7th LINK 2000+ PSG Meeting

Executive Overview

- Version 1.0 –

INTRODUCTION

The 7th LINK2000+ PSG-LIT Meeting was held on March 29, 2012, at EUROCONTROL HQ Brussels. Jacky Pouzet, Head of the Communication and Frequency Coordination Unit in the Network Management Directorate of EUROCONTROL, chaired the meeting that was attended by over 70 representatives of ANSPs, Airlines, Aircraft Manufacturers, Avionics manufacturers, EASA, SITA, ARINC and the EUROCONTROL Agency.

Progress Reports

Martin Adnams, the LINK Programme Manager, congratulated **DFS** for **becoming operational on Jan. 26, 2012**, thus joining Maastricht and enlarging the contiguous datalink airspace. The dates in EC Regulation 29/09 must be met by all stakeholders and clearly a rush of activity toward 7th Feb 2013s is expected. Resources available to the Programme are more than ever under pressure hence stakeholders must make their requests for LINK support known as early as possible, any support given will be provided on a best efforts basis, the Programme can not guarantee to satisfy all requests given the expected peak in demand.

The LINK programme Central Reporting Office CRO is still to be approved by the Network Management Board and stakeholders are encouraged to support the proposal by briefing their representatives in the Agency Advisory Body (AAB) and NMB.

The EEC Test Facility is still providing extensive test support to avionics implementers, Airlines, ANSPs and CSPs, and has been upgraded to support VDL M2 multi frequency (MF) capability.. The Interoperability Test guidance documents at application level for ANSPs and Avionics have been finalised and the ATN Route Monitoring tool is included in the CRO tools alongside MOON and LISAT.

The CRO "Hot Topics" meeting now takes place the day before the PSG and a summary was given. Good progress was made on the Provider Abort (PA) investigations, although this remains a top priority critical issue. Lessons learned from the DFS implementation were presented, including on OLDI exchanges. The MOON VDL2 monitoring network is being expanded to ANSPs and a briefing was given on developments related to FANS accommodation.

VDL Service Provision

IATA briefed on the follow-up to the critical issue of dual VDL service coverage/provision. IATA is coordinating an action plan based on the agreement. ARINC and SITA briefed on their development supporting ATN/VDL deployment.

EASA Airworthiness

EASA was present the status of applications and to address open actions from the previous meeting.

Exemptions & DLS-IR compliance

A sensitivity analysis on traffic increase and exemption numbers was presented, concluding that neither the 75% equipage target, nor the date at which it would be reached, would be compromised.

Airborne Implementers Status

Airbus, Boeing, Bombardier, Dassault, and Embraer presented the status of the certification efforts and good progress towards DLS-IR compliance. Garmin, Honeywell, Rockwell-Collins and Spectralux also presented the status of mandate-level avionics equipment and plans.

Ground Implementers Status

Maastricht UAC – preparing to remove the voice read back from November 2012, together with DFS. DFS – Operational since January 2012! Skyguide – Working towards implementation in time. NAV Portugal – expected to be operational Q4 2012, including accommodation of FANS aircraft. DSNA – Operational on time on the current CAUTRA system, but limited to ACM, AMC and DLIC. AENA – The service will be operational in Feb. 2013, with both ATN and FANS aircraft. NATS – Implementation on time in Swanwick and Prestwick. FANS aircraft will be accommodated. Austrocontrol – Implementation impacted by delays on the COOPANS project. IAA – Implementation also potentially impacted by delays and uncertainty on the COOPANS project.

Next Meeting Date

The next meeting will take place on **24 October, 2012 in Brussels.**

1   Introduction

Jacky Pouzet, Head of the Communications and Frequency Coordination Unit in the Network Management Directorate of EUROCONTROL, chaired the 7th meeting of the LINK2000+ PSG. He welcomed the participants, the list of which is attached to these minutes.

This summary captures the main points of the meeting and is not intended to be fully detailed minutes. The **supporting presentations** are an integral part of the record of the meeting they, are available in a .zip-file on the LINK 2000+ website:

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

2   Review of Agenda and Minutes

The distributed agenda was accepted by the meeting. The PSG-LIT6 summary was accepted.

Outstanding actions were reviewed. Only the remaining open actions from the previous meeting are listed below. Three actions assigned to EASA were closed by the presentation given in this meeting.

New actions were recorded during the present meeting and are listed at the end of this summary.

3   PM report

Martin Adnams congratulated DFS on becoming operational in January 2012. All the rest of the European ANSPs, and about 12000 aircraft, still have to equip by February 2015.

The incentive scheme was reviewed, with around 500 aircraft being equipped – applications are still being received but can no longer be accepted under the TENT-EA scheme rules.

The question of whether 2013 ANSPs would be ready on time was discussed, with a peak of effort coming up with all implementing towards the end of 2012. By February 2013 more than 1000 aircraft are expected to be equipped.

Among 2015 ANSPs, the Czech Republic announced they would be ready by early 2014, while others are aiming at the Feb. 2015 date.

Given that LINK resources are finite if not decreasing, stakeholders must inform LINK of their support requests (action PSG-7-2). Any support given will be provided on a best efforts basis, the Programme can not guarantee to satisfy all requests given the expected peak in demand, commercial testing support may need to be considered.

The DLS-CRO itself must still be approved by the Network Management Board, and Stakeholders are requested to support the recommendation of CRO at the NMB via their representatives in the CNS-Team and the NMB (action PSG-7-1). The agreed recommendation resulting from PSG/7 is the following:

> *The LINK PSG supports the creation of the DLS-CRO*
>
> *and the continuation of Datalink Implementation Support activities*
>
> *as part of the Network Manager's Work Programme.*
>
> *Appropriate resources should be made available for this work.*

Slides were presented on behalf of the European Commission concerning:

- the final date for applications for permanent exemptions. This 31 Dec 2012, no decision on these applications can be expected before the end Q1 2013. No more applications for Temporary exemptions from the forward fit dates will be considered..

- infringement procedures for stakeholders late with implementation. The 3 step process was explained.

In answer to IATA and Boeing questions, it was stated there was no formal cost-benefit analysis planned for justifying the CRO to the NMB, the main motivation being both the DLS IR and the Network Manager requirement to monitor and document the performance of the network

4   CRO action plan

The CRO action plan was distributed by email prior to the meeting, and discussed in the CRO-Hot Topic the day before PSG-7. Relevant actions will not be repeated here (see respective meeting summary).

David Isaac from EUROCONTROL recently joined the LINK team as the CRO Co-ordinator. David presented the plan, as well as CRO tools. Feedback is sought on these documents and tools.

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 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 Administration tools

The new proposed tools were reviewed, together with access rights:

-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.

5   DLS-IR exemptions

The EUROCONTROL Exemption Cell has analysed all applications for exemptions under Article 14 of EC Reg. 29/2009 and has made 2 reports to the European Commission. Using these reports two decisions have been taken by the European Commission.

Temporary exemption cell reports amount to about 9% of the fleet impacted by the forward fit Jan. 1, 2011 date. This has no impact on the project since these aircraft have to be retrofitted by 2013 on entry into force of the rule. There will be no more temporary exemptions.

Permanent exemptions – which affect the rule in the mid- and long-term, will involve maximum 5,2% of the fleet.

A detailed impact assessment was performed on the permanent exemptions, showing that the date, at which the goal of reaching a 75% equipage rate in the total fleet is met, is affected only by a couple of months at the worst (see slides).

No exemption request so far submitted to be considered in 3rd Exemption Report has a major impact, and in any case any such potential request would have to be approved by the Commission.

6   ATN/VDL2 Service Provision

Ton Van der Veldt (IATA) presented an update on the PSG-6 briefing about ATN/VDL2 service provision. ANSPs have agreed to have dual ARINC-SITA contracts and an action plan was prepared in October 2011. The principles were recalled (see slides). IATA stressed again that airlines should be able to access ATS CPDLC services using their preferred AOC communications provider, and an agreement had been reached to that effect. A number of ANSPs have already contacted the second ACSP to put the agreement into practise.

Work is thus in progress, trusting we can reach dual coverage by the 7th February, 2013, which will be challenging. IATA will send a letter to ANSPs asking officially about the dual coverage state of readiness by that date.

7   ATN/VDL2 Deployment Update

7.1 ARINC

ARINC presented their infrastructure and plans, see slides. More than 30 VHF stations must be upgraded to VDL in Europe and the individual ANSP situation was reviewed.
Answering a question about multi-frequency, ARINC stated the technical capability would be present in time, but re-iterated their concern about the difficulty of guaranteeing Service Level Agreements on shared frequencies.
It was also clarified that the ICAO Frequency Management Group is not involved in the technical aspects of MF, but rather in decisions on the availability and ways of using these frequencies (shared/dedicated).

7.2 SITA

SITA presented their infrastructure and plans, see slides.
Answering the same question about multi-frequency, SITA confirmed the technical capability would be there as well. The standards are being validated at the moment. SITA has a CVME prototype supporting the MF validation, and the final baseline is expected before installing the final field CVME.
The coverage for NATS/IAA was presented, and the coverage hole in North Sea was questioned. NATS confirmed there were already voice communications coverage issues there anyway, and the idea of installing stations on oil rigs (like in the Gulf of Mexico) was proposed.

8   CRO "Hot topic" meeting summary

A summary was given of the "CRO Hot Topics" meeting that took place the day before PSG (see slides). Separate detailed notes are available for this meeting, with relevant actions.

CRO – A summary was given above.

Provider Aborts (PA) - Good progress has been made on investigating technical problems, but the number of occurrences is still too high. Stakeholders highlighted the need to address the PA issue with the highest importance (**action PSG-7-7**).

Multi-Frequency and Frequency Sharing (MF) – Standards are being updated and further results are expected from commercial flights equipped with MF avionics in the first half of 2012 (validation phase 3).

MOON – It is a key tool for the CRO. ANSPs are asked to indicate their plans with MOON (CRO meeting action).

EEC Bretigny – A summary is presented below.

DFS lessons learned – A detailed briefing was given on the DFS implementation, together with recommendations on the use of OLDI messages. A forum will be convened to share these issues in a wider context (**action PSG-7-6**).

NPD and Generic ACSP documents – Updates have been distributed and comments are expected from all stakeholders.

FANS Accommodation – Some ANSPs will be accommodating FANS and a common approach shall be taken in order to harmonise the behaviour encountered by airlines. NATS is coordinating the approach with all concerned ANSPs.

Voice Read Back removal – After many years, VRB will finally be removed in Maastricht and DFS in November 2012. "Pioneer CPDLC" (= non Protected Mode) aircraft will not be allowed to connect from that moment.

9   EEC Datalink Test Facility report

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 status of the Generic Interoperability Test guidance documents. See slides.
- As a complement to the LISAT and MOON which 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.
- 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 Generic Interoperability Test guidance documents for CM&CPDLC ANSPs and Avionics have been delivered. Guidance for testing avionics at the lower layers (ATN and VDL M2) will be available in Q3 2012.

ANSPs must inform LINK of any test support requests for the future (**action PSG-7-2**) as soon as possible. Support will be given on a best efforts basis during the normal working hours of EEC Bretigny.

10   Connecting to ATN/VDL2 via PENS

The chairman of the PENS Users Group (PUG) presented PENS services and how they can support DLS. PENS is now present in 17 countries, and this number is rising. See slides and the summary of PSG-6. It was again clarified that PENS is IP based and provides network connectivity only, not data link services.

11   EASA

EASA presented the progress of current applications and responded to PSG-6-6/7/8 actions, see slides.

Issues have been found with ED-120 compliance, and deviations have to be approved not by EASA but by the Commission.

The two models for communication service provisions were also discussed, the second one involving a certified CSP under oversight of its certification authority.

In answer to a question from Lufthansa, it was stated that data link recording is not required by this CRI. Applicants wishing to record shall use the dedicated special condition. EASA will clarify this further with Lufthansa (**Action PSG-7-5**)

In answer to a question from GAMA, it was stated the Special Condition would just be transferred to Certification Standards material, for which the exact date is not yet fixed.

12   DLS-IR Airborne Certification Status

Airframe Manufacturers (see slides)

➢ **Airbus** – 135 FANSB+ aircraft are in service, with many more being prepared; a new "FANSB+ Maturity" Version is being developed, which will have extra features including more robustness towards VDR causing PAs (certification expected end 2013)

Air Berlin mentioned they cannot operate their installed FANSB+ with Thales VDR (retrofit needed).

➢ **Boeing** – Rockwell-Collins avionics certified (with thanks to EUROCONTROL EEC Bretigny for their support) – Honeywell to be certified this week (high EASA involvement causing extra work) – 747-8 FANS-2 will have PM but not MF (available Q1/2013 – CMU retrofit, not FMS) – 787-8 will not be LINK-compliant and will need retrofit mid-2014 (exemption request considered) – 787-9 will be certified with LINK-compliance.

➢ **Bombardier** – compliance ensured for production aircraft – retrofit planned on schedule except cases with exemption, the highest concern being for Global Express BD-700 (see slides)

➢ **Dassault** – The Enhanced Avionics System (Easy) II with ATN B1, FANS 1/A+, and DL recording will be certified by Q4/2012. A Service Bulletin for retrofit is expected by Q1/2013.

➢ **Embraer** – Primus Epic Load 25.4 includes EASA-requested HMI changes and MF, also optional DL recording – Exemption granted to Dec. 2012 to allow retrofit.

For Phenom 100/300 (Garmin G1000), the approval is planned Q1/2013.

Avionics Manufacturers (see slides)

➢ **Garmin** – G1000 ready to certify Q4/2012; G3000 and G5000 for Q3/2012 – issue on MF: not possible to test in flight in the US so only lab tests are possible.

➢ **Honeywell** – MkII+ CMU released end 2011 as planned – DL recording type certification March 2012, and Boeing PM-CPDLC April 2012. ARINC 724B wired aircraft + PM product available Q4/2012. Mark II+ for 747-8 with MF and DL recording STC planned April 2012 – The Status was presented for Lufthansa, KLM etc (see slides)

AFIS for business jets (Gulfstream, Dassault, Cessna, Bombardier, lear etc) and EPIC (Embraer, Dassault) situation was presented.

➢ **Rockwell-Collins** – over 30 aircraft types are impacted by the DLS-IR with RC avionics. The PM-CPDLC software is ready, forward fit aircraft are being equipped since January 2012.

➢ **Spectralux** – Successful Interop test with EEC and Airtel ATN. FAA TSOA granted and first deliveries since March 2012.

13   ANSPs readiness for 2013

ANSPs are strongly urged to announce their implementation dates and to fill the 2012 questionnaire for the Planning and Support Process (there has been only a couple of responses so far). (**actions PSG-7-3 and PSG-7-4**).

The following is a summary of presentations given at the meeting, detailed information is available in the supporting slides.

➢ **Maastricht UAC** - 57% of messages are "CONTACT" – Speed and Heading messages account for 1%, and will be removed for FANS1/A aircraft together with the VRB in November – Level changes can be kept without VRB because MUAC has Enhanced Mode S flight level downlink – A number of issues were presented and 24-bit addresses of concerned aircraft are known: they might be used for sorting in black/white (a.k.a. negative/positive) lists. MUAC stated that provider aborts are a serious concern. There is a need to improve error investigation means onboard aircraft and to significantly reduce time to install and validate solutions on board aircraft. The major partners to reflect on this topic are avionics providers and the airlines.

➢ **Aena** - No change to the plans of meeting the dates set in the rule.

➢ **Austrocontrol** – the policy is now to follow the IR as close as possible. Both ACSPs have to be contacted soon - MOON installation will be done via a public contract – Part of the COOPANS project (involving IAA as well, see below) is delayed in the ATN software stack, with no announcement of when it will be received – no operational date is yet announced but it will after Feb. 2013. For testing at EEC Bretigny: a time slot is reserved for November 2012 but it is not sure this can be kept due to the above end system issue (information forthcoming in a few weeks).

➢ **DSNA** – a fully new ATC system "4FLIGHT" is being developed, with minimal legacy investment on the current CAUTRA – this has an impact on DL which uses the CAUTRA – for 2013, there will be no FANS and no ACL (only DLIC/ACM/AMC) – ACSP partnership with SITA, and ARINC secondary contract – Bordeaux and Brest will be equipped with LOF/NAN. The system as presented will be operational for Feb. 2013.

➢ **DFS** – **operational since Jan 26, 2012**!! - a detailed briefing was presented in the CRO Hot Topic the day before PSG (see respective slides and summary)– some issues were presented and the multiple CDA may be due to a clock synchronisation problem (the ground LACK is rejected from the aircraft because the time stamp does not look correct).

➢ **ENAV** – HMI is being updated for Mode S and DL capability – VDL GS are owned by ENAV under partnership with ARINC – Some GSs will be ready only by mid-2013 but this will not delay operations in Feb. 2013 (it will only affect double coverage) – EEC tests have been requested for July-Sept 2012.

➢ **IAA** – Integrates DL in the COOPANS project (common ANSP data processing system based on Thales Eurocat) – HMI will have capability to distinguish FANS/ATN – there is a HIGH risk with COOPANS software delivery being late – the ATCO confidence issue is serious if we maintain the 10% provider abort level- Testing is expected with Bretigny and IAA will inform LINK of planning.

➢ **NATS** – DL implemented in Swanwick and Prestwick – a challenging verification schedule is expected in summer 2013 – Operations are expected in Feb. 2013 above FL195– The technical architecture is based on a DL Front End Processor.

A serious concern was raised by NATS about the provider aborts, and coordination must take place as soon as possible. The PA approach being not only an ANSP issue (more an airborne issue), the favoured approach is to continue investigations as today, under the umbrella of the CRO, which will organise meetings/discussions as required (**Action PSG-7-7**).

Similarly, NATS is strongly interested in coordinating the approach on OLDI and will organise the forum for discussion, similarly to what NATS did for the FANS accommodation (**action PSG-7-6**).

> ➤ **NAV Portugal** – the project is on-going as planned. The safety assessment is on-going and the architecture being integrated in LISATM. New VGS stations are being installed in Lisbon, Porto and Madeira. Tests are planned with EEC Brétigny. Operations are expected on time by Q2/2012.

> ➤ **SKYGUIDE** – 5 VGS are used in Switzerland because of the mountainous geography, in partnership with SITA as part of the FABEC approach – negotiations with ARINC are on-going for the dual coverage - the infrastructure is based on the SITA EgisAvia datalink server – operations in both Geneva and Zurich ACC will start on time in Feb. 2013.

14 Datalink roadmap

The datalink roadmap was presented by Martin Adnams (slides).

The ICAO Air Navigation Conference takes place in 2012 and will discuss many items, including the COM roadmap together with SUR, NAV, Avionics and Information Management roadmaps. Input from EUROCONTROL, FAA, OPLINKP and ATNP were included.

Although these strategic developments are important, it was stressed the focus is now on LINK2000+ implementation as a priority and that these developments are for the long term.

15 Risk list

The risks list was reviewed and no amendment was introduced.

16 Actions, decisions, dates of the next meeting

The **PSG-8** meeting will take place on **24 October, 2012** in Brussels, Eurocontrol HQ, and will be preceded by the CRO Hot Topics day.

Actions are summarised below.

No	Action	Who	Date/Status
6-3	Coordinate Action Plan for ANSP/ACSP agreement on ATN/AOC communication provision	IATA	June 2012
6-4	Negotiate ACSP/ANSP agreement on ATN/AOC communication provision	ANSP ACSP	June 2012
6-6	Clarify EASA position related to the CSP "certification" question	EASA	Closed in PSG-7
6-7	Clarify EASA position on Testing Requirement for Airborne Multi-Frequency Certification aspects	EASA	Closed in PSG-7
6-8	Prepare and present detailed briefing on above issues, and EASA regulations related to DLS	EASA	Closed in PSG-7
6-11	Contact Pioneer Airlines about their PM-CPDLC upgrade plans to assess the suitable moment for VRB removal	Maastricht UAC LINK	Nov 2012
7-1	Support the PSG recommendation for CRO creation in the NM Work Programme (input to the Network Management Board)	All	April 2012
7-2	Send 2012 support requests to LINK	ANSPs	April 2012
7-3	ANSPs to confirm their implementation dates	ANSPs	April 2012
7-4	ANSPs to complete the Online Questionnaire	ANSPs	April 2012
7-5	EASA to contact LH on the DL recording issue	EASA	April 2012
7-6	Organise ANSP meeting on OLDI (LOF/NAN) issues	NATS	April 2012
7-7	Coordinate approach/discussions on PAs	CRO	April 2012

17 Closing remarks

The chairman thanked all attendees for their participation and contributions and acknowledged that progress towards implementation is definitely being made although that much still remains to be completed.

8

LINK2000+ PSG#7 meeting – Participants

Name	Organisation	Present
AKSU Alper	THY	X
ALVES Luis	EMBRAER	
ATSESOGLU Sule	THY	X
BARDIN Francois	SITA	X
BERSTEIN Bob	Spectralux	X
BERTI Andrea	SELEX/ENAV	X
BHARJ Daljit Singh	SITA	X
BIGGS Jake	HAWKER BEECHCRAFT	
BLANQUET Benoit	DASSAULT	X
BLASI Eduard	ARINC	X
BOLDIN Lukasz	Air Europa	
BOWLES Greg	GAMA	X
BRUGNOLI Danilo	ENAV	
CARLSSON Goran	SAS	
CHEVALLEY Luc	SKYGUIDE	
CHILDRESS Bob	HONEYWELL	
CIESIELSKI Marcus	LTU	
CIZEK Vladimir	ANS CZ Republic	X
CONDIS Jerome	Airbus	
CRESSWELL Brian	ARINC	
DAVEY Brian	GAMA	X
DE JONGE Pascal	Belgocontrol	
DVORAK Milan	ANS CZ Republic	X

EARNHARDT Neal	Rockwell-Collins	
ESNON Richard	Dassault	X
FANTAPPIE Pierluigi	ENAV	
FERRER Jerome	ALTYS	X
FREIRE Edyr	Embraer	
FROEHLICH Stefan	DFS Karlsruhe	X
FUELBER Walter	LH	
GALLANT Colin	BRITISH AIRWAYS	X
GEURTS Patrick	SITA	X
GILBERT Ian	SpectraluX	X
GUNSAYA Mustafa	NATS	X
GROS Didier	Airbus Transport International	
HARVEY Phil	SITA	
HAUF Klauspeter	DFS	X
HEINZEN Markus	Lufthansa City Line	
HENNIG Jens	GAMA	X
IBARZ Santiago	Airtel ATN	X
IORI Carlo	ENAV	
JEWEL Tom	Rockwell-Collins	
JONKMAN Rene	Honeywell	
JUDD Tom	Honeywell	X
KALLIO Seppo	FINNAIR	X
KAYAHAN Muhammer	Turkish Airlines	X
KIVINEN Toni	FINNAIR	X
KORAB Milan	ANS CZ Republic	

KRAAN Adrie	BOEING	X
KYNARD Richard	Garmin	X
LEBOURG Serge	Dassault Aviation	X
LECCI Fulvio	ENAV	X
LEHMANN Marc	DSNA-DTI	X
JUDD Tom	Honeywell	
LATRON Pascal	Skyguide	
LIEVIN Philippe	Rockwell-Collins	X
LOEFFLER Michael	Austrocontrol	X
MANCEBO David	EASA	X
MANZANO Jordi	Air Europa	
MARTI Michel	Airbus Transport International	
MARTINEZ Florent	EGIS AVIA	X
McGUFFIN Tom	HONEYWELL	X
MICHALIK Lukarz	AIR EUROPA	
MORERE MOLINERO Eduardo	EUROPEAN COMMISSION	
NIRAULA Madhu	ROCKWELL-COLLINS	
MULLARKEY Thomas	Rockwell-Collins	
NILSSON Fredrik	LFV ANS	X
O'CONNOR Frank	Airtel ATN	
PELLESCHI Stephane	Rockwell-Collins	
PRETTO Daniel	Embraer	X
RAARUP Claus	NAVIAR	
RAUSCHENBERGER Jens	Air Berlin	X
REYNOLDS James	Spectralux	

RIBEIRO Gustavo	Embraer	X
ROBERTS Dan	NATS	
ROCHARD Luc	Air France	
ROGER Guillaume	DSNA	
SANCHEZ BARRO Aurora	AENA	X
SANDELL Gordon	Boeing	X
SCHAEFER Rainer	DFS	X
SCHLERETH Armin	DFS	
SCHULTE-ELTE Marc	SKYGUIDE	
SEITZ Ryan	CESSNA	
SHERRINGTON Dave	Gulfstream	X
SOUKUP Milan	ANS CR	X
SYREN Bjorn	SAS	X
TABORDA Joao	EMBRAER	X
TALBOTT Curtis	Rockwell-Collins	X
TALLBACKA John	NAVIAIR	
TARRANT Patrick	IAA	X
TIEFTRUNK Petr	Honeywell	
TROUILLAS Gillaume	Airbus	X
VAN DER HEYDEN Johan	Belgocontrol	
VAN DER VELDT Anthony	IATA	X
VERMELHUDO Jose	NAV-Portugal	X
VERN Gwenael	SKYGUIDE	X
VIALARD Laurent	Airbus Transport International	X
VIDEV Yanko	ARINC	X

VOLKE Wolfgang	TUIfly	
WESTBROOK Jon	NATS	X
WISCHNEFSKI Kelly	Rockwell-Collins	X
WOOD Andy	ARINC	X
ZSCHUNKE Dirk	Lufthansa	X
ZEIGLER David	ARINC	

LINK 2000+ Team	
ADNAMS Martin	EUROCONTROL
BLUNCK Timo	EUROCONTROL
DELHAISE Patrick	EUROCONTROL
DISSING Soeren	EUROCONTROL
HERAIL Isabelle	EUROCONTROL EEC
JANSSENS Gustaaf	EUROCONTROL
MEYER Laurent	ALTYS – supporting EUROCONTROL
POUZET Jacky	EUROCONTROL
SACRE Philippe	EUROCONTROL
STUHLSATZ Volker	EUROCONTROL
WITT Nick	NWC - supporting EUROCONTROL