Partnering for excellence in global aviation

World ATM Congress 2017
VDL MODE 2
DATALINK RECOVERY PLAN WORKSHOP

WAC 2017
Tuesday 7th March 2017
ATM Theatre
Workshop Agenda

1. Welcome Address *(Nicolas Warinsko - SDM)*

2. Setting the scene *(Gzim Ocakoglu – DG MOVE)*

3. Outcome of the ELSA study *(Marouan Chida - SJU)*

4. The Data Link Recovery Plan & CEF Transport Call 2016 related proposals *(Mariagrazia La Piscopia - SDM)*

5. Outcomes from the DLS-COM Workshop of 24th November and way forward
   a) Conclusions and EC letters to main stakeholders *(Gzim Ocakoglu - DG MOVE)*
   b) Statement by EASA *(Maria Algar-Ruiz - EASA)*
   c) Statement by NM *(Joe Sultana – NM)*
   d) Statement by EUROCAE *(Luc Deneufchatel – EUROCAE)*
   e) Statement by SDM *(Mariagrazia La Piscopia – SDM)*

6. Q & A

7. Closing Remarks *(Nicolas Warinsko - SDM)*
Welcome Address

Nicolas Warinsko
Director Technical & Operations – Deputy Managing Director
SESAR Deployment Manager
Workshop Agenda

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6. Q & A

7. Closing Remarks (Nicolas Warinsko - SDM)
Setting the scene

Gzim Ocakoglu
European Commission – DG MOVE
Outline

1. History/background of DLS Development and Implementation
3. Technical Issues and EASA Report findings
4. Implementing Regulation (EU) 2015/310
5. SJU further investigations
An impressive (incomplete) timeline

Future Air Navigation System Concepts and Plans
ICAO FANS ICAO FANS II

ICAO Technical Panels
ICAO SICASP ICAO ATNP ICAO ACP


PETAL (I, II, IIe) datalink trials at MUAC
Operational Datalink in MUAC (2001)
Operational Datalink in MUAC (2001)
Support to ED120, ED110B, etc.
EUROCONTROL Specification
EUROCONTROL Guidance Safety Case Templates
TEN-T funding arrangements
Link 2000+ Programme DLISG
Luxembourg Training on DLS Brétigny Test Facility on DLS
Central Reporting Office

ICAO
ICAO SICASP
ICAO ATNP
ICAO ACP

DLS IR 2009
DLS Special Condition
Ground Community Spec EASA Airborne Certification Spec
Key dates in DLS development and implementation

- **From 1995**: ECTRL PETAL trials
- **March 2000**: Adoption of ED-92 (VDL2 MOPS)
- **From 2000**: ECTRL LINK2000+ Programme
- **From 2003**: operational introduction of DLS at MUAC
- **30 May 2005**: Mandate from EC to ECTRL
  - 19 October 2007: Final Report by ECTRL
  - 4 September 2008: Positive Vote at SSC27 on draft IR
  - 9 February 2009: Entry into force of Regulation
  - 7 February 2013: Application date of the regulation
- **23 April 2014**: EASA Report on Technical issues in the implementation of Regulation (EC) No. 29/2009 (Data Link)
- **PCP Implementing Regulation (EU) No 716/2014 of 27 June 2014**
  - AF6: i4D (Initial Trajectory Information Sharing) from 1 January 2025
  - Pre-requisite: data link capability as described in Commission Regulation (EC) No 29/2009
- **Implementing Regulation 2015/310 of 26 February 2015**
- **November 2015**: SJU "VDL Mode 2 Capacity and Performance Analysis" published
- **July 2016**: SJU ELSA "Final Report VDL2 measurement, analysis and simulation campaign" published
- **October 2016**: SDM appointed as "DLS Implementation Project Manager" and adoption of DLS Recovery Plan
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The DLS IR target

- The benefits of 75% CPDLC flights above FL285:
  - R/T communication reduction of 61%
  - Sector capacity gain of 11%

- Beyond the benefits of data link implementation, it modernizes air-ground information exchanges and opens the door to future SESAR driven concepts and technologies
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EASA Technical Investigation

• Request from EC to EASA with the objective to :
  • To clarify the reasons of the technical and operational problems related to the alleged disconnections of the Data Link Services
  • To formulate recommendations on the way forward based on results of the investigation

• EASA Report - main identified issues :
  • Approach in the implementation of the Regulation : choice of single frequency (instead of multi-frequency configuration) despite known limitations of VDL mode 2 technology
  • Complexity of processes and possible lack of clarity of performance requirements (i.e. admissible rate of disconnections) and difficulties in performance monitoring
  • Lack of a suitable "central" management plan/programme for the implementation, notably for the deployment of VGS (VDL Mode 2 Ground Stations)
Recommended Action Plan

- Action 1: ground infrastructure
- Action 2: level of interference in core airspace with current Infrastructure
- Action 3: management of “hot spots”
- Action 4: concurrent management of AOC and ATN data traffic
- Action 5: management of air/ground communication service provision versus distributed or centralised infrastructure
- Action 6: avionics/ground end systems
- Action 7: ACSP performance monitoring
- Action 8: ground/ground network
- Action 9: CM/CPDLC interoperability robustness testing
- Action 10: ground data link end systems
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## (New) elements of Implementing Regulation (EU) 2015/310

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Outline

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Objective: Identification of the limits of the operational performance of VDL2 in terms of the VHF channel physical limitations and its operational usage for ATS purposes.

Timeline: June 2014 - July 2015 (Delivered to the European Commission)

Objectives:

The ELSA study: (Completed)

Objectives:

Collection and analysis of data from avionics and ground-systems to identify the issues affecting the end-to-end performance of the VDL2 Datalink;

Modelling and analysis of the options for multi-frequency VDL2 deployment, in particular the options for channel use, frequency assignment, network topology and network management;

VDL2 protocol optimization in support of both ATN and AOC communications (through RF Level Modelling and Testing)

Timeline: Feb 2015 - Jun 2016 (Delivered to the European Commission)

Objectives:

Restore confidence in datalink using SESAR demonstrations (eg 4D trajectory exchange)

Timeline: Ongoing
The capacity study

The capacity study (Delivered)

- VDL2 over one single frequency would already reach its capacity limits in 2015. Therefore, Multi-frequency deployment in Europe is a “MUST” as of today (2015).

- A 4 frequencies implementation is a minimum requirement to support VDL2 deployment until 2025 in high density area.

- Further optimisation options under investigation by ELSA may extend the viability of VDL2 over 4 frequencies beyond 2025 in high density area.

- It is highly recommended to anticipate the evolution of the European datalink infrastructure in the ATM masterplan and to prioritize the development of the next generation datalink technology within SESAR.

To identify “where and when” VDL mode 2 should reach its operational limits in Europe
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Outcome of ELSA study

Marouan Chida
SESAR JU
The availability, in Europe, of high quality data communications capabilities for ATM with appropriate Quality of Service is essential to reach the Single European Sky (SES) objectives and subsequently the deployment of SESAR.

The baseline for SESAR includes a data communications capability based on VDL/2 which is expected to support the initial SESAR developed datalink services including Initial 4D.
Sequence of Events

**Mandate 29/2009:**

**Performance Issues:**
Performance issues of VDL/2 raised concern on the usability of the system. Some issues attributed to specific avionics installations but other problems remained to be solved. The problem became highly visible and lead to a European Commission workshop in September 2013.

**EASA Report: April 2014**
EASA conducted an investigation, under the mandate of the EC, into the performance issues of VDL/2 and published their report. The report identified a 10-point Action Plan which the SJU was asked to progress.

**EC request to SESAR: June 2014**
The EC wrote to the SJU requesting R&D actions on the points raised in the EASA report.

**SJU Admin Board: June 2014**
The SJU Admin Board gave the go ahead for the launch of an additional call to support the required actions on VDL/2.

**Call Published : August 2014**
VDL Mode 2 Measurement, Analysis And Simulation Campaign

**Call award and Execution : Feb 2015-Jun 2016**
ELSA Consortium delivered the Final Report and all supporting technical material in June 2016. SJU published the documents in June 2016.
**Single frequency is not the only cause!**

**Provider Abort occurrences could be attributed to a combination of the following factors:** (*

- Use of a **single frequency** for Common Signalling Channel (CSC) and data.
- Concurrency of **AOC and ATN traffics** over this single frequency channel, leading to an **excessive channel usage** level compared to the ATN protocol needs.
- The VGS networks are mainly driven by AOC needs, leading to a saturated and **non-optimised VGS network for en-route** (over FL 285) purposes.
- The resulting **RF complex environment** (where there are many VGSs in view) introduces some unexpected demands on the VGS handover logic at airborne level.
- Increase of the **Radio Frequency congestion** leading to delays in data transmissions or disconnections.

*Statement in the EASA report*
ELSA Objectives

• **Collection and analysis of data** from avionics and ground-systems to **identify the issues** affecting the end-to-end performance of the VDL2 Datalink;

• Modelling and analysis of the **options for multi-frequency VDL2** deployment, in particular the options for channel use, frequency assignment, network topology and network management;

• **VDL2 protocol optimization** in support of both ATN and AOC communications (through RF Level Modelling and Testing)
VDL2 Measurement Analysis and Simulation Campaign (ELSA Study)

Unique Consortium

Outstanding Work

On Time Delivery and Sharing

- 350,000 flight hours, and stress testing of common avionics
- 3 million air/ground exchanges, 700 hours of simulation
- 16 months project
- More than 400 revenue and measurement flights
- More than 1000 pages of technical reports
- 100s of protocol optimisations

Concrete and Actionable Recommendations
Where does the problem come from?
Hidden transmitter causing disconnection

After Saturation, hidden transmitters effect is the main contributor to the RF issues encountered.
Hidden transmitter causing disconnection
Best in Class Performance

Link between change of the ground infrastructure homogeneity (either more or less dense) and HO occurrence.

Mature avionics are managing the HO better that the Non-Mature one.
A rigorous process for MF selection

Phase 1: Identification of all options
Phase 2: Short list of all options
Phase 3 (Validation): Studies, Tests, Flight trials
Phase 4: Trade off analysis
MF solution and transition roadmap
The links between deliverables

D11

WA1 Conclusions
- Bring the big picture
- Consolidate the inputs
- Develop the Recommendations
- Cluster recommendations

WA2 Conclusions

WA3 Conclusions

D08
D09
D10

The D11 is the main ELSA deliverable
D08, D09 and D10 are supporting technical documents
Clear and Actionnable Recommendations

- Use a dedicated channel for transmissions at the airport level in service areas with high traffic levels in en-route.
- Progressively implement additional VDL2 frequencies in accordance with the traffic level.
- Optimise the en-route VDL2 network coverage.
- Use the CSC as common control channel only, unless traffic is very low.
- Ensure the availability of a minimum VDL2 frequency (at a minimum).
- Implement ELSA recommended optimisation: limit A/VLC frame size.
- Favour alternative communications means for AOC, with a priority to the airport domain.
- Implement the transition roadmap to the MF VDL2 target technical solution.
- Fix the unbounded retry issue in certain VDLs.
- Fix the Clear Request issue.
- Optimise the Disconnect Mode management.
- Upgrade of avionics to the “best in class” performance.
- Update pilot procedures to avoid unnecessary avionics resets.
- Define and implement an effective datalink end-to-end system certification process (including both ground and air components) and respective materials for the ground network infrastructure (MOPS-like).
- Include the selected interoperability improvements and clarifications in the relevant standards, and implement the resulting changes.
- Include updates for MF interoperability in the relevant standards.

Establish/empower a pan-European air/ground datalink implementing function having appropriate steering responsibilities.
Establish/empower a pan-European ATC/VDL2 performance monitoring and spectrum coordination function.
Establish/empower a pan-European ATC/VDL2 end-to-end certification and oversight function for validating (ground and airborne) sub-systems' acceptability.
Ground Recommendations

• **Improve the VHF Ground Station (VGS) network and fix the ground system issues**
  – Use a **dedicated channel** for transmissions at the airport in regions with high en-route traffic levels.
  – Progressively implement **additional VDL2 frequencies** in accordance with the traffic level.
  – **Optimise** the en-route VGS network coverage.
  – Use the **CSC as common control channel only**, unless traffic level is very low.
  – Implement ELSA recommended **protocol optimisation** (limit AVLC frame size)
  – Ensure the availability of a **fifth VDL2 frequency** (at a minimum).
  – **Favour alternative communications** means for AOC, with a priority to the airport domain.
  – **Fix** the ELSA identified **ground system problems** (unbounded retry, Clear Request, Disconnect Mode)

• **Start implementing the transition roadmap to the MF VDL2 target technical solution**
• Harmonise avionics’ performance, especially MF capability:
  – Upgrade of avionics to the “best in class” performance, showing no operational issues in the extensive validation performed by ELSA, and
  – supporting MF operations, especially FSL-based, GRAIHO and Autotune handovers.

• Update flight crew operational procedures to avoid unnecessary avionics resets.
Standardisation and Compliance

• Define and implement an effective datalink end-to-end system certification process and reference material for the ground network infrastructure (MOPS-like).

• Include the selected interoperability improvements and clarifications in the relevant standards, and implement the resulting changes:
  – Handover algorithms:
  – Detect peer loss of communication:
  – Reduce ground ACARS latency (check/link with T2 AVLC).
  – Non-use of IDRPU – progressively remove the IDRPU usage on the airborne side.
  – Concatenate the CPDLC LACK (DTPDU) and the TP4 ACK in the same CLNP message.

• Include updates for MF interoperability (as identified in ELSA interoperability tests) in the relevant standards.
For coordinated deployment and operation:

• Establish/empower a pan-European air/ground datalink implementing function having appropriate steering responsibilities.

• Establish/empower a pan-European ATN/VDL2 performance monitoring and spectrum coordination function.

• Establish/empower a pan-European ATN/VDL2 end-to-end certification and oversight function for validating (ground and airborne) sub-systems acceptability.
The recommendations proposed for implementation will provide, if addressed in a coordinated way by all stakeholders, sufficient ATN/VDL2 capacity to support the deployment of ATS data link services.
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The Data Link Recovery Plan & CEF Transport Call 2016 related proposals

Mariagrazia La Piscopia
DP Planning Manager – Deputy Director Technical Operations
SESAR Deployment Manager
From ELSA to the Data Link Services (DLS) Recovery Plan

- EC requested SDM to prepare for a "project management role for data-link deployment", DLS being essential pre-requisite to PCP/AF6
- EC requested SDM to extract from the strategy a "Recovery Plan to implement the necessary technological upgrades to ensure a stable and reliable ATN/VDL Mode 2"
- EC approved the DLS Recovery plan, published it on its website and mandated SDM to ensure its execution

- EC request to SDM
- DLS Recovery Plan
- Supported by Operational Stakeholders
- Delivered to EC under DP 2016 Strategic View
- SDM delivered the DLS Recovery Plan DLS as a priority into 2016 CEF Transport Calls
According to EC mandate, “the SDM should now assume the role of DLS implementation project manager responsible for organizing, implementing and monitoring the activities identified in the recovery plan as necessary for the implementation of the DLS transitional solution and the preparatory actions for the full achievement of the European target solution, Model D, in order to achieve the implementation of AF6 in accordance with the deadlines defined in the PCP Regulation.

This role shall include managing the overall set-up, steering and coordination of the technical approach through:

- Identification of homogenous service areas starting from the analysis of the current situation in EU Member States;
- Definition of target ground architecture per service area in cooperation with the local stakeholders;
- Interconnection of sub-networks within each service area to achieve a European distributed network and a European common approach;
- Updated CBA and expected contribution to SES performance objectives.

SDM – as DLS project manager – shall facilitate the involvement of relevant stakeholders to ensure a coordinated submission of DLS IPs to the CEF Transport Calls for proposals, also enabling projects to stimulate establishment of a single European DLS governance"
DLS Recovery Plan

- The Recovery Plan derives from the DLS implementation strategy for the purpose of further specifying DLS as a priority into 2016 CEF Transport Calls
- The Recovery Plan has been approved by EC, is referenced into the text of the call and published on DG MOVE website.

PATH I – IMPLEMENTATION OF THE DLS TRANSITIONAL SOLUTION

It aims at deploying enablers compliant with ELSA’s recommendations to meet IR (EU) 2015/310, focusing in particular on the transitional solutions:
- Model B or Model C with Multi Frequency) for the ground segment; and
- “best in class” avionics for the airborne segment.

It also includes activities to prepare for target solutions for the ground segment (Model D).

PATH II – PREPARATORY ACTIVITIES TOWARDS THE TARGET SOLUTION (MODEL D)

It aims at:
- Supporting SDM in its roles of DLS implementation project manager, and architect, including service areas and architecture definition as required for Model D implementation;
- Ensuring a framework for the operational stakeholders and communication service providers to continue to study and implement DLS provision governance.
2016 CEF Transport Calls – DLS WBS
Path I – IPs submitted

1 MULTISTAKEHOLDER PROJECT FOR PATH I (FAMILY 6.1.3):

- **2016_161_AF6** – General Call - DLS Implementation Project - Path 1 "Ground" stakeholders
  - **Project Leader**: ENAIRE
  - **Project Contributors**:
    - 2 CSPs - ARINC; SITA
    - 15 ANSPs - Austrocontrol; Croatia Control; DCA; DFS; DSNA; EANS; ENAV; HCAA; Hungaro Control; LFV; LGS; MATS; NAV Portugal; Oro Navigacija; PANSA

5 AIRBORNE-RELATED INITIATIVES (FAMILY 6.1.4):

- **2016_164_AF6** – RYR Upgrade to ATN B1 to "best in class":
- **2016_165_AF6** - Lufthansa Group & Air France Group Datalink upgrade to "best in class" avionics:
- **2016_061_AF6** - Deployment of ATN B1 capability within TAP Group
- **2016_125_AF6_ES_Airbus A310 ATN VDL2 Compliance.**
- **2016_126_AF6_ES_FALCON 900 compliance with Air_Ground ATN VDL2 Data Link**
Path I – Ground domain: State of play

1 MULTISTAKEHOLDER PROJECT FOR PATH I – State of play

**Objectives:** identifying the deployment activities needed to meet EU (IR) 2015/310 and ELSA’s recommendations, focusing in particular on the envisaged transitional solutions (Model B or Model C with Multi-frequency (MF)).

- SDM support for the stakeholders involved within Path I, through the participation to key meetings/webexes and to preliminary and critical design review;
- SDM monitors the implementation of the transitional solution throughout Europe, according to mechanisms already implemented for DP.

**Project Management** (07/02/17-01/02/18)
- A/G network design (07/02/17-30/09/17)
- G/G network design (07/02/17-30/09/17)
- Support System design (07/02/17-30/09/17)
- Interface design (07/02/17-30/09/17)
- Infrastructure deployment (01/06/17-01/02/18)
- Operational acceptance (01/10/17-01/02/18)
- Operational transition (01/12/17-01/02/18)
- Analysis of the future evolution to Model D (07/02/18-01/02/18)

Kick-Off Meeting held in Madrid on 16/02

Project started according to submitted plan
Path II – IP submitted

1 MULTISTAKEHOLDER PROJECT FOR PATH II (FAMILY 6.1.3):

- **2016_159_AF6 – DLS Implementation Project - Path 2**
  - **Project Leader:** ENAV
  - **Project Contributors:**
    - **2 CSPs** - ARINC; SITA;
    - **19 ANSPs** - Austrocontrol; BULATSA; Croatia Control; DCA; DFS; DSNA; EANS; ENAIRE; Finavia; Hungaro Control; LFV; LGS; LPS SR; MATS; NATS; NAV Portugal; Oro Navigacija; Pansa; Eurocontrol (MUAC);
    - **ESSP**
    - **3 AUs** - Deutsche Lufthansa; Ryanair; TAP Portugal

Main tasks

1. Project Management
2. Deployment of ELSA outcomes for the achievement of the target solution
3. Technical architecture definition
4. Elaboration of a Business Case for the target solution
5. Coordination with IP Path I (Types 1 and 2)
6. Definition of an European Common DLS Governance
Path II - State of play

2016_159_AF6 – “DLS Implementation Project - Path 2”– State of play

- **Objectives**: preparatory activities towards the target solution (model D)
- **Kick-Off Meeting** held in Brussels on 02/03
- Project started according to the Path II – PMP, agreed during the KOM

SDM tasks for Path II

The following tasks are performed by SDM, supported by the stakeholders of the 2016_159_AF6:

1. **Requirements collection & Service area definition**
2. **European technical architecture definition**;
3. **Elaboration of a Business Case for the target solution**
4. **Transitional activities towards target solution**
5. **Monitoring of activities related to DLS Governance definition**

According to the EC mandate, these activities are expected to be performed in cooperation with Stakeholders and other relevant Bodies
According to EC Mandate, the SDM, acting as DLS Project Manager, has elaborated the SDM DLS Programme Management Plan, that aims at providing a detailed picture of the SDM DLS project management activities structured as follows:

**Path I:** SDM monitors the DLS implementation projects/initiatives focusing in particular on the envisaged transitional solutions (Model B or Model C (MF) for the ground segment and best in class avionics for the airborne segment. Adherence to what described in the Recovery Plan for Path I has to be kept.

**Path II:** SDM leads all preparatory activities needed in order to achieve the target solution (Model D).

**Other required activites:** SDM establishes mechanism of cooperation with all those Bodies having to perform complementary activities essential to a successful DLS deployment.
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   e) Statement by SDM *(Mariagrazia la Piscopia – SDM)*

6. Q & A

7. Closing Remarks *(Nicolas Warinsko - SDM )*
DLS-COM Workshop conclusions and EC letters to main stakeholders

Gzim Ocakoglu
European Commission – DG MOVE
DLS-COM Workshop
24 November 2016

Available webstreaming link:

https://webcast.ec.europa.eu/workshop-future-a-g-data-link-strategy
OBJECTIVES:

- to present and address the ELSA recommendations and their implementation towards a recovery of DLS implementation;

- to present and discuss possible options of a future ATM communication infrastructure
Summary of DLS-COM Workshop

- With ELSA and SDM DLS Recovery Plan we are progressing in a right direction for the implementation of Data Link in Europe, and this requires a lot of collaborative work.

- It is important to close the identified gaps in the implementation of the ELSA recommendations:
  - clarifying the concept of "best in class avionics"
  - address the needed "end-to-end certification/validation" through concerted Eurocae and EASA work
  - ensure a proper monitoring of the network resources (frequencies);
  - ensure the inclusion of all stakeholders (not only those submitting projects to SDM/CEF call) in the implementation of DLS
  - focus the implementation on the transition from models B and C+ to Model D
  - work towards alternative technologies for AOC traffic

- As a follow-up, and building on these conclusions, the EC will directly engage the SDM, EASA, the NM and Eurocae with the aim to close those identified gaps.
EC request to EASA

• Short term: "review of Regulation (EC) No 29/2009:
  • to assess, clarify and adapt the conditions for exemptions in current Regulation (EC) No 29/2009, and to clarify the provisions regarding non-AOC traffic operators.
  • This action should lead to a proposed amendment to Regulation (EC) No 29/2009 (to be adopted before February 2018) and a potential review of existing Decisions on exemptions"

• Medium term: "launch of the new rulemaking task for the revision of the DLS Regulation (as already planned in the Draft EASA Rulemaking Programme 2016-2020 under reference RMT.0524):
  • To address, in addition to the regulatory material (e.g. AMC) for extended data link operations as per PCP AF6,
    – all regulatory needs for the implementation of multi-frequency DLS on the basis of Model D (as per ELSA study),
    – the specific identified requirements for 'end-to-end certification and oversight function',
    – including the characterisation of "best in class" and the necessary related avionics improvements.
  • For this action, EASA shall duly coordinate with the SDM, the Network Manager and Eurocae."
Transport

• "relying on an active coordination between EASA, the SDM, the Network Manager and Eurocaec, to:

  • **continue supporting the DLS implementation** and reinforcing the RFF function contribution, by notably pursuing the monitoring campaign (in terms of VDL load)
  • perform the "**pan-European ATN/VDL2 performance monitoring and spectrum coordination function infrastructure performances impact and monitoring function**" as identified in the ELSA recommendations (NetworkOversight-02)
  • further support the implementation of the DLS Recovery plan, in coordination with SDM and EASA, **through the centralised collection of ‘best in class’ avionics, possible contributions on architecture and governance issues, and contributions to the test and validation for both air and ground systems** (cf. Interop testing)
  • **duly report all findings** stemming from previously mentioned actions (RFF, performance monitoring, etc..) to the Commission, EASA and SDM"
EC request to EUROCAE

"relying on an active coordination between EASA, the SDM, the Network Manager and Eurocae, to:

- closely work with EASA and the SDM in identifying and developing as needed, the required standards for "end-to-end certification" of DLS solutions;
- continue adapting ED-92D, as needed, targeting the ELSA model D implementation, and complement it by the necessary clarifications and guidance material, to ensure coherence and consistency among all standards and certification material;
- further support the implementation of the DLS recovery plan, in coordination with SDM, EASA and the NM."

EC request to SDM

"to focus its attention and resources in the DLS Recovery on the model D implementation and
to complement the work undertaken as part of the DLS Recovery Plan by:

- Engaging and including ALL DLS stakeholders in the implementation management of the DLS Recovery Plan (i.e. irrespective of funding arrangements under CEF);
- Ensuring that the solutions developed under DLS Recovery Plan accommodate all airspace users (including those without AOC);
- Provide, in the scope of its DSL Recovery activities, a pro-active steering to all relevant stakeholders"
EC request to SJU

- "relying on an active coordination between the SDM, EASA, the Network Manager and Eurocaee, the Commission would appreciate the continued assistance, as required, of the SESAR Joint Undertaking in terms of research or large scale validation tasks to support the DLS implementation recovery"
Statement by EASA

Maria Algar-Ruiz
According to ELSA study and DLS Recovery Plan, ... The EC has requested EASA to launch, as soon as possible, two distinct actions:

1. A short-term review of Regulation (EC) No 29/2009 to assess, clarify and adapt the conditions for exemptions in current Regulation (EC) No 29/2009, and to clarify the provisions regarding non-AOC traffic operators...

2. The launch of the new rulemaking task for the revision of the DLS Regulation, as already planned in the Draft EASA Rulemaking Programme 2016-2020 under reference RMT.0524 to address, in addition to the regulatory material (e.g. AMC) for extended data link operations as per PCP AF6, all regulatory needs for the implementation of multi-frequency DLS on the basis of Model D (as per ELSA study), the specific identified requirements for 'end-to-end certification and oversight function', including the characterisation of "best in class" and the necessary related avionics improvements. For this action, EASA shall duly coordinate with the SDM, the Network Manager and Eurocae.
Statement by NM

Joe Sultana
According to mandate, the EC has requested the Network Manager to:

• continue **supporting** the DLS implementation and **reinforcing** the RFF **function contribution**, by notably pursuing the **monitoring campaign** (in terms of VDL load);
• perform the "**pan-European ATN/VDL2 performance monitoring and spectrum coordination function infrastructure performances impact and monitoring function**" as identified in the ELSA recommendations (NetworkOversight-02);
• further **support the implementation of the DLS Recovery plan**, in coordination with SDM and EASA, through the centralised **collection of ‘best in class’ avionics**, possible contributions on **architecture and governance issues**, and contributions to **the test and validation** for both air and ground systems (cf. Interop testing);
• duly **report** all findings stemming from previously mentioned actions (RFF, performance monitoring, etc..) to the Commission, EASA and SDM.
Statement by EUROCAE

Luc Deneufchatel
According to mandate, the EC has requested the Eurocae to:

- closely work with EASA and the SDM in identifying and developing as needed, the required standards for "end-to-end certification" of DLS solutions;

- continue adapting ED-92D, as needed, targeting the ELSA model D implementation, and complement it by the necessary clarifications and guidance material, to ensure coherence and consistency among all standards and certification material;

- further support the implementation of the DLS recovery plan, in coordination with SDM, EASA and the NM.
Statement by SDM

Mariagrazia La Piscopia
DP Planning Manager – Deputy Director Technical Operations
SESAR Deployment Manager
According to EC mandate of 10/01/2017, the Commission has requested the SESAR Deployment Manager to focus its attention and resources in the DLS Recovery on the model D implementation and to complement the work undertaken as part of the DLS Recovery Plan by:

- Engaging and including ALL DLS stakeholders in the implementation management of the DLS Recovery Plan (i.e. irrespective of funding arrangements under CEF);

- Ensuring that the solutions developed under DLS Recovery Plan accommodate all airspace users (including those without AOC);

- Provide, in the scope of its DSL Recovery activities, a pro-active steering to all relevant stakeholders.
Workshop Agenda

1. Welcome Address *(Nicolas Warinsko - SDM)*
2. Setting the scene *(Gzim Ocakoglu – DG MOVE)*
3. Outcome of the ELSA study *(Marouan Chida - SJU)*
4. The Data Link Recovery Plan & CEF Transport Call 2016 related proposals *(Mariagrazia La Piscopia - SDM)*
5. Outcomes from the DLS-COM Workshop of 24th November and way forward
   a) Conclusions and EC letters to main stakeholders *(Gzim Ocakoglu - DG MOVE)*
   b) Statement by EASA *(Maria Algar-Ruiz - EASA)*
   c) Statement by NM *(Joe Sultana – NM)*
   d) Statement by EUROCAE *(Luc Deneufchatel – EUROCAE)*
   e) Statement by SDM *(Mariagrazia la Piscopia – SDM)*
6. Q & A
7. Closing Remarks *(Nicolas Warinsko - SDM)*
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   e) Statement by SDM *(Mariagrazia la Piscopia – SDM)*
6. Q & A
7. Closing Remarks *(Nicolas Warinsko - SDM)*
Closing Remarks

Nicolas Warinsko
Director Technical & Operations – Deputy Managing Director
SESAR Deployment Manager
Thank you for your attention

More information:

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