



EASA
European Aviation Safety Agency

2017 EASA-FAA International Safety Conference

New CNS/ATM Technologies and Safety

Pascal Medal
Chief Engineer
EASA

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CNS EU Regulatory Ongoing activities

(COM)

» Data Link Services (reg 29/2009 & PCP/AF 6)

- A short-term review of Regulation (EC) No 29/2009 for exemptions mainly
- A long term revision (RMT.0524 DLS)

(NAV) Navigation

PBN – Proposal for PBN implementation issued

(SUR) Surveillance

- ### » Surveillance Performance Interoperability ($\Phi 2$) on going discussions



Communication (DLS revision RMT 524)

- EC mandate to EASA regarding 3 main aspects related to DLS implementation in Europe:
 - Establish an end-to-end certification and oversight function (EASA)
 - Ground network (Model D): Introduction of multiple frequencies and single service area
 - Clarification of the “Best In Class” performance and related avionics improvements

In addition the following complementary options are studied to offload VDLM 2

- SATCOM, (IRIs precursor, etc...)
- AeroMACS, etc...



Navigation

➤ Current situation

- PBN is the future navigation system, (RNP= RNAV with on board monitoring and alerting system)
- New CS-ACNS subpart C, NPA being published for comments soon
- Pretty much harmonised with USA, slight differences in RNP-AR regulatory approaches

➤ Future developments

- ICAO CONOPS introducing next generation GNSS supported by Dual Frequency & Multi Constellations (DFMC)



Surveillance Performance Interoperability (SPI 2)

- **Use of Radar Mode S (ELS, EHS) & ADS-B**
 - Spectrum issues, frequency congestion on 1090 MHz, (L band)
 - Mode S coverage in Europe is well established, therefore the ADS-B contribution to the surveillance network is questioned, the operational need have to be further elaborated
 - ADS-B Critical path Navigation and Surveillance based on single GNSS=> single point of failure



Future steps & Harmonisation with USA (1/2)

Challenges

- **COM**

- Transmission and use of ATN messages also needs careful tailoring to the intended airspace operational concept
- ATN over IP has its own challenges (security and mobility) vs OSI protocols
- Long term convergence to IP is however planned on both sides,
- Mid term would need amendments either to the ground (gateway) or to the on-board avionics (multi stacks) therefore significant costs

- **SUR**

- ADS-B: need for full harmonisation? Look into the different operational environments, which might lead to different local approaches, when we consider all airspace users

Opportunities

NAV: PBN move to DFMC => multi-mode receivers, SBAS & GBAS where needed, saving costs for everybody, ensuring interoperability

SUR: Mode S equipage ensures interoperability both sides, for transatlantic flights



Future steps & Harmonisation with USA (2/2)

- Set a forum EASA/FAA to
 - Discuss and harmonise the 2 approaches
 - Coordinate MOCs to both Regulations & ICAO standards, in cooperation with Standardisation bodies (EUROCAE, RTCA, SAE, etc...)
 - Support ICAO Standard Round Tables



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