

Tuesday 1st December 2020

DEMO ACTIVITIES AND RESULTS

- 14:00 Welcome by event host AIRBUS (Hugues de Beco)
Welcome by the SESAR JU (Benoît Fonck)
- 14:10 Agenda presentation (Tom Maier - AIRBUS)
- 14:15 Introduction to PJ31 and PJ18-6
(Tom Maier - AIRBUS / Julian Alonso - INDRA)
- ### INFRASTRUCTURE
- 14:25 Avionics (Thierry Harquin - AIRBUS)
& Operations (Andreas Linner - NOVAIR)
- 14:40 Ground demonstration platform
Pre-Operational platform (Noud de Lang - MUAC)
Shadow mode platform (Hendrik Oberheid - DFS)
- 14:55 Q&A session
- ### RESULTS AND BENEFITS
- 15:05 Summary of data collection/
Technical Analysis results (Jean Boucquey - EEC)
- 15:20 Situational awareness: EPP display to ATCO
(Federico Ferrari – ENAV / Preetam Heeramun - NATS)
- 15:35 Safety: 2D discrepancy monitoring and EPP display results
(Christopher Adams - MUAC)
- 15:50 Q&A session
- 16:00 Coffee break
- 16:10 Complementary Operational Analysis (H. Oberheid - DFS)
- 16:25 TP-enhancements validations ref PJ18-06a (A. Olbes-INDRA)
- 16:35 ADS-C contribution to ground TP enhancement: a few
figures (Jean-Philippe Chapelle - AIRBUS)
- 16:45 Q&A session
- 16:55 Wrap-Up Day 1 / Day 2 Teaser (Tom Maier - AIRBUS)

Wednesday 2nd December 2020

DEPLOYMENT AND PERSPECTIVES

- 10:00 Welcome 2nd Part host AIRBUS (Thierry Harquin)
- 10:05 Recap DIGITS Key Results – Day 1 (Tom Maier - AIRBUS)
- 10:15 Next research and development steps under SESAR
(David Lewin - NATS)
- 10:45 Airline Expectations & Needs (Pascal Colles - AFR)
- 11:05 SESAR DM - Airborne equipage plans & ground
deployment aspects including update on
mandate PCP/CP1 (Cristian Pradera – SESAR DM)
- 11:25 Coffee break
- 11:35 **PANEL DISCUSSION** – Moderator David Lewin (NATS)
- Benoit Fonck - SESAR JU Chief Development and Delivery
 - Dan Wood - EasyJet, Training Captain and Fleet Manager
 - Niels Lokman – MUAC COO
 - Hugues de Beco - Airbus, Head of Multi-Program Projects & ATM Program
- Q&A session
- 12:30 Wrap-Up and Overall Conclusions (Tom Maier - AIRBUS)

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RESULTS AND BENEFITS

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RESULTS AND BENEFITS (cont'd)

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Introduction to DIGITS



Demonstration of Air Traffic Management Improvements generated by initial Trajectory Sharing

Tom MAIER
DIGITS Project Leader
Webinar 1st Dec 2020



founding members



Four-dimensional Trajectory Based Operations



3 min video on 4D TBO

Success through Partnership



Airspace Users (AU)

a/c upgrades	AFR	BAW	EZY	IBE	NVR	WZZ	WUK	91
Forward-Fit		3	23	6		18		50
Retro-Fit	25	7			2		7	41

AIRFRANCE

BRITISH AIRWAYS

easyJet

IBERIA

novair

WIZZ

DIGITS-AU 9 participants

6.1 M€ → 4.3 M€

total 19 active participants

cost co-financing

DIGITS 12 active participants

27.8 M€ → 18.9 M€

Air Navigation Service Providers (ANSP)

control of DIGITS airspace

DFS Deutsche Flugsicherung

enav

EUROCONTROL

NATS

COOPANS
REAL COOPERATION. REAL RESULTS

LFV

Naviair

ACG

CCL

IAA

Industry

airframe

AIRBUS

avionics

Airbus Ops
(coordinator)

Honeywell
- Honeywell inc
- Honeywell sro

Airbus
(coordinator)

airborne

THALES

ground

indra

LEONARDO

NATMIG

AIRTEL^{ATN}

- Saab

- Sintef



Legend

DIGITS-AU

DIGITS

both

no workshare

DIGITS responds to EU Implementation Regulation

ANNEX to the **COMMISSION IMPLEMENTING REGULATION** on the establishment of the **Common Project One** supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014



ATM Functionality #6 Initial Trajectory Information Sharing (i4D)

- Equipped **aircraft must down-link trajectory information** using ADS-C EPP as part of the ATS B2 services...
- Data link communications **ground systems must support ADS-C** (downlink of aircraft trajectory using EPP) as part of the ATS B2 services...
- All ATS providers referred to in point 6.3 and the related **ATC systems must be able to receive and process trajectory information** from equipped aircraft.
- The ATC systems must enable **controllers to display the route** of the downlinked trajectory.
- The ATC systems must provide a **warning to controllers in case of a discrepancy** between the downlinked trajectory and the filed flight plan route. .

ATS providers and the Network Manager shall ensure that they enable Initial Trajectory Information Sharing as from **31 December 2027**.

Operators must ensure that aircraft operating flights with an individual certificate of airworthiness first issued on or after **31 December 2027** are equipped with ATS B2 capability, in accordance with EUROCAE document ED 228A, in order to downlink aircraft trajectory using ADS-C EPP.

DIGITS Scope

PJ31 DIGITS started Sep-2016 and comprises **developments of**

- ATS B2 EPP avionics in accordance with ED 228A (world first)
- ANSP controller support tools for air-ground trajectory synchronisation

DIGITS-AU started Jan-2018 and constitutes the **operational airborne complement** to DIGITS

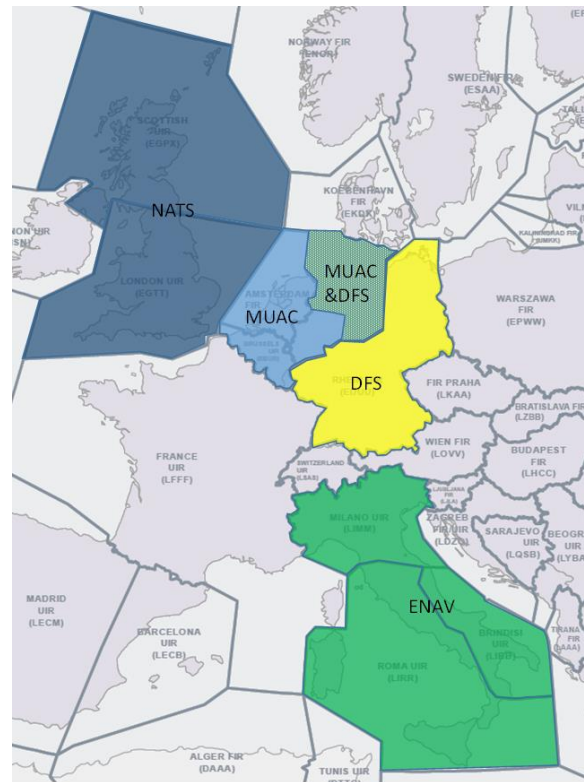
- equip 91 aircraft to fly in the DIGITS airspace
- downlinking ADS-C ATS B2 EPP data

Collection and analysis of ADS-C data

- from revenue flights
- operated by different Airspace Users
- in a variety of operational conditions
- in test mode (DFS, ENAV, NATS) and pre-operational (MUAC)

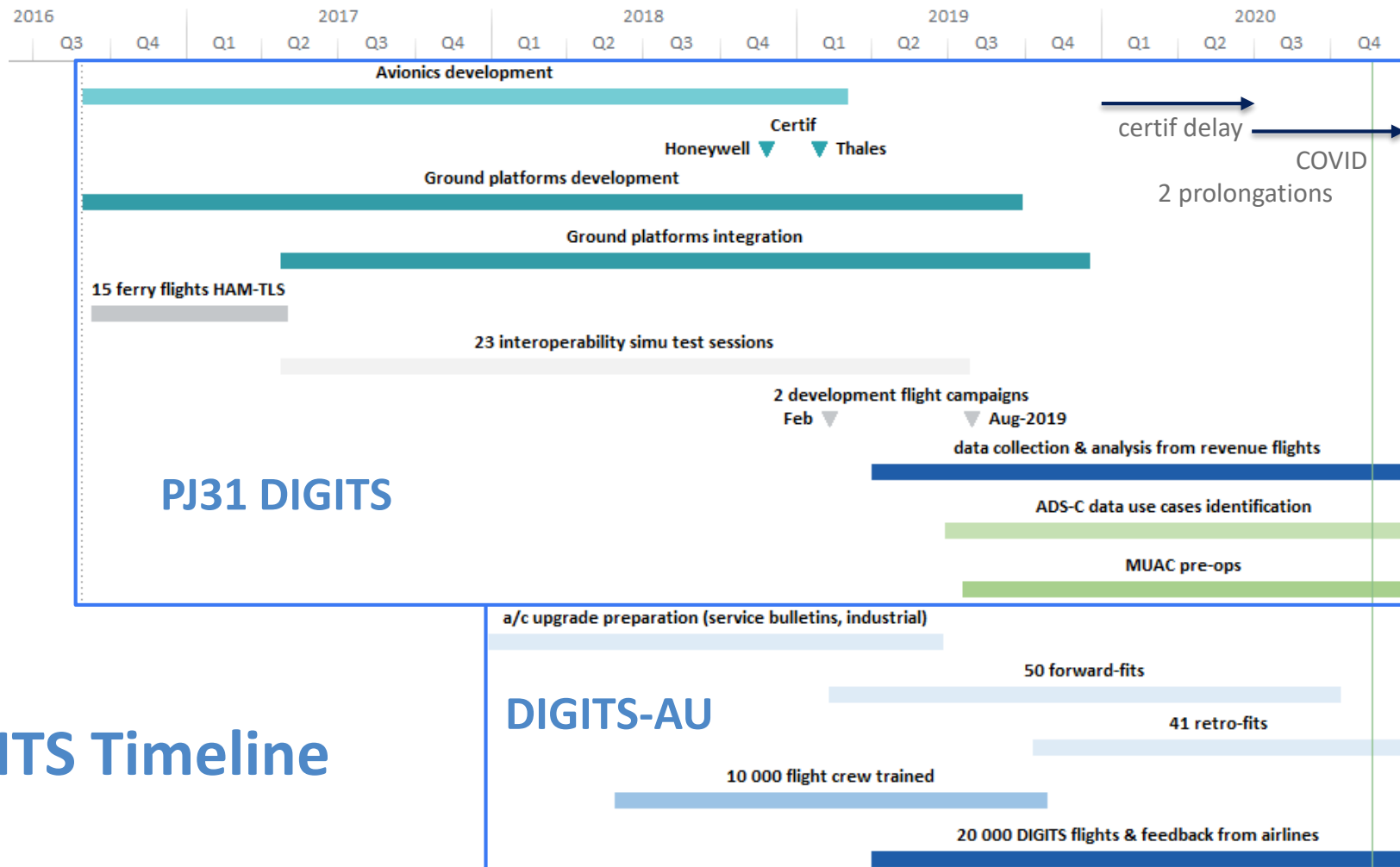
Objective

- understand the impact of operating practices on the downlinked data
- fine tune the requirements for integration of EPP in ground system
- identify use cases and benefit potentials



The DIGITS airspace

DIGITS Timeline



AIRFRANCE

BRITISH AIRWAYS

easyJet

IBERIA

novair

WIZZ

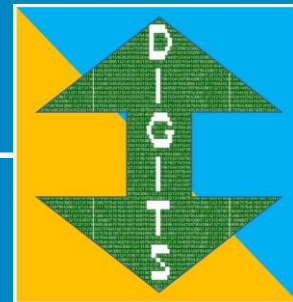
Airlines

AIRBUS

Honeywell

THALES

Airborne
Industry



Thank you very much for your attention!

ANSPs

DFS Deutsche Flugsicherung

ENAV

EUROCONTROL

NATS

LFV
AIR NAVIGATION SERVICES
OF SWEDEN

NAVIAIR

AIRTEL^{ATN}

indra

LEONARDO

Ground
Industry

founding members

