accurate flight plan information, improving their traffic situation awareness and reducing the workload and disruption caused by missing flight plans;

b) Update the ETFMS in the cases where the original flight plan information is missing in IFPS in order to provide accurate sector load calculations thus improving the ATFCM performance

c) Update CCAMS with flight plan data for missing flight plans such that directional codes can be assigned instead of omni directional codes.

2.2.1.2.1.2 Transmission events and circumstances

(1) An APL message is sent by the IFPS whenever information is received from an ATC Unit in an AFP, FNM or MFS message, concerning a flight which either:

- does not exist in the IFPS;

or

- does exist but as a result of the information received i.e. change of route, the Flight plan details need to be sent to an ATS centre which did not receive the original FPL.

Note: More details on AFP messages are available in section 2.2.1.1.1 of this document. FNM and MFS are co-ordination messages received by IFPS from Oceanic control centres for Eastbound North-Atlantic traffic. FNM and MFS are never output by IFPS but only the resultant APL/ACH messages are output.

(2) IFPS shall also transmit an APL message in reply to an RQP message in case the initial flight plan data has previously been modified by an AFP, FNM or MFS message.

(3) IFPS distributes APL messages to ATC centres that have not received basic flight plan information for the flight either because it did not exist in IFPS or because they were not on the original route of the flight.

(4) IFPS shall distribute an APL message to all ATC centres concerned by the flight and that are situated downstream of the estimate point received in the incoming AFP/FNM/MFS message but not to the originator of the message.

(5) In the specific case where the incoming message is entirely consistent with the flight plan held in IFPS, the original FPL is sent as a reply to an AFP originator ATC Unit. No APL is distributed to other ATC Units. It is assumed that the AFP was sent because the ATC Unit, for unknown reasons, did not have the flight plan.

2.2.1.2.1.3 Implementation plans and ECIP Objectives & SLoAs

(1) The implementation of the APL is covered by the following ECIP/SLoA:

- FCM03.ASP04 – Processing of APL and ACH messages

(2) The table below contains the implementation time scales for APL messages as indicated in the ECIP. A description of the APL SLoA is also included in the ECIP. Although every effort is done to maintain the dates in the table below aligned with dates contained in the ECIP, the ECIP documents should be used as the official reference for planning.

(3)

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM03.ASP04	Dec 1997	Dec 1999	Agreed, Revised in EAG/4

2.2.1.2.1.4 Message description

2.2.1.2.1.4.1 Format

(1) APL messages can be sent in either ADEXP or ICAO format. They will be in the same format as all other flight plan messages transmitted to the ATC centre. The format is configured and can be changed in the NMOC ENV database.

2.2.1.2.1.4.2 Syntax

(1) An APL message contains all flight plan data available in IFPS.

(2) The syntax of an APL message is described in Doc Ref 2.

2.2.1.2.1.4.3 Semantics

(1) In ADEXP format, if there is only one occurrence of rfl, this is the initial requested flight level.

(2) In ADEXP format, if there is only one occurrence of speed or Mach number, this is the initial requested speed or Mach number for the flight.

(3) If not provided in the incoming message, IFPS shall assume and output the following information:

- flight rules = I
- flight type = G
- communications equipment = S
- surveillance equipment = C

(4) The estimated off-block time and the date of the flight are automatically calculated by IFPS.

(5) The source field (SRC) contains the text AFP, FNM, MFS or RQP to indicate the type of the original message on which the APL is based.

(6) In case the APL message refers to a diverted flight, the source field (SRC) contains the three-letter indicator DIV followed by the four-letter ICAO indicator of the original aerodrome of destination, as included in the filed flight plan, separated by a space.

(7) APL messages sent in reply to an RQP message shall contain in the Remark field (RMK) the text APL IS FPL UPDATED BY ATC.

2.2.1.2.1.5 Fields description

(1) The syntax definition of the fields included in an APL message is included in Doc Ref 2. The semantics are included in the Doc Ref 8.

2.2.1.2.2 ACH – ATC flight plan change message

2.2.1.2.2.1 Purpose

(1) The objectives of ACH messages are to:

a) Enable the NMOC to provide ATC Units downstream with more accurate flight plan information, improving their traffic situation awareness and reducing the workload and disruption caused by last minute updates;

b) Update the ETFMS and CCAMS with flight plan changes in order to reflect as accurately as possible the current and future trajectory of the flight, providing accurate sector load calculations thus improving the ATFCM performance.

2.2.1.2.2.2 Transmission events and circumstances

(1) An ACH message is output by the IFPS whenever information is received in an AFP, FNM or MFS message concerning a modification to a flight.

(2) In the case of a modification only in time, a time parameter, currently set at 10 minutes, needs to be exceeded before ACH messages will be distributed.

(3) IFPS shall distribute an ACH message to all ATC centres concerned by the flight that have already received flight plan information and that are situated downstream of the estimate point received in the incoming AFP/FNM/MFS message but not to the network address from which the message was originated.

(4) In the specific case where the incoming message is entirely consistent with the flight plan held in IFPS, the original FPL is sent as a reply to an AFP originator ATC Unit. No ACH is distributed to other ATC Units. It is assumed that the AFP was sent because the ATC Unit, for unknown reasons, did not have the flight plan.

2.2.1.2.2.3 Implementation plans and ECIP Objectives & SLoAs

(1) The implementation of the ACH messages is covered by the following ECIP/SLoA:

- FCM03.ASP04 – Processing of APL and ACH messsages

(2) The table below contains the implementation time scales for ACH messages as indicated in the ECIP. A description of the ACH SLoA is also included in the ECIP. Although every effort is done to maintain the dates in the table below aligned with dates contained in the ECIP, the ECIP documents should be used as the official reference for planning.

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM03.ASP04	Dec 1997	Dec 1999	Agreed, Revised in EAG/4

2.2.1.2.2.4 Message description

2.2.1.2.2.4.1 Format

(1) ACH messages can be sent in either ADEXP or ICAO format. They will be in the same format as all other flight plan messages transmitted to the respective ATC Unit. The format is configured and can be changed in the NMOC ENV database.

2.2.1.2.2.4.2 Syntax

(1) The syntax of an ACH message is described in Doc Ref 2.

2.2.1.2.2.4.3 Semantics

(1) In ADEXP format, if there is only one occurrence of rfl, this is the initial requested flight level.

(2) In ADEXP format, if there is only one occurrence of speed or Mach number, this is the initial requested speed or Mach number for the flight.

(3) In ICAO format, when modifying the content of Field 18 via the Field 22 mechanism e.g. to provide the SRC/ indication, IFPS shall provide the complete Field 18 information applicable to the flight.

2.2.1.2.2.5 Fields description

2.2.1.2.2.5.1 Introduction

(1) The syntax definition of the fields included in an ACH message is included in Doc Ref 2. The semantics are descriebed in Doc Ref 8. Additional details on the use of fields in ACH messages are included in this section.

2.2.1.2.2.5.2 Source field

(1) The source field (SRC) contains the text AFP, FNM, MFS or RQP to indicate the type of the original message on which the ACH is based.

(2) In case the ACH message refers to a diverted flight, the source field (SRC) contains the three-letter indicator DIV followed by the four-letter ICAO indicator of the original aerodrome of destination, as included in the filed flight plan, separated by a space.

2.2.1.2.2.5.3 Aerodrome of destination

(1) The aerodrome of destination field shall contain the aerodrome of destination included in the filed flight plan except in case the aerodrome of destination has been modified by a diversion AFP message. In the later case, the aerodrome of destination will be indicated as follows.

ICAO format

(2) An ACH message resulting from a diversion AFP message shall contain the previous aerodrome of destination within Field 16a and the new aerodrome of destination shall be indicated within Field 22, as a change to Field 16.

(3) Subsequent ACH messages shall contain the new aerodrome of destination within Field 16a.

ADEXP format

(4) An ACH message resulting from a diversion AFP message shall contain the new aerodrome of destination within the ADES field and the original aerodrome of destination, as included in the filed flight plan, within the ADESOLD field.

(5) Subsequent ACH messages shall also contain the new aerodrome of destination within the ADES field and the original aerodrome of destination within the ADESOLD field.

2.2.2 ATFM Messages

2.2.2.1 Introduction

(1) The section describes all the ATFM Flight Progress messages that are sent and received by ETFMS.

2.2.2.2 ATFM Flight Progress messages – Originated by AO/ATS

2.2.2.2.1 APR – Aircraft (operator) Position Report

2.2.2.2.1.1 Purpose

(1) The APR message is a Position Report message that is sent by Aircraft Operators.

(2) The purpose of the APR is to inform the NMOC about the progress of an airborne long haul flight.

(3) The APR message informs the NMOC with an accurate update of the Estimated Arrival Time or with an Actual Time Over the aircraft's current position.

(4) The APR message will be received and processed by ETFMS. It will be used to update ETFMS flight data, in order to get a more accurate prediction of the sector counts.

(5) The main benefit of the APR message is to enable ETFMS to take the accurate flight profile into account for the allocation of ATFM Slots to other flights. This will prevent overdeliveries to Air Traffic Controllers and reduce holdings for Aircraft Operators at e.g. TMA (E.g. for EGLL).

2.2.2.2.1.2 Transmission events and circumstances

Which flights:

(1) APR messages are expected for flights that are airborne and that have departed from aerodromes outside the NMOC area and that have planned to enter the NMOC area, either over-flying it or landing at an airport inside it.

(2) Basically these are all flights not departing from airports having ICAO location indicators E*, L*, GC*, GM* and UK*.

Timing & Trigger event:

(3) APR messages are expected to be sent approximately 2 to 3 hours before the flight enters the NMOC area. This gives the NMOC sufficient time to optimise the slot allocation and to prevent overloads of air-spaces where long haul flights form a significant percentage of the traffic. This moment of transmission will also prevent potential conflicts with flight update messages coming from ATC such as FSA messages and (radar) Position Reports.

(4) The NMOC prefers to receive APR messages approximately 2 to 3 hours before the flight enters the NMOC area. However, if the Aircraft Operator wishes to send an APR earlier than 2-3 hours before entry into the NMOC area (e.g. at take-off), this will be accepted as well.

(5) The APR can be sent on any event that improves the times in the flight data of the AO. It could e.g. be based upon ACARS messages.

(6) Normally one APR message per flight is sufficient. However, if filtering is difficult to achieve, ETFMS will accept and process more. The AO may decide to send a new APR if e.g. previously reported times have changed by more than 10 min.

(7) In case of multiple data sources, ATC information will take precedence over AO information. This means that APR messages will be ignored as soon as the NMOC has received the first FSA or CPR message.

(8) The NMOC only receives flight data for flights that are fully or partly IFR/GAT and therefore, only APR messages for IFR/GAT flights shall be sent.

Contents:

(9) The APR message will supply the NMOC with either an estimated time of arrival at the aerodrome of destination or with actual times over geographical positions at a distance from the NMOC area boundary. The reporting position may be 2-3 hours flying away from the NMOC area boundary.

(10) Of the two different types of APR messages, the NMOC prefers to receive APR messages giving the ETA at the aerodrome of destination.

(11) In case the APR message contains an ETA, the times of the flight profile will be updated, starting at the ADES and calculating backwards.

(12) In case the APR message contains an actual time and level at a given position, ETFMS will determine the closest position in the flight plan route and calculate the estimated time to arrive at this point. This calculation will be based upon the distance between the reported position and the reported time (Processing will be similar to the processing of (radar) Position Reports).

Other requirements:

(13) In addition to the time updates, the APR message can be used to update the NMOC with the aircraft registration, which will also improve the billing procedures in the CRCO.

(14) The APR message is expected to be transmitted by the aircraft operators' central system and shall be sent via SITA or AFTN networks to the NMOC Enhanced Tactical Flow Management System (ETFMS).

(15) The APR message is accepted only from validated/known AFTN/SITA addresses. An APR message from an unknown/unvalidated address is ignored by ETFMS.

(16) The APR will initially be implemented for a trial and dependent on the success of this trial further implementation will be considered.

2.2.2.2.1.3 Implementation plans and ECIP Objectives & SLoAs

(1) The APR message is a message that is generated by AOs ground based flight management systems and it could e.g. be based upon ACARS reports. Not all AOs will technically be able to send APR messages. It is planned to have a trial with several AOs and based on the results of these trials, other AOs will be invited to start transmission of APR messages.

(2) The table below gives an indication of the implementation timescales for the APR message. It contains both the plans of the NMOC and the proposed target dates for the aircraft

operator. However this table is nothing more than an indication. The NMOC implementation plans are subject to the Change-Request (CR) approval procedure and are also subject to agreement of the ODSG meetings.

2.2.2.2.1.4 For the APR message no ECIP Objective & SLoA exists., Message description

2.2.2.2.1.4.1 Format

(1) The APR message is in ADEXP format. There is no equivalent ICAO format specified for this message.

(2) ETFMS will check automatically the syntax of each received APR message. If the message does not conform to the proposed syntax, it will only be partly processed or rejected completely.

2.2.2.2.1.4.2 Syntax

(1) Syntax of APR message is as follows (syntax is described using a BNF-like format as explained in section 1.4 "Message Description Method").

APR_MESSAGE := “-“+”TITLE APR”+ (origin) + (ifplid) +arcid + adep + ades + ([(eobt + eobd) | (sobt + sobd) | (aobt + aobd)])+ position + 0{geo}1 + 0{ref}1 + 0{rename}1 + ([***groundspeed*** | (***windspeed*** + ***airtemp*** + ***winddirection)***]) + ([***trackangle*** | ahead]) + (reg) + (arcaddr)

Note:
All fields in ***bold-italic*** are new fields and therefore not yet defined in the EUROCONTROL ADEXP Standard (see Doc Ref 1).

(2) ETFMS prefers to receive the groundspeed-field to the windspeed-, airtemp- and winddirection-fields and therefore, if the groundspeed-field is present, the windspeed-, airtemp- and winddirection-fields are not required

(3) ETFMS prefers to receive the trackangle-field to the ahead-field and therefore, if the trackangle-field is present, the ahead-field is not required. The trackangle-field contains the direction that the aircraft is moving in relation to the ground and True-north. The ahead-field contains the heading in relation to the magnetic north.

(4) If any of the groundspeed-, windspeed-, airtemp-, trackangle-, ahead- or winddirection-fields is wrong, none of these fields will be used. These are considered to be future extensions.

2.2.2.2.1.4.3 Semantics

(1) The fields in the ADEXP message can be divided into two groups; fields used for matching the APR message to the flight plan and fields used for updating the flight plan. The following fields will only be used for matching the APR message to the flight (these will not be used for updating the flight plan): ifplid, adep, ades, eobt, sobt, aobt, eobd, sobd, aobd.
All other fields will be used to update the flight plan.

(2) The preferred field for matching is the ifplid-field. If this field is present, there is no need to add any of the obt-fields and the obd-fields. However the presence of these obt-fields and obd-fields will allow for additional checking and will improve the robustness of ETFMS.

(3) Amongst the obt-fields and obd-fields, the eobt field is preferred to the others. The NMOC has clear matching rules using the eobt-fields and the eobd-fields. Matching based upon sobt/sobd and aobt/aobd fields requires other (slightly different) rules.

(4) The origin-field will be used by ETFMS to send any reply message to the received message instead of sending the reply to the originator field that was received from AFTN message header. This will allow for transmission of reply messages to another address than the sending address.

2.2.2.2.1.5 Validation and Reply Messages

(1) ETFMS will validate each APR message. In case of syntax error, the standard syntax error reply message will be sent. See 2.2.4.2.1 “ERR – ERRor message”.

(2) In case of semantic errors the APR message is ignored. No reply message is sent.

2.2.2.2.1.6 Fields description

2.2.2.2.1.6.1 Introduction

(1) Syntax and semantic definition of the constituents ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in the Doc Ref 1.

2.2.2.2.1.6.2 adep

Purpose and syntax:

(1) This field indicates the ICAO location indicator of the aerodrome of departure.

(2) The syntax of the adep-field can be found in Doc Ref 1.

Semantics:

(3) No special semantic definitions for this field.

2.2.2.2.1.6.3 adid

Purpose and syntax:

(1) In the context of position, this field indicates the ICAO location indicator for the aerodrome of destination.

(2) The syntax of the adid-field is defined in Doc Ref 1.

Semantics:

(3) The ICAO aerodrome designator must be the same with the one specified in ades-field. If this is not the case, the APR message will be rejected.

2.2.2.2.1.6.4 ahead

Purpose and syntax:

(1) The ahead-field contains the current heading of the aircraft. If present, this field may be used to find the position at which the aircraft if most likely to join the flight plan route. The ahead-field contains the heading in relation to the magnetic north.

(2) The syntax of the ahead-field is defined in Doc Ref 1.

Semantics:

(3) If the ahead-field does not follow the above-described syntax the ahead-field will be ignored.

2.2.2.2.1.6.5 airtemp

Purpose and syntax:

(1) The airtemp-field contains the air-temperature at the aircrafts reported position at the moment of the report. If present, this field may be used for flight profile calculation purposes.

(2) The syntax of the airtemp-field will be defined in Doc Ref 1, but is:

airtemp := “-“ + “AIRTEMP” + temp
temp := ["P" | "M"] + 3{DIGIT}3 + ["C" | "F" | "K"]

Semantics:

(3) The letters "P" (plus) and "M" (minus) indicate positive or negative temperatures.

(4) The letters "C" (Celcius), "F" (Fahrenheit) and "K" (Kelvin) indicate the unit of temperature.

(5) If the airtemp-field does not follow the above-described syntax it will be ignored.

2.2.2.2.1.6.6 aobd

Purpose and syntax:

(1) The aobd-field indicates the Actual Off-Block Date of the flight and it is used for APR-flight plan matching only, so not to update the OBD of the flight plan

(2) The syntax of the aobd-field is defined in Doc Ref 1.

Semantics:

(3) The aobd-field shall contain the Actual off-block date of the flight. ETFMS will use different matching rules when the aobd is specified instead of the eobd.

2.2.2.2.1.6.7 aobt

Purpose and syntax:

(1) The aobt-field indicates the Actual Off-Block Time of the flight and it is used for APR-flight plan matching only, so not to update the OBT of the flight plan.

(2) The syntax of the aobt-field is defined in Doc Ref 1.

Semantics:

(3) The aobt-field shall contain the actual off-block time of the flight. ETFMS will use different matching rules when the aobt is specified instead of the eobt.

2.2.2.2.1.6.8 arcaddr

Purpose and syntax:

(1) The arcaddr-field contains the 24 bit ICAO aircraft address of the flight.

(2) The syntax of the arcaddr-field is defined in Doc Ref 1.

Semantics:

(3) This field shall be present only if the arcaddr is retrieved from air ground data-link communications, in other words, automatically retrieved from the aircraft.

2.2.2.2.1.6.9 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight and it is used for APR-flight plan matching only, so not to update the EOBD of the flight plan.

(2) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(3) The eobd-field shall contain the eobd that has been last distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages). In the ICAO flight plan, the EOBD is present in field18 as DOF/yymmdd.

(4) The eobd-field is an optional field, but its presence in the APR message is nevertheless highly desirable. The presence of the EOBD reduces the number of APR-flight plan matching problems.

2.2.2.2.1.6.10 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight and it is used for APR-flight plan matching only, so not to update the EOBT of the flight plan.

(2) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(3) The eobt-field shall contain the eobt that has been last distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages).

(4) The eobt-field is an optional field, but its presence in the APR message is nevertheless highly desirable. The presence of the EOBT reduces the number of APR-flight plan matching.

2.2.2.2.1.6.11 fl

Purpose and syntax:

(1) In the context of position-field with option ptid present, this field indicates the actual flight level of the aircraft at the point specified in the ptid-field.

(2) In the context of position-field with option adid present, the fl-field shall contain the aerodrome elevation, but preferably this fields should be omitted in this case.

(3) The syntax of the fl-field can be found in Doc Ref 1.

Semantics:

(4) The fl-field will be used to recalculate the flight plan profile and as such it will be considered as the actual level at which the aircraft actually is (it will not be considered to be the new cruising level).

(5) If the fl-field does not follow the above-described syntax the fl-field will be ignored.

2.2.2.2.1.6.12 groundspeed

Purpose and syntax:

(1) The groundspeed-field indicates the current ground speed of the aircraft. If present, this field will be used to calculate the elapsed time between the reported position and the closest point on the flight plan route.

(2) The syntax of the groundspeed-field will be defined, but is:

groundspeed := "-" + "GROUNDSPEED" + spd
spd := See EUROCONTROL ADEXP standard, Doc Ref 1

Semantics:

(3) If the groundspeed-field does not follow the above-described syntax the groundspeed-field will be ignored.

2.2.2.2.1.6.13 position

Purpose and syntax:

(1) This field indicates, either the aircraft's estimated time and flight level at a given (geographical) position or the aerodrome of destination and the estimate time of arrival.

(2) The syntax of the position-field is:

position :="-"+ "POSITION" + [adid | ptid] + to + (fl)
adid := see section 2.2.2.2.1.6.3 "adid"
ptid := see section 2.2.2.2.1.6.14 "ptid"
to := see section 2.2.2.2.1.6.18 "to"
fl := see section 2.2.2.2.1.6.11 "fl"

Semantics:

(3) Subfield 'to' is mandatory. If present, it shall contain the time-over at the position specified by the adid-field or the ptid-field.

(4) Options cto, sto that are specified in the EUROCONTROL ADEXP standard {see Doc Ref 1} will be ignored if present.

(5) If the position-field contains the adid-field, the fl-field shall contain the airfield elevation or the fl-field shall be omitted.

(6) As can be seen in the APR message description (see 2.2.2.2.1.4 “Message description”), only one occurrence of the position-field is allowed in the message. If more than one occurrence is detected, the APR message will be rejected.

2.2.2.2.1.6.14 ptid

Purpose and syntax:

(1) In the context of position, this field identifies the point at which the aircraft reported its position.

(2) The syntax of the ptid-field can be found in Doc Ref 1.

Semantics:

(3) The reference point can be either a published ICAO identifier, or the identifier (geoname) allocated for a geographical point, or the identifier (refname) located for a reference point, or the identifier (renameid) of a renamed point with the following syntax:

geoname := “GEO” + 2{DIGIT}2 (strict concatenation)
refname := “REF” + 2{DIGIT}2 (strict concatenation)
renameid := “REN” + 2{DIGIT}2 (strict concatenation)

(4) If the point is a geographical point or a reference point or a rename point, the corresponding primary ADEXP fields geo, ref or rename, must be present in the APR message (see 2.2.2.2.1.4 “Message description”).

(5) If the syntax of the ptid-field is not correct, the whole position-field will ignored.

2.2.2.2.1.6.15 reg

Purpose and syntax:

(1) The reg-field is an optional field that can be used to supply the NMOC with the aircraft registration. If present, this field will be used for posterior analysis (it could e.g. be used to determine reactionary delays). The availability of the reg-field will also simplify the CRCO billing procedures.

(2) The syntax of the reg-field is defined in Doc Ref 1.

Semantics:

(3) No special semantic definitions for this field.

2.2.2.2.1.6.16 sobt

Purpose and syntax:

(1) The sobt-field indicates the Scheduled Off-Block Time of the flight and it is used for APR-flight plan matching only, so not to update the OBT of the flight plan.

(2) The syntax of the sobt-field is defined in Doc Ref 1.

Semantics:

(3) The sobt-field shall contain the scheduled off-block time of the flight. ETFMS will use different matching rules when the sobt is specified instead of the eobt.

2.2.2.2.1.6.17 sobd

Purpose and syntax:

(1) The sobd-field indicates the Scheduled Off-Block Date of the flight and it is used for APR-flight plan matching only, so not to update the OBD of the flight plan.

(2) The syntax of the sobd-field is defined in Doc ref 1.

Semantics:

(3) The sobd-field shall contain the scheduled off-block date of the flight. ETFMS will use different matching rules when the sobd is specified instead of the eobd.

2.2.2.2.1.6.18 to

Purpose and syntax:

(1) In the context of the position-field with option adid present, this field indicates the estimated time of arrival of the aircraft.

(2) In the context of position-field with option ptid present, this field indicates the estimated time of overflight at the point described in ptid.

(3) The syntax of the to-field can be found in Doc Ref 1.

Semantics:

(4) In this context, timehhmm must be a time of the day. If this is not the case, the contents of the to-field will be ignored.

2.2.2.2.1.6.19 trackangle

Purpose and syntax:

(1) The trackangle-field indicates the current track angle of the aircraft. The trackangle-field contains the direction that the aircraft is moving in relation to the ground and True-north. If present, this field will be used to find the position at which the aircraft if most likely to join the flight plan route.

(2) The syntax of the trackangle-field will be defined in Doc Ref 1, but is:

trackangle := "-" + "TRACKANGLE" + heading
heading := See EUROCONTROL ADEXP standard, Doc Ref 1

Semantics:

(3) If the trackangle-field does not follow the above-described syntax the trackangle-field will be ignored.

2.2.2.2.1.6.20 winddirection

Purpose and syntax:

(1) The winddirection-field contains the wind-direction at the aircrafts reported position at the moment of the report. If present, this field may be used for flight profile calculation purposes.

(2) The syntax of the winddirection-field will be defined in Doc Ref 1, but is:

winddirection := "-" + "WINDDIR" + heading
heading := See EUROCONTROL ADEXP standard, Doc Ref 1

Semantics:

(3) If the winddirection-field does not follow the above-described syntax it will be ignored.

2.2.2.2.1.6.21 windspeed

Purpose and syntax:

(1) The windspeed-field contains the windspeed at the aircrafts reported position at the moment of the report. If present, this field may be used for flight profile calculation purposes.

(2) The syntax of the windspeed-field will be defined in Doc Ref 1, but is:

windspeed := "-" + "WINDSPEED" + spd
spd := See EUROCONTROL ADEXP standard, Doc Ref 1

Semantics:

(3) If the windspeed-field does not follow the above-described syntax it will be ignored.

2.2.2.2.2 DPI – Departure Planning Information

2.2.2.2.2.1 Purpose

(1) The overall objective of the DPI messages is to improve the coordination between ATFM and Airport operations in order to ensure on time update of the flight data more consistent slot calculation and improve slot adherence.

(2) The purpose of the Departure Planning Information (DPI) message is to supply the NMOC with flight data related updates that are only available from airports or data that is only available shortly before departure.

(3) The DPI **shall** supply the NMOC with more recent flight data than the data that is currently available from IFPS and that cannot be sent via IFPS.

(4) The DPI message **should** be sent by ATC (TWR) systems, by DMAN systems or by Collaborative Decision Making (CDM) systems at airports. Airport CDM systems are systems where AOs, Airport authorities and ATC work in a collaborative way in order to handle the traffic in an optimised way.

(5) The main data to be received via the DPI message are
- an accurate estimation of the take-off time
- the taxi-time
- the SID

(6) For CDM systems, systems where Aircraft Operators play an important role, the DPI message can also contain updates of:
- the aircraft type
- the aircraft registration
- 24 bit ICAO aircraft address

(7) The DPI will be used by the NMOC to update the flight data for ATFM purposes. An early accurate update of the flight data will improve the ATFM slot allocation process by reducing overloads, reducing bunching and additionally it may reduce the ATFM delay for other non departed flights.

(8) It is important to note that the AOs **shall** update their EOBT via DLA or CHG messages in case there is a (significant) difference between the EOBT (from IFPS) and the TTOT - taxi-time.

(9) For further details, please refer to the “DPI Implementation Guide”, Doc Ref 9.

(10) The detailed operational procedures associated to DPIs for the co-ordination between ATFM and Airports will be described in the ATFM Handbook.

2.2.2.2.2.2 Transmission events and circumstances

(1) DPI messages **shall** be sent for every IFR/GAT departure from an aerodrome, for regulated flights and not regulated flights.

(2) The DPI message **shall** not replace the FSA message for departures (the FSA message gives the Actual Take-Off Time at the moment of take-off while the A-DPI gives the Target Take-Off Time (TTOT) x minutes before take-off).

(3) Any flight plan message that is issued by the Aircraft Operator (e.g. DLA or CHG message) after the reception of a DPI message, will update the flight plan and it may overrule the data received via the DPI message.

(4) The DPI messages (that are sent via AFTN) are accepted only from validated/known AFTN addresses. A DPI message from an unknown/unvalidated address is rejected by ETFMS.

Who (can send it):

(5) DPI messages are only accepted from known and validated originators.

(6) Additionally E-DPI with TTOT and T-DPI messages are only accepted from originators that have been qualified for CDM.

(7) Depending on the operational procedures and data available in computer systems of airports and ATC-TWR, ATC or the airport systems could send the DPI message.

When (can it be sent) :

(8) The most obvious events at which a DPI or a DPI update message can be sent are:
- modification of a previously supplied Take-Off Time (TOT) of more than 5 minutes
- modification of the Taxi-Time for an individual flight
- at the allocation or modification of the SID
- Modification of the aircraft type and/or aircraft registration
- At change of the DPI status (e.g. After a T-DPI, an A-DPI shall be sent even if there is no difference between the TTOT of the T-DPI-t and the TTOT of the A-DPI).
- At log-on via air-ground data link (to supply e.g. 24 ICAO aircraft address)

(9) The most important aspect of the DPI is that it improves the quality of the flight data that is already available in the NMOC (mainly from IFPS). Therefore the moment of transmission of the DPI message will be dependent on the moment that such data is available in the ATC or Airport system and this moment may be different for each aerodrome of departure.

For more details:

(10) The following sections in this document contain the detailed requirements for DPI message syntax ans semantics, including the syntax and semantics of the fields that can be used in the DPI messages.

(11) The detailed requirements for trigger events **shall** be extracted from the “DPI Implementation Guide”, Doc Ref 9.

2.2.2.2.2.3 Implementation plans and ECIP Objectives & SLoAs

(1) The table below gives an indication of the implementation time-scales for the DPI message. It contains both the plans of the NMOC and the proposed target dates for the States. However this table is nothing more than an indication. The actual ECIP and SLoA target dates can be found in the relevant ECIP documentation and the NMOC implementation plans are subject to the Change-Request (CR) approval procedure and are also subject to agreement of the ODSG meetings.

(2) The following ECIP Objective and SLoA exist:
- FCM01.ASP08 - Supply NMOC with Departure Planning Information (DPI).
  This SLoA is applicable to Airports with advanced TWR systems only.

- AOP05.APO05 – Define and implement the exchange of messages, FUM and DPI between NMOC and the airport in accordance with the airport CDM manual guidelines.
  This SLoA is applicable to airports that are fully CDM.

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM01.ASP08	Mar 2005		Updated by SSG/18
AOP05.APO05	Mar 2005		Approved

2.2.2.2.2.4 Message description

2.2.2.2.2.4.1 Format

(1) The DPI message **shall** be sent ADEXP format. There is no equivalent ICAO format specified for this message.

(2) ETFMS will check automatically the syntax of each received DPI message. If the message does not conform to the proposed syntax, it will only be partly processed or rejected completely.

2.2.2.2.2.4.2 Syntax

(1) The DPI message **shall** be sent with the following syntax (syntax is described using a BNF-like format as explained in section 1.4 "Message Description Method").

DPI_MESSAGE := "-"+"TITLE DPI"+ dpistatus + arcid + adep + ades + eobt + eobd + (tobt) + (tsat) + (taxitime) + (ttot) + [(sobt) + (sobd) | (aobd) + (aobt)] + (sid) + (arctyp) + (reg) + (depstatus) + (reason) + (ifplid) + (origin)

Note:
1. Fields in ***bold-italics*** are new fields and not yet defined in the EUROCONTROL ADEXP standard (see Doc Ref 1).

(2) The following table provides an overview which field shall or should be present for each DPI-type:

Field-name	E-DPI	T-DPI-t, T-DPI-s	A-DPI	C-DPI
TITLE DPI	**M**	**M**	**M**	**M**
DPISTATUS	M	M	M	M
ARCID	M	M	M	M
ADEP	M	M	M	M
ADES	M	M	M	M
EOBT [1)]	M	M	M	M
EOBD [1)]	M	M	M	M
TOBT	O	HD	--	--
TSAT	--	HD	--	--
TAXITIME	M	M	M	--
TTOT	O	M	M	--
SOBT	O [2)]	--	--	--
SOBD	O [2)]	--	--	--
AOBT	--	--	O	--
AOBD	--	--	O	--
SID	HD	HD	M	--
ARCTYP	HD	HD	HD	--
REG	HD	HD	HD	--
DEPSTATUS	O	O	O	--
REASON	--	--	--	O or M [3)]
IFPLID [1)]	HD	HD	HD	HD
ORIGIN	O	O	O	O

(3) Classification:
- --: Not allowed
- M: Mandatory
- HD: Highly Desirable because it significantly improves the quality of the provided information.
- O: Optional

(4) Note that the above table contains the DPI-fields in the preferred order in the DPI message. It is an operational requirement that all fields, when present, are included in this order in the DPI message.

(5) Each field **shall** start on a new line.

2.2.2.2.2.4.3 Semantics

(1) The fields in the ADEXP message can be divided into two groups; fields used for matching the DPI message to the flight plan and fields used for updating the flight plan. The following fields will only be used for matching the DPI message to the flight (these will not be used for updating the flight plan) : ifplid, arcid, adep, ades, eobt, eobd.
All other fields will be used to update the ETFMS flight data.

(2) (note 1) The ifplid-field **should** be present in the DPI message. It is the preferred field for matching the DPI message to the flight plan. If this field is present, there is no need to add

the eobt-field and the eobd-field. However when these eobt-field and eobd-fields are present, ETFMS will be able to cross check which will increase the robustness of ETFMS.

(3) (note 2) The sobt-field and sobd-field shall only be present in the E-DPI message if the Airport Slot to FPL comparison is made.

(4) The airport related data field sid **should** be present if the sending system contains more accurate/reliable data than can be retrieved from the IFPS flight plan.

(5) The airport related data field taxi-time **should** be present and is highly desired. TWR/DMAN/Airport CDM systems are expected to have a more accurate view on the taxi-time than NMOC.

(6) The aircraft operator data related fields arctyp and reg **should** be present if the sending system contains more accurate/reliable data than can be retrieved from the IFPS flight plan.

(7) The origin-field **should** be used to send a possible reply message to the origin-field-address instead of sending the reply to the originator field that was received from AFTN message header. This will allow for transmission of reply messages to another address than the sending address.

(8) The depstatus-field **should** be present if it is necessary to indicate that the flight is subject to special circumstances at the airport.

(9) The tobt- and tsat-fields should be present. In a first implementation these fields will be used to improve the understanding of NMOC and AO of the received DPI data. Further use will be developed in future releases.

(10) The reason-field (see note 3) is mandatory for new CDM Airports.

2.2.2.2.2.5 Validation and Reply Messages

(1) ETFMS will validate each DPI message. In case of syntax error, the standard syntax error reply message will be sent. See 2.2.4.2.1 “ERR – ERRor message”.

(2) In case of semantic error which results in not-processing or partly processing of the DPI messages an ERR message will be sent. Comment-field will contain one of the texts that can be found in the “DPI Implementation Guide”, Doc Ref 9.

2.2.2.2.2.6 Fields description

2.2.2.2.2.6.1 Introduction

(1) Syntax and semantic definition of the constituents ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are described Doc Ref 1.

2.2.2.2.2.6.2 aobt & aobd

Purpose and syntax:

(1) The aobd-field and the aobt-field **shall** contain the Actual Off-Block Date & Time of the flight.

(2) It is used to inform ETFMS that the flight has actually left the blocks and is taxiing. It is not (yet) used by ETFMS to update its flight data.

(3) The syntax of the aobt-field and aobd-field **shall** be in accordance with the syntax definition in Doc Ref 1.

Semantics:

(4) The aobt-field and aobd-field **shall** contain the actual off-block time of the flight.

2.2.2.2.2.6.3 arctyp

Purpose and syntax:

(1) The arctyp-field **shall** contain the aircraft type of the flight.

(2) The syntax of the arctyp-field **shall** be as specified in Doc Ref 1.

Semantics:

(3) The ARCTYP **shall** be a valid ICAO aircraft type.

2.2.2.2.2.6.4 depstatus

Purpose and syntax:

(1) The depstatus-field **shall** contain the departure status if the flight. This departure status indicates any special circumstances that may be applicable for the flight.

(2) In case the flight will be de-iced or is under de-icing the depstatus-field **shall** contain the value “DEICING”.

(3) The syntax of the depstatus-field is defined in Doc Ref 1.

Semantics:

(4) The only value this is (currently) possible is “DEICING”. It indicates that the flight needs to be de-iced or is currently being de-iced.

2.2.2.2.2.6.5 dpistatus

Purpose and syntax:

(1) The dpistatus-field **shall** contain the status of the DPI message. This field is used in all the DPIs messages and indicates the type of DPI message.

(2) The syntax of the dpistatus-field is defined in Doc Ref 1.

Semantics:

(3) The following DPISTATUS **shall** be used per DPI message type:

DPI-type	DPISTATUS

E-DPI	“EARLY”
T-DPI-t	“TARGET”
T-DPI-s	“SEQ”
A-DPI	“ATC”
C-DPI	“CNL”

2.2.2.2.2.6.6 eobt

Purpose and syntax:

(1) The eobt-field **shall** contain the Estimated Off-Block Time of the flight and it is used for DPI-flight plan matching only, so does not update the EOBT of the flight plan.

(2) The syntax of the eobt-field **shall** be as specified in Doc Ref 1.

Semantics:

(3) The eobt-field **shall** contain the last eobt that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages).

(4) The eobt-field is a mandatory field. The presence of the EOBT reduces the number of DPI-to-flight plan matching problems especially for "shuttle flights" (flights with a short EET, same callsign that use the same city-pair several times per day).

2.2.2.2.2.6.7 eobd

Purpose and syntax:

(1) The eobd-field **shall** contain the Estimated Off-Block Date of the flight and it is used for DPI-flight plan matching only, so not to update the EOBD of the flight plan.

(2) The syntax of the eobd-field **shall** be as specified in Doc Ref 1.

Semantics:

(3) The eobd-field **shall** contain the last EOBD that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages). In the ICAO flight plan, the EOBD is present in field18 as DOF/yymmdd.

(4) The eobd-field is a madatory field. The presence of the EOBD reduces the number of DPI-to-flight plan matching problems.

2.2.2.2.2.6.8 reason

Purpose and syntax:

(1) If present, the reason-field **shall** contain the reason of the transmission of the DPI messages. It is currently defined to be used in the C-DPI.

(2) The reason-field will improve the understanding of all operational users of the A-CDM events at the airports and it will help to AOs and Handling Agents to take the best action for the flight concerned.

(3) The syntax of the reason-field is defined in Doc Ref 1.

Semantics:

(4) The values that are (currently) possible are:

Reason value	Possible transmission reasons
NOAIRPORTSLOT	The airport does not have an airport slot for the departure
TOBTUNKNOWNOREXPIRED	The TOBT was deleted, the pilot did not request startup or report ready in accordance with the procedures at the Airport, …
TSATEXPIRED	The pilot did not request startup in accordance with the CDM procedures at the airport
RETURNTOSTAND	After having started taxiing, the flight returned back to stand/ramp
FLIGHTPLANINVALID	The discrepancy between TOBT and EOBT is larger then 15min (and needs to be resolved before start-up will be issued)

2.2.2.2.2.6.9 reg

Purpose and syntax:

(1) This field **shall** contain the registration mark of the flight.

(2) The syntax of the reg-field **shall** be as specified in Doc Ref 1.

Semantics:

(3) The REG **shall** be a valid ICAO Registration Mark.

2.2.2.2.2.6.10 sid

Purpose and syntax:

(1) This optional field **shall** contain the Standard Instrument Departure procedure followed by the aircraft. It provides additional information to the information included in the furthrte field.

(2) This specified SID will override any automatically allocated SID or previously specified SID.

(3) The syntax of the sid-field **shall** be as specified in Doc Ref 1.

Semantics:

(4) The SID **shall** be a published SID (in the AIP).

(5) The sid -field **shall** be conform to the above-specified syntax and semantics, otherwise it will be ignored.

2.2.2.2.2.6.11 sobt

Purpose and syntax:

(1) The sobt-field **shall** contain the airport Scheduled Off-Block Time of the flight. It will be used to record the airport scheduled off-block time in ETFMS for evaluation purposes.

(2) The syntax of the sobt-field is defined in Doc Ref 1.

Semantics:

(3) The sobt-field **shall** contain the first scheduled off-block (SOBT) that is defined for the flight in agreement with the Airport Slot Coordinator. This time is usually determined/agreed several months before the flight takes place. For passengers flights, it shall for example be the time the passenger has on his ticket.

2.2.2.2.2.6.12 taxitime

Purpose and syntax:

(1) The taxitime-field must contain the duration between Off-Block Time and take-off of the flight.

(2) It will be used in the processing of ETFMS to compare TTOT of the DPI messages with OBT in messages from IFPS such as DLA and CHG.

(3) The syntax of the taxitime-field **shall** be as specified in Doc Ref 1.

Semantics:

(4) The taxitime **shall** be between 1 and 1hr30 minutes

(5) The taxitime-field **shall** include the time it takes between off-block and take-off. Consequently, the taxitime value is updated/extended when the flight requires remote de-icing (and not for on-stand de-icing).

2.2.2.2.2.6.13 tobt

Purpose and syntax:

(1) The tobt-field **shall** contain the Target Off-Block Time (TOBT) of the flight. It shall only contain a very reliable and/or confirmed TOBT value. Such a reliable/confirmed value could be a calculated when the aircraft is on final approach and/or it could be input by a Ground Handler,…

(2) In a first implementation it will be used to improve the understanding of NMOC and AOs of the received DPI data. Further use will be developed in future releases.

(3) The syntax of the tobt-field will is defined in Doc Ref 1.

Semantics:

(4) The tobt-field **shall** contain the Target Off-Block Time (TOBT) that is received from the CDM Airport.

2.2.2.2.2.6.14 tsat

Purpose and syntax:

(1) The tsat-field **shall** contain the Target Start-up Approval Time (TSAT) of the flight.

(2) In a first implementation it will be used to improve the understanding of NMOC and AOs of the received DPI data. Further use will be developed in future releases.

(3) The syntax of the tsat-field is defined in Doc Ref 1.

Semantics:

(4) The tsat-field **shall** contain the Target Start-up Approval Time (TSAT) that is received from the CDM Airport. For flights with a CTOT, it shall contain the TSAT that corresponds to the CTOT.

2.2.2.2.2.6.15 ttot

Purpose and syntax:

(1) The ttot-field **shall** contain the Target Take-Off Time (TTOT) of the flight. This is an accurate estimation of the Take-Off Time at a moment of transmission of the DPI.

(2) The syntax of the ttot-field is defined in Doc Ref 1.

(3) The detailed requirements for semantics **shall** be extracted from the “DPI Implementation Guide”, Doc Ref 9.

Semantics (if present in the E-DPI):

(4) The TTOT in the E-DPI is the first estimate of the Take-Off Time of the CDM system. This TTOT is based upon a consistency check between the flight plan EOBT and the airport schedule. Via this comparison, the Airport CDM system is helping in suppressing duplicate and ghost flight plans.

(5) The TTOT-field **shall** contain the best known preferred take-off-time of the flight WITHOUT taking any ATFM delay (CTOT) into account.

Semantics (if present in the T-DPI-t):

(6) The ttot -field **shall** contain the best known preferred take-off-time of the flight WITHOUT taking any ATFM delay (CTOT) into account.

(7) If the TTOT is before the slot tolerance window, ETFMS will use the TTOT as a “no slot before”. If the TTOT is after the Slot Tolerance Window (STW) then ETFMS will re-calculate the slot.

(8) It is important to note that the AO/ATC are expected to respect the last issued CTOT even if this is different from the TTOT. So in case the TTOT is outside the slot tolerance window, the AO is expected to take action.

Semantics (if present in the T-DPI-s):

(9) The ttot-field **shall** contain the take-off-time of the ATC pre-departure sequence, where applicable based upon the ATFM slot (CTOT).

(10) If the TTOT is before the slot tolerance window, ETFMS will use the TTOT as a “no slot before”. If the TTOT is after the Slot Tolerance Window (STW) then ETFMS will re-calculate the slot.

(11) It is important to note that the AO/ATC are expected to respect the last issued CTOT even if this is different from the TTOT. So in case the TTOT is outside the slot tolerance window, the AO is expected to take action.

Semantics (if present in the A-DPI):

(12) For regulated flights, the TTOT if the A-DPI **shall** be inside the slot tolerance window, if not, the flight will be considered as an anticipated slot violation.

2.2.2.2.3 FSA – First System Activation

2.2.2.2.3.1 Purpose

(1) The purpose of the FSA message is to inform the NMOC about the progress of airborne flights and to supply the NMOC with updated information on airborne flights.

(2) The FSA may supply the NMOC with the Actual Take-Off Time (ATOT) from the aerodrome of the departure or with estimated time, level and point of entry into the airspace of the FDPA.

(3) The FSA will also supply the NMOC with significant changes in the flight plan route to allow for reliable predictions of the future flight profile.

(4) This message will be received and processed by ETFMS. It will be used to update ETFMS flight data, in order to get a more accurate prediction of the sector counts.

(5) In addition to updating the NMOC flight data, the FSA messages are used for statistical purposes. For example, they are used to detect ghost flight plans (i.e. flight plans for flights that never took place, multiple flight plans for one flight, verification of adherence to ATFM slots,…….

2.2.2.2.3.2 Transmission events and circumstances

(1) An FSA shall be sent in the following circumstances:
- On first co-ordination with an FDPA, including departure
- There is a change of route within an FDPA, which does not affect another FDPA e.g. a change of RFL
- Holding

(2) In cases where the NMOC is informed about an update of a flight via an AFP message (see section 2.2.1.1.1 “AFP – ATC Flight plan Proposal message”), it is not necessary to send an FSA message.

(3) The NMOC only processes flight data for flights that are fully or partly IFR/GAT. Therefore, only FSA messages for IFR/GAT flights shall be sent.

(4) The FSA message shall be sent by ATC to the NMOC ETFMS system.

(5) The FSA message (that is sent via AFTN) is accepted only from validated/known AFTN addresses. An FSA message from an unknown/unvalidated address is ignored by ETFMS.

(6) Note that normally the en-route FSA contains data (position-field) which is 10-20 min in the future. This is particularly important for ANSPs that also provide surveillance data (CPRs).

(7) Note that normally the departure FSA contains data (position-field) which is 0-1 min in the future.

<u>On first co-ordination with an FDPA, including departures</u>

(8) For flights inbound to or overflying the FDPA, the first FSA shall be sent at the entry co-ordination. Normally this is at the activation of a flight in the local ATC system, e.g. the reception of an ACT message.

(9) For departures, the first FSA shall be sent at take-off, specifying the Actual-Take-Off Time (ATOT).

There is a change of route within an FDPA, which does not affect another FDPA

(10) An FSA shall be sent for a change of route that does not involve a change of COP on exit from the FDPA (For route changes that involve a change of COP on exit from the FDPAs an AFP message shall be sent).

(11) In this case the position-field shall contain, the route point from which the route change starts.

The flight is holding

(12) An FSA shall be sent in case the flight is holding. In this case, the FSA shall contain the point at which the flight will be holding or the points in between the flight is holding. The estimated time of holding shall also be present.

All events

(13) Any subsequent FSA shall be sent at the moment of modification, but not later than when the co-ordination process with the next FDPA has taken place (normally the transmission of the ACT message to the next centre).

2.2.2.2.3.3 Implementation plans and ECIP Objectives & SLoAs

(1) The table below gives an indication of the implementation time-scales for the FSA messages. It contains both the plans of the NMOC and the proposed target dates for the states. However this table is nothing more than an indication. The actual ECIP and SLoA target dates can be found in the relevant ECIP documentation and the NMOC implementation plans are subject to the Change-Request (CR) approval procedure and are also subject to agreement of the ODSG meetings.

(2) The following ECIP Objective and SLoAs exist:

- FCM01.ASP04 – Inform NMOC of flight activations and estimates for ATFM purposes
- FCM01.ASP06 - Inform NMOC of re-routings inside FDPA for ATFM purposes
- FCM01.ASP07 - Inform NMOC of aircraft holding for ATFM purposes

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM01.ASP04	Mar 1995	Dec 1999	Agreed, Revised in EAG/4
FCM01.ASP06	Mar 2001	Dec 2006	Agreed by SSG/9, endorsed by EAG/6
FCM01.ASP07	Mar 2003	Dec 2006	Agreed by SSG/9, endorsed by EAG/6

2.2.2.2.3.4 Message description

2.2.2.2.3.4.1 Format

(1) The FSA message is in ADEXP format. There is no equivalent ICAO format specified for this message.

(2) ETFMS will check automatically the syntax of each received FSA message. If the message does not conform to the proposed syntax, it will only be partly processed or may be rejected completely.

2.2.2.2.3.4.2 Syntax

(1) Syntax of FSA message is as follows (syntax is described using a BNF-like format as explained in section 1.4 "Message Description Method).

FSA_MESSAGE := “-“+”TITLE FSA”+ (origin) + (ifplid) +arcid + adep + ades + (eobt) + (eobd) + (arctyp)+ position + 0{geo} + 0{ref} + 0{rename} + (furthrte) + 0{rfl} + 0{atsrt} +0 {dct} + (sid) + (star) + (arcaddr) + (stay)

2.2.2.2.3.4.3 Semantics

(1) The fields in the ADEXP message can be divided into two groups; fields used for matching the FSA message to the flight plan and fields used for updating the flight plan. The following fields will only be used for matching the FSA message to the flight (these will not be used for updating the flight plan) : ifplid, arcid, adep, ades, eobt, eobd.
All other fields will be used to update the flight plan.

(2) The preferred field for matching is the ifplid-field. If this field is present, there is no need to add the eobt-field and the eobd-field. However, the presence of the eobt-field and the eobd-field will increase the robustness of ETFMS because it will allow for cross checking.

(3) The arctype field is an optional field and its use is only justified in FSA messages for departures. It is ignored if present in en-route FSA messages

(4) To update a previously sent Holding time (in a Stay-indicator), a new FSA shall be sent with the new stay-time. To undo/remove a previously sent holding time, an FSA with stay-time=0, shall be sent.

(5) The point where the stay (of the stay-indicator) is performed shall be included in the furthrte-field.

(6) The origin-field will be used by ETFMS to send any reply message to the received message instead of sending the reply to the originator field that was received from AFTN message header. This will allow for transmission of reply messages to another address than the sending address.

(7) In case the FSA message is transmitted for “a change of route within an FDPA”, then the position-field shall contain a point & time that is in the future route of the flight.

2.2.2.2.3.5 Validation and Reply Messages

(1) ETFMS will validate each FSA message. In case of syntax error, the standard syntax error reply message will be sent. See 2.2.4.2.1 “ERR – ERRor message”.

(2) In case of semantic errors the FSA message is ignored. No reply message is sent.

2.2.2.2.3.6 Fields description

2.2.2.2.3.6.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are described in Doc Ref 1.

2.2.2.2.3.6.2 adep

Purpose and syntax:

(1) This field indicates the ICAO location indicator of the aerodrome of departure.

(2) The syntax of the adep-field can be found in Doc Ref 1.

Semantics:

(3) No special semantic definitions for this field.

2.2.2.2.3.6.3 adid

Purpose and syntax:

(1) In the context of position, this field indicates the ICAO location indicator for the aerodrome of departure.

(2) The syntax of the adid-field is defined in Doc Ref 1.

Semantics:

(3) If 'ZZZZ' or 'AFIL' are received instead of an ICAO aerodrome location indicator and the FSA message cannot be matched to the flight plan using the ifplid-field, the whole position-field will be ignored.

(4) The ICAO aerodrome location indicator must be equal to the one specified in adep-field. If this is not the case, the position-field will be ignored.

2.2.2.2.3.6.4 arcaddr

Purpose and syntax:

(1) The arcaddr-field contains the 24 bit ICAO aircraft address of the flight.

(2) The syntax of the arcadd-field is defined in Doc Ref 1.

Semantics:

(3) This field shall be present only if the arcaddr is retrieved from air ground data-link communications, in other words, automatically retrieved from the aircraft.

2.2.2.2.3.6.5 atsrt

Purpose and syntax:

(1) This optional field provides the ats route designator of the route followed between two points of the furthrte field. It provides additional information to the information included in the furthrte-field. This information might be used for the determination of flight level restrictions and route prediction algorithms.

(2) The syntax of the atsrt-field can be found in Doc Ref 1.

Semantics:

(3) Both reference points must be present in the furthrte-field.

(4) The atsroute-field must be present in the NMOC ENVironment database (i.e. a published ATS route).

(5) The atsrt -field must conform to the above-specified syntax and semantics, otherwise it will be ignored.

2.2.2.2.3.6.6 dct

Purpose and syntax:

(1) This optional field indicates that the aircraft will fly DCT between two consecutive points of the furthrte-field. It provides additional information to the route included in the furthrte-field.

(2) The syntax of the dct-field can be found in Doc Ref 1.

Semantics:

(3) Both reference points must be present and consecutive in the furthrte field.

(4) The dct-field must conform to the above-specified syntax and semantics, otherwise it will be ignored.

2.2.2.2.3.6.7 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight and it is used for FSA-flight plan matching only, not to update the EOBD of the flight plan.

(2) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(3) The eobd-field shall contain the last eobd that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages). In the ICAO flight plan, the EOBD is present in field18 as DOF/yymmdd.

(4) The eobd-field is an optional field, but its presence in the FSA message is nevertheless highly desirable. The presence of the EOBD reduces the number of FSA-flight plan matching problems.

2.2.2.2.3.6.8 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight and it is used for FSA-flight plan matching only, not to update the EOBT of the flight plan.

(2) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(3) The eobt-field shall contain the last eobt that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages).

(4) The eobt-field is an optional field, but its presence in the FSA message is nevertheless highly desirable. The presence of the EOBT reduces the number of FSA-flight plan matching problems especially for "shuttle flights" (flights with a short EET, same callsign that use the same city-pair several times per day).

2.2.2.2.3.6.9 fl

Purpose and syntax:

(1) In the context of position-field with option ptid present, this field indicates the estimated or actual flight level of overflight at the point specified in the ptid-field. In case the estimated or actual level is not known, the fl-field may contain the cleared level during climb and descend phases. If these are not available, then the fl-field shall be omitted (It shall never contain the RFL from the flight plan).

(2) In the context of position-field with option adid present, the fl-field shall contain the aerodrome elevation, but preferably this fields should be omitted in this case.

(3) The syntax of the fl-field can be found in Doc Ref 1.

Semantics:

(4) The fl-field will be used to recalculate the flight plan profile and as such it will be considered as the actual level of the aircraft (it will not be considered to be the new cruising level).

(5) If the fl-field does not follow the above-described syntax the fl-field will be ignored.

2.2.2.2.3.6.10 furthrte

Purpose and syntax:

(1) This field indicates the further routing of the flight, following the co-ordination point or aerodrome of departure specified in the position-field. This field normally describes the further routing of the flight within the area of responsibility of the FDPA.

(2) The syntax of the furthrte-field is defined in Doc Ref 1.

(3) Point can be either a published ICAO identifier, or the identifier (geoname) allocated for a geographical point, or the identifier (refname) located for a reference point, or the identifier (renameid) of a renamed point with the following syntax:

geoname := “GEO” + 2{DIGIT}2 (strict concatenation)
refname := “REF” + 2{DIGIT}2 (strict concatenation)
renameid := “REN” + 2{DIGIT}2 (strict concatenation)

(4) If the point is a geographical point or a reference point or a rename point, the corresponding primary ADEXP fields geo, ref or rename, must be present in the FSA message (see 2.2.2.2.3.4 “Message description”).

Semantics:

(5) Furthrte consists of a list of consecutive points that the aircraft will over-fly after having passed overhead the co-ordination point as specified in the PTID. These include all the points of the air route or standard arrival route to be followed by the aircraft, after having passed overhead the PTID.

(6) If aerodrome of departure is specified in the position-field, furthrte consists of a list of consecutive reporting points that the aircraft will overfly after having departed from the aerodrome of departure. These include all the points of the standard departure route followed by the aircraft.

(7) Each point can be a published ICAO point, a geographical point, a reference point or a rename point.

(8) The distance between point and the closest point on the flight plan route will be verified. An algorithm will be used to determine if the point can be expected to be part of the flight plan route or if erroneous position is used. This is e.g. to prevent that FSA messages, that contain a point that is not published in the FDPA from where the FSA message originates, but is published elsewhere in the NMOC area.

(9) The furthrte-field must conform to the above-specified syntax, otherwise it will be ignored.

2.2.2.2.3.6.11 position

Purpose and syntax:

(1) If the FSA is distributed for a “first co-ordination with an FDPA, including departure”, then this field indicates, either the aircraft’s estimated time and flight level at the co-ordination point (or a point in the vicinity of a co-ordination point) of the sending FDPA or, the aerodrome of departure and the actual take-off time.

(2) If the FSA is distributed for a “change of route within an FDPA, which does not affect another FDPA”, then this field indicates, the route point from which the route change starts.

(3) If the FSA is distributed for a “flight is holding”, then this field indicates, the route point at which the holding starts.

(4) In case the position-field contains estimate data, this is usually not more than 20 minutes in the future.

(5) The syntax of the position-field is defined in Doc Ref 1.

Semantics:

(6) Subfield "to" is mandatory. Options "cto", "sto" that are specified in the EUROCONTROL ADEXP standard {see Doc Ref 1} will be ignored if present.

(7) If the position-field contains the adid-field, the fl-field shall contain the airfield elevation or be omitted.

(8) As can be seen in the FSA message description (see section 2.2.2.2.3.4 "Message description"), only one occurrence of the position-field is allowed in the message. If more than one occurrence is detected, the FSA message will be rejected.

(9) Note that for ANSPs that also provide CPR messages, it is particularly important that the position-field contains data (ptid, adid and to) in the future.

(10) Note that the ptid-field shall contain a position that is part of the route that is still to be flown and cannot be in the past.

2.2.2.2.3.6.12 ptid

Purpose and syntax:

(1) In the context of position, this field identifies the co-ordination point which the aircraft is expected to overfly.

(2) The syntax of the ptid-field can be found in Doc Ref 1.

Semantics:

(3) The reference point can be either a published ICAO identifier, or the identifier (geoname) allocated for a geographical point, or the identifier (refname) located for a reference point, or the identifier (renameid) of a renamed point with the following syntax:

geoname := “GEO” + 2{DIGIT}2 (strict concatenation)
refname := “REF” + 2{DIGIT}2 (strict concatenation)
renameid := “REN” + 2{DIGIT}2 (strict concatenation)

(4) If the point is a geographical point or a reference point or a rename point, the corresponding primary ADEXP fields geo, ref or rename, must be present in the FSA message (see section 2.2.2.2.3.4 "Message description").

(5) In the point is an ICAO identifier, it must be published in the national AIP (else it will not be available in the NMOC ENVironment database).

(6) If the distance between point and the closest point on the flight plan route will be verified. An algorithm will be used to determine if the point can be expected to be part of the flight plan route or if erroneous position is used. This is e.g. to prevent that FSA messages, that contain a point that is not published in the FDPA from where the FSA message originates, but is published elsewhere in the NMOC area.

(7) If the syntax or the semantics of the ptid-field are not correct, the whole position-field will be ignored.

2.2.2.2.3.6.13 rfl

Purpose and syntax:

(1) This optional field indicates a requested flight level. It describes modifications in the requested (by the AO or pilot) flight level detected in the area of responsibility of the sending FDPA.

(2) The syntax of the rfl-field can be found in Doc Ref 1, except that for the FSA implementation, the point-sub-field is mandatory.

rfl := “-“ + “RFL” + flightlevel + point
flightlevel := see Doc Ref 1
point := see Doc Ref 1

Semantics:

(3) Note that the point-field is mandatory in the context of a rfl-field present in the FSA message. (Note that in the ADEXP standard (Doc Ref 1), point is optional in rfl-field).

(4) Point indicates the point at which the aircraft will start to climb/descend in order to reach the specified flightlevel.

(5) The rfl-field(s) specified in the FSA message will be used to recalculate the flight profile starting from the specified point onwards. Any changes of speed and level that are present after the referenced point in the original flight plan will be ignored. The profile re-calculation will be done taking into account the ENV flight level restrictions.

(6) Point must be matching either the ptid in the position-field, or one of the points in the furthrte or a point in the existing flight plan. If this is not the case, the rfl-field will be ignored.

(7) The rfl-field must conform to the above-specified syntax, otherwise it will be ignored.

2.2.2.2.3.6.14 sid

Purpose and syntax:

(1) This optional field indicates the Standard Instrument Departure (SID) procedure followed by the aircraft. It provides additional information to the information included in the furthrte field.

(2) The syntax of the sid-field can be found in Doc ref 1.

Semantics:

(3) At least the SID-exit point must be present in the furthrte-field or in the original flight plan route. Other SID-points may optionally be present in the furthrte-field.

(4) This specified SID will overrule any automatically allocated SID or previously specified SID.

(5) The sid-field must conform to the above-specified syntax and semantics, otherwise it will be ignored.

2.2.2.2.3.6.15 star

Purpose and syntax:

(1) This optional field indicates the Standard Instrument Arrival (STAR) procedure followed by the aircraft. It provides additional information to the information included in the furthrte field.

(2) The syntax of the star-field can be found in Doc Ref 1.

Semantics:

(3) At least the STAR-entry point must be present in the furthrte-field or in the original flight plan route. Other STAR-points may optionally be present in the furthrte-field.

(4) This specified STAR will overrule any automatically allocated STAR or previously specified STAR.

(5) The star-field must conform to the above-specified syntax and semantics, otherwise it will be ignored.

2.2.2.2.3.6.16 stay

Purpose and syntax:

(1) This optional field indicates that a flight is staying in the area defined by at least two points for a specified period of time. The stay-field will be used to update the flight plan profile.

(2) The official syntax of the stay-field is defined in Doc Ref 1, but NMOC applies:

stay := “-“ + “STAY” + stayident + time + (ptid ptid) [ptspeed] [ptrfl]
stayident := this field defines the name of the "stay-area" to be able to identify more more "stay-areas" in a flight plan route
time := see Doc Ref 1.
ptid := see section 2.2.2.2.3.6.12 "ptid"
ptspeed := see Doc Ref 1.
ptrfl := see Doc Ref 1.

Semantics:

(3) For circular flights, flying over the same route point more than once, the rename-field shall be used and the stay-field may reference the rename-field or the normal point to indicate at which part of the route, the holding is performed.

(4) The to-field in the position-field always refers to the entry-time of the holding if the reported point and the entry point in the holding are identical.

(5) The ptspeed-field and the ptrfl-field will be used as an indication of the aircrafts speed and level during the period of special activity. As soon as the special activity is finished, the cruising speed and RFL as specified in the flight plan will be used.

(6) The stay-field must conform to the above-specified syntax and semantics, otherwise it will be ignored.

2.2.2.2.3.6.17 to

Purpose and syntax:

(1) In the context of the position-field with option adid present, this field indicates the actual take-off time of the aircraft.

(2) In the context of position-field with option ptid present, this field indicates the estimated time of overflight of the coordination point described in ptid.

(3) The syntax of the to-field can be found in Doc Ref 1.

Semantics:

(4) In this context, timehhmm must be a time of the day. If this is not the case, the contents of the to-field will be ignored.

(5) The to-field shall contain a time that is in the future, compared to the system time, i.e. the transmission tim of the message.

2.2.2.2.4 CPR – Correlated Position Report

The purpose of this message description is to provide the ATS Units with a description of the standard interface for the provision of Correlated Position Reports (CPRs).

Note that before provision of CPRs to NMOC can take place, a Service Level Agreement (SLA) and a detailed Interface Control Document (ICD) have to be signed. Especially the ICD contains the necessary technical details for the interface.

2.2.2.2.4.1 Purpose

(1) The purpose of the CPR is to inform the NMOC about the actual 4D position of the flight when airborne.

(2) This message will be received and processed by ETFMS. It will be used to update ETFMS flight data, in order to get a more accurate prediction of the sector counts.

(3) In addition to updating the NMOC flight data, the CPR messages are used for statistical purposes. For example, they are used to detect ghost flight plans (i.e. flight plans for flights that never took place, multiple flight plans for one flight, verification of adherence to ATFM slots,…….

2.2.2.2.4.2 Transmission events and circumstances

(1) A CPR shall be sent in the following circumstances:
- When the flight is airborne
- At an update rate of 1 per minute

(2) The NMOC only processes flight data for flights that are fully or partly IFR/GAT. Therefore, only CPR messages for IFR/GAT flights shall be sent.

(3) The CPR message shall be sent by ATC to the NMOC.

(4) The ATS Unit shall send the CPRs to an Entry Node (EN) that will be installed by the NMOC at the ACC's premises.

(5) The Entry Node receives position data in native format from the ANSP system. It will convert from the native format and output in ASTERIX Cat 062.

(6) The following diagram gives an overview of the connectivity and data exchanges that will take place between the EN and the ANSP system.

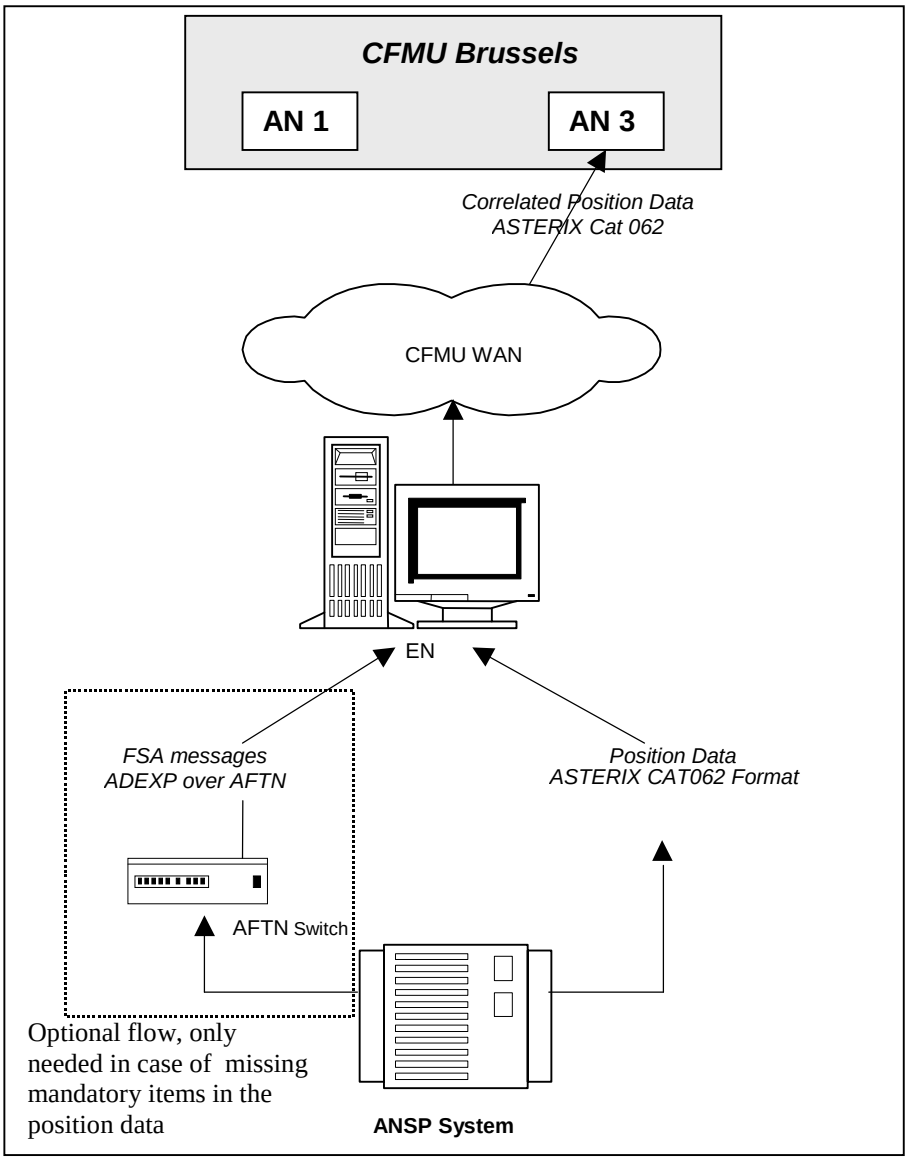


Figure 1: Overview of Connectivity between EN and ANSP systems

(7) In principle, the preferred solution is to receive all needed data items inside the position data flow, i.e. in the ASTERIX Cat062 message.

(8) However, if all mandatory data items are not available in the position data message, the ANSP system should also provide FSA messages containing the missing mandatory information and send them the EN as well.

(9) The preferred format for the position data is Asterix CAT062 Version 0.17 or version 1.3.

(10) The EN supports other data formats for the position data: Asterix CAT030, AIRCAT500, IMAGE. However these special formats are not part this message description.

2.2.2.2.4.3 Implementation plans and ECIP Objectives & SLoAs

(1) The table below gives an indication of the implementation time-scales for the CPR messages. It contains both the plans of the NMOC and the proposed target dates for the states. However this table is nothing more than an indication. The actual ECIP and SLoA target dates can be found in the relevant ECIP documentation and the NMOC implementation plans are subject to the Change-Request (CR) approval procedure and are also subject to agreement of the EAG-ODSG meetings.

(2) The following ECIP Objective and SLoAs exist:

- FCM01.ASP02 – Supply ETFMS with Standard Correlated Position Data

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM01.ASP02	Aug 2001	Dec 2006	Endrosed by EAG/6

2.2.2.2.4.4 Message description

2.2.2.2.4.4.1 Format

(1) The CPR message is in ASTERIX CAT062 format, version 0.17 or Version 1.3.

(2) The Entry Node and the ETFMS central server will each check the syntax of each received CPR message. If the message does not conform to the proposed syntax, it will only be partly processed or may be ignored completely.

2.2.2.2.4.4.2 Syntax & Semantics

(1) The following table provides the data items expected by the EN. The data items listed in the table correspond to Asterix **CAT062 V1.3**. In case of using other supported Asterix categories (see above), the equivalent data items should have to be considered.

(2) These data items have to be transmitted in records and blocks as defined in the corresponding Asterix Standard.

(3) As the FRN (Field Reference Number) can be different between the different CAT062 supported versions (and it is different in other categories), the table below does not provide such information, the ANSP system has to build the Asterix records in accordance with the category and version agreed.

(4) Items marked in **bold** are mandatory ones, items marked in *italics underlined* are highly desirable, other items are optional.

Data Item	Name	Comment
I062/010	**Data Source Identifier**	a)
I062/015	Service Identification	
I062/070	*Time Of Track Information*	
I062/040	Track Number	

Data Item	Name	Comment
I062/105	**Calculated Track Position (WGS-84)**	h)
I062/100	**Calculated Track Position (Cartesian)**	h)
I062/060	**Track Mode 3/A Code**	
I062/130	Calculated Track Altitude	
I062/135	Calculated Track Flight Level	b)
I062/136	**Measured Flight Level**	b)
I062/180	Calculated Track Velocity (Polar)	
I062/200	Mode Of Flight	
I062/220	Calculated Rate Of Climb/Descent	
I062/240	Calculated Rate Of Turn	
I062/210	Longitudinal Acceleration	
I062/080	Track Status	c)
I062/290	Plot Information Ages	
I062/340	Measured Information	
I062/380	Mode-S / ADS-B related Data	
	Subfield#2 - Aircraft Address	g)
I062/500	Estimated Accuracies	
I062/390	Flight Plan Related Data	
	Subfield#2 - Callsign	
	Subfield#3 - IFPS_Flight_ID	d), e)
	Subfield#7 - Departure Airport	e)
	Subfield#8 - Destination Airport	e)
	Subfield#12 - Time of Departure (TYP=1)	e), f)

Table 2: Correlated Position Message data items in CAT062 V0.17

(5) Here follows the description of the comments indicated in the table:

a) The data item I062/010 will contain the value of Source Area Code for the ANSP as defined in ASTERIX, Part 1, Reference 005-1-93. The SIC value received will depend on the ANSP system generating the data.

b) The data item 062/135 Calculated Track Barometric Altitude and the data item 062/136 Measured flight level are exclusive. The position data messages shall contain one or the other.

c) The Track Status data item is not mandatory. If this information is not provided, the EN has its own logic to handle such status.

d) The IFPS_Flight_ID information has to be encoded as following:

Octet no. 1								Octet no. 2							
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
TYP		0	0	0	NBR										

Octet no. 3								Octet no. 4							
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
															LSB

Table 3: I062/390 Subfield # 3 Encoding Description

Bits-32/31 (TYP) = 00 Plan number (not used in ETFMS).
= 01 Unit 1 internal flight number (corresponds to AA in the ADEXP format).
= 10 Unit 2 internal flight number (corresponds to BB in the ADEXP format).
= 11 Unit 3 internal flight number (not used, spare value).

Bits-30/28 spare bits set to zero.

Bits-27/1 (NBR) Number from 0 to 99 999 999.

e) These items can be present in the position data. If they were not, the EN should be fed with FSA messages, that will allow the EN to get this information and to associate it to the position data.

f) The item I062/390 subfield #12 will contain the information related to TYP=1, (i.e., estimated off-block time EOBT), and with more detail, the EOBT/EOBD fields that have been last received from IFPS, taking any DLA and CHG message into account. The EOBD/EOBT are not mandatory fields but nevertheless “highly desired” because the may resolve CPR to flight asscociation problems. If the IFPLID is present in the CPR, then the EOBD/EOBT is not required.

g) This information is present in CAT062 V1.3 in subfield#1 - Target Address.

h) Only one of these two items should be provided.

2.2.2.2.4.4.3 Semantics

See above.

2.2.2.2.4.5 Validation and Reply Messages

(1) The Entry Node and the ETFMS Central Server will validate each CPR message.

(2) In case of errors the CPR message is ignored. No reply message is sent.

2.2.2.2.4.6 Fields description

See above.

2.2.2.3 ATFM Flight Progress messages – Originated by NMOC

2.2.2.3.1 EFD – ETFMS Flight Data message

2.2.2.3.1.1 Purpose

(1) The purpose of the ETFMS Flight Data message (EFD) is to inform users with the latest updates and about the latest state of a flight in ETFMS.

(2) The EFD is basically an extract of flight data that is available in the ETFMS of which the flight profile is the most important part.

2.2.2.3.1.2 Transmission events and circumstances

(1) The EFD will be sent by ETFMS to ANSPs of FDPAs that are interested in receiving such information and with whom the ETFMS Interface Control Document (ICD) for data re-distribution has been established.

(2) ETFMS will distribute the EFD in broadcast mode. The receiver can filter out the required update types and of each EFD, the required data can be extracted.

(3) The first event at which an EFD will be sent is at the moment of the flight plan creation (e.g. reception of a FPL or APL message from IFPS).

(4) EFD distribution will end when the status of the flight changes to Terminated, cancelled or suspended in ETFMS. ETFMS will send an EFD for the status change followed by a limited number of periodically transmitted EFDs.

(5) In between the transmission of the first EFD and the last one, EFDs will be distributed when the EFD data changes.

(6) Additionally, EFDs will be distributed at regular intervals. The EFD will be refreshed SYSPAR minutes after the last update has been distributed. This SYSPAR is currently 60 minutes until approximately 2 hours before EOBT and it is 15 minutes for the rest of the “life of the flight”.

(7) If we want to be more specific and list the events at which the EFDs data may change, then the following overview lists the main events:

- At reception of an FPL, CHG, DLA from IFPS (see note 2)
- At reception of a CNL message from IFPS
- At reception of an ARR message from IFPS
- At reception of an FPL message with source AFIL from IFPS
- At reception of an ATC activation message from IFPS (APL or ACH)
- At reception of a DEP message from IFPS (see note 3)

- At reception of an FSA or CPR message from ATC (see note 3)
- At reception of an APR from an aircraft operator (see note 3)

- At activation or deep rectification of a regulation affecting the flight (see 7)
- At cancellation of the regulation affecting the flight (see notes 7)
- At suspension or shift of the flight (transmission of FLS)
- At reception of an FCM message (see note 4,7)
- At de-suspension of the flight (transmission of a DES message).

- At manual exclusion of a flight from a regulation (see note 7)
- At manual inclusion of a flight into a regulation (see note 7)

- At manual exemption or de-exemption of a flight (see note 7)
- At manual de-activation of a flight
- At cancellation of the flight by the FMD Flow Controller

- At TACT activation.
- At termination of the flight
- At Slot Issue Time (SIT1)

- At reception of an SMM message
- At reception of a REA message
- At reception of a SPA

- At manual runway update or runway times update

- At time-out of flight activation monitoring (both shift and suspension)
- At flight profile re-calculation due to meteo data update
- At manual suspension and manual de-suspension of a flight

- At slot re-calculation (see note 7)
- Automatic transmission every SYSPAR1 (60) min before SIT1 and every SYSPAR2 (15) min after SIT1

- At the reception of a DPI message

- Processing of a diversion by ETFMS

(8)

Notes:

1. ETFMS will distribute an EFD due to an incoming message, only after it has accepted and correctly processed this incoming message (e.g. a DEP messages is rejected when it arrives after an FSA or CPR message).
2. ETFMS (currently) receives the first FPL message from IFPS 20 hours before EOBT, which means that the first EFD may be received at the same moment.
3. Only when deviating or a status change (to ATC activation)
   A reported position is considered to be deviating if the reported position deviates more that SYSPAR (5 min) in time, SYSPAR (700ft) vertically or SYSPAR (20Nm) laterally from the 4D flight profile that is available in ETFMS at reception of the Reported Position.
4. Only when the EOBT or the flights' suspension status has changed.
5. Only when the EOBT, the CTOT or the list of regulations has changed.
6. Only when the readiness of the flight has changed
7. Only after SITd. The SITd parameter is set to EOBT-5 hours.

(9) Each FDPA will have options to filter the received EFDs, which it requires. The detailed specification of the filter options will be specified in each ICD, but here are some examples:

A) List of Elementary Sectors (ESs).
   EFDs that do not enter at least one of the listed ESs will be discarded.
B) list of flight states
   EFDs in a state, which is not included in this list, are discarded.
C) entry delay

A profile where the first entry time in any of ESs listed is earlier than the current time plus entry delay will be discarded. This allows the ANSPs to e.g. discard EFDs after the flight is activated in the system.

D) exit delay
A profile where the last exit time in any of the ESs listed is later than the current time plus exit delay will be discarded. This allows the ANSPs to e.g. discard EFDs after the flight has definitively left their airspace.

E) event exclusion list
An EFD generated for an event, which is included in this list, is discarded.

(10) Due to the continuous update of the flight profile in ETFMS the list of ESs may change (regularly). Such changes, combined with the filtering options, may result in EFDs being received or not. At the removal of an ES, ETFMS will not send an EFD cancellation message.

2.2.2.3.1.3 Implementation plans and ECIP Objectives & SLoAs

(1) The table below gives an indication of the implementation time scales for the EFD message. It contains only the plans of the NMOC. There is no ECIP Object/SLoA (yet) which requests stakeholders the use of the EFD. The table below is nothing more than an indication. The actual ECIP and SLoA target dates can be found in the relevant ECIP documentation and the NMOC implementation plans are subject to the Change-Request (CR) approval procedure and are also subject to agreement of the ODSG meetings.

(2) The following ECIP Objective and SLoA exist:
- FCM01.AGY04 - Implement ETFMS Phase 2

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM01.AGY04	Mar 2004	Mar 2004	Endorsed by EAG/6

2.2.2.3.1.4 Message description

2.2.2.3.1.4.1 Format

(1) The EFD message is in ADEXP format. There is no equivalent ICAO format specified for this message.

2.2.2.3.1.4.2 Syntax

(1) The syntax of the EFD message is as follows (syntax is described using a BNF-like format).

EFD_MESSAGE :=
"-" + "TITLE EFD" + ifplid + arcid + arctyp + (reg) +adep + ades + eobd + eobt + (iobd) + (iobt) + event + eventclass + timestamp + fltstate + rdystate + modeltyp + [(cobd + cobt) | (aobd + aobt**)**] + [(eda + eta) | (cda + cta) | (ada + ata)] + rtepts + asplist + (regul) + (afregullist) + {geo} + taxitime + (atfmdelay) + irules + flttyp + (**sensitive**) + (aoopr) +

(aoarcid) + (adesold) + ***(depaptype)*** + ***(cdmstatus)*** + ***(depreg)*** + ***(deparctype)*** + ***(ifpsdiscrepancy)*** + (depstatus) + (tobt) + (tsat)

Note:
All fields in ***bold-italic*** are new fields and therefore not yet defined in the EUROCONTROL ADEXP Standard (see Doc Ref 1).

2.2.2.3.1.4.3 Semantics

(1) The regul-field, the afregullist-field and the atfmdelay-field are omitted if the flight is not regulated.

(2) If present as a primary field in the EFD-message, the regul-field contains the most penalising regulation of the flight.

(3) The geo-primary field is used in case the rtepts-field uses lat/long points. NMOC system points which are also output in the EFD are also represented as geo-fields.

(4) The eda-field and the eta-field are present if the distributed flight model is ESTimated flight model.

(5) The cobd-field, cobt-field, cda-field and cta-field are present if the distributed flight model is CALculated flight model.

(6) The aobd-field, aobt-field, ada-field and ata-field are present if the distributed flight model is ACTual flight model.

(7) The regulation-related fields, which are regul, afregullist and atfmdelay will not be distributed before SITd even is the flight is regulated. These fields will not be present when the flight is ATC-activated.

(8) The iobd-field is only present if different from the eobd-field. The iobt-field is only present if different from the eobt-field.

(9) The taxitime-field contains the most recently known taxitime value by ETFMS.

(10) The reg-field contains the aircraft registration, if known by ETFMS. Note that this is currently considered to be a future extension of the EFD message.

(11) Flight identification of the EFD should be mainly based upon the IFPLID. The ARCID, ADEP, ADES and EOBDEOBT fields are included for readability and cross-check purposes.

(12) The sensitive-field will only be used for filtering by the Entry Node. It will never be included in EFDs that are sent outside the NMOC systems and for this reason the sensitive field is not further described in this document.

(13) The aoopr- and aoarcid- fields will only be present if ETFMS was able to extract the aircraft operator 3 letter identification from the corresponding flight plan fields. If the values of aoopr and aoarcid are equal, then only the aoopr-field is included in the EFD.

(14) The adesold-field will be present for flights for which ETFMS has processed a diversion (see description of AFP message for more details). Note that in this case the ades-field will contain the new aerodrome of destination.

(15) In case of a diversion, the rtepts-field and the asplist-field will contain the route and airspace profile to the new airport of destination.

(16) The reg-field will only be present if the FPL or CHG message contained a registration mark.

(17) The depaptype-field and the cdmstatus-field will not be present for standard airports (see Doc Ref 9 for details about depaptype and cdmstatus).

(18) The depreg-field and the depacrtype-field will only be present if the NMOC has received a reg or arctyp via a DPI message (see Doc Ref 9 for details about DPI messages).

(19) The ifpsdiscrepancy-field will only be present in the EFD message if an IFPS discrepancy has been detected (see Doc Ref 9 for more details about IFPS Discrepancies).

(20) The depstatus-field is omitted if no special departure status is available.

(21) The maximum size of an EFD message is 20Kb.

2.2.2.3.1.5 Fields description

2.2.2.3.1.5.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly in this section are as described in the Doc Ref 1.

2.2.2.3.1.5.2 ad

Purpose and syntax:

(1) The ad-field describes the aerodrome of departure or the aerodrome of destination in the rtepts-field. It includes aerodrome identification, time of departure or arrival, the SID or DCT, any STAY indicators.

(2) The full syntax of the ad-field is described in DOC Ref 1 but the EFD message will only use the following parts/definition:

ad := "-" + "AD" + adid + eto + (ptrte) + (ptstay) + (ptdle)
adid := see Doc Ref 1.
eto := see Doc Ref 1.
ptrte := see Doc Ref 1.
ptstay := see Doc Ref 1.
ptdle := see section 2.2.2.3.1.5.26 ptdle

(3) The ADEXP standard offers the possibility to add e.g. changes of flight rules (OAT/GAT) or the stay-information to the ad-field, ETFMS will use these options.

Semantics:

(4) The adid-field will contain the ADEP or the ADES of the flight. It can contain an ICAO location indicator, ZZZZ or AFIL.

(5) The ptrte-field can contain the name of a SID or DCT.

(6) The ptstay-field contains the “stay-time”. The ptstay-field describes portions of the route where the elapsed time between the referenced points is different from the normal calculated elapsed times. The ptstay-field will e.g. be used for holdings or for portions of flights where (military) training take place.

(7) In case of a diversion, i.e. the adesold field present, then the adid-field will contain the new destination aerodrome.

2.2.2.3.1.5.3 adesold

Purpose and syntax:

(1) The purpose of the adesold-field is to indicate that it concerns a flight that has been diverted to a new aerodrome of destination. The adesold-field can be used to associate the EFD message to previously received flight plan data.

(2) The syntax of the adesold-field is defined in Doc Ref 1.

Semantics:

(3) The adesold-field contains the aerodrome of destination that was filed in the flight plan.

2.2.2.3.1.5.4 afregullist

Purpose and syntax:

(1) The afregullist-field contains the list of regulations by which the flight is affected.

(2) The syntax of the afreglist-field is defined in Doc Ref 1.

Semantics:

(3) The afregullist-field also includes the most penalising regulation. It is the list that is used to calculate the CTOT.

2.2.2.3.1.5.5 aoarcid

Purpose and syntax:

(1) The aoarcid-field contains the 3 letter ICAO designator of the AO which is derived from the ARCID of the flight plan.

(2) The syntax of the aoacrid-field is defined in Doc Ref 1.

Semantics:

(3) The aoarcid-field contains the 3 letter ICAO aircraft operator designator that ETFMS has derived from the ARCID of the flight plan. It is the same AO that is used for addressing of ATFM messages.

(4) The aoarcid-field is included in the EFD message to allow filtering on AOs before transmission of EFDs to the AOs.

2.2.2.3.1.5.6 aoopr

Purpose and syntax:

(1) The aoopr-field contains the 3 letter ICAO designator of the AO which is derived from the OPR/ field in the field18 of the flight plan.

(2) The syntax of the aoopr-field is defined in Doc Ref 1.

Semantics:

(3) The aoopr-field contains the 3 letter ICAO aircraft operator designator that ETFMS has derived from the OPR/ field in field18 of the flight plan. It is the same AO that is used for addressing of ATFM messages.

(4) The aoopr-field is included in the EFD message to allow filtering on AOs before transmission of EFDs to the AOs.

2.2.2.3.1.5.7 asp

Purpose and syntax:

(1) The asp-field contains the airspace designator, the flights' entry and exit time and the airspace type.

(2) The syntax of the asp-field is defined in Doc Ref 1.

Semantics:

(3) The naming convention of the elementary sectors contained in the airspdes-field will be such that it will be possible to use simple wildcard conventions to filter EFDs.

(4) All sector and FIR names correspond to names officially confirmed with the NMOC NV, current at the time of the flight.

2.2.2.3.1.5.8 asplist

Purpose and syntax:

(1) The asplist -field contains the list of airspaces crossed, called the airspace profile.

(2) The ETFMS airspace-profile consists of the list airspaces with their corresponding entry- and exit- times.

(3) The types of airspaces that are included are Elementary Sectors (ES)

(4) The syntax of the asplist -field is defined in Doc Ref 1.

Semantics:

(5) The asplist-field will not include airspaces that are on a so-called "invisible" portion of the flight. Examples of invisible portions are OAT portions, VFR portions, portions in between IFPS Stop and IFPS Start, ……

(6) The asp entries in the asplist will be sorted on the entry-time of the airspace.

(7) In cases of flightrules or flighttype changes, the asplist-field can contain zero asp-fields.

2.2.2.3.1.5.9 atfmdelay

Purpose and syntax:

(1) The atfmdelay-field contains the atfmdelay that has been allocated to the flight.

(2) The syntax of the atfmdelay-field is defined in Doc Ref 1.

Semantics:

(3) The ATFM delay is the value that has been calculated at the time the EFD was transmitted. It corresponds to CTOT that has been issued by the ATFM messages SAM/SRM.

2.2.2.3.1.5.10 cdmstatus

Purpose and syntax:

(1) The cdmstatus-field contains the cdmstatus values as available in ETFMS. The cdmstatus shows which DPI data is actually used in the flight profile (see Doc Ref 9 for detailed information about cdmstatus).

(2) The full syntax of the cdmstatus-field will be described in DOC Ref 1 and it will be:
cdmstatus := "-" + "CDMSTATUS" + cdmstatusvalue

The cdmstatusvalue may have one of the following values:

CDMSTATUS value	Description
DPIEXPECTED	Default value. DPI messages are expected.
ESTIMATED	The E-DPI message has been received.
TARGETED	The T-DPI-t message has been received.
PRESEQUENCED	The T-DPI-s message has been received.
ACTUALOFFBLOCK	The ATC-DPI message has been received.

Semantics:

(3) None.

2.2.2.3.1.5.11 da-fields & ta-fields

Purpose and syntax:

(1) The eda-field & eta-field and the cda-field & cta-field and the ada-field & ata-field contain the arrival date and time of the flight.

(2) The syntax of these fields is described in DOC Ref 1.

Semantics:

(3) The EFD will only include one of the three da- & ta- sets of fields. It will include the one that corresponds to the modeltyp-field.

2.2.2.3.1.5.12 depaptype

Purpose and syntax:

(1) The depaptype-field describes the type of aerodrome of departure.

(2) The full syntax of the depaptype-field will be described in DOC Ref 1 and it will be:
depaptype := "-" + "DEPAPTYPE" + airporttype
The airporttype may have one of the following values:

DEPAPTYPE Value	Description
ADVANCEDATCTWR	to indicate an airport that has been classified in NMOC as an advanced ATC TWR (which can send e.g. ATC-DPI messages).
CDM	to indicate an airport that has been classified in NMOC as a CDM airport (and which can send e.g. send all types of DPI messages

Semantics:

(3) Note that in NMOC data, the airport-type can also have the value “STANDARD” but that in that case, the depaptype-field in the EFD is omitted.

2.2.2.3.1.5.13 deparctype

Purpose and syntax:

(1) The deparctyp-field contains the aircraft type that has been received from the airport via DPI messages (see Doc Ref 9 for more details).

(2) The full syntax of the deparctyp-field will be described in DOC Ref 1 and it will be:
deparctyp := "-" + "DEPARCTYP" + aircraft_type_from_departure_airport
aircraft_type_from_departure_airport := (icaoaircrafttype | "ZZZZ")

Semantics:

(3) The aircraft_type_from_departure_airport may contain any valid aircraft type as specified in ICAO flight plan.

2.2.2.3.1.5.14 depreg

Purpose and syntax:

(1) The depreg-field contains the registration mark that has been received from the airport via DPI messages (see Doc Ref 9 for more details).

(2) The full syntax of the depreg-field will be described in DOC Ref 1 and it will be:
depreg := "-" + "DEPREG" + aircraft_registration_from_departure_airport
aircraft_registration_from_departure_airport := 1{lim_char}7

Semantics:

(3) The aircraft_registration_from_departure_airport may contain any valid aircraft registration mark as specified in ICAO flight plan field 18 REG/.

2.2.2.3.1.5.15 depstatus

Purpose and syntax:

(1) The depstatus-field describes any special status of the flight at the departure airport (see Doc Ref 9 for more details).

(2) The full syntax of the depstatus-field will be described in DOC Ref 1 and it will be:
depstatus := "-" + "DEPSTATUS" + departurestatus_value
The departurestatus_value may have one of the following values:

DEPSTATUS Value	Description
DEICING	The Aircraft is being de-iced or will be de-iced.

Semantics:

(3) If no special departure status is available, the depstatus-field is omitted.

2.2.2.3.1.5.16 eti

Purpose and syntax:

(1) The eti-field contains the absolute value of the entry time of e.g. an airspace or a regulation.

(2) The syntax of the eti-field is defined in Doc Ref 1.

Semantics:

(3) No specific semantics for the eti-field (yet).

2.2.2.3.1.5.17 event

Purpose and syntax:

(1) This field provides the source of the EFD. This can be an incoming message, a user command or a system event, which is known to the ETFMS users.

(2) The syntax of the event-field will be defined in Doc Ref 1.

Semantics:

(3) In the EFD message, the event-field can have the following values: (this table below is a proposal, which may still slightly change during the implementation phase in 2003/2004)

(4) Note: This table also contains the cross-reference with the eventclass-field. The description of the eventclass-field can be found in the following section.

event type	event class	Description
ACH	MSG	IACH message received from IFPS
ADI	MSG	A-DPI message
AFI	MSG	IFPL message received from IFPS with source AFIL
APL	MSG	IAPL message received from IFPS

APR	MSG	APR message received from Aircraft Operator
ATT	MAN	Take off from Tools for TWR
AXT	MAN	Taxi from Tools for TWR
CAL	MAN	FMD Operator Runway update
CDI	MSG	Cancel DPI
CEO	MAN	Flow Controller change OBT
CDC	REG	Suspended due to exception Regulation and delay is exceeding confirmation threshold
CNC	REG	CASA slot allocation /Update (before SIT1) [1]
CPR	MSG	CPR message received from ATC
CPT	MAN	CASA placed on time-over
CSC	REG	CASA slot cancellation
CTD	MSG	Target DPI confirmation via RCA
EDI	MSG	Early Departure Planning Information (DPI) message received
FCM	MSG	FCM message received or FMD Operator confirmation
FDI	MSG	FAA Departure Information (departure message from FAA in USA)
FLS	MSG	Casa suspend including Response by
FSA	MSG	FSA message received from ATC
IAR	MSG	IARR message received from IFPS
ICA	MSG	ICNL message received from IFPS
ICH	MSG	ICHG message received from IFPS
IDE	MSG	IDEP message received from IFPS
IDL	MSG	IDLA message received from IFPS
IFP	MSG	IFPL message received from IFPS
MET	SYS	Update of flight due to reception of meteo data
OCA	MAN	FMD Operator flight cancellation
OCM	MAN	FMD Operator Change Manual Suspension
ODA	MAN	FMD Operator de-activation of an ATC-activated flight
OEX	MAN	FMD Operator Flight exempted/de-exempt from regulation manually
OER	MAN	FMD Operator Environment re-routing
OIC	MAN	FMD Operator Confirmation (manual FCM)
ONR	MAN	FMD Operator NAT re-routing
ORX	MAN	FMD Operator inclusion/exclusion of a flight into a regulation
PTX	SYS	Periodic transmission
REA	MSG	REA, RFI or SWM message received
SIT	REG	CASA slot allocation /Update (after SIT1)
SMM	MSG	SMM message received
SPA	MSG	Slot Proposal Acceptance
SUS	REG	Casa suspend + CASA de-suspend
TAM	SYS	Time-out Activation Monitoring (shift and suspension)
TDE	SYS	Departure time-out (=TACT activation)
TDI	MSG	Target DPI-t received
TSA	MSG	T-DPI-s – Target Start-up DPI received
TTE	SYS	Termination time-out
UFA	MAN	FMD operator undo Flight Activation Monitoring
UXC	MAN	Undo XCD Effect

2.2.2.3.1.5.18 eventclass

Purpose and syntax:

(1) The eventclass-field contains a classification of the event-field.

(2) The syntax of the eventclass -field is defined in Doc Ref 1.

[1] Note that the CNC will not occur in EFD messages with the current parameter settings (SIT1=SITd=EOBT-2hrs). It will occur if SITd is before SIT1.

Semantics:

(3) The eventclass -field can contain the following values:
"MSG" - the EFD source is an incoming or outgoing message
"MAN" - the EFD is triggered by an FMD user command
"SYS" - the EFD is automatically generated by a time trigger event
"REG" - the EFD is automatically generated by a slot re-calculation event

(4) The cross-reference between the event-field and the eventclass-field can be found in the previous section.

2.2.2.3.1.5.19 fltstate

Purpose and syntax:

(1) The fltstate-field contains the ATFM status of the flight.

(2) The syntax of the fltstate -field is defined in Doc Ref 1.

Semantics:

(3) The values of the fltstate-field can be:
"FI" - Filed.
Basic status.
“FS” - Filed_Slot_allocated.
The flight is regulated, but the slot has not yet been published via a SAM.
“SI” - Slot_Issued.
The flight is regulated and the slot has been published via a SAM.
"TA" - Tact_Activated.
ETFMS assumes that the flight is airborne, but it has not yet received a confirmation from ATC (yet).
"AA" - Atc_Activated.
ETFMS has received a message that the flight is airborne.
"CA" - CAncelled. The flight plan has been cancelled via a CNL message or by the FMD operator.
"TE" - TErminated.
ETFMS considers the flight terminated.
"SU" - SUspended.
The flight has been suspended.

2.2.2.3.1.5.20 ifpsdiscrepancy

Purpose and syntax:

(1) The ifpsdiscrepancy-field describes the ifpsdiscrepancy that is actually applicable for the flight concerned (see Doc Ref 9 for more details).

(2) The full syntax of the ifpsdiscrepancy-field will be described in DOC Ref 1 and it will be:
ifpsdiscrepancy := "-" + "IFPSDISCREPANCY" + 1{ifpsdiscrepancy_value}3

The ifpsdiscrepancy_value may have one of the following values:

IFPS	

DISCREPANCY Value	Description
ARCTYP	The Aircraft Type received from the departure airport is different from the Aircraft Type in the ICAO flight plan.
REG	The Aircraft Registration received from the departure airport is different from the Aircraft Registration in the ICAO flight plan or is missing in the ICAO Flight plan.
OBT	The off-block time of the ICAO flight plan is more than 15min different from the off-block time derived from E-DPI or T-TDPI-t messages.

Semantics:

(3) None.

2.2.2.3.1.5.21 iobd-field & iobt-field

Purpose and syntax:

(1) The iobd-field & iobt-field contain the IFPS (or Initial) Off Block Date and Time

(2) The syntax of these fields is described in DOC Ref 1.

Semantics:

(3) The EFD will only include the iobd/iobt-fields where there is a difference in value between the EOBD/EOBT and the IOBD/IOBT, which is the case when e.g. the EOBT is modified via e.g. a REA message.

2.2.2.3.1.5.22 irules

Purpose and syntax:

(1) The irules-field contains the initial flight rules, initial flught type and initial IFPS processing indication of the flight.

(2) The syntax of the irules-field is defined in Doc Ref 1.

Semantics:

(3) The ifpsprocess value indicates whether IFPS has performed route checks on the rtepts.

(4) The ifpsprocess value is used in the irules-field, to specify whether the first route segment(s) in the rtepts-field have been checked by IFPS. Value IFPSTART indicates that the first route segment(s) have been checked by IFPS, IFPSTOP means that the first route segment(s) have not been checked by IFPS.

2.2.2.3.1.5.23 modeltyp

Purpose and syntax:

(1) The modeltyp-field contains the type of flight model that is included in the EFD.

(2) The syntax of the modeltyp -field is defined in Doc Ref 1.

Semantics:

(3) The values of the modeltyp-field can be:
"EST" - The ESTimated model, also called Filed Traffic Flight Model (FTFM).
"CAL" - The CALculated model, also called Regulated Traffic Flight Model (RTFM).
"ACT" - The ACTual model, also called Current Traffic Flight Model (CTFM).

(4) The EFD will contain the most recent profile in the hierarchy (filed, regulated, current), called the most significant profile.

(5) There is nevertheless an exception - the regulated profile is not distributed before SIT_D even if present in ECS. One of the consequences of the above rule is that there may be situations where the ECS updates the lower-in-the-hierarchy profile without triggering re-distribution, if a profile higher in the hierarchy has been distributed and is still valid.

(6) It should also be noted that events may result in the distribution of a profile lower in the hierarchy after one higher in the hierarchy was received. For example, a regulated one may be received, then the cancellation of the regulation could result in a filed profile being distributed, in case the flight is no more regulated.

2.2.2.3.1.5.24 obd-fields & obt-fields

Purpose and syntax:

(1) The cobd-field & cobt-field and the aobd-field & aobt-field contain the actual off block date and time of the flight.

(2) The syntax of these fields is described in Doc Ref 1.

Semantics:

(3) The EFD will only include the cobd/cobt-fields when modeltyp is CAL and include the aobd/aobt fields when modeltyp is ACT.

2.2.2.3.1.5.25 pt

Purpose and syntax:

(1) The pt-field describes a route point in the rtepts-field. It includes point identification, flight level of overflight, time of overflight, the route or DCT, any STAY indicators and any changes of flight rules and changes of flight type.

(2) The full syntax of the pt-field is described in DOC Ref 1 but the EFD message will only use the following parts/definition:

```
pt       := "-" + "PT" + ptid + fl + eto + (ptrte) + (ptstay) + (ptrulchg) + (ptdle)
ptid     := see Doc Ref 1.
fl       := see Doc Ref 1.
eto      := see Doc Ref 1.
ptrte    := see Doc Ref 1.
ptstay   := see Doc Ref 1.
ptrulchg := see Doc Ref 1.
ptdle    := see section 2.2.2.3.1.5.26 ptdle below.
```

(3) Point can be either a published ICAO identifier, the identifier (geo-name) allocated for a geographical point.

(4) The ADEXP standard offers the possibility to add e.g. changes of flight rules (OAT/GAT) or the stay-information to the pt-field, ETFMS will use these options.

Semantics:

(5) If the point is a geographical point, the corresponding ADEXP field geo will be present in the EFD message.

(6) The ptrte-field can contain the name of an Airway, DCT or STAR.

(7) The ptstay-field contains the “stay-time”. The ptstay-field describes portions of the route where the elapsed time between the referenced points is different from the normal calculated elapsed times. The ptstay-field will e.g. be used for holdings or for portions of flights where (military) training take place.

(8) The ptrulchg-field contains a change of flight rules (VFR/IFR) and/or a change of flight type (OAT/GAT) and/or IFPS-process indicators.

2.2.2.3.1.5.26 ptdle

Purpose and syntax:

(1) The ptdle-field is included if the flight plan contains the DLE-field.

(2) The full syntax of the ptdle-field will be described in Doc Ref 1 and is:
ptdel := “-PTDLE “ + timeHHMM.

Semantics:

(3) The semantics of this field are equal to the semantics of the DLE-field in the ICAO flight plan.

2.2.2.3.1.5.27 ptrulchg

Purpose and syntax:

(1) The ptrulchg-field describes any change of flight-rules, flight-type and ifpsprocessing in the route-point list (rtepts-field).

(2) The full syntax of the ptrulchg-field is described in Doc Ref 1.

Semantics:

(3) The ifpsprocess value indicates whether IFPS has performed route checks on the rtepts.

(4) The ifpsprocess value specifies whether the following route segment(s) in the rtepts-field have been checked by IFPS. Value IFPSTART indicates that these route segment(s) have been checked by IFPS, IFPSTOP means that these route segment(s) have not been checked by IFPS.

2.2.2.3.1.5.28 rdystate

Purpose and syntax:

(1) The rdystate-field contains the ready status of the flight.

(2) The syntax of the rdystate-field is defined in Doc Ref 1.

Semantics:

(3) The values of the rdystate-field can be:

"D" - ready to Depart (REA message received).
“N“ - not ready to Depart (no REA received yet).
“I” - ready for Improvement
“S” - SIP wanted

2.2.2.3.1.5.29 reldist

Purpose and syntax:

(1) The reldist-field contains the relative distance on the route segment where vec-point is defined. It is expressed as a percentage. The total distance of a segment is the distance between the previous ad-field or pt-field and the next ad- or pt-field in the rtepts-field.

(2) The syntax of the reldist-field is defined in Doc Ref 1.

Semantics:

(3) The reldist-field value is expressed as a percentage of the total distance of a segment. The total distance is the distance between the previous ad-field or pt-field and the next ad- or pt-field.

2.2.2.3.1.5.30 rtepts

Purpose and syntax:

(1) The rtepts-field contains the list of route point as used by ETFMS. It contains the ADEP as first element in the list and the ADES as the last element. Intermediate points can be normal points (pt) or vector points (vec).

(2) The full syntax of the rtepts-field is described in Doc Ref 1.

Semantics:

(3) The rtepts-field contains the published points, the unpublished points and vector points.

(4) The unpublished points (NMOC internal points/DBE points) are converted in lat/long points using the geo-field.

(5) Vector points are points that are inserted to mark points at which changes are calculated. An example of such a vector point is a level transitions from climb into cruise.

(6) The first ad-field contains the airport of departure and the SID, if present.

(7) The pt-field just before the last ad-field contains the STAR, if present.

(8) The presence of any ptrte-field and ptrulchg-field inside a pt-field or an ad-field gives information about the segments following this ad- or pt,-field. The information is valid for the following segments until the next ptrte-field or ptrulchg-field indicates a change (see also examples).

(9) The presence of any ptstay-field only gives the information about the next segment following this ad- or pt,-field. The “stay-time” can also be verified in the to-fields of the segment.

(10) The ptrulchg-field, if present in a pt-field, contains a change of flight rules and/or flight type and/or IFPS process indicators. The initial flight-rules, flight-type and IFPS process indicators are specified in the irules-field..

(11) The rtepts-field will also include route-points that are on a so-called "invisible" portion of the flight. Examples of invisible portions are OAT portions, VFR portions, route parts in between IFPS Stop and IFPS Start, …

2.2.2.3.1.5.31 timestamp

Purpose and syntax:

(1) This field contains the moment of creation of the EFD in ETFMS-CS.

(2) The syntax of the timestamp-field is defined in Doc Ref 1.

Semantics:

(3) No specific semantics.

2.2.2.3.1.5.32 tobt

Purpose and syntax:

(1) The tobt-field contains the Target Off-Block Time (TOBT) of the flight. It only contains a confirmed TOBT value.

(2) The syntax of the tobt-field is defined in Doc Ref 1.

Semantics:

(3) The tobt-field **shall** contain the Target Off-Block Time (TOBT) that is received from the CDM Airport.

2.2.2.3.1.5.33 tsat

Purpose and syntax:

(1) The tsat-field contains the Target Start-up Approval Time (TSAT) of the flight.

(2) The syntax of the tsat-field is defined in Doc Ref 1:

Semantics:

(3) The tsat-field contains the Target Start-up Approval Time (TSAT) that is received from the CDM Airport. For flights with a CTOT, it contains the TSAT that corresponds to the CTOT.

2.2.2.3.1.5.34 vec

Purpose and syntax:

(1) Vector points are points that are inserted to mark points at which changes are calculated. An example of such a vector point is a level transition from climb into cruise.

(2) The vec-field contains the vector point identification, flight level of overflight, time of overflight and relative distance of the vector.

(3) The syntax of the vec-field is defined in Doc Ref 1.

Semantics:

(4) The reldist-field contains the relative distance on the route segment where vec-point is defined. It is expressed as a percentage. The total distance of a segment is the distance between the previous ad-field or pt-field and the next ad- or pt-field.

2.2.2.3.1.5.35 xti

Purpose and syntax:

(1) The xti-field contains the absolute value of the exit time of e.g. an airspace.

(2) The syntax of the xti-field is defined in Doc Ref 1.

Semantics:

(3) No specific semantics for the xti-field (yet).

2.2.2.3.2 FUM – Flight Update Message

2.2.2.3.2.1 Purpose

(1) The purpose of the Flight Update Message (FUM) is to inform "others" about the progress of a flight.

(2) Initially it will be used to supply airports of destination (ADES) with an Estimated LanDing Time (ELDT). In addition to the ELDT, the FUM will contain the Star Entry Point (SEP) or the last point in the flight plan route with the corresponding Estimated Time Over (ETO).

(3) In the future it could also be used to:
- supply a Flight Data Processing Area (FDPA) at an early point in time with an estimated time and point of entry of a flight into its airspace
- supply e.g. Aircraft Operators with the ELDT
- include the Estimated Time Over for the Initial Approach Fix (IAF) instead of the STAR Entry Point (SEP)
- include the name of the STAR (i.e. after an update has been received from ATC)

(4) The FUM will be sent at significant updates of the flight in the NMOC/ETFMS system.

2.2.2.3.2.2 Transmission events and circumstances

(1) A FUM will be sent in the following circumstances:
- at LandingTime – 3 hours
- at modification of the ELDT of more than SYSPAR minutes (5 min)
- at important flight status changes
- when the flight is reported as diverted

(2) The FUM will be sent by ETFMS to an address that is derived from the airports of destination (ADES) and ONLY to those users/systems that wish to receive such information.

(3) In case the FUM is sent for a diverted flight, i.e. when the adesold-field is present, the FUM is sent to both the new aerodrome of destination (in the ades-field) and to the original aerodrome of destination (in the adesold-field).

(4) The FUM will have to be sent via the AFTN.

At LandingTime – 3 hours

(5) The first FUM will be sent at earliest landing time as known by ETFMS – 3 hours. In most cases the trigger moment (earliest landing-time – 3 hours) will be based upon flight plan data. However in case the flight has been reported as airborne and the landing-time based upon the latest received airborne information (ETA_airborne) is earlier than landing-time from flight plan data then the FUM will be sent at ETA_airborne – 3 hours.

(6) Note that the LandingTime used for triggering the message is not always the same as the ELDT.

A modification of the ELDT of more than SYSPAR minutes

(7) If there is a change of more than SYSPAR min (5 min) to the previously reported ELDT, an updated FUM message is sent.

(8) The last FUM is sent when ETFMS considers the flight as terminated, which is approximately 20 min after landing time.

At important flight status changes

(9) A FUM will be sent at important changes of the status of the flight in ETFMS.

(10) The statuses (changes) that are relevant for the FUM are:

- not-active (initial status)
  This is the flight status before ATC-activated, suspended, regulated, not regulated
- regulated
  The flight status changes to “regulated”.
- no longer regulated
  The slot is cancelled.
- ATC-activated
  After reception of the first FSA, DEP, ACH, APL, CPR message.
- suspended
  When the flight is suspended for any reason by ETFMS.
- De-suspension: status change from “suspended” to “not-active” status
  E.g. after the reception of a DLA for a suspended flight.
- Termination: status change to “terminated” status.

(11) The FUM will also be sent when the cdmstatus-field changes.

When the flight is diverted

(12) When NMOC is informed (via an AFP message) that the flight is diverted to another airport of destination a new FUM message is sent.

(13) Note that is this case the FUM will be addressed to both the old and new destination airport.

2.2.2.3.2.3 Implementation plans and ECIP Objectives & SLoAs

(1) The table below gives an indication of the implementation time scales for the FUM message. It contains only the plans of the NMOC. There is no ECIP Object/SLoA (yet) which requests stakeholders the use of the FUM. The table below is nothing more than an indication. The actual ECIP and SLoA target dates can be found in the relevant ECIP documentation and the NMOC implementation plans are subject to the Change-Request (CR) approval procedure and are also subject to agreement of the ODSG meetings.

(2) The following ECIP Objective and SLoA exist:

- FCM01.AGY04 - Implement ETFMS Phase 2

Stakeholder Line of Action	Time Scale		Status
	From	By	
FCM01.AGY04	Mar 2004	Mar 2004	Endorsed by EAG/6

2.2.2.3.2.4 Message description

2.2.2.3.2.4.1 Format

(1) The FUM message is in ADEXP format. There is no equivalent ICAO format specified for this message.

2.2.2.3.2.4.2 Syntax

(1) Syntax of FUM message is as follows:

FUM_MESSAGE := "-"+"TITLE FUM"+ addr + ifplid +arcid + adep + ades + eobt + eobd + (iobd) + (iobt) + eldt + arctyp + (estdata) + 0{geo}1 + (star) + (reg) + fltstate + (adesold) + ***(depaptype)*** + ***(cdmstatus)***

Note:
All fields in ***bold-italic*** are new fields and therefore not yet defined in the EUROCONTROL ADEXP Standard (see Doc Ref 1).

2.2.2.3.2.4.3 Semantics

(1) The star-field the ETFMS selected STAR.

(2) The geo- ref- and rename-fields are only present if the ADEXP standard so requires (e.g. in case the estdata-point is a lat/long).

(3) The reg-field (aircraft registration) will only be present if the aircraft registration is known to ETFMS.

(4) In case the fltstate-field contains the status SU-Suspended then, the eldt-field and the estdata-field will contain data derived from the ESTimated flight model (FTFM). It is up-to the receiver of the FUM to use or to ignore the eldt and estdata.

(5) The estdata-field is not provided for a flight which does not have any route points, i.e. a flight which is DCT from ADEP to ADES.

(6) The star-field is not provided for a flight which does not have any route points, i.e. a flight which is DCT from ADEP to ADES.

(7) The adesold-field will be present for flights for which ETFMS has processed a diversion (see description of AFP message for more details). Note that in this case the ades-field will contain the new aerodrome of destination.

(8) The iobd-field is only present if different from the eobd-field. The iobt-field is only present if different from the eobt-field.

(9) The depaptype-field and the cdmstatus-field will not be present for standard airports (see Doc Ref 9 for details about depaptype and cdmstatus).

2.2.2.3.2.5 Fields description

2.2.2.3.2.5.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in the Doc Ref 1 (ADEXP standard).

2.2.2.3.2.5.2 adesold

Purpose and syntax:

(1) The purpose of the adesold-field is to indicate that it concerns a flight that has been diverted to a new aerodrome of destination. The adesold-field can be used to associate the FUM message to previously received flight plan data.

(2) The syntax of the adesold-field is defined in Doc Ref 1.

Semantics:

(3) The adesold-field contains the aerodrome of destination that was filed in the flight plan.

2.2.2.3.2.5.3 cdmstatus

Purpose and syntax:

(1) The cdmstatus-field contains the cdmstatus values as available in ETFMS. The cdmstatus shows which DPI data is actually used in the flight profile (see Doc Ref 9 for detailed information about cdmstatus).

(2) The full syntax of the cdmstatus-field will be described in DOC Ref 1 and it will be:
cdmstatus := "-" + "CDMSTATUS" + cdmstatusvalue

The cdmstatusvalue may have one of the following values:

CDMSTATUS value	Description
DPIEXPECTED	Default value. DPI messages are expected.
ESTIMATED	The E-DPI message has been received.
TARGETED	The T-DPI-t message has been received.
PRESEQUENCED	The T-DPI-s message has been received.
ACTUALOFFBLOCK	The ATC-DPI message has been received.

Semantics:

(3) None.

2.2.2.3.2.5.4 depaptype

Purpose and syntax:

(1) The depaptype-field describes the type of aerodrome of departure.

(2) The full syntax of the depaptype-field will be described in DOC Ref 1 and it will be:
depaptype := "-" + "DEPAPTYPE" + airporttype
The airporttype may have one of the following values:

DEPAPTYPE Value	Description

ADVANCEDATCTWR	to indicate an airport that has been classified in NMOC as an advanced ATC TWR (which can send e.g. ATC-DPI messages).
CDM	to indicate an airport that has been classified in NMOC as a CDM airport (and which can send e.g. send all types of DPI messages

Semantics:

(3) Note that in NMOC data, the airport-type can also have the value “STANDARD” but that in that case, the depaptype-field in the EFD is omitted.

2.2.2.3.2.5.5 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight.

(2) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(3) The eobd-field contains the eobd that ETFMS has stored for the flight. It is based upon the EOBD that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages updated with modifications from e.g. the REA message.

2.2.2.3.2.5.6 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight.

(2) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(3) The eobt-field contains the last eobt that ETFMS has stored for the flight. It is based upon the EOBT that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages, updated with modifications from e.g. the REA message.

2.2.2.3.2.5.7 fl

Purpose and syntax:

(1) In the context of estdata-field this field indicates the estimated flight level of overflight at the point specified in the ptid-field.

(2) The syntax of the fl-field can be found in Doc Ref 1.

Semantics:

(3) The fl-field will be extracted from the ETFMS flight profile and will consequently contain the level that has been calculated by ETFMS. However if the flight profile has been updated by data from ATC, it will contain the received level.

2.2.2.3.2.5.8 estdata

Purpose and syntax:

(1) This field indicates the aircraft's estimated time and flight level at the co-ordination point (STAR Entry Point or last point on the route).

(2) The syntax of the estdata-field is defined in Doc Ref 1.

Semantics:

(3) None.

2.2.2.3.2.5.9 iobd-field & iobt-field

Purpose and syntax:

(1) The iobd-field & iobt-field contain the IFPS (or Initial) Off Block Date and Time.

(2) The syntax of these fields is described in Doc Ref 1.

Semantics:

(3) The FUM will only include the iobd/iobt-fields where there is a difference in value between the EOBD/EOBT and the IOBD/IOBT, which is the case when e.g. the EOBT is modified via a REA message.

2.2.2.3.2.5.10 ptid

Purpose and syntax:

(1) In the context of position, this field identifies the co-ordination point which the aircraft is expected to overfly.

(2) The syntax of the ptid-field can be found in Doc Ref 1.

Semantics:

(3) The reference point can be either a published ICAO identifier, or the identifier (geoname) allocated for a geographical point with the following syntax:

geoname := "GEO" + 2{DIGIT}2 (strict concatenation)

(4) If the point is a geographical point or a reference point or a rename point, the corresponding primary ADEXP fields geo, ref or rename, will be present in the message.

(5) The ptid-field will contain one of the following fields. In order of preference and availability in NMOC ENVironment data and flight plan route:

1. the Initial Approach Fix (IAF)
   i.e. if the IAF has been defined in the NMOC ENVironment data (future extension)
2. the STAR Entry Point (SEP)
   i.e. the first point of the STAR if a STAR is present in the ETFMS flight data.
3. the last point in the flight plan route

2.2.2.3.2.5.11 star

Purpose and syntax:

(1) This optional field indicates the Standard Arrival (STAR) procedure followed by the aircraft.

(2) The syntax of the star-field can be found in Doc Ref 1.

Semantics:

(3) The STAR will only be present if it has been supplied to ETFMS by ATC (future extension).

2.2.2.3.2.5.12 eto

Purpose and syntax:

(1) In the context of estdata-field, this field indicates the estimated time of overflight of the point described in ptid.

(2) The syntax of the eto-field can be found in Doc Ref 1.

Semantics:

(3) No special semantics for this field.

2.2.2.3.2.5.13 eldt

Purpose and syntax:

(1) The eldt-field contains the Estimated LanDing Time (ELDT). It contains the most accurate value that is known to ETFMS, based upon it's own flight profile calculation and flight data updates received from ATC.

(2) The syntax of the eldt-field is defined in Doc Ref 1.

Semantics:

(3) The ELDT will contain the most accurate landing time that is available to ETFMS, i.e. the landing time from the most recent flight model.

(4) Only in case the flight is regulated and the slot is not yet published (before SAM), the ELDT will be derived from flight plan data.

(5) The eldt-field contains the landing time corresponding to the aerodrome of destination in the ades-field. So in case of a diversion (adesold-field present), the eldt-field will contain the estimated landing time at the new airport of destination.

2.2.2.3.2.5.14 flightstatus

Purpose and syntax:

(1) The flightstatus-field contains the main statuses of the flight. It can be used as an accuracy indicator for the estimates that are included in the FUM.

(2) The syntax of the flightstatus-field is defined in Doc Ref 1.

Semantics:

(3) The fltstate-field can contain the following values:

- FI - FIled
  The flight has not yet been reported as airborne by ATC to ETFMS. The flight is not regulated.
- FS – Filed Slot allocated
  The flight has not yet been reported as airborne by ATC to ETFMS. The flight is regulated.
- SI – Slot Issued
  The flight has not yet been reported as airborne by ATC to ETFMS. The flight is regulated.
- TA – Tact Activated
  ETFMS considers the flight as airborne. ETFMS changes the state automatically to TA at the ETOT/CTOT of the flight. Note that the airborness has not been confirmed by ATC.
- AA – ATC Activated
  ETFMS has received a message from ATC that the flight is actually airborne. Examples of such confirmation messages are DEP, FSA, CPR, APL, ACH and APR.
- CA – CAncelled
  The Aircraft Operator has cancelled the flight. Considering the triggering events for FUM, it is most unlikely that a FUM will be transmitted that contains the CA status. The cancellation of a flight is received from IFPS via a CNL message.
- TE – TErminated
  The flight has been terminated in ETFMS.
- SU – SUspended
  ETFMS has suspended the flight. This means that a previously supplied ELDT is no longer valid.

2.2.3 SSR Code Management Messages

Note that CCAMS is not yet in operations. Operations are planned for February 2012.

2.2.3.1 Introduction

(1) The SSR Code Management Messages are used by CCAMS-CS and ATS Units to exchange information about the SSR Code that should be or has been assigned[2] to flights.

(2) The messages are exchanged via AFTN.

(3) The following messages from ATS Units to CCAMS-CS have been identified:

COR - COde Request message
An ATS Unit will send a COR when it needs to request CCAMS-CS for an SSR Code for a flight, i.e. to retain the actual code or assign a code from the CCAMS pool of codes.

CRE - Code RElease message
An ATS Unit will send a CRE when it needs to inform CCAMS-CS that the specified flight no longer needs an SSR Code from CCAMS-CS.

(4) The following messages from CCAMS-CS to ATS Units have been identified:

CAM – Code Assignment Message
CCAMS-CS will send a CAM message to inform ATS Units about the SSR Code that it has assigned to a flight. CCAMS-CS will send a CAM message to inform ATS Units about the fact that it was required to change a previously assigned code to the newly specified code.

CCM – Code Cancellation Message
CCAMS-CS will send a CCM message to inform ATS Units about the fact that a flight no longer requires an (CCAMS) SSR Code (for the time being).

(5) CCAMS-CS requires messages for special situations such as recovery after failure, incoming messages that cannot be processed, warnings that need to be raised, etc,…

ERR – ERRor message
CCAMS-CS will send an ERR message when it could not process a message that was received from an ATS Unit. The ERR message is used to inform the sender of the message that it was not processed by CCAMS-CS or it is used to inform the sender of a message about a special situation in the form of a warning.

2.2.3.2 Message Format

(1) The SSR Code Messages are all in ADEXP format. There is no equivalent in ICAO format specified for these messages.

2.2.3.3 Implementation plans and ECIP Objectives

(1) There are no ECIP objectives defined for CCAMS.

[2] It should be kept in mind that “CCAMS assigned code” could, depending on the circumstances, mean a code retained by CCAMS or a code from the CCAMS pool.

2.2.3.4 SSR Code Management Messages – Originated by ATS

2.2.3.4.1 COR – COde Request message

2.2.3.4.1.1 Purpose

(1) The purpose of the COde Request (COR) message is to allow an ATS Unit/ATC system to request CCAMS-CS for an SSR code for the specified flight.

(2) If the COR contains an actual SSR code, CCAMS will first evaluate this code for possible retention. If the COR contains no SSR code or the code could not be retained, CCAMS will assign a new SSR code.

(3) Note that if CCAMS-CS has already assigned a code to the specified flight, then CCAMS-CS will in most cases reply with the already assigned code. If CCAMS-CS has not assigned a code to the specified flight, then CCAMS-CS will assign a code to the flight before replying.

2.2.3.4.1.2 Transmission events and Circumstances

(1) The ATSU **shall** automatically trigger a COR message for departures from within its AoR in the following cases:

- At the time of the first activation of the SFPL (usually at the time of ATC Clearance request or in accordance with local procedures) in case the unit does not require the automatic assignment of codes by CCAMS-CS.

(2) The ATSU **shall** automatically trigger a COR message for inbound and over-flights in the following cases:

- At the moment of SFPL activation (either the manual input of a verbal estimate or the reception of an automated notification/ activation message) in case the unit does not require the automatic assignment of codes by CCAMS-CS

(3) The ATSU **shall** automatically trigger a COR message for any case where a CAM was not received automatically at the time that the ATS Unit requires an SSR Code for a flight. The ATS Unit shall allow for a minimum time (e.g. 3 min) to allow the automatic CAM to arrive at the ATS Unit.

(4) **Note:** In case a Code Cancellation Message is received for a flight (i.e. a message specifying a long delay is received for that flight) the ATS System is expected to retransmit a COR when a CCAMS code is required for that flight.

(5) The ATS Unit **shall** trigger a COR message based on controller action for inbound and overflights in the following cases:

- For flights that used a special SSR code (i.e. A2000, A7000, A7500, A7600, A7700) and need a discrete SSR code in accordance with local procedures;
- For flights eligible for A1000 if this code cannot be used because of an Aircraft Identity discrepancy.

Note: For such cases the controller action initiating the COde Request (COR) message should be performed only when the emergency has been overcome and the flight resumes a normal status.

(6) For flights that use a special SSR code the COde Request (COR) message **shall** be sent only if the previously assigned CCAMS code is no longer known in the ATS Unit (i.e. diversion to an alternate airport).

(7) For flights eligible for A1000 for which a discrete SSR code is required, the ATS System **shall** send a COde Request (COR) message containing A0000 in the ssrcode-field in order to clearly indicate that a discrete SSR code is needed for operational reasons (i.e. Aircraft Identity discrepancy, Air Defence requirements to have all flights on discrete codes, no more double ModeS radar coverage,…). The contents of the ssrcode-field is irrelevant.

(8) Note that normally for flights that are eligible for A1000, no COR should be sent to CCAMS-CS.

(9) The COR message shall only be sent for IFR/GAT flights.

(10) The COR message shall be addressed to both the CCAMS-CS main unit in Haren and the CCAMS-CS backup Unit in Bretigny.

(11) The COR messages are accepted only from validated/known AFTN addresses. A COR message from an unknown/unvalidated address is ignored by CCAMS-CS.

2.2.3.4.1.3 Message description

2.2.3.4.1.3.1 Syntax

(1) Syntax of COR message is as follows:

COR_MESSAGE := “-“+”TITLE COR” + (ifplid) + arcid + adep + ades + (eobt) + (eobd) + (ssrcode) + (arctyp) + (origin)

Note that the ttleet-field has been suppressed.

2.2.3.4.1.3.2 Semantics

(1) The preferred field for matching is the ifplid-field. It shall be present if available in the ATC System. If this field is present, there is no need to add the eobt-field and the eobd-field. However, the presence of the eobt-field and the eobd-field will allow verification when necessary.

(2) If available, the ssrcode-field shall contain the SSR code that is currently assigned to the flight, for example for an inbound or over-flight CCAMS-CS will try to retain this code for the flight inside the CCAMS-CS area.

(3) If the ATS Unit does not wish CCAMS-CS to retain the code (according to the retain rules configured in ENV data) that is currently assigned to the flight, then the ssrcode-field shall be omitted.

(4) The arctyp-field could be present for non-IFPS flights in order to help CCAMS-CS to more accurately estimate the flying time of the flight.

(5) If present, the origin-field shall contain an AFTN address. The origin-field shall be used to replace the originator address of the AFTN message in CCAMS-CS. CCAMS-CS will use the

origin-address to replace the AFTN message originator address whenever it needs to use the originator of the message (for e.g. addressing and determination of the current ATS Unit).

Note that it is intended to use the AFTN address of the COR to determine which (1st, 2nd,…last) ATS unit has sent the COR. This mechanism will not work if the origin-field is used. So for the time-being, it is not recommended to use the origin-field in the COR message.

2.2.3.4.1.4 Validation and Reply messages

(1) The reply to a COR message is usually a Code Assignment Message (CAM). The CAM will contain the code that CCAMS-CS has assigned to the flight.

(2) In case CCAMS-CS cannot process or could only partly process the COR message, then CCAMS-CS will reply with an ERRor (ERR) message.

ERR Comment	Severity	Description
MESSAGE RECEIVED TOO EARLY OR TOO LATE	ERROR	CCAMS could not process the COR because it was received too early.or too late
NO MORE SSR CODES AVAILABLE FOR THIS FLIGHT	ERROR	CCAMS could not find a suitable code for this flight. A Local Code must be assigned.
NOT AUTHORISED TO SEND THIS MESSAGE	ERROR	CCAMS CS will send this error when a msg is received from an address which is not authorised at CCAMS CS side to send such addresses
UNABLE TO ASSIGN A CODE FOR THIS FLIGHT	ERROR	In some cases, no code can be assigned, e.g. if not enough data is available in the COR. A.o., this happens when both the ADEP and the ADES are unspecified (i.e. ZZZZ)
FLIGHT IS SUSPENDED	ERROR	The flight is suspended. It should not take off.

(3) The possible general ERR reply messages are described in section 2.2.4.2 ERRor message – originated by ETFMS and CCAMS-CS

(4) In case of AFTN Failure or CCAMS-CS outage there could be no reply at all.

2.2.3.4.1.5 Fields Description

2.2.3.4.1.5.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in section 2.2.3.8 General Fields Description or in the Doc Ref 1 (ADEXP standard).

2.2.3.4.1.5.2 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight and it is used for COR to flight plan matching only, not to update the EOBD of the flight plan.

(2) However in the case that a COR message cannot be associated to a flight plan, the EOBD is used as the EOBD of the CCAMS mini flight plan.

(3) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(4) The eobd-field shall contain the last eobd that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages). In the ICAO flight plan, the EOBD is present in field18 as DOF/yymmdd.

(5) The eobd-field is an optional field, but its presence in the COR message is nevertheless highly desirable. The presence of the EOBD reduces the number of COR-flight plan matching problems.

2.2.3.4.1.5.3 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight and it is used for COR to flight plan matching only, not to update the EOBT of the flight plan.

(2) However in the case that a COR message cannot be associated to a flight plan, the EOBT is used as the EOBT of the CCAMS mini flight plan.

(3) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(4) The eobt-field shall contain the last eobt that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages).

(5) The eobt-field is an optional field, but its presence in the COR message is nevertheless highly desirable. The presence of the EOBT reduces the number of COR to flight plan matching problems especially for "shuttle flights" (flights with a short EET, same callsign that use the same city-pair several times per day).

2.2.3.4.2 CRE – Code RElease message

2.2.3.4.2.1 Purpose

(1) The purpose of the Code RElease (CRE) message is to allow an ATS Unit/ATC system to inform CCAMS-CS that (for a flight landing inside or leaving the CCAMS area) a code is no longer required by the flight.

(2) In most cases, CCAMS-CS will automatically release the code based upon the flight plan 4D profile that it has. This could be the 4D profile based upon flight plan data, possibly updated with airborne update messages.

(3) CCAMS-CS will only release the code after careful validation of the CRE message (e.g. CRE is only accepted from the first or last ATS Unit in the CCAMS Area).

2.2.3.4.2.2 Transmission events and Circumstances

(1) An ATS Unit should send a Code Release (CRE) message for the following cases:
- flights that land at the airport of destination including diversions.
- flights that leave the CCAMS area.
- In case CCAMS-CS has assigned and distributed a code before departure and the flight was cancelled in the ATS system.
- For an ATS unit that is at the boundary of the CCAMS area, at abrogation of the coordination.
- In case the flight enters the Oceanic Areas and switched to A2000.

(2) The CRE message shall only be sent for IFR/GAT flights for which CCAMS-CS had sent a CAM message.

(3) The CRE message shall be addressed to both the CCAMS-CS main unit in Haren and the CCAMS-CS backup Unit in Bretigny.

(4) The CRE messages are accepted only from validated/known AFTN addresses. A CRE message from an unknown/unvalidated address is ignored by CCAMS-CS.

2.2.3.4.2.3 Message description

2.2.3.4.2.3.1 Syntax

(1) Syntax of CRE message is as follows:

CRE_MESSAGE := “-“+”TITLE CRE” + (ifplid) +arcid + adep + ades + (eobt) + (eobd) + (origin)

2.2.3.4.2.3.2 Semantics

(1) The preferred field for matching is the ifplid-field. It shall be present if available in the ATC System. If this field is present, there is no need to add the eobt-field and the eobd-field. However, the presence of the eobt-field and the eobd-field will increase the robustness of ETFMS because it will allow for cross checking.

(2) If present, the origin-field shall contain an AFTN address. The origin-field shall be used to replace the originator address of the AFTN message in CCAMS-CS. CCAMS-CS will use the origin-address to replace the AFTN message originator address whenever it needs to use the originator of the message (for e.g. addressing and determination of the current ATS Unit).

Note that it is intended to use the AFTN address of the COR to determine which (1st, 2nd,…last) ATS unit has sent the COR. This mechanism will not work if the origin-field is used. So for the time-being, it is not recommended to use the origin-field in the COR message.

2.2.3.4.2.4 Validation and Reply messages

(1) CCAMS-CS will normally not send a reply to a CRE message.

(2) CCAMS-CS could send a CCM message to all ATS Units. This could for example be the case for a flight that was not yet airborne when the CRE is received.

(3) In case CCAMS-CS cannot process or could only partly process the CRE message, then CCAMS-CS will reply with an ERRor (ERR) message.

(4) The possible ERR reply messages that are specific to the CRE message are:

ERR Comment	Severity	Description
MESSAGE RECEIVED TOO EARLY OR TOO LATE	ERROR	CCAMS could not process the CRE because it was received too early or too late.
NOT EXISTING FLIGHT	ERROR	CCAMS could not find the flight plan for this CRE message
NOT AUTHORISED TO SEND THIS MESSAGE	ERROR	CCAMS CS will send this error when a msg is received from an address which is not authorised at CCAMS CS side to send such addresses
MESSAGE RECEIVED BUT CCAMS DID NOT SELECT A CODE YET	ERROR	CCAMS CS will send this error when a CRE is received, but the selection of an SSR code is not yet done
MESSAGE RECEIVED FROM NEITHER ASSIGNING NOR RELEASING UNIT	ERROR	CCAMS CS will send this error when a CRE is sent by a unit which is not the assigning or releasing unit

(5) The possible general ERR reply messages are described in section 2.2.4.2 ERRor message – originated by ETFMS and CCAMS-CS

(6) In case of AFTN Failure or CCAMS-CS outage there could be no reply at all.

2.2.3.4.2.5 Fields Description

2.2.3.4.2.5.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in section 2.2.3.8 General Fields Description or in the Doc Ref 1 (ADEXP standard).

2.2.3.4.2.5.2 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight and it is used for CRE to flight plan matching only, not to update the EOBD of the flight plan.

(2) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(3) The eobd-field shall contain the last eobd that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages). In the ICAO flight plan, the EOBD is present in field18 as DOF/yymmdd.

(4) The eobd-field is an optional field, but its presence in the CRE message is nevertheless highly desirable. The presence of the EOBD reduces the number of CRE to flight plan matching problems.

2.2.3.4.2.5.3 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight and it is used for CRE to flight plan matching only, not to update the EOBT of the flight plan.

(2) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(3) The eobt-field shall contain the last eobt that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages).

(4) The eobt-field is an optional field, but its presence in the CRE message is nevertheless highly desirable. The presence of the EOBT reduces the number of CRE to flight plan matching problems especially for "shuttle flights" (flights with a short EET, same callsign that use the same city-pair several times per day).

2.2.3.5 SSR Code Management Messages – Originated by NMOC

2.2.3.5.1 CAM – Code Assignment Message

2.2.3.5.1.1 Purpose

(1) The purpose of the Code Assignment Message (CAM) is to provide ATS units with the SSR code that CCAMS-CS has assigned to the flight. This includes a first distribution of the CCAMS Code and also any updates of the SSR code.

(2) Recipients are expected to make sure that the aircraft is squawking that code in the CCAMS area.

2.2.3.5.1.2 Transmission events and Circumstances

(1) There are several events when CCAMS-CS decides to send a CAM. A CAM will be sent for the first assignment of an SSR Code to a flight and a CAM may be sent to change the SSR code for a flight.

(2) The most significant events when a CAM is sent are:

a) at first automatic assignment of a SSR code to a flight which is a NMOC ENV-parameter before EOBT for departures from inside the CCAMS area.
b) at first automatic assignment of a SSR code to a flight which is a NMOC ENV-parameter before entry time in the CCAMS area for inbounds and overflights.
c) As a reply to a COde Request (COR) message
d) At change of the SSR code. For example after a flight plan change (CHG) message that changed the route of the flight.

2.2.3.5.1.3 Message description

2.2.3.5.1.3.1 Syntax

(1) Syntax of CAM message is as follows:

CAM_MESSAGE := "-"+"TITLE CAM"+ (ifplid) +arcid + adep + ades + (eobt) + (eobd) + (iobt) + (iobd) + ssrcode + (prevssrcode) + sequencedata

Notes:
1. that the addr-field has been suppressed
2. the timestamp-field has been replaced by the sequencedata-field

2.2.3.5.1.3.2 Semantics

(1) The IFPLID shall not be present for CAM messages for flights for which CCAMS-CS has not received a flight plan from IFPS. This will only be the case for a CAM that has been sent in reply to a COR and for which CCAMS-CS could not find the corresponding flight plan.

(2) The ssrcode-field shall contain the newly assigned code for the flight.

(3) The prevssrcode-field, if present, shall contain the previously assigned CCAMS Code. In case of a first CAM, the prevssrcode-field will not be present,

(4) The sequencedata -field shall contain the date and time at which the message has been sent by CCAMS-CS together with a message sequence number. It shall be used to determine the sequence of CCAMS messages.

(5) The eobd- and eobt-fields will not be present if not known to CCAMS-CS (e.g. after Code Request (COR) for a missing flight plan).

(6) The iobd-field is only present if different from the eobd-field. The iobt-field is only present if different from the eobt-field. If present, the iobt-field shall be used for correlation.

2.2.3.5.1.4 Validation and Reply messages

(1) CCAMS-CS does normally not expect an ERR-reply message to a CAM but in special circumstances the ATS Unit should send an ERR-reply message to CCAMS-CS.

(2) The possible ERR reply messages that are specific to the CAM message are:

ERR Comment	Severity	Description
NO FLIGHT PLAN FOR RECEIVED CCAMS MESSAGE	WARNING	The ATS Unit had not received a flight plan from IFPS for this flight
RECEIVED CCAMS CODE IGNORED	WARNING	This could occur when the flight plan is already activated in the ATS system

(3) The possible general ERR reply messages are described in section 2.2.4.1 ERRor message – Originated by ATS

(4) When CCAMS-CS receives an ERR-reply to a CAM it will be logged. The logged messages will be very useful during Operational Evaluation and Post OPS analysis of the CCAMS-CS system.

2.2.3.5.1.5 Fields Description

2.2.3.5.1.5.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in section 2.2.3.8 General Fields Description or in the Doc Ref 1 (ADEXP standard).

2.2.3.5.1.5.2 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight.

(2) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(3) The eobd-field contains the eobd that ETFMS has stored for the flight. It is based upon the EOBD that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages), updated with modifications from e.g. the REA message.

2.2.3.5.1.5.3 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight.

(2) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(3) The eobt-field contains the last eobt that ETFMS has stored for the flight. It is based upon the EOBT that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages), updated with modifications from e.g. the REA message.

2.2.3.5.2 CCM – Code Cancellation Message

2.2.3.5.2.1 Purpose

(1) The purpose of the Code Cancellation Message (CCM) is to inform an ATS Unit that CCAMS-CS has cancelled a code for a flight.

(2) It means that CCAMS-CS has identified that the flight does not require an SSR code in the short term e.g. due a long delay or suspension.

2.2.3.5.2.2 Transmission events and Circumstances

(1) There are several events when CCAMS-CS decides to send a CCM.

(2) The most significant cases for which a CCM will be sent are:
   a) A flight for which a "long" delay (of e.g. 1 hour) is received does not need an SSR code for the time being. CCAMS-CS will send a CCM.
   b) CCAMS will send a CCM for a flight plan that has been identified as a ghost flight plan, I.e. a flight plan that has been suspended by Flight Activation Monitoring for a system parameter (e.g. 15 min) time.
   c) At reception of a CRE for a flight that was not airborne
   d) …

(3) CCAMS-CS will NOT send a CCM in the following cases:
   a) At reception of a flight plan CNL message from IFPS.
   The ATS Units will also receive the CNL message from IFPS and shall use it to remove the SSR code from the database.
   b) …

2.2.3.5.2.3 Message description

2.2.3.5.2.3.1 Syntax

(1) Syntax of CCM message is as follows:

CCM_MESSAGE := "-"+"TITLE CCM"+ (ifplid) +arcid + adep + ades + (eobt) + (eobd) + (iobt) + (iobd) + prevssrcode + sequencedata

Notes:
1. that the addr-field has been suppressed
2. the timestamp-field has been replaced by the sequencedata-field

2.2.3.5.2.3.2 Semantics

(1) The IFPLID shall not be present for flights for which CCAMS-CS has not received a flight plan from IFPS. This will only be the case for a CCM that has been sent for a flight for which CCAMS-CS could not find the corresponding flight plan at reception of a COR.

(2) The prevssrcode-field shall contain the previously assigned code of the flight.

(3) The sequencedata -field shall contain the date and time at which the message has been sent by CCAMS-CS together with a message sequence number. It can be used to determine the sequence of messages if necessary.

(4) The eobd- and eobt-fields will not be present if not known to CCAMS-CS (e.g. after Code Request (COR) for a missing flight plan).

(5) The iobd-field is only present if different from the eobd-field. The iobt-field is only present if different from the eobt-field. If present, the iobt-field shall be used for correlation.

2.2.3.5.2.4 Validation and Reply messages

(1) CCAMS-CS does normally not expect an ERR-reply message to a CCM but in special circumstances the ATS Unit should send an ERR-reply message to CCAMS-CS.

(2) The possible ERR reply messages that are specific to the CCM message are:

ERR Comment	Severity	Description
NO FLIGHT PLAN FOR RECEIVED CCAMS MESSAGE	WARNING	The ATS Unit had not received a flight plan from IFPS for this flight
CCM REJECTED FLIGHT ACTIVE	WARNING	The ATS Unit received a CCM while it required an SSR code, so it decided to assign a local code or ignore the CCM (and keep the CCAMS code).
NO CCAMS CODE ASSIGNED	WARNING	The ATS Unit received a CCM while it had a Local Code or no CCAMS Code assigned for this flight.

(3) The possible general ERR reply messages are described in section 2.2.4.1 ERRor message – Originated by ATS

(4) When CCAMS-CS receives an ERR-reply to a CCM it will be logged. The logged messages will be very useful during Operational Evaluation and Post OPS analysis of the CCAMS-CS system.

2.2.3.5.2.5 Fields Description

2.2.3.5.2.5.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in section 2.2.3.8 General Fields Description or in the Doc Ref 1 (ADEXP standard).

2.2.3.5.2.5.2 eobd

Purpose and syntax:

(1) The eobd-field indicates the Estimated Off-Block Date of the flight.

(2) The syntax of the eobd-field can be found in Doc Ref 1.

Semantics:

(3) The eobd-field contains the eobd that ETFMS has stored for the flight. It is based upon the EOBD that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages), updated with modifications from e.g. the REA message.

2.2.3.5.2.5.3 eobt

Purpose and syntax:

(1) The eobt-field indicates the Estimated Off-Block Time of the flight.

(2) The syntax of the eobt-field can be found in Doc Ref 1.

Semantics:

(3) The eobt-field contains the last eobt that ETFMS has stored for the flight. It is based upon the EOBT that has been distributed by IFPS (i.e. taking into account all FPL, CHG and DLA messages), updated with modifications from e.g. the REA message.

2.2.3.6 CCAMS ERR messages – Originated by ATS

(1) ATS Units may send ERR messages in reply to a received message or in case special information needs to be provided to the ATS system.

(2) The ERR as a reply to a message from CCAMS-CS:

(3) The possible general ERR reply messages are described in section 2.2.4.1 ERRor message – Originated by ATS.

(4) The possible ERR reply messages are described in each section that describes the sent message.

(5) The unsolicited ERR message:

(6) The ATS Unit will send an ERRor message “NO CAM RECEIVED AFTER COR TIME OUT” in case it had not received a CAM as a reply within the CCAMS_COR_Time_Out (e.g. 3) min to a COR.

(7) The ATS Unit shall address the unsollicited ERRor message to both CCAMS Units.

2.2.3.7 CCAMS ERR messages – Originated by NMOC

(1) CCAMS-CS may send ERR messages in reply to a received message or in case special information needs to be provided to the ATS system.

(2) The ERR as a reply to a message from ATS Units:

(3) The possible general ERR reply messages are described in section 2.2.4.2 ERRor message – originated by ETFMS and CCAMS-CS.

(4) The possible ERR reply message are described in each section that describes the received message.

(5) The unsolicited ERR message:

(6) CCAMS-CS will send an ERRor message “NO MORE SSR CODES AVAILABLE FOR THIS FLIGHT” in case it intended to send a CAM automatically and when it could not find a code for the flight concerned. The ERRor message will be equal to the ERRor message that is sent as a reply to a COR message for a flight for which no SSR code could be found.

(7) CCAMS-CS will address the unsollicited ERRor message to the same addresses as to which the CAM would have been sent.

2.2.3.8 General Fields Description

Note from the author: The following paragraphs are described in format “Heading 6” in order to prevent that they appear in the table of contents.

Notes:

1. the general fields errornr-field and warningnr-field have been suppressed.

2.2.3.8.1.1 Fields Description

2.2.3.8.1.1.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in the Doc Ref 1 (ADEXP standard).

2.2.3.8.1.1.2 adep

Purpose and syntax:

(1) The purpose of the adep-field is to provide the aerodrome of departure of the flight. This field will be used to match the incoming message to the flight plan.

(2) The syntax of the adep-field can be found in Doc Ref 1.

Semantics:

(3) The adep-field contains the aerodrome of departure of the flight.

2.2.3.8.1.1.3 ades

Purpose and syntax:

(1) The purpose of the ades-field is to provide the aerodrome of destination of the flight. This field will be used to match the incoming message to the flight plan.

(2) The syntax of the ades-field can be found in Doc Ref 1.

Semantics:

(3) The ades-field contains the aerodrome of destination of the flight.

2.2.3.8.1.1.4 arcid

Purpose and syntax:

(1) The arcid-field contains the aircraft id of the flight. This field will be used to match the incoming message to the flight plan.

(2) The syntax of the arcid-field can be found in Doc Ref 1.

Semantics:

(3) The arcid-field contains the aircraft id (callsign) from the flight plan.

2.2.3.8.1.1.5 ifplid

Purpose and syntax:

(1) The ifplid-field contains the IFPS Flight Plan Identification of the flight plan. This field will be used to match the incoming message to the flight plan.

(2) The syntax of the ifplid-field can be found in Doc Ref 1.

Semantics:

(3) The ifplid-field contains the IFPS Flight Plan Identification of the flight plan.

(4) The IFPLID is an Id that consists of 2 letters followed by 8 digits (example AA12345678). The IFPLID is issued by IFPS and it is recommended to be used by FDPSs for automatic matching of incoming flight data messages with already existing/available flight data.

(5) Note that the IFPLID is intended for system-to-system data exchange and that it is not desirable that operators enter this Id.

2.2.3.8.1.1.6 iobd-field & iobt-field

Purpose and syntax:

(1) The iobd-field & iobt-field contain the IFPS Off Block Date and Time. The IOBD/IOBT is the last off-block date/time that has been received from IFPS via FPL, DLA or CHG message.

(2) The syntax of these fields is described in Doc Ref 1.

Semantics:

(3) The iobd/iobt-fields are only included when there is a difference in value between the EOBD/EOBT and the IOBD/IOBT, which is the case when e.g. the EOBT is modified via e.g. a REA message.

2.2.3.8.1.1.7 orgmsg

Purpose and syntax:

(1) The purpose of the orgmsg-field is to inform the receiver of the message that contains the orgmsg-field with the type (title-field) of originator message that triggered the message that contains the orgmsg-field.

(2) The orgmsg-field is used for example in ERRor reply messages.

(3) The syntax of the orgmsg-field can be found in Doc Ref 1.

Semantics:

(4) The orgmsg-field always contains the type (title-field) of originator message that trigger the ERR message.

2.2.3.8.1.1.8 origin

Purpose and syntax:

(1) The purpose of the origin-field is to inform the CCAMS-CS that any reply to the received message must not be sent to the originator of the message but to the address that is specified in the org-field.

(2) The origin-field is used for example in COR or CRE messages.

(3) The syntax of the origin-field can be found in Doc Ref 1.

Semantics:

(4) The origin-field always contains the AFTN originator address and the type of address to which any possible reply shall be sent.

(5) Note that the CCAMS Central Server still accepts the orgn-field in place of the origin-field but that the CCAMS users are expected to migrate to the origin-field at a future software release.

2.2.3.8.1.1.9 prevssrcode

Purpose and syntax:

(1) The prevssrcode-field contains the SSR code that CCAMS-CS has previously assigned to the flight plan.

(2) The syntax of the prevssrcode-field can be found in Doc Ref 1.

Semantics:

(3) The prevssrcode-field always contains the SSR code that CCAMS-CS had previously assigned to the flight plan.

2.2.3.8.1.1.10 sequencedata

Purpose and syntax:

(1) The sequencedata-field contains information that can be used to verify and if necessary reconstitute the order in which CCAMS messages have been sent.

(2) The syntax of the sequencedata -field will be defined in Doc Ref 1 but is:

sequencedata :=”-“+ “SEQUENCEDATA” + txtime + num
txtime := ”-“+ “TXTIME” + datetime ! seconds
num := “-“ + “NUM” + 1{digit}4

Semantics:

(3) The sequencedata-field contains the timestamp of the transmitted message, i.e. the date/time at which CCAMS-CS has sent the message.

(4) The sequencedata-field contains a sequence number which is the n-th message that has been generated for this flight.

(5) The sequence at which the CCAMS-CS has transmitted messages can be retrieved by first comparing the timestamp-subfields. For messages that have been transmitted in the same second, the num-subfield must be used to determine the order.

(6) Note that both the timestamp- and num-subfields are needed for cases when switch-over is done between CCAMS-CS back-up unit and CCAMS-CS main-unit.

(7) Note that the syntax of the num-field is currently not fully consistent with the ADEXP standard. It is proposed to adapt the ADEXP standard such that it is backwards compatible with the current definition.

2.2.3.8.1.1.11 ssrcode

Purpose and syntax:

(1) The ssrcode-field contains the SSR code that currently is assigned to the flight.

(2) The syntax of the ssrcode-field can be found in Doc Ref 1.

Semantics:

(3) The ssrcode-field always contains the SSR code that has currently been assigned to the flight, either by CCAMS-CS (in e.g. a CAM) or by the ATS Unit (in e.g. a COR).

(4) Any old/previous codes will be stored in the prevssrcode-field.

2.2.4 ERRor messages

2.2.4.1 ERRor message – Originated by ATS

2.2.4.1.1 ERR messages

2.2.4.1.1.1 Purpose

(1) The purpose of the ERRor message is to inform NMOC that a received CCAMS-CS message could not be processed or that a warning needed to be raised.

(2) In this case, the ERR messages contains a reference to the received message as detailed as possible and it contains a short description of the reason for rejection.

(3) The ERR message could also be used to inform CCAMS-CS about any special ERRor or WARning event in the ATS system related to SSR Code Management, not directly related to the reception of an SSR Code Management message (currently not implemented).

(4) CCAMS-CS will log such a message in its log-file for Operational Evaluation purposes and off-line analysis.

2.2.4.1.1.2 Transmission events and circumstances

(1) An ERR may be sent in the following circumstances:
- In case of syntax error in the incoming message
- after validation of a CAM or CCM by an ATS Unit

(2) The ERR shall be sent to both CCAMS Units (Haren and Bretigny).

(3) The ERR will be sent via the AFTN or SITA.

2.2.4.1.1.3 Message description

2.2.4.1.1.3.1 Format

(1) The ERR message is in ADEXP format. There is no equivalent ICAO format specified for this message.

2.2.4.1.1.3.2 Syntax

(1) Syntax of ERR message is as follows:

ERR_MESSAGE := “-“+”TITLE ERR”+ (arcid) + (ifplid) + (adep) + (ades) + (eobd) + (eobt) + (orgmsg) + (filtim) + (reason) + 0 {comment} + (severity)

Notes:
1. the addr-field, the errornr-field and the timestamp-field have been suppressed

2.2.4.1.1.3.3 Semantics

(1) The ifplid-, arcid-, adep-, ades-, eobt-, and eobd-fields shall only be present if it was possible to parse these fields, i.e. if no syntax error was found before these fields were identified.

(2) In case of syntax error in the incoming message, the reason-field will contain SYNTAXERROR.

(3) In case of semantic error the parsed fields will be present in order to identify the message.

(4) The comment field will contain a free-text description of the error or information.

(5) The field orgmsg shall contain the title-field of the incoming message.

(6) The filtim-field shall contain timestamp-field of the received ETFMS/CCAMS message to which the ERR message is a reply. These fields will be used to identify the message from CCAMS-CS that caused the ERR reply message.

2.2.4.1.1.4 Fields description

2.2.4.1.1.4.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in the Doc Ref 1 (ADEXP standard).

2.2.4.1.1.4.2 comment

Purpose and syntax:

(1) The purpose of the comment-field is to provide the receiver of the message with the additional information about the reason of the transmission of the reply message.

(2) The syntax of the comment-field is defined in Doc Ref 1.

Semantics:

(3) The comment-field contains different values dependent on the type of error that has been detected.

Syntax error

(4) In case of syntax error, the comment field is free text and gives a description of the detected error by using line-number, column number and ADEXP field name (if recognised).

After validation of a message from CCAMS-CS

(5) In case of semantic errors which results in not-processing or partly processing of a message an ERR message will be sent. Comment-field will contain a self-explanatory text. Such text can be found with the description of each message.

2.2.4.1.1.4.3 filtim

Purpose and syntax:

(1) The purpose of the filtim-field is to inform the receiver of the message that contains the filtim-field with the filing-time of originator message that triggered the message that contains the orgmsg-field.

(2) The syntax of the filtim-field is defined in Doc Ref 1.

Semantics:

(3) The filtim-field always contains (AFTN) filing-time of originator message that triggered the ERR message.

2.2.4.1.1.4.4 reason

Purpose and syntax:

(1) The reason-field indicates, if possible, the reason of the detected problem.

(2) The syntax of the reason-field can be found in Doc Ref 1.

Semantics:

(3) The reason-field contains different values dependent on the type of error that has been detected.

(4) The following values are possible:

Value	Description
SYNTAXERROR	The incoming message does not have the correct message of field syntax.
OTHERERROR	No specific reason
VOID	No specific reason
UNKNOWN	No specific reason

Note that these values are currently under review in NMOC.

2.2.4.1.1.4.5 severity

Purpose and syntax:

(1) The severity-field indicates shows the significance of the ERR message.

(2) The syntax of the severity-field is defined in Doc Ref 1.

Semantics:

(3) The severity-field may contain one of the following values:
"ERROR" -- to show that the received message could not be processed at all
"WARNING" – to show that the message could at least be partly processed but some additional information needed to be provided.

2.2.4.2 ERRor message – originated by ETFMS and CCAMS-CS

2.2.4.2.1 ERR – ERRor message

2.2.4.2.1.1 Purpose

(1) The purpose of the ERRor message is to inform mainly the sender of a message to ETFMS or CCAMS-CS that the message could not be processed.

(2) In that case, the ERR messages contains a reference to the received message as detailed as possible and it contains a short description of the reason for rejection.

(3) The ERR message can also be used by CCAMS-CS to inform the ATS system of a special event (example: if no code could be found for a flight CCAMS-CS will send an ERR instead of a CAM).

2.2.4.2.1.2 Transmission events and circumstances

(1) An ERR will be sent in the following circumstances:
- In case of syntax error in the incoming message
- In case the message is received from an unknown AFTN/SITA address
- after the validation of a DPI message and semantic errors have been detected
- after the validation of a COR or CRE message
- instead of transmission of a CAM when no SSR Code could be found for a flight

(2) The ERR will be sent to the originator of the message in case it is sent as a reply to an incoming message. In other cases, it is sent to a list of addresses related to the flight.

(3) The ERR will be sent via the AFTN or SITA.

2.2.4.2.1.3 Message description

2.2.4.2.1.3.1 Format

(1) The ERR message is in ADEXP format. There is no equivalent ICAO format specified for this message.

2.2.4.2.1.3.2 Syntax

(1) Syntax of ERR message is as follows:

ERR_MESSAGE := “-“+”TITLE ERR”+ (arcid) + (ifplid) + (adep) + (ades) + (eobd) + (eobt) + (iobd) + (iobt) + (orgmsg) + (filtim) + (reason) + 0 {comment} + (taxitime) + (sequencedata) + (severity)

2.2.4.2.1.3.3 Semantics

(1) The arcid-, adep-, ades-, eobt-, and eobd-fields shall only be present if it was possible to parse these fields, i.e. if no syntax error was found before these fields were identified.

(2) The ERR message only contains an ifplid-field if it is for a flight for which a flight plan from IFPS has been received.

(3) In case of syntax error in the incoming message, the reason-field will contain SYNTAXERROR.

(4) In case of semantic error the parsed fields will be present in order to identify the message.

(5) The comment field will contain a description of the error or information.

(6) The field orgmsg shall contain the title-field of the incoming message.

(7) The filtim-field shall contain timestamp-field of the received ETFMS/CCAMS-CS message to which the ERR message is a reply. These fields can be used to identify the message to ETFMS/CCAMS-CS that caused the ERR reply message.

(8) The sequencedata-field will not be present if ERR is a reply to an incoming message which could not be associated to flight data in ETFMS/CCAMS-CS.

2.2.4.2.1.4 Fields description

2.2.4.2.1.4.1 Introduction

(1) Syntax and semantic definition of the constituent ADEXP fields is described in this section. All ADEXP fields referenced but not described explicitly below are as described in the Doc Ref 1 (ADEXP standard).

2.2.4.2.1.4.2 comment

Purpose and syntax:

(1) The purpose of the comment-field is to provide the receiver of the message with the additional information about the reason of the transmission of the reply message.

(2) The syntax of the comment-field can be found in Doc Ref 1. The maximum number of characters is set to 200.

Semantics:

(3) The comment-field contains different values dependent on the type of error that has been detected.

Syntax error

(4) In case of syntax error, the comment field gives a description of the detected error by using line-number, column number and ADEXP field name (if recognised).

Unknown AFTN/SITA address

(5) In case the message is received from an unknown AFTN/SITA address, the comment-field contains the text “NOT AUTHORISED TO SEND THIS MESSAGE”.
After validation of DPI message

(6) In case of semantic errors which results in not-processing or partly processing of a message an ERR message will be sent. Comment-field will contain a self-explanatory text. Such text can be found with the description of each message.

After validation of a message to CCAMS-CS

(7) In case of semantic errors which results in not-processing or partly processing of a message an ERR message will be sent. Comment-field will contain a self-explanatory text. Such text can be found with the description of each message.

2.2.4.2.1.4.3 filtim

Purpose and syntax:

(1) The purpose of the filtim-field is to inform the receiver of the message that contains the filtim-field with the filing-time of originator message that triggered the message that contains the orgmsg-field.

(2) The syntax of the filtim-field is defined in Doc Ref 1.

Semantics:

(3) The filtim-field always contains (AFTN) filing-time of originator message that triggered the ERR message.

2.2.4.2.1.4.4 reason

Purpose and syntax:

(1) The reason-field indicates, if possible, the reason of the detected problem.

(2) The syntax of the reason-field can be found in Doc Ref 1.

Semantics:

(3) The reason-field contains different values dependent on the type of error that has been detected.

(4) The following values are possible:

Value	Description
SYNTAXERROR	The incoming message does not have the correct message syntax or field syntax.
OTHERERROR	No specific reason
VOID	No specific reason
UNKNOWN	No specific reason

Note that these values are currently under review in NMOC.

2.2.4.2.1.4.5 sequencedata

Purpose and syntax:

(1) The sequencedata-field contains information that can be used to verify and if necessary reconsituate the order in which CCAMS messages have been sent.

(2) The syntax of the sequencedata -field will be defined in Doc Ref 1 but is:

sequencedata :=”-“+ “SEQUENCEDATA” + txtime + num
txtime := ”-“+ “TXTIME” + datetime ! seconds
num := “-“ + “NUM” + 1{digit}4

Semantics:

(3) The sequencedata-field contains the timestamp of the transmitted message, i.e. the date/time at which CCAMS-CS has sent the message.

(4) The sequencedata-field contains a sequence number which is the n-th message that has been generated for this flight.

(5) The sequence at which the CCAMS-CS has transmitted messages can be retrieved by first comparing the timestamp-subfields. For messages that have been transmitted in the same second, the num-subfield must be used to determine the order.

(6) Both the timestamp- and num-subfields are needed for cases when switch-over is done between CCAMS-CS back-up unit and CCAMS-CS main-unit.

2.2.4.2.1.4.6 severity

Purpose and syntax:

(1) The severity-field indicates the significance of the ERR message.

(2) The syntax of the severity-field is defined in Doc Ref 1.

Semantics:

(3) The severity-field may contain one of the following values:
"ERROR" -- to show that the received message could not be processed at all
"WARNING" – to show that the message could at least be partly processed but some additional information needed to be provided.

2.3 EXAMPLES

2.3.1 Messages to/from IFPS

2.3.1.1 IFPS Inputs

2.3.1.1.1 AFP – ATC Flight Plan Proposal message

The following sections contain examples of AFP messages.

2.3.1.1.1.1 AFP for a missing flight plan

ICAO format:

(AFP-ABC123-IN
-B732/M-SRWY /C
-EHAM
-XAMAN/1210F280
-N0430F280 XAMAN UL980 LAM UL179 CPT UL9 SLANY
-EINN)

ADEXP format

-TITLE IAFP
-ARCID ABC123
-ARCTYP B732
-CEQPT SRWY
-SEQPT C
-ADEP EHAM
-ESTDATA -PTID XAMAN -ETO 051028121000 -FL F280
-ROUTE N0430F280 XAMAN UL980 LAM UL179 CPT UL9 SLANY
-ADES EINN

2.3.1.1.1.2 AFP for change of route

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-ADEP LPPR
-ESTDATA -PTID ADORO -ETO 060110064000 -FL F340
-ROUTE N0422F340 ADORO UL155 ZMR UN873 DELOG
-ADES LFPG

2.3.1.1.1.3 AFP for a diversion

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-ADEP LPPR
-ESTDATA -PTID RELVA -ETO 060110064000 -FL F100
-ROUTE N0422F280 RELVA UP600 TURON
-ADES LECO
-ADESOLD LFPG

2.3.1.1.1.4 AFP for a change of requested cruising level

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-ADEP LPPR
-ESTDATA -PTID TURON -ETO 060110064000 -FL F210
-ROUTE N0422F320 TURON UP600 STG UN741 LOTEE
-ADES LFPG

2.3.1.1.1.5 AFP for a change of aircraft type

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-ARCTYP B733
-ADEP LPPR
-ESTDATA -PTID TURON -ETO 060110064000 -FL F210
-ADES LFPG

2.3.1.1.1.6 AFP for a change of flight rules (IFR/VFR)

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-ADEP LPPR
-ESTDATA -PTID TURON -ETO 060110064000 -FL F210
-ROUTE N0422F340 TURON IFR UP600 STG UN741 LOTEE
-ADES LFPG

2.3.1.1.1.7 AFP for a change of flight type (OAT/GAT)

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-ADEP LPPR
-ESTDATA -PTID TURON -ETO 060110064000 -FL F340
-ROUTE N0422F340 TURON GAT UP600 STG UN741 LOTEE
-ADES LFPG

2.3.1.1.1.8 AFP for a change of aircraft equipment

Original FPL

(FPL-ABC123-IN
-F100/M-SRWY/C
-LPPR0600
-N0422F340 TURON UP600 STG UN741 KEPER
-LFPG0155
-DOF/060110)

AFP in ADEXP format

-TITLE IAFP
-ARCID ABC123
-BEGIN EQCST
-EQPT W/NO
-SUREQPT S/EQ/S
-SUREQPT ADSC/NO
-END EQCST
-ADEP LPPR
-ESTDATA -PTID TURON -ETO 060110064000 -FL F210
-ADES LFPG
-PBN B1

2.3.1.2 IFPS Output

2.3.1.2.1 APL – ATC flight plan message

ICAO format:

(APL-ABC123/A4441-IS
-B763/H-S/C
-SLVR0411
-EDUMO/1217F350
-N0420F350 EDUMO DCT APASO UN871 GDV UN858 OXACA UW990 HIJ UN10 BOGAS
-LEMD1144
-DOF/060110 IFP/833UNKNOWN RVSMUNKNOWN SRC/AFP ORGN/GCCCYFPX)

APL for a diverted flight:

(APL-ABC123/A4441-IS
-B763/H-SRWY/C
-SLVR0411
-EDUMO/1217F350
-N0420F350 EDUMO DCT APASO UN871 GDV UN858 OXACA UW990 UN10 BOGAS
-LEMD1144
-DOF/060110 SRC/DIV LPPR ORGN/GCCCYFPX)

ADEXP format:

-TITLE IAPL
-BEGIN ADDR
    -FAC LEMDZPZX
    -FAC CFMUTACT
    -FAC GCCCYFPX
    -FAC LESCYFPX

```
    -FAC LPAMYWYA
    -FAC LPPCZQZX
    -FAC LPAMYCYX
    -FAC GCCCYXYX
    -FAC GMMMZQZX
-END ADDR
-ADEP SLVR
-ADES LEMD
-ARCID ABC123
-ARCTYP B763
-CEQPT WY
-EOBD 060110
-EOBT 0411
-FILTIM 101304
-IFPLID AA53255069
-ORGNID TCPVGCCC
-ORIGIN -NETWORKTYPE AFTN -FAC GCCCYFPX
-SEQPT C
-SSRCODE A4441
-WKTRC H
-IFP 833UNKNOWN RVSMVIOLATION
-SRC AFP
-TTLEET 1144
-RFL F350
-SPEED N0420
-FLTRUL I
-FLTTYP S
-ROUTE N0420F350 EDUMO DCT APASO UN871 GDV UN858 VASTO UN858 OXACA UW990 HIJ UN10 BOGAS
-ESTDATA -PTID EDUMO -ETO 060110121700 -FL F380
-GEO -GEOID GEO01 -LATTD 170508N -LONGTD 0300000W
-BEGIN RTEPTS
    -PT -PTID SLVR -FL F000 -ETO 060110041150
    -PT -PTID GEO01 -FL F350 -ETO 060110110525
    -PT -PTID EDUMO -FL F350 -ETO 060110121700
    -PT -PTID APASO -FL F350 -ETO 060110125345
    -PT -PTID VIDRI -FL F350 -ETO 060110131845
    -PT -PTID GDV -FL F350 -ETO 060110133435
    -PT -PTID VASTO -FL F350 -ETO 060110135935
    -PT -PTID SULAM -FL F350 -ETO 060110140350
    -PT -PTID DIMSA -FL F350 -ETO 060110141450
    -PT -PTID ATLUX -FL F350 -ETO 060110142535
    -PT -PTID SUNID -FL F350 -ETO 060110144240
    -PT -PTID AKUDA -FL F350 -ETO 060110145655
    -PT -PTID PESAS -FL F350 -ETO 060110151110
    -PT -PTID LEPES -FL F350 -ETO 060110151250
    -PT -PTID OXACA -FL F350 -ETO 060110152325
    -PT -PTID HIJ -FL F350 -ETO 060110153110
    -PT -PTID CRISA -FL F290 -ETO 060110153630
    -PT -PTID BOGAS -FL F200 -ETO 060110154425
    -PT -PTID LEMD -FL F000 -ETO 060110161030
-END RTEPTS
-DCT EDUMO APASO
-ATSRT UN871 APASO GDV
-ATSRT UN858 GDV VASTO
-ATSRT UN858 VASTO OXACA
-ATSRT UW990 OXACA HIJ
-ATSRT UN10 HIJ BOGAS
```

APL for a diverted flight:

```
-TITLE IAPL
-BEGIN ADDR
    -FAC LEMDZPZX
```

-FAC CFMUTACT
-FAC GCCCYFPX
-FAC LESCYFPX
-FAC LPAMYWYA
-FAC LPPCZQZX
-FAC LPAMYCYX
-FAC GCCCYXYX
-FAC GMMMZQZX
-END ADDR
-ADEP SLVR
-ADES LEMD
-ADESOLD LPPR
-ARCID ABC123
-ARCTYP B763
-CEQPT WY
-EOBD 060110
-EOBT 0411
-FILTIM 101304
-IFPLID AA53255069
-ORGNID TCPVGCCC
-ORIGIN -NETWORKTYPE AFTN -FAC GCCCYFPX
-SEQPT C
-SSRCODE A4441
-WKTRC H
-IFP 833UNKNOWN RVSMVIOLATION
-SRC DIV LPPR
-TTLEET 1144
-RFL F350
-SPEED N0420
-FLTRUL I
-FLTTYP S
-ROUTE N0420F350 EDUMO DCT APASO UN871 GDV UN858 VASTO UN858 OXACA UW990 HIJ UN10 BOGAS
-ESTDATA -PTID EDUMO -ETO 060110121700 -FL F380
-GEO -GEOID GEO01 -LATTD 170508N -LONGTD 0300000W
-BEGIN RTEPTS
-PT -PTID SLVR -FL F000 -ETO 060110041150
-PT -PTID GEO01 -FL F350 -ETO 060110110525
-PT -PTID EDUMO -FL F350 -ETO 060110121700
-PT -PTID APASO -FL F350 -ETO 060110125345
-PT -PTID VIDRI -FL F350 -ETO 060110131845
-PT -PTID GDV -FL F350 -ETO 060110133435
-PT -PTID VASTO -FL F350 -ETO 060110135935
-PT -PTID SULAM -FL F350 -ETO 060110140350
-PT -PTID DIMSA -FL F350 -ETO 060110141450
-PT -PTID ATLUX -FL F350 -ETO 060110142535
-PT -PTID SUNID -FL F350 -ETO 060110144240
-PT -PTID AKUDA -FL F350 -ETO 060110145655
-PT -PTID PESAS -FL F350 -ETO 060110151110
-PT -PTID LEPES -FL F350 -ETO 060110151250
-PT -PTID OXACA -FL F350 -ETO 060110152325
-PT -PTID HIJ -FL F350 -ETO 060110153110
-PT -PTID CRISA -FL F290 -ETO 060110153630
-PT -PTID BOGAS -FL F200 -ETO 060110154425
-PT -PTID LEMD -FL F000 -ETO 060110161030
-END RTEPTS
-DCT EDUMO APASO
-ATSRT UN871 APASO GDV
-ATSRT UN858 GDV VASTO
-ATSRT UN858 VASTO OXACA
-ATSRT UW990 OXACA HIJ
-ATSRT UN10 HIJ BOGAS

2.3.1.2.2 ACH – ATC flight plan change message

ICAO format

(ACH-ABC123/A4441-SLVR0411-LEMD-14/EDUMO/1217F380-15/N0420F350 EDUMO DCT APASO UN871 GDV UN858 VASTO UN858 OXACA UW990 HIJ UN10 BOGAS-18/DOF/060110 SRC/AFP ORGN/GCCCYFPX)

ACH resulting from a diversion AFP:

(ACH-ABC123/A4441-SLVR0411-LPPR-14/EDUMO/1217F380-15/N0420F350 EDUMO DCT APASO UN871 GDV UN858 VASTO UN858 OXACA UW990 HIJ UN10 BOGAS - 16/LEMD -18/DOF/060110 SRC/DIV LPPR ORGN/GCCCYFPX)

ADEXP format

-TITLE IACH
-BEGIN ADDR
    -FAC LEMDZPZX
    -FAC CFMUTACT
    -FAC GCCCYFPX
    -FAC LESCYFPX
    -FAC LPAMYWYA
    -FAC LPPCZQZX
    -FAC LPAMYCYX
    -FAC GCCCYXYX
    -FAC GMMMZQZX
-END ADDR
-ADEP SLVR
-ADES LEMD
-ARCID ABC123
-ARCTYP B763
-CEQPT SRWY
-EOBD 060110
-EOBT 0411
-FILTIM 101304
-IFPLID AA53255069
-ORGNID TCPVGCCC
-ORIGIN -NETWORKTYPE AFTN -FAC GCCCYFPX
-SEQPT C
-SSRCODE A4441
-WKTRC H
-IFP 833UNKNOWN RVSMVIOLATION
-SRC AFP
-TTLEET 1144
-RFL F350
-SPEED N0420
-FLTRUL I
-FLTTYP S
-ROUTE N0420F350 EDUMO DCT APASO UN871 GDV UN858 VASTO UN858 OXACA UW990 HIJ UN10 BOGAS
-ESTDATA -PTID EDUMO -ETO 060110121700 -FL F380
-GEO -GEOID GEO01 -LATTD 170508N -LONGTD 0300000W
-BEGIN RTEPTS
    -PT -PTID SLVR -FL F000 -ETO 060110041150
    -PT -PTID GEO01 -FL F350 -ETO 060110110525
    -PT -PTID EDUMO -FL F350 -ETO 060110121700
    -PT -PTID APASO -FL F350 -ETO 060110125345
    -PT -PTID VIDRI -FL F350 -ETO 060110131845
    -PT -PTID GDV -FL F350 -ETO 060110133435
    -PT -PTID VASTO -FL F350 -ETO 060110135935
    -PT -PTID SULAM -FL F350 -ETO 060110140350
    -PT -PTID DIMSA -FL F350 -ETO 060110141450
    -PT -PTID ATLUX -FL F350 -ETO 060110142535
    -PT -PTID SUNID -FL F350 -ETO 060110144240
    -PT -PTID AKUDA -FL F350 -ETO 060110145655

```
    -PT -PTID PESAS -FL F350 -ETO 060110151110
    -PT -PTID LEPES -FL F350 -ETO 060110151250
    -PT -PTID OXACA -FL F350 -ETO 060110152325
    -PT -PTID HIJ -FL F350 -ETO 060110153110
    -PT -PTID CRISA -FL F290 -ETO 060110153630
    -PT -PTID BOGAS -FL F200 -ETO 060110154425
    -PT -PTID LEMD -FL F000 -ETO 060110161030
-END RTEPTS
-DCT EDUMO APASO
-ATSRT UN871 APASO GDV
-ATSRT UN858 GDV VASTO
-ATSRT UN858 VASTO OXACA
-ATSRT UW990 OXACA HIJ
-ATSRT UN10 HIJ BOGAS
```

ACH resulting from a diversion AFP:

```
-TITLE IACH
-BEGIN ADDR
    -FAC LEMDZPZX
    -FAC CFMUTACT
    -FAC GCCCYFPX
    -FAC LESCYFPX
    -FAC LPAMYWYA
    -FAC LPPCZQZX
    -FAC LPAMYCYX
    -FAC GCCCYXYX
    -FAC GMMMZQZX
-END ADDR
-ADEP SLVR
-ADES LEMD
-ADESOLD LPPR
-ARCID ABC123
-ARCTYP B763
-CEQPT SRWY
-EOBD 060110
-EOBT 0411
-FILTIM 101304
-IFPLID AA53255069
-ORGNID TCPVGCCC
-ORIGIN -NETWORKTYPE AFTN -FAC GCCCYFPX
-SEQPT C
-SSRCODE A4441
-WKTRC H
-IFP 833UNKNOWN RVSMVIOLATION
-SRC DIV LPPR
-TTLEET 1144
-RFL F350
-SPEED N0420
-FLTRUL I
-FLTTYP S
-ROUTE N0420F350 EDUMO DCT APASO UN871 GDV UN858 VASTO UN858 OXACA UW990 HIJ UN10 BOGAS
-ESTDATA -PTID EDUMO -ETO 060110121700 -FL F380
-GEO -GEOID GEO01 -LATTD 170508N -LONGTD 0300000W
-BEGIN RTEPTS
    -PT -PTID SLVR -FL F000 -ETO 060110041150
    -PT -PTID GEO01 -FL F350 -ETO 060110110525
    -PT -PTID EDUMO -FL F350 -ETO 060110121700
    -PT -PTID APASO -FL F350 -ETO 060110125345
    -PT -PTID VIDRI -FL F350 -ETO 060110131845
    -PT -PTID GDV -FL F350 -ETO 060110133435
    -PT -PTID VASTO -FL F350 -ETO 060110135935
    -PT -PTID SULAM -FL F350 -ETO 060110140350
```

-PT -PTID DIMSA -FL F350 -ETO 060110141450
-PT -PTID ATLUX -FL F350 -ETO 060110142535
-PT -PTID SUNID -FL F350 -ETO 060110144240
-PT -PTID AKUDA -FL F350 -ETO 060110145655
-PT -PTID PESAS -FL F350 -ETO 060110151110
-PT -PTID LEPES -FL F350 -ETO 060110151250
-PT -PTID OXACA -FL F350 -ETO 060110152325
-PT -PTID HIJ -FL F350 -ETO 060110153110
-PT -PTID CRISA -FL F290 -ETO 060110153630
-PT -PTID BOGAS -FL F200 -ETO 060110154425
-PT -PTID LEMD -FL F000 -ETO 060110161030
-END RTEPTS
-DCT EDUMO APASO
-ATSRT UN871 APASO GDV
-ATSRT UN858 GDV VASTO
-ATSRT UN858 VASTO OXACA
-ATSRT UW990 OXACA HIJ
-ATSRT UN10 HIJ BOGAS

2.3.2 ATFM Messages

2.3.2.1 ATFM Flight Progress messages – Originated by AO/ATS

2.3.2.1.1 APR – Aircraft (operator) Position Report

1. APR giving a report for a Lat/Long:

- TITLE APR
- ARCID BAW12
- ADEP WSSS
- EOBT 1546
- EOBD 000316
- POSITION
- PTID GEO01
- TO 0215
- FL F350
- ADES EGLL
- GEO
- GEOID GEO01
- LATTD 544129N
- LONGTD 0254412E

2. APR giving an ETA at the aerodrome of destination:

- TITLE APR
- ARCID AFR135
- ADEP VABB
- EOBT 2110
- EOBD 000316
- POSITION
- ADID LFPG
- TO 0656
- ADES LFPG

2.3.2.1.2 DPI – Departure Planning Information

1. E-DPI with TTOT:

- TITLE DPI
- DPISTATUS EARLY
- ARCID DLH4564
- ADEP EDDM
- ADES EGLL
- EOBT 1155
- EOBD 000112
- TAXITIME 0035
- TTOT 1219
- SOBT 1155
- SID xxx1A

2. E-DPI without TTOT:

- TITLE DPI
- DPISTATUS EARLY
- ARCID DLH4564
- ADEP EDDM
- ADES EGLL
- EOBT 1155
- EOBD 000112
- TAXITIME 0013
- SID xxx1A

3. A-DPI with TTOT and updated taxitime and 24bit ICAO address:

- TITLE DPI
- DPISTATUS ATC
- ARCID CSDNJ
- ADEP EHRD
- ADES LFPB
- EOBT 1300
- EOBD 000112
- TTOT 1308
- TAXITIME 0012
- SID REFSO2C
- ARCTYP H25B
- REG OOADA
- IFPLID AA12295633

4. C-DPI:

- TITLE DPI
- DPISTATUS CNL
- ARCID AF762SD
- ADEP LFPG
- ADES LFST
- EOBT 1310
- EOBD 991223
- IFPLID BB76297483

2.3.2.1.3 FSA – First System Activation

1. FSA for Take-Off:

- TITLE FSA
- ARCID MAH9554
- ARCTYP B733
- ADEP LHBP
- EOBT 1050
- EOBD 991007
- POSITION -ADID LHBP -TO 1110
- FURTHRTE BAKOL LALAT
- ADES LFPG

- TITLE FSA
- ARCID MAH123
- ARCTYP B757
- ADEP LHBP
- EOBT 1030
- EOBD 991007
- POSITION -ADID LHBP -TO 1100
- ADES LFPG

2. FSA at airspace entry (not a departure) and using IFPLID:

- TITLE FSA
- IFPLID BB76297483
- ARCID THY1905
- ARCTYP B738
- ADEP LTAC
- EOBT 0600
- EOBD 991007
- POSITION -PTID BABIT -TO 0812 -FL F350
- FURTHRTE BABIT DIMLO GRZ ERKI KOGOL KPT
- ADES LSZH

- TITLE FSA
- IFPLID AA05072741
- ARCID KLM123
- ARCTYP B757
- ADEP EBBR
- EOBT 1340
- EOBD 991007
- POSITION - PTID NICKY - TO 1355 - FL F220
- ADES EHAM

3. FSA with lat/long point:

- TITLE FSA
- IFPLID AA76297483
- ARCID FIN821F
- ARCTYP MD80
- ADEP EFHK
- EOBT 0605 - EOBD 991225
- POSITION -PTID GEO01 -TO 0736 FL F310
- FURTHRTE DETNI ARGAD TRT MAG FUL
- GEO

- GEOID GEO01
- LATTD 545500N
- LONGTD 0142039E

- ADES EDDF

- TITLE FSA
- IFPLID AA76297483
- ARCID FIN821F
- ARCTYP MD80
- ADEP EFHK
- EOBT 0605 - EOBD 991225
- POSITION -PTID GEO01 -TO 0736 FL F310
- FURTHRTE DETNI ARGAD TRT MAG FUL GEO02
- GEO - GEOID GEO01 - LATTD 545500N - LONGTD 0142039E
- GEO - GEOID GEO02 - LATTD 545510N - LONGTD 0142139E
- ADES EDDF

4. FSA with bearing/distance point:

- TITLE FSA
- IFPLID AA76297483
- ARCID FIN821F
- ARCTYP MD80
- ADEP EFHK
- EOBT 0605 - EOBD 991225
- POSITION -PTID REF01 -TO 0736 FL F310
- FURTHRTE DETNI ARGAD TRT MAG FUL
- REF
  - REFID REF01
  - PTID BAKOL
  - BRNG 123
  - DISTNC 020
- ADES EDDF

5. FSA with SID:

- TITLE FSA
- IFPLID AA19600528
- ARCID TRA165
- ARCTYP B733
- ADEP EHAM
- EOBT 0810
- EOBD 000528
- POSITION -ADID EHAM -TO 0825
- FURTHRTE LEKKO INKET GEO01 INKET WILMA THN NW
- GEO
  - GEOID GEO01
  - LATTD 514853N
  - LONGTD 0044619E
- SID LEKKO50
- ADES EHBK

6. FSA for holding:

- TITLE FSA
- IFPLID BB76297483
- ARCID THY1905
- ARCTYP B738
- ADEP LTAC
- EOBT 0600
- EOBD 991007

- POSITION -PTID BABIT -TO 0812 -FL F350
- FURTHRTE BABIT DIMLO GRZ ERKIR KOGOL KPT
- STAY
    - STAYIDENT STAY1
    - TIME 0025
    - PTID DIMLO
    - PTID GRZ
- ADES LSZH

- TITLE FSA
- IFPLID AA05072741
- ARCID KLM123
- ARCTYP B757
- ADEP EBBR
- EOBT 1340
- EOBD 991007
- POSITION - PTID NICKY - TO 1355 - FL F220
- STAY
    - STAYIDENT STAY1
    - TIME 0025
    - PTID NICKY
    - PTID NICKY
- ADES EHAM

- TITLE FSA
- IFPLID AA05072741
- ARCID KLM123
- ARCTYP B757
- ADEP EBBR
- EOBT 1340
- EOBD 991007
- POSITION - PTID NICKY - TO 1355 - FL F220
- STAY
    - STAYIDENT STAY1
    - TIME 0100
    - PTID NICKY
    - ADID EHAM
- ADES EHAM

-TITLE FSA
-ARCID POKER91
-ARCTYP F18
-ADEP LETO
-EOBT 0830
-EOBD 041127
-POSITION -PTID VJZ -TO 0910
-STAY
    -STAYIDENT -STAY1
    -TIME 0010
    -PTID VJZ
    -PTID VJZ
-ADES LETO
-FURTHRTE VJZ BAN REN01
-RENAME
    -RENID REN01
    -PTID VJZ

2.3.2.1.4 CPR – Correlated Position Report

It is not possible to provide examples of a CPR in ASTERIX CAT062 format because it is a message in binary format.

2.3.2.2 ATFM Flight Progress messages – Originated by NMOC

2.3.2.2.1 EFD – ETFMS Flight Data message

1. An EFD transmitted at the reception of an FPL message from IFPS:

This is also an example of a flight that changes frlihg rules from GAT to OAT to GAT.

```
-TITLE EFD
-TIMESTAMP 071122183001
-EVENT IFP
-EVENTCLASS MSG
-FLTSTATE FI
-IFPLID AA00495346
-ARCID RCH945
-EOBD 071123
-EOBT 0120
-EDA 071123
-ETA 0721
-ADEP ETAR
-ADES CYQX
-MODELTYP EST
-ARCTYP C17
-IRULES IFR GAT IFPSTART
-GEO -GEOID GEO01 -LATTD 505016N -LONGTD 0033544E
-GEO -GEOID GEO02 -LATTD 504511N -LONGTD 0002949E
-GEO -GEOID GEO03 -LATTD 503507N -LONGTD 0023605W
-GEO -GEOID GEO04 -LATTD 500137N -LONGTD 0173000W
-GEO -GEOID GEO05 -LATTD 500000N -LONGTD 0200000W
-GEO -GEOID GEO06 -LATTD 493155N -LONGTD 0223000W
-GEO -GEOID GEO07 -LATTD 490000N -LONGTD 0250000W
-GEO -GEOID GEO08 -LATTD 490137N -LONGTD 0273000W
-GEO -GEOID GEO09 -LATTD 490000N -LONGTD 0300000W
-GEO -GEOID GEO10 -LATTD 490137N -LONGTD 0323000W
-GEO -GEOID GEO11 -LATTD 490000N -LONGTD 0350000W
-GEO -GEOID GEO12 -LATTD 490137N -LONGTD 0373000W
-GEO -GEOID GEO13 -LATTD 490000N -LONGTD 0400000W
-GEO -GEOID GEO14 -LATTD 490137N -LONGTD 0423000W
-GEO -GEOID GEO15 -LATTD 490000N -LONGTD 0450000W
-GEO -GEOID GEO16 -LATTD 490137N -LONGTD 0473000W
-GEO -GEOID GEO17 -LATTD 490000N -LONGTD 0500000W
-BEGIN RTEPTS
 -AD  -ADID ETAR           -ETO 071123012500 -PTRTE MAPIG1N
 -PT  -PTID RMS    -FL F036 -ETO 071123012620
 -VEC -RELDIST 52 -FL F100 -ETO 071123012920
 -PT  -PTID MAPIG -FL F155 -ETO 071123013140
 -PT  -PTID TOLEY -FL F176 -ETO 071123013230
 -PT  -PTID IDARO -FL F240 -ETO 071123013510 -PTRTE Q760
 -VEC -RELDIST 13 -FL F250 -ETO 071123013540
 -PT  -PTID RUDOT -FL F290 -ETO 071123013730
 -VEC -RELDIST 64 -FL F300 -ETO 071123013800
 -PT  -PTID DEPAX -FL F302 -ETO 071123013815
 -PT  -PTID ULMEN -FL F310 -ETO 071123013915
 -PT  -PTID POBIX -FL F316 -ETO 071123014005
 -VEC -RELDIST 82 -FL F340 -ETO 071123014310
 -PT  -PTID NOR   -FL F340 -ETO 071123014355 -PTRTE DCT  -PTRULCHG IFR OAT IFPSTART
 -PT  -PTID GEO01 -FL F340 -ETO 071123020040
 -PT  -PTID GEO02 -FL F340 -ETO 071123021725
 -PT  -PTID GEO03 -FL F340 -ETO 071123023415
 -PT  -PTID GITUS -FL F340 -ETO 071123025115 -PTRTE UN20  -PTRULCHG IFR GAT IFPSTART
```

```
  -PT  -PTID RIGDI -FL F340 -ETO 071123025300
  -PT  -PTID GAPLI -FL F340 -ETO 071123030410 -PTRTE UL739
  -PT  -PTID KENUK -FL F340 -ETO 071123032610
  -PT  -PTID SOMAX -FL F340 -ETO 071123034240 -PTRTE DCT
  -PT  -PTID GEO04 -FL F340 -ETO 071123035540
  -PT  -PTID GEO05 -FL F340 -ETO 071123040840
  -PT  -PTID GEO06 -FL F340 -ETO 071123042220
  -PT  -PTID GEO07 -FL F340 -ETO 071123043610
  -PT  -PTID GEO08 -FL F340 -ETO 071123044925
  -PT  -PTID GEO09 -FL F340 -ETO 071123050245
  -PT  -PTID GEO10 -FL F340 -ETO 071123051600
  -PT  -PTID GEO11 -FL F340 -ETO 071123052915
  -PT  -PTID GEO12 -FL F340 -ETO 071123054230
  -PT  -PTID GEO13 -FL F340 -ETO 071123055545
  -PT  -PTID GEO14 -FL F340 -ETO 071123060905
  -PT  -PTID GEO15 -FL F340 -ETO 071123062220
  -PT  -PTID GEO16 -FL F340 -ETO 071123063540
  -PT  -PTID GEO17 -FL F340 -ETO 071123064855
  -PT  -PTID LOGSU -FL F340 -ETO 071123065430
  -VEC -RELDIST 32 -FL F340 -ETO 071123070040
  -VEC -RELDIST 41 -FL F300 -ETO 071123070220
  -VEC -RELDIST 51 -FL F250 -ETO 071123070425
  -VEC -RELDIST 83 -FL F100 -ETO 071123071445
  -VEC -RELDIST 90 -FL F060 -ETO 071123071730
  -PT  -PTID YQX   -FL F010 -ETO 071123072100
  -AD  -ADID CYQX           -ETO 071123072140
 -END RTEPTS
 -BEGIN ASPLIST
  -ASP -AIRSPDES EDDDALL2 -ETI 071123012500 -XTI 071123014115
  -ASP -AIRSPDES EDGGALL -ETI 071123012500 -XTI 071123013525
  -ASP -AIRSPDES EDGGFALL -ETI 071123012500 -XTI 071123013525
  -ASP -AIRSPDES EDGGPFA -ETI 071123012500 -XTI 071123013435
  -ASP -AIRSPDES EDUUALL -ETI 071123013525 -XTI 071123014115
  -ASP -AIRSPDES EDUUNTMB -ETI 071123013525 -XTI 071123014110
  -ASP -AIRSPDES EDDDALL1 -ETI 071123014115 -XTI 071123014355
  -ASP -AIRSPDES EDYYBD -ETI 071123014115 -XTI 071123014355
  -ASP -AIRSPDES EDYYLNL -ETI 071123014115 -XTI 071123014230
  -ASP -AIRSPDES EDYYUAC -ETI 071123014115 -XTI 071123014355
  -ASP -AIRSPDES EDYYLNH -ETI 071123014230 -XTI 071123014355
  -ASP -AIRSPDES EGTT09LND -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGTT180 -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGPXFIR1 -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGWWYYYY -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGTTWES -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGTTEI -ETI 071123025115 -XTI 071123034240
  -ASP -AIRSPDES EGTTACC -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGTT370 -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGTT240 -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EGTT1ACC -ETI 071123025115 -XTI 071123030410
  -ASP -AIRSPDES EISNGAPS -ETI 071123030410 -XTI 071123032040
  -ASP -AIRSPDES EISNSOM -ETI 071123032040 -XTI 071123034240
  -ASP -AIRSPDES EGGXALL -ETI 071123034240 -XTI 071123050245
  -ASP -AIRSPDES EISNNAT -ETI 071123034240 -XTI 071123034255
 -END ASPLIST
 -RDYSTATE IN
 -TAXITIME 0005
 -AOOPR DOD
 -AOARCID RCH
 -FLTTYP M
```

2. An EFD transmitted at the change of a regulation:

This is also an example of a case where AOOPR and AOARCID are different.

```
-TITLE EFD
-TIMESTAMP 071123040806
-EVENT CNC
-EVENTCLASS REG
-FLTSTATE FS
-IFPLID AA00493775
-ARCID DLH9VV
-EOBD 071123
-EOBT 0605
-EDA 071123
-ETA 0715
-ADEP EBBR
-ADES EDDM
-MODELTYP EST
-ARCTYP CRJ9
-IRULES IFR GAT IFPSTART
-BEGIN RTEPTS
 -AD  -ADID EBBR           -ETO 071123062000 -PTRTE SOPOK3C
 -PT  -PTID HUL   -FL F069 -ETO 071123062255
 -VEC -RELDIST 94 -FL F195 -ETO 071123062655
 -PT  -PTID BULUX -FL F202 -ETO 071123062710
 -VEC -RELDIST 77 -FL F300 -ETO 071123063020
 -PT  -PTID SOPOK -FL F320 -ETO 071123063115 -PTRTE UY863
 -VEC -RELDIST 60 -FL F350 -ETO 071123063240
 -PT  -PTID ETENO -FL F350 -ETO 071123063330 -PTRTE Y863
 -PT  -PTID LIRSU -FL F350 -ETO 071123063450
 -PT  -PTID VIBOM -FL F350 -ETO 071123063825
 -PT  -PTID TUMUL -FL F350 -ETO 071123063915
 -PT  -PTID UBIDU -FL F350 -ETO 071123064205
 -PT  -PTID RUDUS -FL F350 -ETO 071123064300 -PTRTE UL984
 -PT  -PTID FFM   -FL F350 -ETO 071123064550
 -PT  -PTID BOMBI -FL F350 -ETO 071123064635 -PTRTE T104
 -PT  -PTID HAREM -FL F350 -ETO 071123065110
 -VEC -RELDIST 57 -FL F350 -ETO 071123065425
 -VEC -RELDIST 84 -FL F300 -ETO 071123065605
 -PT  -PTID DKB   -FL F270 -ETO 071123065705
 -VEC -RELDIST 70 -FL F270 -ETO 071123065950
 -PT  -PTID XERUM -FL F233 -ETO 071123070105
 -VEC -RELDIST 89 -FL F195 -ETO 071123070220
 -PT  -PTID BURAM -FL F189 -ETO 071123070230 -PTRTE BURAM1M
 -PT  -PTID ROKIL -FL F110 -ETO 071123070505
 -PT  -PTID MIQ   -FL F110 -ETO 071123070730
 -VEC -RELDIST 70 -FL F110 -ETO 071123071220
 -VEC -RELDIST 86 -FL F075 -ETO 071123071330
 -AD  -ADID EDDM           -ETO 071123071530
-END RTEPTS
-BEGIN ASPLIST
 -ASP -AIRSPDES EBBRTA    -ETI 071123062000 -XTI 071123062245
 -ASP -AIRSPDES EBBUHUS   -ETI 071123062245 -XTI 071123062835
 -ASP -AIRSPDES EDYYBD    -ETI 071123062835 -XTI 071123063545
 -ASP -AIRSPDES EDYYLNL   -ETI 071123062835 -XTI 071123063200
 -ASP -AIRSPDES EDYYUAC   -ETI 071123062835 -XTI 071123063545
 -ASP -AIRSPDES EDYYLNH   -ETI 071123063200 -XTI 071123063545
 -ASP -AIRSPDES EDDDALL2  -ETI 071123063330 -XTI 071123071530
 -ASP -AIRSPDES EDUUALL   -ETI 071123063545 -XTI 071123065805
 -ASP -AIRSPDES EDUUNTMMH -ETI 071123063545 -XTI 071123064430
 -ASP -AIRSPDES EDUUEST   -ETI 071123064430 -XTI 071123065805
 -ASP -AIRSPDES EDUUFFMMH -ETI 071123064430 -XTI 071123064955
 -ASP -AIRSPDES EDUUWURMH -ETI 071123064955 -XTI 071123065435
 -ASP -AIRSPDES EDUUWURML -ETI 071123065435 -XTI 071123065535
 -ASP -AIRSPDES EDUUWURB  -ETI 071123065535 -XTI 071123065805
 -ASP -AIRSPDES EDMMALL   -ETI 071123065805 -XTI 071123071530
 -ASP -AIRSPDES EDMMNDGE  -ETI 071123065805 -XTI 071123070255
 -ASP -AIRSPDES EDMMN     -ETI 071123070255 -XTI 071123071530
```

```
-END ASPLIST
-REGUL EDDMA23
-BEGIN AFREGULLIST
 -REGUL EDDMA23
-END AFREGULLIST
-ATFMDELAY 0012
-RDYSTATE IN
-TAXITIME 0015
-AOOPR CLH
-AOARCID DLH
-FLTTYP S
```

Note that this example will never appear as long as SIT1=SITd=EOBT-2hrs.

3. An EFD transmitted at the change of a CTOT:

```
-TITLE EFD
-TIMESTAMP 071123040806
-EVENT SIT
-EVENTCLASS REG
-FLTSTATE SI
-IFPLID AA00493775
-ARCID DLH9VV
-EOBD 071123
-EOBT 0605
-COBD 071123
-COBT 0617
-CDA 071123
-CTA 0727
-ADEP EBBR
-ADES EDDM
-MODELTYP CAL
-ARCTYP CRJ9
-IRULES IFR GAT IFPSTART
-BEGIN RTEPTS
 -AD  -ADID EBBR           -ETO 071123063200 -PTRTE SOPOK3C
 -PT  -PTID HUL   -FL F069 -ETO 071123063455
 -VEC -RELDIST 94 -FL F195 -ETO 071123063855
 -PT  -PTID BULUX -FL F202 -ETO 071123063910
 -VEC -RELDIST 77 -FL F300 -ETO 071123064220
 -PT  -PTID SOPOK -FL F320 -ETO 071123064315 -PTRTE UY863
 -VEC -RELDIST 60 -FL F350 -ETO 071123064440
 -PT  -PTID ETENO -FL F350 -ETO 071123064530 -PTRTE Y863
 -PT  -PTID LIRSU -FL F350 -ETO 071123064650
 -PT  -PTID VIBOM -FL F350 -ETO 071123065025
 -PT  -PTID TUMUL -FL F350 -ETO 071123065115
 -PT  -PTID UBIDU -FL F350 -ETO 071123065405
 -PT  -PTID RUDUS -FL F350 -ETO 071123065500 -PTRTE UL984
 -PT  -PTID FFM   -FL F350 -ETO 071123065750
 -PT  -PTID BOMBI -FL F350 -ETO 071123065835 -PTRTE T104
 -PT  -PTID HAREM -FL F350 -ETO 071123070310
 -VEC -RELDIST 57 -FL F350 -ETO 071123070625
 -VEC -RELDIST 84 -FL F300 -ETO 071123070805
 -PT  -PTID DKB   -FL F270 -ETO 071123070905
 -VEC -RELDIST 70 -FL F270 -ETO 071123071150
 -PT  -PTID XERUM -FL F233 -ETO 071123071305
 -VEC -RELDIST 89 -FL F195 -ETO 071123071420
 -PT  -PTID BURAM -FL F189 -ETO 071123071430 -PTRTE BURAM1M
 -PT  -PTID ROKIL -FL F110 -ETO 071123071705
 -PT  -PTID MIQ   -FL F110 -ETO 071123071930
 -VEC -RELDIST 70 -FL F110 -ETO 071123072420
 -VEC -RELDIST 86 -FL F075 -ETO 071123072530
```

```
  -AD  -ADID EDDM           -ETO 071123072730
 -END RTEPTS
 -BEGIN ASPLIST
  -ASP -AIRSPDES EBBRTA    -ETI 071123063200 -XTI 071123063445
  -ASP -AIRSPDES EBBUHUS   -ETI 071123063445 -XTI 071123064035
  -ASP -AIRSPDES EDYYBD    -ETI 071123064035 -XTI 071123064745
  -ASP -AIRSPDES EDYYLNL   -ETI 071123064035 -XTI 071123064400
  -ASP -AIRSPDES EDYYUAC   -ETI 071123064035 -XTI 071123064745
  -ASP -AIRSPDES EDYYLNH   -ETI 071123064400 -XTI 071123064745
  -ASP -AIRSPDES EDDDALL2  -ETI 071123064530 -XTI 071123072730
  -ASP -AIRSPDES EDUUALL   -ETI 071123064745 -XTI 071123071005
  -ASP -AIRSPDES EDUUNTMMH -ETI 071123064745 -XTI 071123065630
  -ASP -AIRSPDES EDUUEST   -ETI 071123065630 -XTI 071123071005
  -ASP -AIRSPDES EDUUFFMMH -ETI 071123065630 -XTI 071123070155
  -ASP -AIRSPDES EDUUWURMH -ETI 071123070155 -XTI 071123070635
  -ASP -AIRSPDES EDUUWURML -ETI 071123070635 -XTI 071123070735
  -ASP -AIRSPDES EDUUWURB  -ETI 071123070735 -XTI 071123071005
  -ASP -AIRSPDES EDMMALL   -ETI 071123071005 -XTI 071123072730
  -ASP -AIRSPDES EDMMNDGE  -ETI 071123071005 -XTI 071123071455
  -ASP -AIRSPDES EDMMN     -ETI 071123071455 -XTI 071123072730
 -END ASPLIST
 -REGUL EDDMA23
 -BEGIN AFREGULLIST
  -REGUL EDDMA23
 -END AFREGULLIST
 -ATFMDELAY 0012
 -RDYSTATE IN
 -TAXITIME 0015
 -AOOPR CLH
 -AOARCID DLH
 -FLTTYP S
```

4. An EFD transmitted at the change of an FSA:

This EFD includes a STAY indicator and a change of flightrules.
The STAY describes that the flight is holding 15 minutes at PTID HAZEL.

```
-TITLE EFD
-EVENT FSA
-EVENTCLASS MSG
-FLTSTATE AA
-TIMESTAMP 031126083500
-IFPLID BB56882245
-ARCID DAN1419
-EOBD 031126
-EOBT 1005
-AOBD 031126
-AOBT 1005
-ADA 031126
-ATA 1206
-ADEP LEMD
-ADES EGLL
-MODELTYP ACT
-IRULES VFR GAT IFPSTART
-GEO –GEOID GEO01 -LATTD 403932N -LONGTD 0033135W
-BEGIN RTEPTS
   -AD    -ADID LEMD               -ETO 031126101500 -PTRTE DCT
   -PT    -PTID MD       -FL F024  -ETO 031126101610 –PTRULCHG IFR
   -PT    -PTID GEO01    -FL F055  -ETO 031126101750
   -VEC   -RELDIST 35    -FL F100  -ETO 031126102005
   -VEC   -RELDIST 88    -FL F150  -ETO 031126102235
   -PT    -PTID ARN      -FL F159  -ETO 031126102305
```

```
   -VEC   -RELDIST 26    -FL F225   -ETO 031126102645
   -VEC   -RELDIST 63    -FL F300   -ETO 031126103150
   -VEC   -RELDIST 78    -FL F310   -ETO 031126103400
   -PT    -PTID DGO      -FL F310   -ETO 031126103650 -PTRTE UB11
   -PT    -PTID BLV      -FL F310   -ETO 031126104405
   -PT    -PTID BISKA    -FL F310   -ETO 031126104730
   -PT    -PTID BELEN    -FL F310   -ETO 031126104935
   -PT    -PTID TIOCH    -FL F310   -ETO 031126110810 -PTRTE DCT
   -PT    -PTID NTS      -FL F310   -ETO 031126111820
   -PT    -PTID GUEME    -FL F310   -ETO 031126112230
   -PT    -PTID GUIGN    -FL F310   -ETO 031126112420
   -PT    -PTID DIN      -FL F310   -ETO 031126113105
   -PT    -PTID SENEQ    -FL F310   -ETO 031126113655
   -VEC   -RELDIST 76    -FL F310   -ETO 031126114020
   -PT    -PTID BARLU    -FL F316   -ETO 031126114130 -PTRTE UB11
   -PT    -PTID FAWBO    -FL F330   -ETO 031126114425
   -VEC   -RELDIST 47    -FL F300   -ETO 031126114625
   -VEC   -RELDIST 55    -FL F290   -ETO 031126114650
   -PT    -PTID KATHY    -FL F244   -ETO 031126114850
   -VEC   -RELDIST 73    -FL F225   -ETO 031126114940
   -PT    -PTID ELDER    -FL F217   -ETO 031126115000 -PTRTE OCK2B
   -VEC   -RELDIST 78    -FL F150   -ETO 031126115245
   -PT    -PTID HAZEL    -FL F130   -ETO 031126115345 –STAY STAY1 0015
   -PT    -PTID HAZEL    -FL F130   -ETO 031126120845
   -VEC   -RELDIST 54    -FL F100   -ETO 031126121125
   -PT    -PTID OCK      -FL F070   -ETO 031126121455
   -AD    -ADID EGLL                -ETO 031126122100
-END RTEPTS
-BEGIN ASPLIST
 -ASP LECMNOR      -ETI 031126101500 -XTI 031126102540
 -ASP LECMDGO      -ETI 031126102540 -XTI 031126103830
 -ASP LECMBLV      -ETI 031126103830 -XTI 031126104935
 -ASP LFEERRFF_UIR -ETI 031126104935 -XTI 031126114425
 -ASP LFRGS        -ETI 031126104935 -XTI 031126110845
 -ASP LFRNS        -ETI 031126110845 -XTI 031126112835
 -ASP LFRJS        -ETI 031126112835 -XTI 031126114425
 -ASP NA004        -ETI 031126113455 -XTI 031126113645
 -ASP EGTTHRE      -ETI 031126114425 -XTI 031126115145
 -ASP EGTTOCA      -ETI 031126115145 -XTI 031126121520
 -ASP EGLMSFI      -ETI 031126121520 -XTI 031126122100
-END ASPLIST
-RDYSTATE SN
-TAXITIME 0010
-AOARCID DAN
-FLTTYP I
```

5. An EFD transmitted after the change due to a CPR:

```
  -TITLE EFD
  -TIMESTAMP 071003114333
  -EVENT CPR
  -EVENTCLASS MSG
  -FLTSTATE AA
  -IFPLID AA62322674
  -ARCID RCH993
  -EOBD 071003
  -EOBT 1110
  -AOBD 071003
  -AOBT 1116
  -ADA 071003
  -ATA 1623
  -ADEP ETAR
  -ADES OKBK
  -MODELTYP ACT
```

```
-ARCTYP C17
-IRULES IFR GAT IFPSTART
-GEO -GEOID GEO01 -LATTD 334557N -LONGTD 0453436E
-BEGIN RTEPTS
 -AD  -ADID ETAR           -ETO 071003112100 -PTRTE MAPIG1E
 -PT  -PTID RMS   -FL F031 -ETO 071003112135
 -VEC -RELDIST 28 -FL F060 -ETO 071003112220
 -VEC -RELDIST 55 -FL F090 -ETO 071003112310
 -PT  -PTID MAPIG -FL F090 -ETO 071003112420
 -PT  -PTID TOMPI -FL F090 -ETO 071003112445
 -PT  -PTID ZWN   -FL F090 -ETO 071003112650
 -PT  -PTID LADAT -FL F090 -ETO 071003112855
 -PT  -PTID MANEM -FL F090 -ETO 071003113035
 -PT  -PTID NEKOM -FL F090 -ETO 071003113310 -PTRTE Z12
 -PT  -PTID BANIK -FL F150 -ETO 071003113500
 -VEC -RELDIST 62 -FL F190 -ETO 071003113615
 -PT  -PTID OSBAN -FL F190 -ETO 071003113640
 -PT  -PTID GIBSA -FL F190 -ETO 071003113810
 -PT  -PTID ALUPO -FL F190 -ETO 071003113835
 -PT  -PTID TALAK -FL F210 -ETO 071003113910
 -PT  -PTID WUR   -FL F218 -ETO 071003113925
 -PT  -PTID OLIXA -FL F243 -ETO 071003114005
 -VEC -RELDIST 11 -FL F250 -ETO 071003114020
 -PT  -PTID ERMUT -FL F285 -ETO 071003114125
 -VEC -RELDIST 09 -FL F290 -ETO 071003114140
 -VEC -RELDIST 47 -FL F290 -ETO 071003114225
 -PT  -PTID SULUS -FL F290 -ETO 071003114250 -PTRTE UZ650
 -VEC -RELDIST 18 -FL F300 -ETO 071003114300
 -VEC -RELDIST 50 -FL F300 -ETO 071003114315
 -VEC -RELDIST 76 -FL F305 -ETO 071003114325
 -PT  -PTID TONSU -FL F310 -ETO 071003114405
 -PT  -PTID ERETO -FL F316 -ETO 071003114455
 -PT  -PTID NOGRA -FL F326 -ETO 071003114620
 -VEC -RELDIST 35 -FL F330 -ETO 071003114655
 -PT  -PTID NIKUS -FL F330 -ETO 071003114755
 -PT  -PTID TIPAM -FL F330 -ETO 071003114915
 -PT  -PTID VEMUT -FL F330 -ETO 071003115015
 -PT  -PTID ROKEM -FL F330 -ETO 071003115640
 -PT  -PTID ODNEM -FL F330 -ETO 071003121445
 -PT  -PTID LITKU -FL F330 -ETO 071003122750 -PTRTE UN95
 -PT  -PTID ARGIV -FL F330 -ETO 071003122925
 -PT  -PTID KOVEK -FL F330 -ETO 071003123320
 -PT  -PTID NARKA -FL F330 -ETO 071003124135 -PTRTE UL140
 -PT  -PTID OBARA -FL F330 -ETO 071003124620
 -PT  -PTID LUNAV -FL F348 -ETO 071003124850
 -VEC -RELDIST 08 -FL F350 -ETO 071003124905
 -PT  -PTID REBLA -FL F350 -ETO 071003125210 -PTRTE UL620
 -PT  -PTID TGM   -FL F350 -ETO 071003125605
 -PT  -PTID ABOKA -FL F350 -ETO 071003130035
 -PT  -PTID BAKOV -FL F350 -ETO 071003130220
 -PT  -PTID ERGAT -FL F350 -ETO 071003130635
 -PT  -PTID LAPKA -FL F350 -ETO 071003131115
 -PT  -PTID RIVOS -FL F350 -ETO 071003131925
 -PT  -PTID CND   -FL F350 -ETO 071003132450 -PTRTE UL851
 -PT  -PTID ADINA -FL F350 -ETO 071003133655 -PTRTE DCT  -PTRULCHG IFR OAT IFPSTART
 -PT  -PTID KUGOS -FL F350 -ETO 071003135900 -PTRTE UT33  -PTRULCHG IFR GAT IFPSTART
 -PT  -PTID SIN   -FL F350 -ETO 071003140720
 -PT  -PTID CRM   -FL F350 -ETO 071003141750 -PTRTE UT34
 -PT  -PTID ODALI -FL F350 -ETO 071003142955
 -PT  -PTID VABEL -FL F350 -ETO 071003143525
 -PT  -PTID EBEDI -FL F350 -ETO 071003143730
 -PT  -PTID KONUK -FL F350 -ETO 071003144010
 -PT  -PTID TALIL -FL F350 -ETO 071003144410
 -VEC -RELDIST 42 -FL F370 -ETO 071003144655
```

```
  -PT  -PTID NAREN -FL F370 -ETO 071003145045
  -PT  -PTID RENGI -FL F370 -ETO 071003145240
  -PT  -PTID SRT   -FL F370 -ETO 071003145900 -PTRTE T37
  -VEC -RELDIST 56 -FL F270 -ETO 071003150235
  -PT  -PTID KABAN -FL F270 -ETO 071003150530 -PTRTE DCT
  -PT  -PTID GEO01 -FL F270 -ETO 071003153630
  -PT  -PTID SIDAD -FL F270 -ETO 071003161015
  -VEC -RELDIST 13 -FL F250 -ETO 071003161050
  -VEC -RELDIST 65 -FL F170 -ETO 071003161450
  -PT  -PTID FALKA -FL F119 -ETO 071003161720
  -VEC -RELDIST 17 -FL F100 -ETO 071003161815
  -VEC -RELDIST 49 -FL F060 -ETO 071003162025
  -AD  -ADID OKBK           -ETO 071003162335
 -END RTEPTS
 -BEGIN ASPLIST
  -ASP -AIRSPDES EDDDALL2 -ETI 071003112100 -XTI 071003115015
  -ASP -AIRSPDES EDFFACC  -ETI 071003112100 -XTI 071003114010
  -ASP -AIRSPDES EDFFPFA  -ETI 071003112100 -XTI 071003113125
  -ASP -AIRSPDES EDGGACC  -ETI 071003112100 -XTI 071003114010
  -ASP -AIRSPDES EDGGFPFA -ETI 071003112100 -XTI 071003113125
  -ASP -AIRSPDES EDFFNKR  -ETI 071003113125 -XTI 071003113540
  -ASP -AIRSPDES EDGGFNKR -ETI 071003113125 -XTI 071003113540
  -ASP -AIRSPDES EDFFKNG  -ETI 071003113540 -XTI 071003113810
  -ASP -AIRSPDES EDGGFKNG -ETI 071003113540 -XTI 071003113810
  -ASP -AIRSPDES EDFFKTG  -ETI 071003113810 -XTI 071003114010
  -ASP -AIRSPDES EDGGFKTG -ETI 071003113810 -XTI 071003114010
  -ASP -AIRSPDES EDUUALL    -ETI 071003114010 -XTI 071003115015
  -ASP -AIRSPDES EDUUEST    -ETI 071003114010 -XTI 071003115015
  -ASP -AIRSPDES EDUUWURB   -ETI 071003114010 -XTI 071003114205
  -ASP -AIRSPDES EDUUERLH   -ETI 071003114205 -XTI 071003114615
  -ASP -AIRSPDES EDUUFULERL -ETI 071003114205 -XTI 071003115015
  -ASP -AIRSPDES EDUUERLM   -ETI 071003114615 -XTI 071003115015
  -ASP -AIRSPDES LKAAWM     -ETI 071003115015 -XTI 071003120030
  -ASP -AIRSPDES LKAAEUSGN  -ETI 071003115020 -XTI 071003124135
  -ASP -AIRSPDES LKAASM     -ETI 071003120030 -XTI 071003120900
  -ASP -AIRSPDES LKAAEM     -ETI 071003120900 -XTI 071003121445
  -ASP -AIRSPDES LZBBWM33   -ETI 071003121445 -XTI 071003122750
  -ASP -AIRSPDES LHCCDUP    -ETI 071003122750 -XTI 071003124135
  -ASP -AIRSPDES LRBBBUDM   -ETI 071003124135 -XTI 071003124825
  -ASP -AIRSPDES LRBBNAPO   -ETI 071003124850 -XTI 071003130035
  -ASP -AIRSPDES LRBBARGT   -ETI 071003130035 -XTI 071003131920
  -ASP -AIRSPDES LRBBDINT   -ETI 071003131920 -XTI 071003133655
  -ASP -AIRSPDES LTAAWU     -ETI 071003135900 -XTI 071003140640
  -ASP -AIRSPDES LTAAE1     -ETI 071003140640 -XTI 071003144425
  -ASP -AIRSPDES LTAAE2     -ETI 071003144425 -XTI 071003150530
  -ASP -AIRSPDES ORBBALL    -ETI 071003150530 -XTI 071003161015
 -END ASPLIST
 -RDYSTATE IN
 -TAXITIME 0005
 -AOOPR DOD
 -AOARCID RCH
 -FLTTYP M
```

6. An EFD transmitted at TACT Activation:

```
 -TITLE EFD
 -TIMESTAMP 071123062743
 -EVENT TDE
 -EVENTCLASS SYS
 -FLTSTATE TA
 -IFPLID AA00493775
 -ARCID DLH9VV
 -EOBD 071123
 -EOBT 0605
```

```
-AOBD 071123
-AOBT 0612
-ADA 071123
-ATA 0722
-ADEP EBBR
-ADES EDDM
-MODELTYP ACT
-ARCTYP CRJ9
-IRULES IFR GAT IFPSTART
-BEGIN RTEPTS
 -AD  -ADID EBBR -ETO 071123062700 -PTRTE SOPOK3C
 -PT  -PTID HUL -FL F069 -ETO 071123062955
 -VEC -RELDIST 94 -FL F195 -ETO 071123063355
 -PT  -PTID BULUX -FL F202 -ETO 071123063410
 -VEC -RELDIST 77 -FL F300 -ETO 071123063720
 -PT  -PTID SOPOK -FL F320 -ETO 071123063815 -PTRTE UY863
 -VEC -RELDIST 60 -FL F350 -ETO 071123063940
 -PT  -PTID ETENO -FL F350 -ETO 071123064030 -PTRTE Y863
 -PT  -PTID LIRSU -FL F350 -ETO 071123064150
 -PT  -PTID VIBOM -FL F350 -ETO 071123064525
 -PT  -PTID TUMUL -FL F350 -ETO 071123064615
 -PT  -PTID UBIDU -FL F350 -ETO 071123064905
 -PT  -PTID RUDUS -FL F350 -ETO 071123065000 -PTRTE UL984
 -PT  -PTID FFM -FL F350 -ETO 071123065250
 -PT  -PTID BOMBI -FL F350 -ETO 071123065335 -PTRTE T104
 -PT  -PTID HAREM -FL F350 -ETO 071123065810
 -VEC -RELDIST 57 -FL F350 -ETO 071123070125
 -VEC -RELDIST 84 -FL F300 -ETO 071123070305
 -PT  -PTID DKB -FL F270 -ETO 071123070405
 -VEC -RELDIST 70 -FL F270 -ETO 071123070650
 -PT  -PTID XERUM -FL F233 -ETO 071123070805
 -VEC -RELDIST 89 -FL F195 -ETO 071123070920
 -PT  -PTID BURAM -FL F189 -ETO 071123070930 -PTRTE BURAM1M
 -PT  -PTID ROKIL -FL F110 -ETO 071123071205
 -PT  -PTID MIQ -FL F110 -ETO 071123071430
 -VEC -RELDIST 70 -FL F110 -ETO 071123071920
 -VEC -RELDIST 86 -FL F075 -ETO 071123072030
 -AD  -ADID EDDM -ETO 071123072230
-END RTEPTS
-BEGIN ASPLIST
 -ASP -AIRSPDES EBBRTA -ETI 071123062700 -XTI 071123062945
 -ASP -AIRSPDES EBBUHUS -ETI 071123062945 -XTI 071123063535
 -ASP -AIRSPDES EDYYBD -ETI 071123063535 -XTI 071123064245
 -ASP -AIRSPDES EDYYLNL -ETI 071123063535 -XTI 071123063900
 -ASP -AIRSPDES EDYYUAC -ETI 071123063535 -XTI 071123064245
 -ASP -AIRSPDES EDYYLNH -ETI 071123063900 -XTI 071123064245
 -ASP -AIRSPDES EDDDALL2 -ETI 071123064030 -XTI 071123072230
 -ASP -AIRSPDES EDUUALL -ETI 071123064245 -XTI 071123070505
 -ASP -AIRSPDES EDUUNTMMH -ETI 071123064245 -XTI 071123065130
 -ASP -AIRSPDES EDUUEST -ETI 071123065130 -XTI 071123070505
 -ASP -AIRSPDES EDUUFFMMH -ETI 071123065130 -XTI 071123065655
 -ASP -AIRSPDES EDUUWURMH -ETI 071123065655 -XTI 071123070135
 -ASP -AIRSPDES EDUUWURML -ETI 071123070135 -XTI 071123070235
 -ASP -AIRSPDES EDUUWURB -ETI 071123070235 -XTI 071123070505
 -ASP -AIRSPDES EDMMALL -ETI 071123070505 -XTI 071123072230
 -ASP -AIRSPDES EDMMNDGE -ETI 071123070505 -XTI 071123070955
 -ASP -AIRSPDES EDMMN -ETI 071123070955 -XTI 071123072230
-END ASPLIST
-REGUL EDDMA23
-BEGIN AFREGULLIST
 -REGUL EDDMA23
-END AFREGULLIST
-ATFMDELAY 0007
-RDYSTATE IN
```

```
-TAXITIME 0015
-AOOPR CLH
-AOARCID DLH
-FLTTYP S
```

7. An EFD containing reg, cdmstatus, dep airport type, …:

```
-TITLE EFD
-TIMESTAMP 101027133808
-EVENT ADI
-EVENTCLASS MSG
-FLTSTATE TA
-IFPLID AA00112290
-ARCID DLH2PX
-EOBD 101027
-EOBT 1325
-AOBD 101027
-AOBT 1335
-ADA 101027
-ATA 1514
-ADEP EDDM
-ADES LRSB
-MODELTYP ACT
-ARCTYP CRJ7
-IRULES IFR GAT IFPSTART
-BEGIN RTEPTS
 -AD  -ADID EDDM -ETO 101027134900 -PTRTE MEBEK2E
 -VEC -RELDIST 89 -FL F050 -ETO 101027135005
 -PT  -PTID MSW -FL F053 -ETO 101027135010
 -VEC -RELDIST 40 -FL F100 -ETO 101027135145
 -PT  -PTID RATGI -FL F143 -ETO 101027135335
 -VEC -RELDIST 18 -FL F150 -ETO 101027135355
 -PT  -PTID MEBEK -FL F169 -ETO 101027135505 -PTRTE Y105
 -PT  -PTID KIRDI -FL F196 -ETO 101027135635 -PTRTE UL174
 -VEC -RELDIST 06 -FL F200 -ETO 101027135650
 -PT  -PTID VELOM -FL F240 -ETO 101027140025 -PTRTE UL605
 -VEC -RELDIST 18 -FL F250 -ETO 101027140120
 -PT  -PTID ALMER -FL F274 -ETO 101027140515
 -PT  -PTID GAMLI -FL F289 -ETO 101027140750
 -VEC -RELDIST 23 -FL F300 -ETO 101027140940
 -PT  -PTID DIVAL -FL F322 -ETO 101027141550
 -PT  -PTID STEIN -FL F332 -ETO 101027141835
 -PT  -PTID SIRDU -FL F347 -ETO 101027142250
 -VEC -RELDIST 15 -FL F350 -ETO 101027142335
 -PT  -PTID GITAS -FL F359 -ETO 101027142745
 -PT  -PTID BUG -FL F379 -ETO 101027143640
 -PT  -PTID BOKSI -FL F381 -ETO 101027143735
 -VEC -RELDIST 54 -FL F390 -ETO 101027144145
 -VEC -RELDIST 73 -FL F350 -ETO 101027144310
 -VEC -RELDIST 93 -FL F300 -ETO 101027144445
 -PT  -PTID TEGRI -FL F285 -ETO 101027144520 -PTRTE P993
 -VEC -RELDIST 78 -FL F270 -ETO 101027144550
 -PT  -PTID ARD -FL F270 -ETO 101027144600 -PTRTE T1
 -PT  -PTID LIPOV -FL F270 -ETO 101027144845
 -PT  -PTID ARPOS -FL F270 -ETO 101027145040
 -PT  -PTID VASIS -FL F270 -ETO 101027145400
 -PT  -PTID DVA -FL F270 -ETO 101027145745 -PTRTE Y574
 -VEC -RELDIST 51 -FL F270 -ETO 101027145950
 -PT  -PTID UREKI -FL F220 -ETO 101027150200
 -VEC -RELDIST 95 -FL F150 -ETO 101027150505
 -PT  -PTID SIB -FL F147 -ETO 101027150515 -PTRTE DCT
 -VEC -RELDIST 37 -FL F100 -ETO 101027150745
```

-VEC -RELDIST 73 -FL F050 -ETO 101027151045
-AD -ADID LRSB -ETO 101027151400
-END RTEPTS
-BEGIN ASPLIST
-ASP -AIRSPDES EBBUFABEC -ETI 101027134900 -XTI 101027135730
-ASP -AIRSPDES EDDDALL2 -ETI 101027134900 -XTI 101027135940
-ASP -AIRSPDES EDMMALL -ETI 101027134900 -XTI 101027135545
-ASP -AIRSPDES EDMMS -ETI 101027134900 -XTI 101027135545
-ASP -AIRSPDES LOVVB5L -ETI 101027135545 -XTI 101027135940
-ASP -AIRSPDES LOVVNLG -ETI 101027135940 -XTI 101027141105
-ASP -AIRSPDES LKAAEUSGM -ETI 101027140850 -XTI 101027143720
-ASP -AIRSPDES LOVVNSU -ETI 101027141105 -XTI 101027141220
-ASP -AIRSPDES LOVVESU -ETI 101027141220 -XTI 101027141835
-ASP -AIRSPDES LHCCWESTUX -ETI 101027141835 -XTI 101027142210
-ASP -AIRSPDES LHCCWESTU -ETI 101027141925 -XTI 101027142550
-ASP -AIRSPDES LHCCWESTHX -ETI 101027142210 -XTI 101027143020
-ASP -AIRSPDES LHCCWESTH -ETI 101027142550 -XTI 101027143500
-ASP -AIRSPDES LHCCWESTTX -ETI 101027143020 -XTI 101027143515
-ASP -AIRSPDES LHCCEASTT -ETI 101027143515 -XTI 101027144220
-ASP -AIRSPDES LHCCEASTTX -ETI 101027143515 -XTI 101027144240
-ASP -AIRSPDES LKAAEUSGN -ETI 101027143720 -XTI 101027144455
-ASP -AIRSPDES LHCCEASTM -ETI 101027144340 -XTI 101027144520
-ASP -AIRSPDES LHCCEASTMX -ETI 101027144400 -XTI 101027144520
-ASP -AIRSPDES LRBBMOP1 -ETI 101027144520 -XTI 101027145735
-ASP -AIRSPDES LRBBNER1 -ETI 101027145735 -XTI 101027151400
-END ASPLIST
-RDYSTATE IN
-TAXITIME 0014
-AOOPR CLH
-AOARCID DLH
-FLTTYP S
-REG DACPA
-DEPAPTYPE CDM
-CDMSTATUS ACTUALOFFBLOCK
-DEPREG DACJC
-DEPARCTYP CRJ2
-IFPSDISCREPANCY ARCTYP REG

2.3.2.2.2 FUM – Flight Update Message

1. FUM giving the arrival time at LEMD.

- TITLE FUM
- BEGIN ADDR
  - FAC LEMDDZZP
- END ADDR
- IFPLID AA76297483
- ARCID SAS581
- ARCTYP MD80
- REG HBIXG
- ADEP EKCH
- EOBT 1019
- EOBD 991007
- ELDT 991007131612
- ESTDATA
  - PTID BAN –ETO 991007130212 –FL F230
- ADES LEMD
- STAR XXXXX
- FLTSTATE AA

2. FUM containing CDMSTATUS and Departure Airport Type.

- TITLE FUM
- BEGIN ADDR
  - FAC LSZHDART
  - FAC EUDHIOTZ
  - FAC EUDHJOTZ
- END ADDR
- IFPLID AA00115088
- ARCID SWR1105
- ADEP EDDM
- ADES LSZH
- EOBD 101027
- EOBT 1205
- ELDT 101027124805
- ARCTYP RJ1H
- ESTDATA
  - PTID NEGRA -ETO 101027123645 -FL F179
- STAR NEGRA1Z
- FLTSTATE AA
- REG HBIYT
- DEPAPTYPE CDM
- CDMSTATUS ACTUALOFFBLOCK

2.3.3 SSR Code Management Messages

2.3.3.1 SSR Code Management Messages – Originated by ATS

2.3.3.1.1 COR – Code Request Message

1. COR message for a departing flight
- TITLE COR
- ARCID CFG256
- IFPLID AA19600528
- ADEP EDDM
- ADES LFPG
- EOBT 0830
- EOBD 081007

2. COR message with the request to retain the code for e.g. an inbound flight
- TITLE COR
- ARCID CFG257
- IFPLID AA19600528
- ADEP EDDM
- ADES LFPG
- EOBT 0830
- EOBD 081007
- SSRCODE A3301

3. COR message for a missing flight plan
- TITLE COR
- ARCID CFG999
- ADEP EDDM
- ADES LFPG
- EOBT 0830
- EOBD 081007
- ARCTYP F100
- SSRCODE A4576

2.3.3.1.2 CRE – Code Release Message

1. CRE message for a normal flight
- TITLE CRE
- ARCID CFG256
- IFPLID AA19600528
- ADEP EDDM
- ADES LFPG
- EOBT 0830
- EOBD 081007

2.3.3.2 SSR Code Management Messages – Originated by NMOC

2.3.3.2.1 CAM – Code Assignment Message

1. CAM message
- TITLE CAM
- ARCID CFG256
- IFPLID AA19600528
- ADEP EDDM
- ADES LFPG
- EOBT 0830
- EOBD 081007
- SSRCODE A1234
- PREVSSRCODE A1233
- SEQUENCEDATA
    - TXTIME 081007081012
    - NUM 7

2. CAM message with IOBT/IOBD
- TITLE CAM
- ARCID KLM2243
- IFPLID AA19600529
- ADEP EHAM
- ADES LPPT
- EOBT 0830
- EOBD 081007
- IOBT 0845
- IOBD 081007
- SSRCODE A6234
- PREVSSRCODE A6233
- SEQUENCEDATA
    - TXTIME 081007081012
    - NUM 82

2.3.3.2.2 CCM – Code Cancellation Message

1. CCM message
- TITLE CCM
- ARCID CFG256
- IFPLID AA19600528
- ADEP EDDM
- ADES LFPG
- EOBT 0830
- EOBD 081007
- PREVSSRCODE A1233
- SEQUENCEDATA
    - TXTIME 081007083224
    - NUM 152

2.3.4 ERRor messages

2.3.4.1 ERR messages – Originated by ATS

2.3.4.1.1 ERR – ERRor message

1. ERR message due to syntax error.

- TITLE ERR
- FILTIM 121331
- REASON SYNTAXERROR
- COMMENT ERROR AT LINE 7 IN COLUMN 11 IN FIELD TITLE
- SEVERITY ERROR

2. ERR message for CAM message that could not be processed.

- TITLE ERR
- ARCID EZY8AX
- FILTIM 111332
- ADEP EGNX
- ADES LKPR
- EOBD 080611
- EOBT 1345
- ORGMSG CAM
- REASON VOID
- COMMENT NO FLIGHT PLAN FOR RECEIVED CCAMS MESSAGE
- SEVERITY WARNING

3. ERR message for CCM message that could not be processed.

- TITLE ERR
- ARCID EZY8AX
- FILTIM 111332
- ADEP EGNX
- ADES LKPR
- EOBD 080611
- EOBT 1345
- ORGMSG CCM
- REASON VOID
- COMMENT LOCAL CODE A1001 ASSIGNED INSTEAD OF CCAMS CODE A3471
- SEVERITY ERROR

2.3.4.2 ERR messages – Originated by ETFMS and CCAMS-CS

2.3.4.2.1 ERR – ERRor message

1. ERR message due to syntax error.

- TITLE ERR
- FILTIM 121331
- REASON SYNTAXERROR
- COMMENT ERROR AT LINE 7 IN COLUMN 11 IN FIELD TITLE
- SEVERITY ERROR
- SEQUENCEDATA
  - TXTIME 080422134552
  - NUM 955

2. ERR message due to semantic error in DPI message.

- TITLE ERR
- ARCID EZY8AX
- FILTIM 111331
- ADEP EGNX
- ADES LKPR
- EOBD 080611
- EOBT 1345
- ORGMSG DPI
- REASON VOID
- COMMENT PROVIDED TAKE OFF TIME OUT OF BOUNDS
- SEQUENCEDATA
  - TXTIME 080611134552
  - NUM 1211
- SEVERITY ERROR

3. ERR message for COR message that could not be processed.

- TITLE ERR
- ARCID EZY8AX
- ADEP EGNX
- ADES LKPR
- EOBD 080611
- EOBT 1345
- ORGMSG COR
- REASON VOID
- COMMENT NO MORE SSR CODES AVAILABLE FOR THIS FLIGHT
- SEQUENCEDATA
  - TXTIME 080611133512
  - NUM 67
- SEVERITY ERROR

3 TESTING WITH EXTERNAL USERS

3.1 INTRODUCTION

(1) The exchange of data between the NMOC and systems external to the NMOC is continuously increasing, not only in amount, but also in types and in importance.

(2) The IFPS receives and distributes the ICAO messages related to flight planning such as FPL, CNL, DLA, … Additionally it receives the non-ICAO FNM, MFS and AFP messages which may be distributed in the form of APL or ACH messages.

(3) Dependent on the settings of the address of the sender of the message to IFPS, IFPS will forward an erroneous message for manual processing or will just ignore it. An ignored message is only visible by analysis of a log-file

(4) The ETFMS system receives and sends the ATFM dialogue messages and receives FSA, CPR and APR messages to update the flight. In the future the ETFMS system more flight plan related messages such as e.g. the Departure Planning Information (DPI) message.

(5) ETFMS in particular will become highly dependent on data from external systems for delivery of a high quality of ATFM service.

(6) Whenever possible an erroneous message arriving in ETFMS will be ignored. The results of the processing of incoming messages can only be retrieved from a log-file.

(7) Many of the messages that are received by IFPS and ETFMS are generated by computer systems and are not made visible to any user.

(8) Although the NMOC has protected its systems against the reception of erroneous data as much as possible, it is still very important that the interfaces between the NMOC and other systems are properly evaluated on a NMOC test system before transmission to a NMOC Operational system is started.

(9) The NMOC is fully aware that for most users this is common practice, but some recent events have shown that there is a need to clarify and publish what should be common practice to all.

3.2 CHANGES IN THE NMOC SYSTEMS

(1) For evaluation of new NM software releases, the NMOC organises 2 to 3 Operational evaluation exercises with external users (OPT days).

(2) These days are organised a few months before the new release is put into operation and are mainly intended to offer NMOC users to evaluate the new features of a NM software release.

3.3 CHANGES TO SYSTEMS THAT INTERFACE WITH THE NMOC

3.3.1 Local system Test

(1) For local system testing, the NMOC can supply off-line output (of e.g. IFPS) for input into a local test system.

3.3.2 On-line evaluation

(1) The NMOC receives different types of messages from external users/systems. They can be grouped into two categories:
- "User messages"
  These are messages that are sent on direct request of a user and for which the user normally receives a reply.
- "System messages"
  These are messages that are usually automatically generated by the users' computer system and for which no reply is sent. On the NMOC side, the results of the processing of such messages can only be viewed by examining a log-file.

(2) For the category "System messages", on-line evaluation on a NMOC test system is required before the implementation of such messages to the NMOC operational system.

(3) For the following messages on-line evaluation is required: AFP, MFS, FNM, FSA, DPI, APR and (surveillance) Position Reports.

(4) Evaluation or re-evaluation of interfaces with the NMOC shall be carried out in the event of:
- the establishment of a new interface
- e.g. the introduction of a new message
- the installation of a new system or a new generation of an existing system
- a software or system change that may influence the quality of the messages to the NMOC.

(5) Evaluation with NMOC will be done in accordance with an agreed evaluation plan. The initial proposal will be made by the NMOC. An example of an evaluation plan for FSA and APR messages can be found in Annex 1. Similar procedures will be developed for other messages.

(6) The evaluation will usually be carried out by transmission of messages to a NMOC Operational Test (OPT) system. This is a system different from the Operational system, but contains basically the same data.

(7) After each evaluation session, the NMOC will provide an evaluation report that contains the handling of the messages by the NMOC system i.e. the details of how the messages were processed by NMOC.

(8) Transmission of a new or modified message to a NMOC Operational system can only start after a formal approval by NMOC.

(9) In case of significant problems with a message to a NMOC operational system, the NMOC may request the sender of the erroneous messages to IMMEDIATELY STOP the transmission.

(10) The NMOC Network Operations Services will be in charge of the co-ordination of evaluations.

ANNEX 1

FSA or APR Messages to the NMOC

Basic Evaluation Plan

This evaluation plan is a proposal to be used for FSA and APR message transmission via the AFTN or SITA network.

Step 1: Develop FSA/APR Interface Control Document (FSA-ICD or APR-ICD).

Step 2: Transmission of off-line copies of messages, using E-mail, diskettes, or paper for validation of syntax.

Step 3a: Provision of the AFTN and/or SITA address to the NMOC such that these can be input into the NMOC ENVironment system. The NMOC only accepts the FSA and APR messages from known addresses.

Step 3b: Transmission of messages to the ETFMS test system, using the AFTN address EUCHZMTT or the SITA address ANREA7X.

- First trial will last several minutes. Addressing, format and common understanding by applications will be verified.
- Second trial will consist of a longer duration session including peak periods in terms of traffic (from communication and ATC or AO situation point of view).
- Update the ICD with the special cases that have been identified during the tests.

Step 4: Analysis and if necessary repetition of the tests.

Step 5: Go no Go decision for sending data to the ETFMS operational system

Step 6: Transmission of messages to the operational ETFMS system, using the AFTN address EUCHZMTA or the SITA address BRUEA7X. A progressive approach may be taken as in step 2.

Step 7: Analysis and final Go no Go decision

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ANNEX 2

AFP Messages to the NMOC

Basic Evaluation Plan

The following plan is proposed to be used for the evaluation of AFP messages prior to their transmission to the IFPS operational system. The Plan can be adapted taking into account the AFP originator constraints.

Step 1: Transmission of AFP messages in an off-line text file for a first evaluation, including syntax. The transmission of the file can be done by e-mail.

Step 2: NMOC analysis of the off-line file and provision of feed-back to the AFP originator.

Step 3: GONOGO decision for the transmission of AFP messages to the IFPS test system.

Step 4: In case it is a NOGO, implementation of corrections to the AFP generation process. Steps 2, 3 and 4 will be repeated until the decision is a GO.

Step 5: On-line transmission of AFP messages to the IFPS test system, to the AFTN address EUCHZMFT or the SITA address ANREP7X.

Step 6: NMOC analysis of the received AFP messages and provision of feed-back to the AFP originator.

Step 7: GONOGO decision for transmission of AFP messages to the IFPS operational system.

Step 8: In case it is a NOGO, implementation of corrections to the AFP generation process. Steps 6, 7 and 8 will be repeated until the decision is a GO.

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ANNEX 3

GLOSSARY OF ABBREVIATIONS

A

AATOT	Anticipated Actual Take-Off Time (see also Definition of Terms)
ABI	Advance Boundary Information
ACARS	ARINC/Aircraft Communication Addressing and Reporting System
ACC	Area Control Centre
ACH	ATC flight plan CHange (message)
ACT	Activation (message)
ADEP	Aerodrome of Departure
ADES	Aerodrome of Destination
ADEXP	ATS Data Exchange Presentation
AFIL	Air-FILed Flight Plan
AFL	Actual Flight Level
AFP	ATC Flight plan Proposal (message)
AFTN	Aeronautical Fixed Telecommunication Network
AGDL	Air Ground Data Link
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information, Regulation and Control
AIS	Aeronautical Information Service
AMAN	Arrival MANager
AMC	Airspace Management Cell
ANM	ATFM Notification Message
ANSP	Air Navigation Service Provider
AO	Aircraft Operator
AOBT	Actual Off-Block Time
APL	ATC flight PLan (message)
APP	Approach
APR	Aircraft operator Position Report
ARCID	Aircraft Identification
ARCTYP	Aircraft Type (ADEXP)
ARINC	Aeronautical Radio Incorporated (US)
ARO	Air Traffic Services Reporting Office
ARR	ICAO defined ARRival message
ARTAS	Advanced Radar Tracker And Server
ASM	AirSpace Management
ASTERIX	All-purpose Structure EUROCONTROL Radar Information Exchange

ATC	Air Traffic Control
ATD	Actual Time of Departure
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATO	Actual Time Overhead
ATOT	Actual Take-Off Time
ATOW	Actual Take-Off Weight
ATS	Air Traffic Services
AUP	Airspace Use Plan

B

C

CADF	Central Airspace Database Function
CAM	Code Assignment Message
CASA	Computer Assisted Slot Allocation
CARAT	Computer Assisted Route Allocation Tool
CCAMS	Centralised Code Assignement and Management System
CCAMS-CS	Centralised Code Assignement and Management System Central Server
CCM	Corporate Conceptual Model
CCM	Code Cancellation Message
CDM	Collaborative Decision Making
CDR	Conditional Route
CEU	Central Executive Unit
CFL	Cleared Flight Level
CFMU	Central Flow Management Unit
CHG	ICAO defined CHG (change) message
CNL	ICAO defined CNL (cancel) message
COR	COde Request (message)
CPM	Correlated Position Message
CPR	Correlated Position Report
CR	Change Request
CRE	Code Release (message)
CRCO	Central Route Charges Office
CTFM	Current Tactical Flight Model
CTO	Calculated Time Over
CTOT	Calculated Take-Off Time

D

DCT	Direct
DEP	ICAO defined DEParture Message

DLA	ICAO defined DLA (delay) message
DLY	OLDI delay message/status
DMAN	Departure MANager
DPI	Departure Planning Information
DTOW	Default Take-Off Weight

E

EAD	European AIS Database
EATMS	European Air Traffic Management System
EATMP	European Air Traffic Management Programme
ECAC	European Civil Aviation Conference
ECIP	European Convergence and Implementation Plan
ECL	En-route Cruising Level
EET	Estimated Elapsed Time
EFD	ETFMS Flight Data (message)
ELDT	Estimated LanDing Time
ENV	CFMU Environment System
EOBT	Estimated Off-Block Time
EOBD	Estimated Off-Block Date
ES	Elementary Sector
ETA	Estimated Time of Arrival
ETFMS	Enhanced Tactical Flow Management System
ETMS	Enhanced Traffic Management System
ETO	Estimated Time Overhead
ETOT	Estimated Take-Off Time
EUROCONTROL	European Organisation for the Safety of Air Navigation

F

FDPA	Flight Data Processing Area
FCM	Flight Confirmation Message
FDPS	Flight Data Processing System
FIR	Flight Information Region
FLS	FLight Suspension (message)
FMP	Flow Management Position
FNM	Flight Notification Message
FPL	Flight Plan Message (ICAO format)
FSA	First System Activation
FSH	Flight SHift message
FUA	Flexible Use of Airspace
FUM	Flight Update Message

G

GAT	General Air Traffic

H

HMI	Human Machine Interface
HLD	Hold

I

IAF	Inbound Approach Fix
IAS	Indicated Air Speed (ICAO 8400/4)
ICAO	International Civil Aviation Organisation
ICD	Interface Control Document
IFPL	Individual Flight Plan Message
IFPS	Integrated Initial Flight Plan Processing System
IFPO	IFPS Operator
IFR	Instrument Flight Rules
IMAGE	Instrument Macrocospique d'Aide à la Gestion de l'Espace
IOBD	Initial (IFPS) Off-Block Date
IOBT	Initial (IFPS) Off-Block Time

J

K

L

LOBT	Last Received Off-Block-Time from IFPS
LOBD	Last Received Off-Block-Date from IFPS

M

MDI	Minimum Departure Interval
MFS	Message From Shanwick
MPL	Mini flight PLan
MTCD	Medium Term Conflict Detection

N

NAVAID	Navigational Aid
NOTAM	Notice to Airmen
Nm	Nautical Miles
NM	Network Manager

MNOC	Network Manager Operations Centre

O

OAT	Operational Air Traffic
OLDI	On-Line Data Interchange
ORM	Operational Reply Message

P

PAC	Pre_Activation (message)
PFD	Planned Flight Data
PIAC	Peak Instantaneous Aircraft Count

Q

R

RADNET	Radar Data Exchange Network (EUROCONTROL)
RCA	Remote Client Application
RDPS	Radar Data Processing System
REA	REAdy to depart message
RENAR	Réseau de la Navigation Aérienne (France)
RFI	Ready For (direct) Improvement (message)
RFL	Requested Flight Level
RNAV	Area Navigation
RQS	ReQuest Supplementary informtion message
RVSM	Reduced Vertical Separation Minimum
RVR	Runway Visual Range

S

SAM	Slot Allocation Message
SDP	Surveillance Data Processing
SEP	STAR Entry Point
SER	Slot Extension Request (message)
SFPL	System Flight PLan
SID	Standard Instrument Departure
SIP	Slot Improvement Proposal (message)
SIT	Slot Issue Time
SLoA	Stakeholder Line of Action
SMM	Slot Missed Message
SPA	Slot Proposal Acceptance
SRD	Software Requirement Document
SRM	Slot Revision Message

SRR	Slot Revision Request message
SSR	Secondary Surveillance Radar
STANLY	Statistic Analysis
STAR	STandard Instrument ARrival
STS	Special Status
SWM	SIP Wanted Message
SYSCO	System Supported Co-ordination
SYSPAR	System Parameter

T

TFV	Traffic Volume
TLPD	Traffic Load Prediction Device
TMA	Terminal Control Area
TMT	Technical Monitoring Team
TOT	Take-Off Time
TOW	Take-Off Weight
TSA	Temporary Segregated Area
TTOT	Target Take-Off-Time
TWR	Tower

U

UAC	Upper Area Control Centre
URD	Users Requirement Document

V

VFR	Visual Flight Rules

W, X, Y, Z

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