EUROPEAN ORGANISATION FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

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SUMMARY OF RESPONSES (SOR) DOCUMENT FOR THE

DRAFT EUROCONTROL SPECIFICATION ON INTEROPERABILITY AND PERFORMANCE FOR FLIGHT MESSAGE TRANSFER PROTOCOL

Formal Consultation 08 March 2006 – 08 May 2006

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DOCUMENT CONTROL

DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

Edition Number	Edition Date	Reason for Change	Pages Affected
0.1	12-05-06	First Draft	All
0.2	19-05-06	RU review and responses	All
1.0	15-06-06	Released edition	All

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Author(s): M. Rees

Reviewed by:

Approved by: J-L. Garnier

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1. INTRODUCTION

The draft implementing rule on Flight Message Transfer Protocol, as developed in response to the related SES mandate, was supplied to the European Commission as part of the Final Report deliverable on 31 March 2005. The draft rule was discussed within the Single Sky Committee (SSC) in the course of autumn 2005. At its 14th meeting the SSC endorsed the rule in principle and supported the proposal from the Commission to invite EUROCONTROL to transform the former Annex I and Annex II, Part D into a EUROCONTROL Specification, which would then be made mandatory through reference to Article 3 in the rule. (Ref: TREN/F2/EMM/mr D(200811)

Consequently the draft EUROCONTROL specification (Ref: SPEC.COM.FMTP), developed on this basis, was circulated for formal consultation from 8 March to 8 May 2006 using the mechanisms of the EUROCONTROL Notice of Proposed Rule-Making (ENPRM) process.

The aim of the document is to summarise the main comments made and provide relevant responses to them.

The document is structured to provide first a high level summary of the comments and level of support received from the consultation and then a discussion of the specific comments. A conclusion is then made at the end of the document, indicating the overall assessed impact of the comments and responses and the way ahead in respect of the EUROCONTROL specification.

A table containing details of all comments received is included at Annex A.

2. CONSULTATION

The consultation documentation consisted of the EUROCONTROL specification describing the interoperability and performance requirements for the Flight Message Transfer Protocol (FMTP).Copies were sent directly to:

- Members of the Provisional Council;
- EC, ECAC, FAA, ICAO, JAA, NATO;
- International Organisations/Associations:
- ACI, AEA, AECMA, ATCEUC, CANSO, EBAA, ECA, ERA, ETWF, IACA, IAOPA, IATA, IFALPA, IFATCA, IFATSEA.
- Chairmen of following bodies:
    - PRC (copy Head of PRU);
    - SRC (copy Head of SRU);
    - CMIC (copy Head of MIL);
    - CESC (copy Secretary of CESC).

3. COMMENTS SUMMARY

3.1 *General*

The consultation provided comments from some 19 Stakeholders. There was a very high level of acceptance of the draft EUROCONTROL specification.

3.2 *Categories of Responses*

Table 1 shows the breakdown of responses into individual stakeholder groups as well as the acceptability of the responses.

ENPRM - Eurocontrol Specification on Interoperability and Performance for FMTP
Comments received by Stakeholders

	A	B	C	D	Total by Stakeholder	%
Authority (Civil & Military)	6	1	1	0	8	42,1%
Service Providers (ANSPs)	8	2	1	0	11	57,9%
Airspace Users	0	0	0	0	0	0,0%
Airport Operator	0	0	0	0	0	0,0%
Industry	0	0	0	0	0	0,0%
Other	0	0	0	0	0	0,0%
Total Received Comments by Category	14	3	2	0	19	100%
Percentage (%)	73,7%	15,8%	10,5%	0,0%	100%	

Legend:
A = Acceptable without amendment
B = Acceptable but would be improved with amendments
C = Not acceptable but would be acceptable with amendments
D = Not acceptable under any circumstances

3.3 *Overall*

14 of the responses indicated acceptance of the specification without amendment while 5 responses indicated suggested changes. The specific comments are referenced in the following section.

4. SPECIFIC COMMENTS

4.1 *Introduction*

The comments below have been sub-divided to highlight and give priority to those that were directly associated with the content of the draft EUROCONTROL specification (Section 4.2), which was the purpose of the ENPRM. Several comments received were of a more general nature and not of direct relevance to the text of the draft EUROCONTROL specification. These have been included under Section 4.3.

4.2 *Comments Directly Applicable to the Draft Text*

4.2.1 Definitions

(a) Comment
It was proposed that additional message definitions needed to be added to make the list complete.

Response
A definition has been added for the following messages:

- *Accept message: In Table 1, replace the description of Identification message by "Used to exchange identification values and the result of their validation (ACCEPT and REJECT messages)"*
- *Reject message: Same as previous*
- *Data Field: In section 3.1.1 replace "header field" by "header" and for the title section 3.2 replace "Header Field" by "Header".*

For the following messages, no definition has been added:

- *Startup message: Table 4 explicitly defines the STARTUP message data field content and Table 1 & 4.3 describe its use.*
- *Shutdown message: Table 4 explicitly defines the SHUTDOWN message data field content and Table 1 & 4.6 describe its use.*
- *Heartbeat message: Table 4 explicitly defines the HEARTBEAT message data field content and Table 1 & 4.8.1 describe its purpose.*
- *User Data Messages: Any data block can be submitted to the FMTP communication interface as long as it is character based (section 8) and does not exceed 10240 octets (section 3.3.4). Section 3.3.1 clearly states that the implementation must identify this MT-User data as an operational or operator message (setting of the TYP field). It is not the purpose of FMTP to verify whether a message identified as operational is a true operational message.*

(b) Comment
Additional definitions in Table 6 would increase consistency throughout chapter 6.

Response

- *5.2.1 describes the link between the FMTP state machine and the transport interface. T-Connect->Ind and T-Disconnect->Ind are events and not FMTP State Machine actions or services invoked by the FMTP State machine. It is unsuitable for integration into Table 6. Those services are described in section 6 and are referred by Table 5 as events.*
- *5.2.1 describes the link between the FMTP state machine and the transport interface. T-Data->Ind is not FMTP State Machine action or service invoked by the FMTP State machine, so unsuitable for integration to Table 6. This service is described in section 6.*

4.2.2 Message Sequence

Comment
Changes in the order of the messages in Table 1 would help better coherence between section 3.3, 3.4 and 3.5.

Response
Agreed. Order of rows in table 1has been changed (Operational became the 1st row).

4.2.3 IPv6

Comment
It was suggested that IPv6 may be too immature for implementation; hence IPv4 should be mandated to avoid risk and ensure safety.

Response
The SES IR formal consultation previously justified the rationale for IPv6. IPv6 is already in operations within the private sector but has also begun within the ATM sector (Spanish-German AMHS), therefore the IPv6 technology is considered mature. It is to be noted that the IR/Specification does not impose that all internal FMTP components or constituents comply to IPv6. However, within the context of the scope of applicability of the interoperability rule, FMTP "systems" must make use of IPv6 when exchanging data.

4.2.4 Tautology

Comment
It was requested to use the word "byte" rather than "octet".

Response
The terms "byte" and "octet" are both valid terms. In the context of communications an octet is explicitly 8 bits. For older operating systems bytes were of different sizes but now commonly 8 bits. We prefer to leave the term octet as this is the term that is used in the referred TCP standard (reference 11.1). We propose to integrate the TCP definition of an octet.
Therefore, in section 1.3.2 a new definition for octet has been added: "an 8-bit byte"

4.3 *Comments Not Directly Applicable to the Draft Text*

4.3.1 Community Specifications

(a) Comment

It was suggested that according to EC Regulation 552/2004 the EUROCONTROL Specification should in fact not be used to demonstrate an acceptable means of compliance, a Community Specification should be used.

Response

At the fourteenth meeting of the Single Sky Committee held on 15 December 2005, the Committee agreed with the approach proposed by the Commission namely as quoted in SSC 14 item 7 SES IOP paper:

- *request Eurocontrol to transform the content of Annex I and the provisions of Annex II, Part D of the draft implementing rule on FMTP into a EUROCONTROL specification;*

- *request the formal opinion of the SSC on the modified draft implementing rule once the Eurocontrol specification has become available in order to include an explicit reference in Article 3, making it binding under Community law..*

All the mandatory interoperability requirements are now contained into the specification document. The IR does not contain any significant regulatory provisions that could be supported by an acceptable means of compliance. The requirements of the EUROCONTROL specification are an extension of the IR.

(b) Comment

It was also suggested that the specifications technical detail was such that it should be incorporated in a Community Specification not an Annex to the IR.

Response

The requirements of the EUROCONTROL specification can be seen as an extension of the IR for the sake of readability and maintainability of the IR. If these requirements are turned into voluntary materials, there is no point of having an IR on FMTP; the IR will lose all of its substance.

(c) Comment

It was further suggested that the whole EUROCONTROL FDE-ICD Part 2 plus the FDC ICD over TCP/IP Interoperability Test Plan should be identified as a means of compliance to the FMTP IR.

Response

In keeping with the approach discussed and agreed at SSC 14, the EUROCONTROL specification contains the minimal set of requirements to ensure interoperability. The recognition of a test plan as a means of compliance with the IR can be achieved by developing a related Community specification.

5. CONCLUSION

Considering that the technical details included in the Annex 1 and Annex 2, part D of the original draft implementing rule for FMTP had been developed in close co-operation with many stakeholders through the formal consultation process, it was understandable that there were very few comments on the draft Eurocontrol specification for FMTP. The draft Eurocontrol specification was essentially a "cut and paste" of the Annexes from the original Draft implementing rule, hence it was widely accepted without comment by the majority of the commentators.

Considering that those comments raised have all been provided with clear responses, it is difficult to see how further discussions could benefit enhancement of the document. The changes mentioned in the above responses will be incorporated, thereafter it is felt that the document is now ready for formal adoption.

ANNEXES

ANNEX A

Annex A contains a list of those Stakeholders that provided comments on the formal Consultation and that agreed to their names being published.

ANNEX B

Annex B provides a table containing all the comments provided by Stakeholders without associating them with those that provided them. The table cross-checks the comments with the associated sections of the SOR.

ANNEX A

LIST OF STAKEHOLDERS THAT PROVIDED COMMENTS TO THE FORMAL CONSULTATION

From the total of 19 stakeholders who provided comments on the EUROCONTROL SPECIFICATION of Interoperability and Performance Requirements for the Flight Message Transfer Protocol (FMTP) all stakeholders agreed to publish their names, which can be found below:

Country	Organisation	Contact Name
ROMANIA	Romanian Air Force	Cdr. P. Relu
UNITED KINGDOM	Civil Aviation Authority	Mr. T.K. Dunford
NETHERLANDS	Ministry of Transport	Mr. Bob Oeloff
NETHERLANDS	LVNL	Mr. E. Tomson
UNITED KINGDOM	NATS	Mr. S. Williams
DENMARK	NAVIAIR	Mr. F. Skov
GERMANY	Bundeswehr ATS Offices	Mr. R. Hausbalk
BELGIUM	Belgian CAA	Ms. E. Billen
FRANCE	Direction Générale de l'Aviation Civile	Mr. D. Lemarchand
PORTUGAL	NAV Portugal	Mr. José Calado
POLAND	Polish Civil Aviation Office	Mr. K. Kazmierczak
FINLAND	Finavia	Mr. P. Virtanen
GREECE	Hellenic CAA	Mr. N. Stratakos
SWEDEN	Swedish CAA	Mr. A. Hietala
GERMANY	DFS	Mr. F. Zetsche
ROMANIA	ROMATSA	Mr. F. Chivulescu
SPAIN	AENA	Mr. J. Martinez Pérez Pérez
CZECH REPUBLIC	Ministry of Transport	Mr. J. Stolc
TURKEY	Ministry of Transport	Mr. A. Ariduru

ANNEX B

TABLE OF RECEIVED COMMENTS

1. The following table details all the comments received as part of the Consultation and cross-refers each comment to an appropriate response within the SOR document. The Consultation process does not allow for specific comments to be attributed to those that made them so the material has been amended to remove any indication of the source of the comment.

2. The table addresses comments on the Draft EUROCONTROL Specification on Interoperability and Performance for Flight Message Transfer Protocol have been associated with relevant paragraph / article / recital numbers of the associated document.

3. The table headings are as follows:

ENPRM ON EUROCONTROL SPECIFICATION ON INTEROPERABILITY AND PERFORMANCE FOR FMTP REGULATORY PROVISIONS				
§ No	Comment	Reason(s) for Comment	Proposed Change/Text	Ref § No SOR

   a. The first column cross-refers to the relevant paragraph (article / recital) number in the Draft EUROCONTROL Specification on Interoperability and Performance for Flight Message Transfer Protocol

   b. The 'Comment' and 'Reason(s) for Comment' columns captures the comments from the 'Comment' and 'Reason(s) for Comment' fields from the Consultation Response Sheet

   c. The 'Proposed Change/Text' column captures the text from the 'Proposed Change/Text' field of the Consultation Response Sheet.

   d. The 'Reference **§ No SOR' column cross-refers to the relevant section of the SOR.**

REGULATORY PROVISIONS				
§ No	**Comment**	**Reason(s) for Comment**	**Proposed Change/Text**	**Ref § No SOR**
N/A	General comment. As this is a technical specification intended for the purpose of EATMN interoperability, according to the Interoperability regulation 552/2004, this must be published as a community specification published in the Official Journal.	The Interoperability regulation only makes provision for Essential requirements, Implementing Rules and Community Specifications as a mean of compliance. There is no provision for technical documents such as this for interoperability conformance. As such technical content is not suitable for an implementing rule this must become a community specification.	COMMUNITY SPECIFICATION for Interoperability and Performance Requirements for the Flight Message Transfer Protocol (FMTP)	4.3.1 (a)
Title Page	This contains much technical detail which should not be in a IR, even as an Annexe, but needs to be a Community Specification	This is a technical specification which is a Community Specification. Also the Interoperability regulation (552/2004) only makes allowances for Essential Requirements, IRs and CSs for compliance. There is no indication that any other document can be order to comply with the SES regulations.	COMMUNITY SPECIFICATION for the IR for the Flight Message Transfer Protocol (FMTP) as part of the Interoperability Regulation	4.3.1 (b)
1.3.2 Definitions	Incomplete list of definitions	Difficult to understand terms not listed	Add definitions for: - accept message - reject message - start up message - shutdown message - heartbeat message - data field - user data messages (-operational messages??)	4.2.1 (a)
2.1 FMTP Identification Values	Use of word "octet"	Not correct English word	Replace "octet" by "byte"	4.2.4

ENPRM ON EUROCONTROL SPECIFICATION ON INTEROPERABILITY AND PERFORMANCE FOR FMTP REGULATORY PROVISIONS				
§ No	**Comment**	**Reason(s) for Comment**	**Proposed Change/Text**	**Ref § No SOR**
2.3 Types of Messages	Change sequence to explain "Message type" in Table 1	To get better coherence with section 3.3, 3.4 and 3.5	Change sequence in Table 1 (system messages, operational messages, identification messages) into the following sequence: operational messages, identification messages, system messages	4.2.2
6. TCP Transport Interface and Settings	Incompatible actions in chapter 6 with action list Table 6 in section 5.2.3	Difficult to understand actions not listed	Add definitions in Table 6 in order to increase consistency in chapter 6 for following actions: * T-Connect -> Ind Service (see in section 6.2.5) * T-Disconnect -> Ind service (see in section 6.3.4) * T-Data -> Ind service (see in section 6.4.2)	4.2.1 (b)
General	The IPv6 technology is immature Reservations on the availability of the related communications softwares		Maintain IPv4 technology to avoid any risk and ensure safety is necessary	4.2.3
General	The complete Eurocontrol FDE-ICD (Flight Data Exchange - ICD) Part 2 (TCP/IP) including the "FDC ICD over TCP/IP Interoperability Test Plan" should be identified as a Means of Compliance to the Implementing Rule on Flight Message Transfer Protocol.	SES legislation foresees to identify Means of Compliance to Implementing Rules in terms of Community Specifications. The reference to the complete and detailed specification and test plan enable manufacturers to implement the Flight Message Transfer Protocol in an ambiguous manner.	Add a corrsponding statement into the specification which refers to the Eurocontrol FDE-ICD (Flight Data Exchange - ICD) Part 2 (TCP/IP) and the Test Pan as a Means of Compliance.	4.3.1