

**AERONAUTICAL TELECOMMUNICATIONS NETWORK**  
**PANEL**

**Working Group 3**

Gran Canaria (Canary Islands), Spain, 28<sup>th</sup> September – 2<sup>nd</sup> October 1999

**SME 2 (Air-Ground ATN Applications)**  
**Status Report**

Presented by: F. Picard (Sub-Volume 2 SME)

**SUMMARY**

This paper contains the open PDRs raised against the Sub-Volume 2 (Air-Ground Applications) ATN SARPs.

The WG3 is invited to note the information provided in this WP.

## 1. CURRENT STATUS

NB PDR			
SARPs	Version	CCB Status	Somme
ADS	IV1.1	WITHDRAWN	2
		ADOPTED	11
	IV2.1	ADOPTED	1
	IV2.2	REJECTED	2
		WITHDRAWN	1
		ADOPTED	8
	IV2.3	ADOPTED	9
IV3.0	SUBMITTED	1	
Somme ADS			35
CM	IV1.1	WITHDRAWN	1
		ADOPTED	2
	IV2.2	REJECTED	1
		WITHDRAWN	1
		ADOPTED	1
	IV2.3	ADOPTED	6
IV3.0	ACCEPTED	1	
Somme CM			13
CPDLC	IV1.1	WITHDRAWN	1
		ADOPTED	25
	IV2.2	REJECTED	2
		ADOPTED	1
	IV2.3	WITHDRAWN	2
ADOPTED		4	
Somme CPDLC			35
FIS	IV1.1	ADOPTED	9
	IV2.1	ADOPTED	2
	IV2.2	REJECTED	3
		FORWARDED	1
		ADOPTED	7
	IV2.3	REJECTED	1
ADOPTED		9	
Somme FIS			32
SV2	IV1.1	ADOPTED	2
	IV2.2	ADOPTED	1
	IV2.3	ADOPTED	4
	IV3.0	SUBMITTED	1
Somme SV2			8
Total			123

IV1.1=Pukhet version

IV2.3= Doc 9705 Ed.1 (Nov. 1998)

IV3.0= Doc 9705 Ed.2 (Nov. 1999)

## 2. PDR 99070001 – SV2 – Editorial Error

Title: ICAO 9705 Edition 1 Amt 1 - Editorial Errors

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"
"
PDR Reference:                99070001
"
Originator Reference:         -
"
SARPs Document Reference:     All Doc 9705 sub-volumes
Status:                       SUBMITTED
Impact:                       E (Editorial)
PDR Revision Date:
PDR Submission Date:          19/07/99
Submitting State/Organization: CCB
Submitting Author Name:        CCB Chair
Submitting Author E-mail Address: atnp_ccb_chair@cenatls.cena.dgac.fr
Submitting Author Supplemental
Contact Information:
SARPs Date:                   ICAO 9705 Edition 1 Amd 1, 11/99
SARPs Language:               English
    
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### Summary of Defect:

Note: In the following, <text> means text in italics and [text] means text in bold.

#### Sub-Volume I

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(no change)

#### Sub-Volume II

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== Part 1 (CM)  
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== Part 2 (ADS)  
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- 1 (source: RTCA SC-189/EUROCAE 53)/ Delete the note of section 2.2.1.7.1.5.2 (the note is made obsolete by PDR 98120003).
- 2 (source: RTCA SC-189/EUROCAE 53)/ In section 2.2.1.7.1.5.5.a)1), replace "FOM set to 0" with "the <position accuracy> FOM element set to 0" (clarification).
- 3 (source: RTCA SC-189/EUROCAE 53)/ Replace 2.2.1.7.1.4.1 by the following text: "[Recommendation.-] <If the ADS-air-user or ADS-ground-user has an unrecoverable error, it should invoke ADS-user-abort request for each affected peer system.>" (this was before a requirement "shall" which could not be always met).
- 4 (source: SME2)/ In sections 2.2.2.2.2.1 and 2.2.2.2.2.2, replace "ARF-user" by "ADS-RF-user" (3 occurrences).
- 5 (source: SME2)/ In section 2.2.2.5.1.1 note 3, delete "(see 4.3.3.1.2.4)".

== Part 3 (CPDLC)  
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- 1 (source: SME2)/ In section 2.3.5.1.1 note 3, delete "see 4.4.3".

== Part 4 (FIS)  
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1 (source: WG3/SG2)/ Replace 2.4.7.2.3.1 by the following text:  
"[Recommandation.-] <If the FIS-user has an unrecoverable error, it should  
invoke FIS-user-abort request for each affected peer system.>" (this was  
before a requirement "shall" which could not be always met).

Sub-Volume III

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== Part 1 (AMHS)

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(no change)

== Part 2 (AIDC)

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(no change)

Sub-Volume IV

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(no change)

Sub-Volume V

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Assigned SME: All SMEs

Proposed SARPs amendment: See "Summary of Defect".

SME Recommendation to CCB: -

CCB Decision: atnp\_ccb\_chair: SUBMITTED (19/09/99)

### 3. PDR 99070002 – CM – Logon Request/Response Clarification

Title: CM – Logon Request/Logon Response Clarification

PDR Reference:	99070002
Originator Reference:	-
SARPs Document Reference:	CM SARPs, Sections 2.1.7.1.1.1, 2.1.7.2.2.5
Status:	SUBMITTED
Impact:	C (Clarification)
PDR Revision Date:	
PDR Submission Date:	19/07/99
Submitting State/Organization:	ATNP WG3/SG2
Submitting Author Name:	Saccone, G
Submitting Author E-mail Address:	
Submitting Author Supplemental:	
Contact Information:	
SARPs Date:	Document 9705 Edition 1 Amendment 1 (11/99)
SARPs Language:	English

Summary of Defect:

There is confusion as to when to put application information in Logon Request and Logon Response APDUs. This PDR suggests adding clarifying notes.

Assigned SME: Sub-Volume II SME

Proposed SARPs amendment:

Add note to 2.1.7.1.1.1:

Note. – Some applications such as ADS and FIS are exclusively ground or air initiated, and the Logon Request must reflect that. Other applications such as CPDLC may be classified as either air or ground initiated, or both air and ground initiated (depending on the implementation). If such an application is air only initiated, then the Logon Request will contain only the AEQualifier and version number. If such an application is either ground only initiated OR both air and ground initiated, that application is considered to be ground initiated and the Logon Request will contain the AEQualifier, version number and address of that application.

Add note to 2.1.7.2.2.5:

Note. – Some applications such as ADS and FIS are exclusively ground or air initiated, and the Logon Response must reflect that. Other applications such as CPDLC may be classified as either air or ground initiated, or both air and ground initiated (depending on the implementation). If such an application is ground only initiated, then the Logon Response will contain only the AEQualifier and version number. If such an application is either air only initiated OR both air and ground initiated, that application is considered to be air initiated and the Logon Response will contain the AEQualifier, version number and address of that application.

SME Recommendation to CCB: REJECTED, this text clarifying the use of the fields in the Logon Request and Response is typical tutorial material and therefore should be inserted in the CAMAL.

CCB Decision: atnp\_ccb\_chair: 19/07/99 (SUBMITTED)  
CCB-10 (Gran Canary): ??

#### 4. PDR 99070003 – ADS – ADS-demand-response (Pos. Ack.)

Title: ADS - Missing Requirement for ADS-demand-contract response

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"
"
PDR Reference:                99070003
"
Originator Reference:         -
"
SARPs Document Reference:     ADS SARPs,
"
Status:                        ACCEPTED
"
Impact:                        C (Clarification)
PDR Revision Date:            26/07/99 (SUBMITTED -> ACCEPTED)
PDR Submission Date:          24/06/99
Submitting State/Organization: RTCA SC-189 / EUROCAE 53
Submitting Author Name:        Lelievre, T
Submitting Author E-mail Address:
Submitting Author Supplemental:
Contact Information:
SARPs Date:                    Document 9705 Edition 2
SARPs Language:                English
    
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Summary of Defect:

There is no recommendation on what the ADS-air-user shall do when it receives an ADS-demand-contract indication but is not able to send the response within 0.5 seconds.

Actually, the ADS SARPs are not aligned with the ADSP ORs. Whatever the contract type is, the aircraft should be allowed to send to the ground a positive acknowledgement to indicate that it accepts the contract but it is not able to send immediately the ADS report. This is applicable to the ADS-demand contract as well. The ADS SARPs do not allow the aircraft to send a positive ack upon receipt of an ADS-demand-contract indication.

Assigned SME: Sub-Volume II SME

Proposed SARPs amendment:

SME Recommendation to CCB: ??

The ADS SARPs do not allow the aircraft to send a positive ack upon receipt of an ADS-demand-contract indication, for the following reasons provided by the ADS editor:

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Originally - in the early versions of the draft ADS SARPs - the ADS demand contract had the following three valid sequences that the aircraft could make in response:

1. ACK, ADS-report
2. NCN, ADS-report
3. NACK

During the development of the SARPs, the ADS manual was also updated and changed on a regular basis. Because of this, in the early stages it was often difficult to track the changes in the Manual into the draft SARPs. In the earlier versions of the Manual there were statements that were clearly technical in nature, and had no operational content. It was sometimes difficult for the working group to determine what was the real operational intent behind the technical statements. (These technical statements were mostly removed in later versions of the Manual.) One solution to the problems of tracking the Manual was to ensure that there were members of the ADSP who attended the working group on a regular basis. Where confusion arose about the meaning of the Manual within the working group, the ADSP members were consulted for clarification. This became the normal way of working within the group.

At one meeting of the working group (I don't remember which) there was a discussion about the meaning of the Manual with regard to the ADS demand contract. It was not clear and the discussion went on for some time. The working group agreed on the current structure of the ADS demand report based on a very clear statement from one of the ADSP members present. The statement is how I have always understood the requirement, and how I have presented the ADS demand contract at all meetings since then. I also summarised it in the ADS guidance material (now the CAMAL) - using almost exactly the same words that were stated in that meeting:

"Note that, unlike event and periodic contracts, demand contracts do not permit the aircraft to return a positive ack, followed by an ADS report some time later. The reason for this is as follows: it is anticipated that normal operation will use event and/or periodic contracts. The use for demand contract is, therefore, expected to be for cases when the controller needs an immediate response to a query outside the normal surveillance operation. The requirement is that the information is required as soon as possible. The aircraft can use the positive ack as a form of delay, and this is therefore prohibited in a demand contract".

From that point on, the working group never had a discussion on the basic structure of the ADS demand contract. However, it was repeatedly reported directly or indirectly at many meetings since then.

It is my opinion that, at the time, "normal operation" was widely considered to be a periodic contract or an event contract either or both of which would be used to ensure that the aircraft was flying according to the flight plan. I also recall discussions from that time that implied that the purpose of the demand contract was for use when the aircraft appeared not to be flying by the flight plan and the controller wanted to know what was happening immediately. This may have been the view that was presented when the above decision was made - I cannot recall.

Clearly, the common view of what "normal operation" is has either changed or was misrepresented to me and the working group all those years ago.

Since then there appears to have been a breakdown in communication. The structure of the demand contract has been presented on many occasions by myself, and possibly others at many public occasions. Likewise the Manual has become much more stable and available to the working group. There have been opportunities on all sides to spot this issue for some time. It has apparently only surfaced now.

So that is where we have come from. I do not want to either place or avoid blame - only to comment on my memory of the background. Now, what to do about it...

If the ADS demand contract is re-engineered to include the ACK - this would be a significant change to the SARPs. It would require a change to the ASN.1, changes to the protocol machine definition, changes to the abstract service interface and changes to the user requirements. I stress that the changes are so significant that some level of re-validation would certainly be necessary.

Although I am out of touch with the operational aspects of the demand contract, I would question whether inclusion of the ACK is operationally or practically an absolute requirement. We may achieve the same result with a much simpler solution. For example, if the value of the recommended reply time was increased or removed for the ADS contract, - would the result not be close enough to the operational requirement? Are there any other solutions?

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CCB Decision:  
(SUBMITTED)

atnp\_ccb\_chair: 19/07/99

(ACCEPTED)

atnp\_ccb\_chair: 26/07/99

CCB-10 (Gran Canary): ??