SUMMARY OF CRO Hot Topics Session
March 28, 2012
EUROCONTROL HQ, Brussels

1   Introduction

The meeting was chaired by Søren Dissing, LINK2000+ Central Reporting Office (CRO) manager. It was attended by representatives from ANSPs, Airframe manufacturers, Avionics vendors, other Industry, ARINC, SITA, and the LINK team. The detailed attendance list is in annex.

Discussions below were supported by **slides** (see link below), which should be used alongside these minutes for relevant details.

http://www.eurocontrol.int/link2000/public/standard_page/lit.html.

2   Actions

Minutes from the previous meeting (LIT Hot Topics, Oct. 5, 2011) are considered accepted and actions were reviewed. Remaining open actions and new actions are listed at the end of this report.

3   Agenda Item 1 - CRO Action Plan and Tools

The initial steps leading to the establishment of Central Reporting Office were reviewed. Formal approval via the EUROCONTROL Directorate Network Management is needed, this is on-going. The DLS-CRO will be proposed as part of the Network Manager's work programme which then needs to be approved by Network Management Board consisted of external stakeholders including FAB representatives, Airline associations etc. .

In the mean time, the CRO Action Plan was distributed by email prior to the meeting. David Isaac from EUROCONTROL recently joined the LINK team, with activities focussing on the CRO. David presented the plan, as well as CRO tools. See the action plan and slides for details.
Feedback is sought on these documents and tools (action CRO-1).

3.1 CRO Action Plan

The problem investigation procedure was reviewed, involving the three following communities: the CRO core team, the CRO Members, and the LINK stakeholders in general. Generally, problem reports (PRs) should be raised even for issues that can be solved locally, in order to raise awareness in the community, and should be visible to all CRO members, although it is the choice of the PR originator, who can mark the PR as private. The CRO core team is not necessarily involved but if the local CRO member can't resolve it, he needs to hand it over to the core team.

The required performance monitoring was also reviewed and includes two aspects for the Network Manager and the ANSP/NSA, respectively, in regard to the requirements of the EC regulation. Action 6 of the action plan aims at addressing the ANSP needs to satisfy NSA requirements, and we should agree on a common proposal among ANSPs, so that when any ANSP is dealing with its individual regulator, it can refer to a common set of expectations and context.

Knowledge management - i.e. sharing experience among stakeholders – includes the use of a "wiki": it is a dedicated CRO tool, while the general LINK website is for the LINK programme in general. However, some "frequent" wiki questions may be copied on the web site.

3.2 CRO tools

A demo was made of the new proposed tools. See slides.
-The wiki uses the same basic software as Wikipedia, and CRO members are invited to populate the tool with their information.
-The new problem reporting tool was also presented, based on JIRA and currently cloud-based, but the aim is to install a local instance of it in EUROCONTROL.

Access rights to these tools were reviewed.

CRO members are also invited to practise using these tools and report feedback to LINK, and to inform LINK on their respective CRO contact details (Actions CRO-2/3/4).

In answer to a question, it was clarified that the CRO will circulate any lessons learnt through the investigation of problems to all CRO members.

4   Agenda Item 2 - Provider Aborts (PA)

The slides and minutes of the previous meeting should be consulted for technical details still relevant to the current on-going investigations on PAs.
The PA rate has increased at end of 2011 to 13%, back from 7,8 % at end of 2009. Finnair aircraft equipped with VHF920 witness an increasing PA trend in particular, with installation of FANS B+ only slightly mitigating this effect. At the end of January 2011 and again in November 2011, Finnair experienced short term escalation in PA rates (PA bursts), investigations are on-going.
The issue is most probably linked to the avionics setup itself rather than the airframe, but looking at the problem externally (with the tools we have) should be complemented by instrumenting aircraft and avionics for in-flight recording.

Airbus reported on their investigations (see slides) on issues met with VDR from Thales, Honeywell, Rockwell-Collins, and the Airbus ATSU. The "FANSB+ maturity standard" will be certified by end 2013 including Multi-frequency and more robustness towards the specific VDR behaviour.

It is clear that the PA issue is critical for Controller acceptance of data link communications, and finding resolutions to PAs should continue to be a top priority for the programme.

Post Meeting Note: PSG7 also discussed the issue and a PA Action Plan will be produced and circulated (see PSG7 action list)

5   Agenda Item 3 - Multi-Frequency VDL Mode 2

The situation on MF VDL2 standards validation was reviewed; see slides (and minutes of the previous meetings for more background information).
Phases 1 and 2 successfully demonstrated the validity of VDL MF protocols in the test conditions, with only minor adaptations required to standards.
Phase 3 of the validation trials with PM-CPDLC pioneers will commence mid-2012 to exercise the protocol in a wider range of operational conditions.

6   Agenda Item 4 – VDL sub-band and MOON

The progress on VDL sub-band deployment and the MOON network was reviewed, see slides.

6.1 VDL Sub-band
The VDL sub-band deployment plan has been agreed previously. The Belgian CCRM (spectrum agency) is now involved in monitoring channel occupancy and supporting deployment. It is envisaged to swap steps 3 and 4 and this is discussed at ICAO level.

The CRO will be involved in frequency monitoring and administration for LINK and this feature will be incorporated in future evolutions.

ARINC re-iterated their previous concerns on the shared frequency approach but the agreement on this has been reached in previous meetings and LINK does not wish to re-open the debate.

6.2 MOON

A detailed presentation was given on the recent statistics, MOON usage and a reminder to ANSP to notify their intentions.
Statistics on the evolution of VDL AOC and ATN traffic were presented. The first VDL channel is expected to become saturated by end 2012.

MOON proves also to be very useful in investigating issues, notably Provider Aborts mentioned above.

ANSPs are urged to contact LINK on their plans on where/when they intend to connect to MOON (action LIT-HT-2). LINK support can be arranged but must be planned. Austrocontrol and NATS announced their plans in the meeting.

7   Agenda Item 5 – EEC Bretigny

The EEC Test Facility Manager presented the ATN Route Monitoring Tool, the newly installed ATN/VDL Mode 2 Multi-Frequency ARINC A/G Test System (AGTS), and the Generic Interoperability Test guidance documents. See slides.

7.1 ROUTE MON

As much as LISAT and MOON provide monitoring at the application and VDL sub-network levels, respectively, ROUTE MON monitors the ATN level to complete the view on the full ATN stack.
In principle this tool could also be installed at any ANSP site, but it is closely linked to the ProATN router product itself, and the ANSP should also receive long prefixes to aircraft from their ACSP. It could be beneficial to have this tool if the ANSP is also ACSP.
The ROUTE MON Statistics view which shows the number of Airlines by CSP also includes the business jets. (Airlines Statistics include all different ADM fields extracted from received ATN mobile prefixes).

7.2. Multi-Frequency ARINC AGTS

The new ATN/VDL Mode 2 Multi-Frequency AGTS has been installed by ARINC in Bretigny, and thanks were expressed to ARINC for this successful collaboration. The new AGTS may be remotely monitored from ARINC Annapolis via VPN
The new equipement – as the former one - allows connectivity between EEC and ARINC Annapolis via an ISDN line in order to allow End-2-End Interoperability Testing; the feature was recently used by both Boeing and Spectralux from the U.S.

7.3 Interop test guidance documents

The available documents were presented.

The avionics test plan is not appropriate for airlines preparing certification: parts 1 and 2 are meant for avionics and aircraft manufacturers

Although the ETSI Community Specification has been published (including test cases), it was discussed that the EUROCONTROL ANSP Interop test plan was still relevant given that it contains additional test cases at ATN Upper Layers, and is as such recommended for use when testing with EEC Brétigny. A new ETSI CS version is forthcoming in Q2/2012 and it may

still be possible to update it with some aspects that are part of the EUROCONTROL specification.

8   Agenda Item 6 – DFS / Maastricht Lessons Learned

DFS became operational in Karlsruhe UAC with ATN/CPDLC in January 2012, and the first CM_Contact was exchanged with Maastricht on 9th February. Lessons learned were presented together with Maastricht, see slides.

For both DFS and Maastricht Pioneer CPDLC aircraft without Protected Mode will be blocked from logging on from November 2012 to enable removal of the Voice Read Back.

DFS mentioned that test sessions with EEC had been very useful and recommended all ANSPs to make use of this service.

Issues were presented on aircraft clock synchronisation, multiple CDAs, provider aborts etc. See slides.

Extensive details were given on aspects related to the **OLDI standard** and robustness proposals were presented, based on the lessons learned.

For such OLDI operational aspects, with both LINK OFG and OLDI groups closed, a forum must be found for putting new proposals forward. LINK is to organise the distribution of this guidance (action CRO-5).

Regarding robustness proposal (1/3 – see slides), discussion took place on the need for the pilot to "re-log-on" in case of a CPDLC connection abort. If the ground re-establishes the connection, the problem initially causing the abort might be made worse. Hence it is felt the best person to re-establish the connection is the pilot (only the ground can re-establish CPDLC so the pilot can trigger that by re-sending a CM-Logon). However, how do we prompt the pilot to do so since, even though the CPDLC connection is aborted, the CM itself might still be valid?

A need was expressed by NATS for coordination with all ANSPs on those lessons learned (action CRO-5). Clarification is also required on the relative support of ICAO and ADEXP formats for those OLDI messages.

9   Agenda Item 7 – NPD Principles

The original NPD was created in 1999, with the latest edition dating from 2007, and was in need of an update reflecting latest white papers, discussions and lessons learned. See slides.

The "Principle zero" was added so as not to change the current numbering and to re-affirm the need for double coverage.
All stakeholders are to review and comment the new NPD version (action CRO-6).

It was clarified that "aircraft operators" are meant by the term "airline" in the presentation.

10   Agenda Item 8 – Generic ACSP

For similar reasons as the NPD, the ACSP requirements document has been updated (see slides) and distributed for comments (action CRO-7).

SITA mentioned that Annex C indicates ANSPs may request laboratory tests from their ACSP: if all ANSPs do it, there is an issue given the short time left for the mandate.

ARINC reiterated their concern that guaranteeing a certain Quality of Service on a shared VDL channel is difficult, and will document this in their comments. It was noted this difficulty was already present on the CSC, although potentially more severe over multiple frequencies.

It was further clarified that:

- there is no requirement to have dual connection for airline operators: dual coverage solves this issue;
- in this framework, business jets using so-called "3rd party services" are considered AOC operators and NOT "non-AOC operators".

11 Agenda Item 9 – Voice Readback Removal

As mentioned above, VRB will be done away with in November in Maastricht and DFS. Pre-requisites are:
- ATN operators to file the 24-bit address in the flight plan
- "Pioneer"-CPDLC equipped aircraft will not be allowed to connect

12 Agenda Item 10 – FANS Accommodation

A summary was presented of recent FANS accommodation ANSP discussions that took place in a group under coordination from NATS (see slides).

ANSP cooperation is mandatory to propose commonality to aircraft operators. Maastricht UAC, IAA, NAV, NATS do or will accommodate FANS - other ANSPs may confirm plans later. A working paper has been distributed internally to the group and will be open to other stakeholders in due time.

Many points were raised but NATS requested clarification from ARINC/SITA on the "Time To Live TTL" and general performance aspects and ACARS "non AVLC" subnetworks from ARINC/SITA (Action CRO-7). NATS also need to support the case to their operational directors, of exposing ATCOs to performance differences of FANS compared to ATN. Operational experience from Maastricht has been requested to that effect. NATS will differentiate FANS and ATN aircraft to the ATCOs, because the initial goal not to do so was not found acceptable.

The NATS FANS CONOPS proposal was discussed and the item related to asking a pilot to "SET ATC COMM OFF" in case of FANS timeout, caused concern that for FANS aircraft going West over the Atlantic from Prestwick would prevent using FANS up to NAV Canada. This would create an issue in the whole NAT. This question will be addressed further. IAA faces the same issue.

13 Agenda Item 11 – OLDI v 4.2 corrigendum

As mentioned in the slides of agenda item 6, an issue has been met in the OLDI standard implementation regarding the length of the application address (Transport Selector TSEL), which can be one or two bytes long.
The OLDI specification uses only 2 byte length, which is an issue for aircraft using the 1 byte version.

The fixes were described (see slides): a Corrigendum to the OLDI Specification is on the Single European Sky web page, and will be on LINK web page.

14 Agenda Item 12 – Stakeholder feedback and conclusion

Stakeholder feedback was sought following the first instance of this special "CRO hot topic" meeting.
The main issue raised was on how to progress on the Provider Abort issue. It was felt that the team in charge of these investigations is already doing a great deal of very good and important work, and should be continuing this work, involving all stakeholders as required.

The next CRO "hot topic" session will be on **23 October, 2012**, the day before PSG-8.

15 Actions from the meeting

No	Action	Who	Deadline
LIT-HT-1	Circulate paper seeking consultation on VDL M2 MF clarifications	LINK	Closed
LIT-HT-2	ANSPs to provide LINK with their plans related to MOON	ANSPs	April 2012
LIT-HT-3	Circulate Rules of Engagement to all and request for creative solutions to the logistic problem	LINK	Closed
LIT-HT-4	Provide comments to LINK on the document, and ideas on how to implement the logistics of making the required agreements with SITA and ARINC	LINK/SITA/ARINC/ Garmin	June 2012
LIT-HT-5	Arrange Stakeholder discussion to develop the Frequency Sharing principles	LINK/SITA/ARINC	June 2012
LIT-HT-6	Inform on how to fill the new FPL for dual-stack FANS/ATN equipped aircraft	LINK	April 2012
LIT-HT-7	Coordinate the FANS accommodation approach in Europe	ANSPs	On-going
CRO-1	Review and comment CRO action plan	All	April 2012
CRO-2	Review and comment CRO Problem Reporting Tool page on wiki	All	April 2012
CRO-3	Review and comment PRR tool	All	April 2012
CRO-4	Provide CRO contact details	All	May 2012
CRO-5	Organise OLDI discussion forum	LINK	June 2012
CRO-6	Provide NPD comments	All	April 2012
CRO-7	Provide ACSP comments	All	April 2012
CRO-8	Clarify FANS TTL issue	NATS/ARINC/SITA	April 2012

Reported by Ph. Sacre / Meeting Secretary
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16 List of participants

Name	Organisation	Present
ADNAMS Martin	EUROCONTROL	X
BARDIN Francois	SITA	X
BERSTEIN Bob	Spectralux	X
BERTI Andrea	ENAV	X
BHARJ Daljit Singh	SITA	X
BIGGS Jake	HAWKER BEECHCRAFT	X
BLANQUET Benoit	DASSAULT	X
BLASI Eduard	ARINC	X
BLUNCK Timo	EUROCONTROL	X
BOLDIN Lukasz	Air Europa	
BOWLES Greg	GAMA	X
BRUGNOLI Danilo	ENAV	
CARLSSON Goran	SAS	
CHEVALLEY Luc	SKYGUIDE	
CHILDRESS Bob	HONEYWELL	X
CIESIELSKI Marcus	BER	
CIZEK Vladimir	ANS CZ Republic	
CONDIS Jerome	Airbus	
CORINALDESI Davide	ENAV	X
CRESSWELL Brian	ARINC	

DAVEY Brian	GAMA	
DE JONGE Pascal	Belgocontrol	
DELHAISE Patrick	EUROCONTROL	X
DISSING Søren	EUROCONTROL	X
EARNHARDT Neal	Rockwell-Collins	
ESNON Richard	Dassault	
FANTAPPIE Pierluigi	ENAV	X
FERRER Jerome	ALTYS	X
FUELBER Walter	LH	X
GALLANT Colin	BRITISH AIRWAYS	X
GEURTS Patrick	SITA	X
GILBERT Ian	Spectralux	X
GUNSAYA Mustafa	NATS	X
GROS Didier	Airbus Transport International	
GWÉNAËL Vern	skyguide	
HARVEY Phil	SITA	
HAUF Klauspeter	DFS	X
HEINZEN Markus	Lufthansa City Line	
HENNIG Jens	GAMA	X
HERAIL Isabelle	EUROCONTROL	X
IBARZ Santiago	Airtel ATN	X
IORI Carlo	ENAV	
JANSSENS Gustaaf	EUROCONTROL	X
JEWEL Tom	Rockwell-Collins	X

JONKMAN Rene	Honeywell	
KALLIO Seppo	Finnair	X
KIVINEN Toni	Finnair	X
KORAB Milan	ANS CZ Republic	
KYNARD Richard	Garmin	X
LECCI Fulvio	ENAV	
LEHMANN Marc	DSNA-DTI	X
JUDD Tom	Honeywell	
LATRON Pascal	sykyguide	
LEHMANN Marc	DSNA	X
LIEVIN Philippe	Rockwell-Collins	X
LOEFFLER Michael	Austrocontrol	X
MANZANO Jordi	Air Europa	
MARTI Michel	Airbus Transport International	
MARTINEZ Florent	EGIS AVIA	
McGUFFIN Tom	HONEYWELL	X
MEYER Laurent	EUROCONTROL	X
NIRAULA Madhu	ROCKWELL-COLLINS	X
ROGER Guillaume	DSNA	X
MULLARKEY Thomas	Rockwell-Collins	
O'CONNOR Frank	Airtel ATN	
PELLESCHI Stephane	Rockwell-Collins	
POUZET Jacky	EUROCONTROL	X
RAARUP Claus	NAVIAR	

RAUSCHENBERGER Jens	LTU	
REYNOLDS James	Spectralux	
ROBERTS Dan	NATS	
ROCHARD Luc	Air France	
SACRE Philippe	EUROCONTROL	X
SALEE Thierry	EUROCONTROL	X
SANCHEZ BARRO Aurora	AENA	X
SCHAEFER Rainer	DFS	X
SCHLERETH Armin	DFS	X
SCHULTE-ELTE Marc	SKYGUIDE	X
SEITZ Ryan	CESSNA	X
SHERRINGTON Dave	Gulfstream	X
SOUKUP Milan	ANS CZ Republic	X
STUHLSATZ Volker	EUROCONTROL	X
SYREN Bjorn	SAS	X
TALBOTT Curtis	Rockwell-Collins	X
TALLBACKA John	NAVIAIR	
TARRANT Patrick	IAA	X
TIEFTRUNK Petr	Honeywell	
TROUILLAS Guillaume	Airbus	X
VAN DER HEYDEN Johan	Belgocontrol	
VERMELHUDO Jose	NAV-Portugal	X
VIALARD Laurent	Airbus Transport International	X
VIDEV Yanko	ARINC	X

VOLKE Wolfgang	TUIfly	
WESTBROOK Jon	NATS	
WISCHNEFSKI Kelly	Rockwell-Collins	X
WITT Nick	Representing EUROCONTROL	X
WOOD Andy	ARINC	X
ZEIGLER David	ARINC	