

Report of the **DLK Teleconference 8** held on **15 May 2008**

In attendance were:

Joe Slavinsky, FedEx	Mike Russo, IA Staff
Andrew Onken, ARINC	Bruce Eckstein, ITT
Augustin Gheorghe, Eurocontrol	Steve Henriksen, ITT
Olivier Gremillet, Eurocontrol	Rob Morgenstern, MITRE
Nick Witt, Eurocontrol	Jim Scroggs, Rockwell Collins
Pete Muraca, FAA	Alain Bothorel, Rockwell Collins France
Matt Wade, FAA	Eric Mehn, SITA
Therin Dastrup, Honeywell	Ron Abeel, Spectralux
Tom McGuffin, Honeywell	Bill Calderhead, Universal Avionics
Dan Cunningham	

### 1] Introduction

DLK Systems SC secretary Mike Russo moderated the teleconference to finalize Draft 4 of Supplement 5 to ARINC Specification 631.

### 2] References to ICAO documents

If a generic reference to the ICAO Manual on VDLM2 is made without further explanation, it should be assumed that ARINC 631-5 and the Manual are in agreement. This enables the function, defined in the Manual, to change as needed over time as new Editions of the Manual are released, without changing the reference in ARINC 631.

Investigation of the reference in ARINC 631 to the ICAO Manual on VDLM2 uncovered the fact that a correction was needed – from Edition 2 to Edition 1. Mike presented a revision that he made in Section 1.4.1 of Strawman 7 to correct the nomenclature. The telecon recommended further revisions (to reference Edition 1) to be included when Draft 4 is published.

Strawman 7 also includes new text: ARINC 631-5 acknowledges that there are some inconsistencies between ARINC 631-5 and the ICAO Manual on VDLM2 Edition 1. In these cases, the difference is noted within ARINC 631-5. Hopefully, these differences will be resolved through coordination with ICAO ACP WG-M and published in an addendum to the Manual or as a new Edition. In the interim there is a potential for some confusion when an avionics manufacture is seeking certification in the USA. In Europe, the Implementation Rule will specify that ARINC 631-5 will have precedence.

### 3] Inconsistencies

Mike noted that since the posting of Strawman 7 for Draft 4 of Supplement 5 to ARINC 631, Bill Calderhead had reported an inconsistency among the existing ARINC 631-4 (published in 2005), and the current ICAO Manual on VDLM2. The inconsistencies appear in the PICS in Attachment 2, Tables 2.2.9 through 2.2.11. Tom McGuffin reported that the differences reflected in A631-4 were indeed intentional, though the rationale for the changes may have been lost. There was a rationale that justified the changes.

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Peter Muraca reported that the RTCA DO-224B MOPS are in agreement with the Manual and therefore inconsistent with ARINC 631-4. There was a lapse in activity in WG-M which resulted in the differences. WG-M is about to resume activity which presents the opportunity to coordinate the changes. RTCA SC-214 was formed recently and will be the focus for updating the MOPS to agree with ARINC 631-5.

The telecon asked to reconvene in two weeks in order for manufactures and DSPs to assess their implementation of the Public Parameters in Non-LE responses. Subsequent to the telecon, Bill Calderhead submitted an e-mail explaining his interpretation of ARINC 631-4. He noted that his more literal interpretation of the PICs may have led to the interoperability problems he had noted. DLK Telecon 9 will discuss removing the potential for different interpretations.

### **4] Other Comments**

a) Nick Witt noted that timers T24 and T25 should not be allowed. Currently these are set to Optional. Consensus was to change them to X in Table 3-21 of Attachment 3 for publication in Draft 4. This will align A631-5 with the intent of the Manual on VDLM2. ICAO amendment 201 was accepted by WG-M. A correction was made to the Manual but the correction is incomplete. Rob Morgenstern and Peter Muraca were tasked to coordinate with WG-M.

b) Nick Witt noted that test was added by Strawman 7 Section 9.8.1 to reminds the reader that the avionics can not assume that the previous link is still valid if it fails to establish a new link. The same advisory should be true for Section 9.8.2. The telecon asked Nick to expand this discussion to enable the avionics to select a ground station that it hears while attempting to establish a link using the FSL to give the avionics more flexibility in acquiring a new link.

c) Alain Bothorel questioned the instruction that, during FSL in Section 9.8.2, the aircraft fill the PECT after the avionics had established a link. Consensus was to remove the “After a link is established” and “using the normal procedure.” These changes make the instruction more consistent with the commentary that follows.

d) Alain Bothorel asked for clarification concerning the Mandatory designation of CO-addrfilter in Table 2-1-2 of Attachment 2. This parameter is conditional: support is only mandatory when the VDL ground station supports ground-requested broadcast handoffs. The telecon revised the entry to show the conditional status. There are other cases where conditional status may not be adequately identified. Correction of this oversight will be delayed to a future supplement.

### **5] Adoption Schedule**

Nick Witt expressed concern that the delay in moving to adoption of Supplement 5 to ARINC 631 would impact the implementation schedule, driven by the EU Implementation Rule. He encouraged the IA Staff to take whatever measures necessary to avoid having to wait until another formal meeting to declare Draft Supplement 5 to be mature. Mike Russo will explore alternatives within the AEEC due process.

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**6] Next DLK Telecon**

DLK Telecon 9 will be held on 3 June at 1500 UTC. The objective of the telecon will be to take the steps necessary to move ahead with submission of Draft 4 of Supplement 5 to ARINC 631 for adoption consideration. The focus of this effort will be on addressing the short term inconsistencies in PICs among the ICAO Manual on VDLM2, RTCA DO-224B, and Draft 4 of ARINC 631-5.

This report was prepared by Mike Russo.

**ATTACHMENT 1**  
**ACTION ITEM LIST – DLK TELECON 8 15 MAY 2008**

Actions Items from DLK Telecon 8 held 15 May 2008					
Number	Volunteer	Organization	Action Description	Status	Due
08-05_02	Nick W	Eurocontrol	Provide new text in Section 9.8.1 and 9.8.2 to clarify the switch when autotune fails	Open	
08-05_01	Rob Morgenstern Peter Muraca	MITRE FAA	Coordinate ARINC 631-4 and 631-5 changes to ICAO Manual on VDLM2 and RTCA DO-224B MOPS to achieve harmonization.	Ongoing	

Actions Items from DLK Telecon 7 held 6 March 2008					
Number	Volunteer	Organization	Action Description	Status	Due
				Open	
08-03_02	Nick W	Eurocontrol	<p><del>1) Add Cause Code entries (when autotune is rejected for the cases described in Commentary to Section 9.8.1).</del></p> <p>2) Provide clarification in Section 4.1 to explain autotune reject when an aircraft wants to connect to its preferred DSP.</p>	Open	
08-03_01	Rob M.	MITRE	Submit text for Section 9.8.2 commentary and Attachment 2 PICs to specify clearly deviations of ARINC 631 from the VDL Manual.	Open	

Actions Items from DLK Telecon 6 held 7 February 2008					
Number	Volunteer	Organization	Action Description	Status	Due
08-02_03					
08-02_02					
08-02_01	Nick Witt	Euro	Follow up on frequency change that involves an ATN Router.	Open	

Actions Items from DLK Telecon 5 held 17 January 2008					
Number	Volunteer	Organization	Action Description	Status	Due
08-01_03	Nick Witt	Eurocontrol	1) Submit changes to add PICS entry for mandatory FSL	Closed	
08-01_02			Withdrawn		
08-01_01	Nick Witt	Eurocontrol	<p>1) Develop text to cover additional scenarios and increase the level of detail in Section 4.3.1.1 concerning. [Andrew Onken will coordinate.</p> <p>2) Provide draft text on how the DSPs should treat access to terminal frequency when the aircraft is airborne (e.g., en-route) overflying the airport.</p>	Closed	

Actions Items from DLK Telecon 4 held 20 December					
Number	Volunteer	Organization	Action Description	Status	Due
07-12_02	Mike Russo	IA Staff	Modify references to ICAO SARPs VDL Manual	Closed 05/15/08	

**ATTACHMENT 1**  
**ACTION ITEM LIST – DLK TELECON 8 15 MAY 2008**

			from Section 6.5.--- to Part 2 Section 5.---		
07-12_01	Nick Witt	Eurocontrol	1) Provide proposed revisions for commentary to Section 4.3.1 and in Section 9.8 concerning link establishment to an existing frequency.  1) Add informal descriptive text as an appendix to describe how the FSL process behaves.	Closed	

**ATTACHMENT 1**  
**ACTION ITEM LIST – DLK TELECON 8 15 MAY 2008**

Actions Items from DLK Sys SC Meeting held October 23-25, 2007 in Dallas, TX					
Number	Volunteer	Organization	Action Description	Status	Due
07-10_07	Tom McGuffin	Honeywell	Develop new text for ARINC 618 that expresses the airline's desire that new DSP frequencies avoid the pre-existing frequency assignments of other DSPs, particularly their base frequency.	Closed	
07-10_06	Alexandre Simonin and Nick Witt	Eurocontrol	Provide proposed revisions to the VSDA address to specify a single address. Changes impact the body of the text plus Appendix D. MPR to provide diagrams.	Closed 03/06/2008	
07-10_05	Tom McGuffin	Honeywell	Update Appendix H for Draft 3 of Supplement 6 to ARINC 631: Modify Message Sequence Charts.	Closed 04/22/08	
07-10_04	Alexandre Simonin	Eurocontrol	Submit an overview of the frequency management process and update Attachment 2 or ARINC 631.	Closed 03/06/2008	

## ATTACHMENT 2

### ICAO / ARINC 631 Inconsistencies

**From:** Leger, Stephen (SRL)  
**Sent:** Thursday, May 15, 2008 9:16 AM  
**To:** Russo, Michael (MPR)  
**Cc:** Onken, Andrew (AONKEN); Grogan, Peter (PGROGAN)  
**Subject:** FW: [DLK] DLK Telecon 8: XID Parameter Definitions

Hi Mike,

Andrew Onken will represent ARINC on this subject which, I believe, is in conflict with this proposal. At this stage, we think the ARINC 631 standard should reflect what is in the ICAO document and not the other way around.

ARINC's VDL implementation currently works with avionics systems developed by Rockwell, Honeywell, Boeing, and SpectraLux. We would have some development work to implement the features we currently consider optional and we are concerned that we may "break" interoperability with avionics that we work with today.

Best regards,  
Steve

**Stephen R. Leger**  
**Director, GLOBALink Customer Services**  
**ARINC Inc.**  
**2551 Riva Road**  
**Annapolis, MD 21401**  
**410-266-2169**

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**From:** dlk-bounces@lists.arinc.com [mailto:dlk-bounces@lists.arinc.com] **On Behalf Of** Russo, Michael (MPR)  
**Sent:** Wednesday, May 14, 2008 11:12 AM  
**To:** DLK Sys SC List Server  
**Subject:** [DLK] DLK Telecon 8: XID Parameter Definitions

Dear DataLinkers,

I stand corrected. Our ICAO historian asserts that the ICAO document is to be aligned with ARINC 631-4. No change will be required in ARINC 631-5.

*Mike Russo*

IA Staff

Ph: +1-410-266-4119

E-Mail: mike.russo@arinc.com

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**From:** Robert M. Morgenstern [mailto:rmorgens@mitre.org]  
**Sent:** Wednesday, May 14, 2008 8:23 AM  
**To:** Russo, Michael (MPR); DLK Sys SC List Server  
**Subject:** Re: [DLK] DLK Telecon 8: XID Parameter Definitions

Those differences are intentional and part of what we need to fix in ICAO Doc 9776.

## ATTACHMENT 2

### ICAO / ARINC 631 Inconsistencies

At 06:46 PM 5/13/2008, Russo, Michael (MPR) wrote:

Dear DataLinkers,

Bill Calderhead brought a discrepancy between the current ICAO Manual on VDLM2 and ARINC 631-4 to my attention.

I inquired and discovered that the current ICAO Manual on VDLM2 is actually Edition 1 (we have it listed as Edition 2

in our Strawman 7). See e-mail from Rob Morgenstern below.

Based on the comments provided by ICAO (included in the e-mail chain below), I support Bill's recommendation that the

PICs of ARINC 631 draft Supplement 5 be revised to align with the ICAO Manual. This suggestion will be reviewed at DLK

Telecon 8.

If you missed the notification about the telecon (Revised date: 1500 UTC on 15 May), please contact me for the information.

*Mike Russo*

IA Staff

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E-Mail: [mike.russo@arinc.com](mailto:mike.russo@arinc.com)

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**From:** Bill Calderhead [<mailto:bcaldерhead@uascwa.com>]

**Sent:** Thursday, May 08, 2008 10:28 AM

**To:** Russo, Michael (MPR); Wendy Ferry

**Cc:** Leger, Stephen (SRL); Grogan, Peter (PGROGAN)

**Subject:** RE: A631, XID Parameter Definitions

Mike,

Unless ICAO has returned the XID parameter specifications to Annex 10 between Ammendment 78 and 82 and revised them to match A631, edition 1 of Tech Manual is the current source ICAO document for the specification of these parameters. A631 references but differs from the Tech Manual. From Attachment 2 of A631-4 (where the tables I referenced in my original e-mail are found):

The following Protocol Implementation Conformance Statements (PICS) have been selected for the implementation of VDL Mode 2.

In the tables that follow, capability definitions and support alternatives are consistent with VDL SARPs definitions. See Section 1.4.1. The use of terms such as "shall" and "mandatory" are used herein for consistency with the VDL SARPs and only imply the provisions are necessary to achieve interoperability.

If an avionics designer follows A631 as currently published interoperability is not achieved. Therefore, I propose that, in Supplement 5, A631 is revised to match the ICAO standard.

## ATTACHMENT 2

### ICAO / ARINC 631 Inconsistencies

Bill

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**From:** Jonasson, Loftur [<mailto:LJonasson@icao.int>]  
**Sent:** Thursday, May 08, 2008 4:01 PM  
**To:** Russo, Michael (MPR)  
**Cc:** Oishi, Roy T. (RTO)  
**Subject:** RE: VDLM2

Dear Mike,

I had do do some quick research, had forgotten most of the history on this :)

According to my copy of the VDL Mode 2 Manual, there has been one corrigenda issued, in March 2002. No amendments have been issued. No Edition 2 is currently planned.

Looking up old ACP WG-M reports, I can find two relevant references to VDL Mode 2.

Report of ACP WG-M/8, 21-28 Nov 2003:

5.2 VDL Mode 2: The meeting discussed Working Paper #2 which dealt with five open Amendment Proposals (APs) for VDL Mode-2. The meeting received the information that these APs had been addressed by AEEC, and that it was the AEECs view that these APs were not necessary to be implemented at this time. It was recommended that the APs be rejected. Further more the meeting was informed that this would bring the VDL Mode 2 Manual in harmonization with ARINC Specification 635.

Report of ACP WG-M/10, 23-26 May 2005.

5.1 VDL Mode 2 - WP#8 was introduced by Mr. P. Muraca, FAA. This paper explains the RTCA and EUROCAE standards harmonization on VDL Mode 2, bringing the RTCA and EUROCAE documents on VDL Mode-2 in line with the VDL Mode-2 Detailed Technical Specifications is under way. Note that no Amendments to the VDL Mode-2 Manual have been presented to the WG since AMCP/8.

It seems we will need industry guidance on this issue. ACP WG-M, which is meeting next on 16-20 June would be the right place to discuss this further within ICAO. In any case, amendments for the VDL2 Manual would be progressed through WG-M.

Your last question is a very good one. The current thought within ICAO is to rely more on referencing the material of other standardisation organisations to avoid duplication of work effort and potential inconsistencies such as this; a method we actually started adopting some years ago. However, there is ongoing discussion within the organisation, as some countries are apprehensive of the legal implications of this approach. In other words, I believe there is still some work to do until we reach a conclusion on this.

Hope this clarifies.

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## ATTACHMENT 2 ICAO / ARINC 631 Inconsistencies

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Mike,

ICAO is selling edition 1 of the Tech Manual, so that is what we should reference.

<http://icaodsu.openface.ca/documentItemView.ch2?ID=9090>

(1st Edition, Sept 2001)

<http://icaodsu.openface.ca/documentItemView.ch2?ID=6529> provides a reference to Annex 10, Vol III, Ed.2, Jul 2007

Robert M. Morgenstern

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**From:** Bill Calderhead [<mailto:bcaldерhead@uascwa.com>]

**Sent:** Wednesday, April 30, 2008 11:02 AM

**To:** Russo, Michael (MPR)

**Subject:** A631, XID Parameter Definitions

Mike,

During our recent AQP test session at ARINC we found that A631-4 specifies several XID parameters as "mandatory" that were "optional" in the ICAO Manual on VHF Digital Link (VDL) Mode 2, Part II ("VDL Tech Manual", 2001). We found (and confirmed with ARINC engineers) that the ARINC ground station implementation followed the SARPS/Tech Manual and not A631. In our case this prevented any VDL handoff from succeeding. Below is a table that identifies the differences in the parameter specifications (A631 references to tables 2.2.x are to the column labeled "Aircraft Support").

XID	Param	VDL TechManII	A631-4
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GSIF

Ground Station Loc O (Table 5-46a) M (section 7.5.1, table 2.2.1)

XID\_CMD\_HO (P=1), Ground Initiated Handoff

Parameter Set Id. O (Table 5-46b) M (table 2.2.6)

## ATTACHMENT 2

### ICAO / ARINC 631 Inconsistencies

Procedure Classes O (Table 5-46b) M (table 2.2.6)

HDLC Options O (Table 5-46b) M (table 2.2.6)

Expedited SN Conn. O (Table 5-46b) X (table 2.2.6)

System Mask O (Table 5-46b) M (table 2.2.6)

#### XID\_RSP\_HO (F=1), Ground Initiated Handoff

Parameter Set Id. O (Table 5-46b) M (table 2.2.7)

Procedure Classes O (Table 5-46b) M (table 2.2.7)

HDLC Options O (Table 5-46b) M (table 2.2.7)

Expedited SN Conn. O (Table 5-46b) X (table 2.2.7)

#### XID\_CMD\_HO (P=1), Air Initiated Handoff

Parameter Set Id. O (Table 5-46b) M (table 2.2.8)

Procedure Classes O (Table 5-46b) M (table 2.2.8)

HDLC Options O (Table 5-46b) M (table 2.2.8)

#### XID\_RSP\_HO (F=1), Air Initiated Handoff

Parameter Set Id. O (Table 5-46b) M (table 2.2.9)

Procedure Classes O (Table 5-46b) M (table 2.2.9)

HDLC Options O (Table 5-46b) M (table 2.2.9)

ATN Router NETs O (Table 5-46b) M (table 2.2.9)

#### XID\_CMD\_HO (P=0), Ground Requested Handoff

Parameter Set Id. O (Table 5-46c) M (table 2.2.10)

Procedure Classes O (Table 5-46c) M (table 2.2.10)

HDLC Options O (Table 5-46c) M (table 2.2.10)

System Mask O (Table 5-46c) M (table 2.2.10)

**ATTACHMENT 2**  
**ICAO / ARINC 631 Inconsistencies**

ATN Router NETs O (Table 5-46c) M (table 2.2.10)

XID\_CMD\_HO (P=0), Ground Requested Handoff (Broadcast)

Parameter Set Id. O (Table 5-46c) M (table 2.2.11)

Procedure Classes O (Table 5-46c) M (table 2.2.11)

HDLG Options O (Table 5-46c) M (table 2.2.11)

System Mask O (Table 5-46c) M (table 2.2.11)

Please contact me if you have any questions.

Regards,  
Bill

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