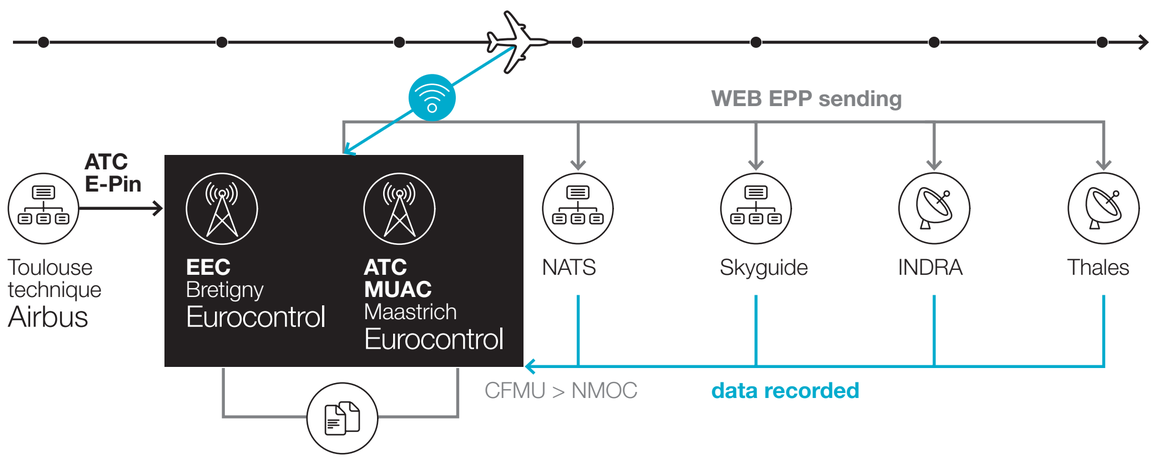
PEGASE project

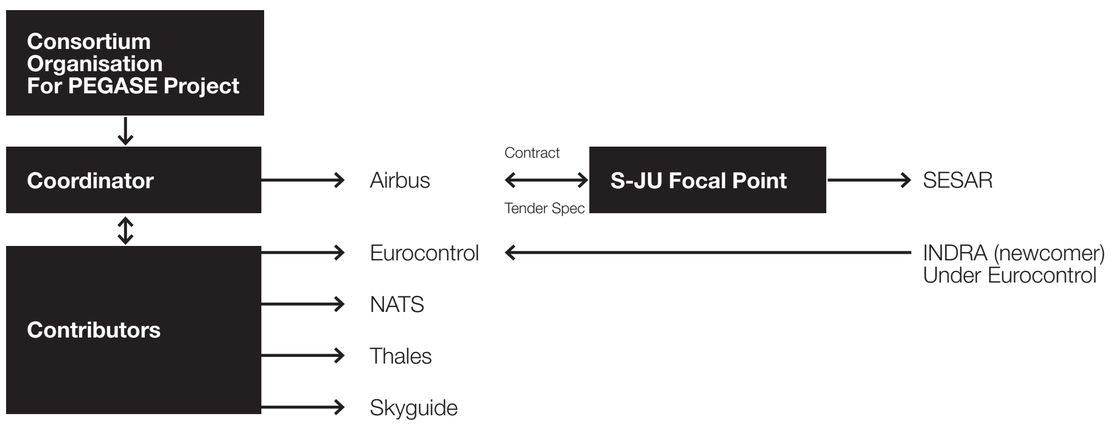
Providing Effective Ground & Air data Sharing via Extended Projected Profile

MEMBER OF SESAR

PEGASE Organisation



PEGASE Consortium



Challenges

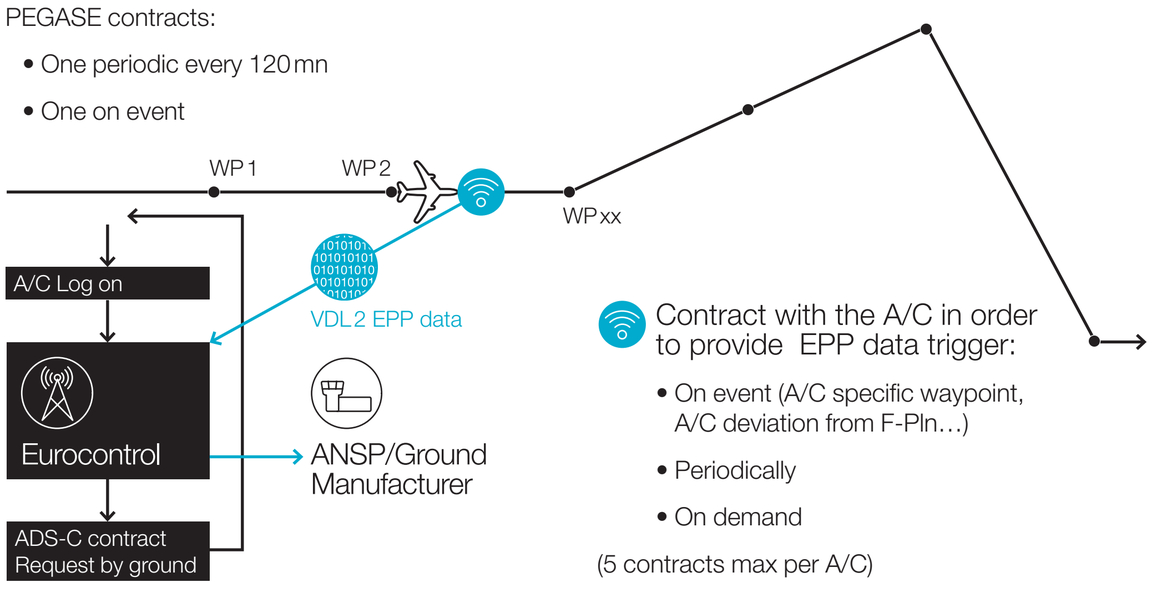
- **Downlink the intended Aircraft route** (EPP) through ADS-C datalink application (ATN VDL mode2).
- Provide **EPP data to several end users** for their own evaluation and experimental needs so as to enhance their ground trajectories with real time aircraft intent.
- Be as close as possible to a real ATM environment for **realistic analysis and conclusions**.
- **Provide an assessment of the EPP performance** (accuracy, reliability) versus the real flown route and the ground based predictions for that flight.
- Provide **EPP operational usage recommendations**.
- Pave the way of next VLD stage and i4D deployment.

Solutions

Flight Plan Prediction Up to 128 waypoints

PEGASE contracts:

- One periodic every 120 mn
- One on event



Contract with the A/C in order to provide EPP data trigger:

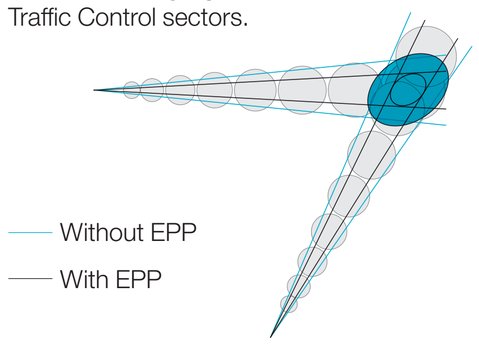
- On event (A/C specific waypoint, A/C deviation from F-Pln…)
- Periodically
- On demand

(5 contracts max per A/C)

Validation results

- Data collection:
  - EPP recorded versus time = 76%
  - Currently 35 flights performed Vs 50 targeted

Even with voice clearances Intended aircraft route is **immediately updated and shared** with all Air Traffic Control sectors.



Intended aircraft route **reduces uncertainty** in conflict detection and there are fewer nuisance alerts.

Benefits

- Environment
- Airspace capacity in TMA
- Airspace capacity en-route
- Cost-efficiency
- Flight time variability

- **"Performance Based Trajectory Prediction" supporting:**
  - Extended Arrival Management with overlapping arrival management (AMAN) operations and interaction with Demand and Capacity Balancing (DCB) and Control Time of Arrival (CTA)
  - Dynamic and Enhanced Routes and Airspace
  - Improved Performance in the Provision of Separation
  - Advanced Separation Management
- **Integration of trajectory management processes in planning and execution.**

“Allows flow management to better balance the demand with the available capacity, ensuring the aircraft’s safe and efficient transit through MUAC’s area of responsibility.”
(Eurocontrol)

“Visibility of an aircraft’s intentions enhances the performance of trajectory conformance monitoring tools. This can reduce the risk of conflicts arising from non-conformance to ATC instructions, for example due to communication errors.”
(NATS)

“Controllers will know at all time exactly where aircraft are, what their trajectory in the immediate future will look like and when to expect them in which sector.”
(Skyguide)

Participating members

- Airbus
- Eurocontrol and its operational ATC Centre in Maastricht
- INDRA Under (Eurocontrol)
- NATS
- Skyguide
- Thales

Supported by Honeywell & SITA

AIRBUS