



Data4Safety

Partnership for Data Driven Aviation Safety Analysis

Supported by EASA

COSCAP-SEA

Introduction to Data4Safety (D4S)

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Data4Safety explained in one paragraph

The Data4Safety Programme (D4S) is a **strategic initiative, objective and priority** of the Agency (ref. EASA Single Programming Document).

D4S is a **voluntary partnership** of the **EASA Members States** and the **Industry** that aims at **inferring unprecedented aviation intelligence**, e.g. to **identify and manage safety risks** or **support data driven change** in both the fields of **safety** and **sustainability**.

D4S leverages on the advent of big data and digital technologies to organize a **massive collection of aviation data sources** and, equally important, **organising the analytical capacity** amongst all **EASA aviation partners (both EASA MSs and Industry)**.

This will take the **collaborative work of EASA with the Industry and the EASA MSs** at a scale never achieved before in Europe.

D4S is led by EASA and powered by its Members



out there!



Objective Deliverables

Expert Knowledge



Know where to look

See it coming

Act!



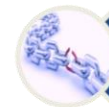
Metrics



Directed Studies



Blind Benchmarking



Vulnerability Discoveries

Programme key Principles



Collaborativeness

The success of the *Data4Safety* programme is reliant on a cooperative effort involving the entire aviation community, the European Union institutions, oversight authorities, industry and unions. The programme members contribute the programme in a cooperative manner.

Voluntariness

The programme is a partnership that is joined or left by the members on a voluntary basis.

Confidentiality

The programme members are obliged to confidentiality in relation to all data and intelligence derived from the programme. A member may voluntarily choose to allow access to the identified data it supplies under the conditions specified in the rules and procedures document.

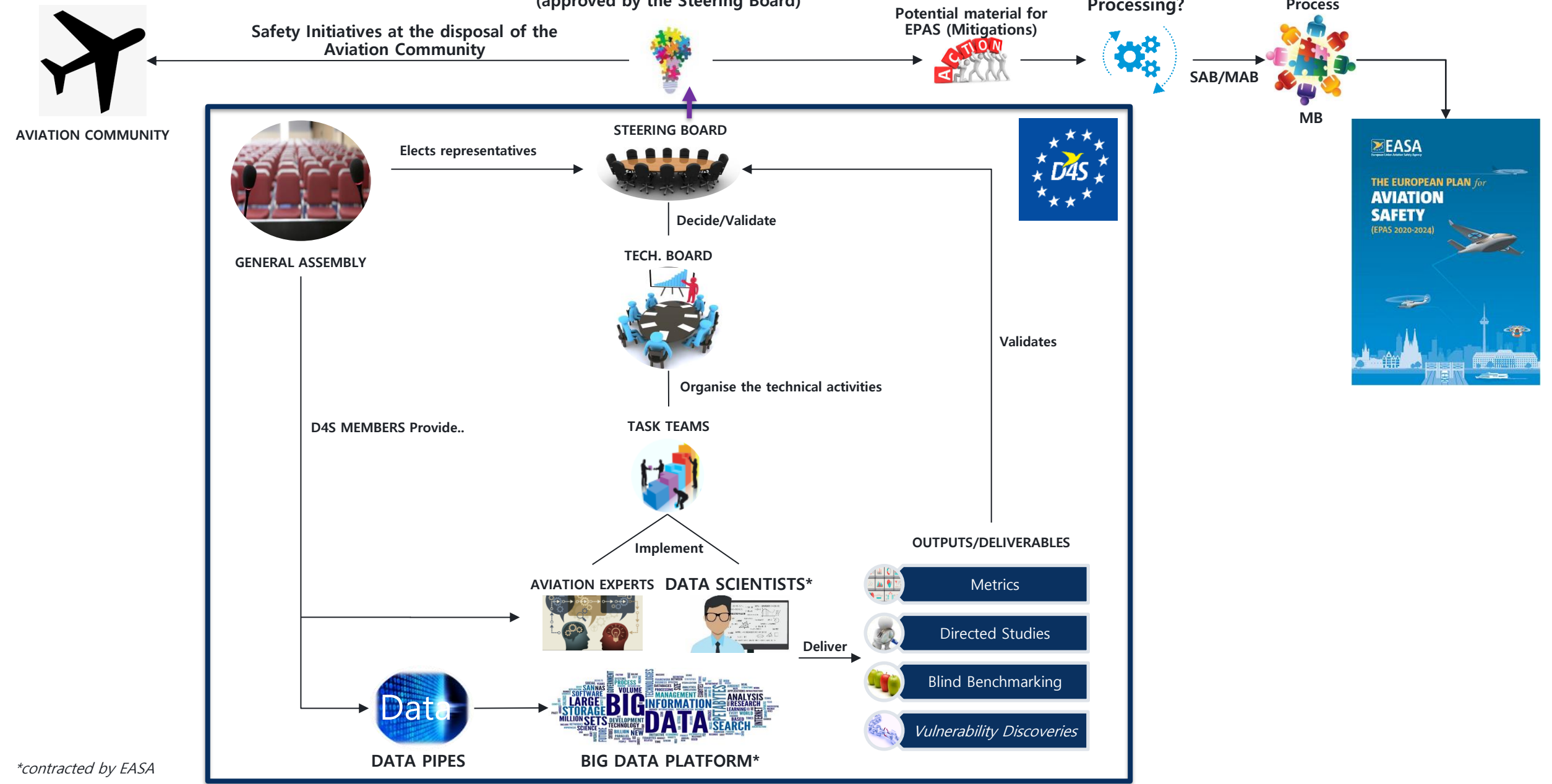
Just Culture

The programme is aligned with the Just Culture principle as defined in European Union regulation 376/2014 and the European Corporate Just Culture Declaration.

Safety first

The primary goal of the programme is safety and as such the programme aims at supporting the identification and assessment of the systemic safety risks at European level as well as the measurement of safety performance. The programme also supports the members in enhancing their own safety performance. The programme has also the ability to support **sustainable aviation, security and cybersecurity** when they impact safety. The programme will not allow any other purpose contrary to its spirit such as seeking mercantile purposes or for a targeted oversight on a given organisation or individual

Overview



*contracted by EASA

Summary Data Governance & Protection measures



Governance

- Steering Board
- Technical Board
- Supervisory Panel

Procurement

- Data Pipe Provider (P#1)
- Big Data Platform Provider (P#2)
- Data Science and Analytics Provider (P#3)

IT architecture

- Dedicated Data Storage

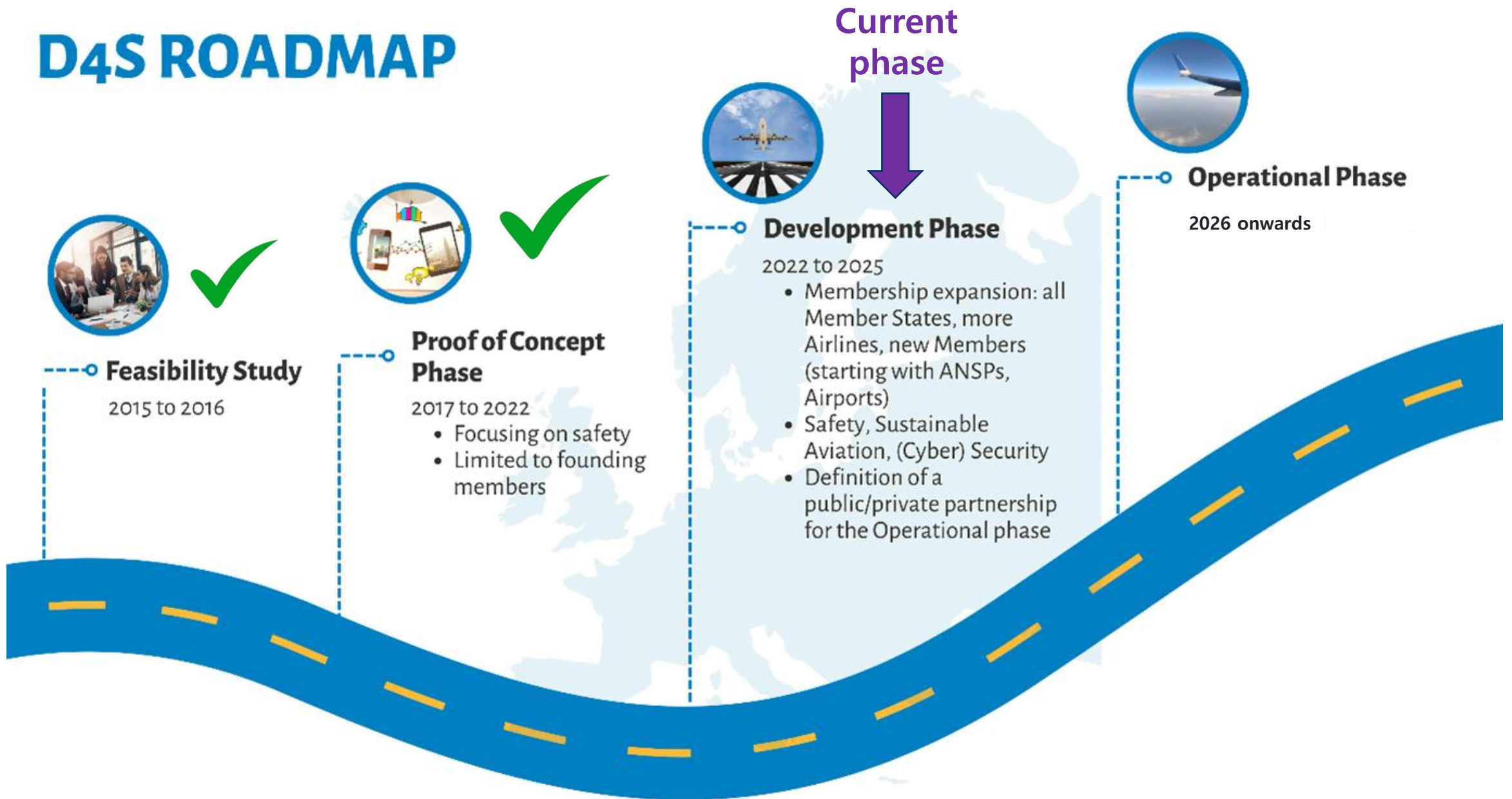
Legal

- EU Law (EU Reg 376/2014, EU Reg 2018/1725, AirOps ORO.AOC.130)
- German Law (Data stored in Frankfurt Germany)
- National Law (Different for each member)

Internal Processes

- User Governance (Charter, RnP and DaGo, incl DSPA's and TPA's)
- Data transfer (Encryption, Timing)
- Analysis Visualisation (Rule of three etc)

D4S ROADMAP



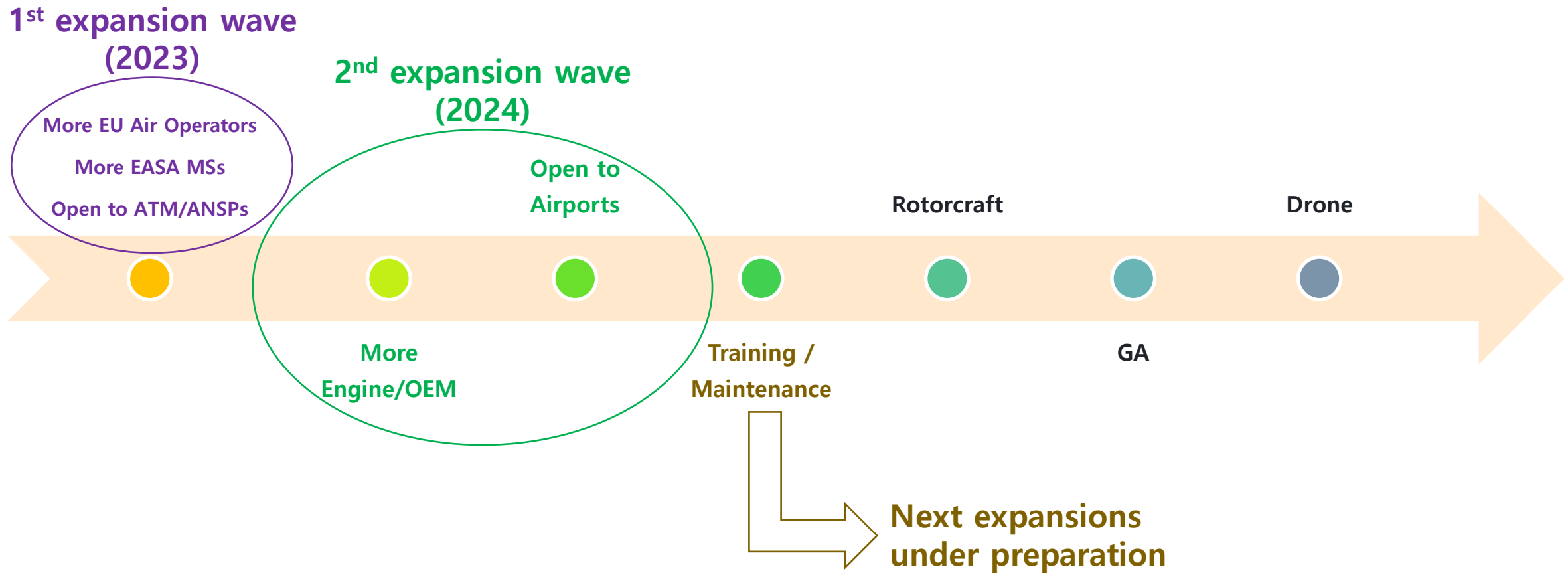
Data4Safety Development Phase (DEV)

⇒ Overview roadmap



Data4Safety Development Phase (DEV)

⇒ Overview roadmap for membership expansion



Data4Safety Development Phase (DEV)

⇒ On-boarding process



**D4S
Prospect**



**D4S
Candidate
Member**



On-boarding
assessment (IT,
Legal, Staff
Representatives)



**D4S Full
Member**





D4S DEV - Membership status (Mar 2025)

- ❑ **First expansion** performed at the occasion of the first D4S General Assembly in Oct 2023 in EASA, Cologne
- ❑ **Expansion wave n°2** performed in Sept 2024 at the occasion of the D4S General Assembly n°2 in Cologne



Air Operators

British Airways*
EasyJet*
Iberia*
KLM*
Ryanair*
Vueling*
Aer Lingus
Norwegian
TAP (Portugal)
Wizz Air
Edelweiss Air
Luxair
TUI Fly (Belgium)
HOP!



EASA + EASA MSs

Ireland*
France*
Spain*
Belgium
Bulgaria
Croatia
Denmark
Finland
Italy
Luxembourg
Netherlands
Norway
Portugal
Romania
Slovenia

Austria
Cyprus
Estonia
Greece
Latvia
Malta
Poland
Swiss
Sweden



ATM

Airnav Ireland
Austro Control
Eurocontrol MUAC
DFS
DSNA
ENAI
ENAV
SKYGUIDE



OEMs

Airbus*
Boeing*



Airports

Brussels Airport
Budapest Airport
(Vinci Group)
Copenhagen Airport
Fraport AG
Munich Airport
Oslo (Avinor Group)
Prague Airport
SEA Milano Airports

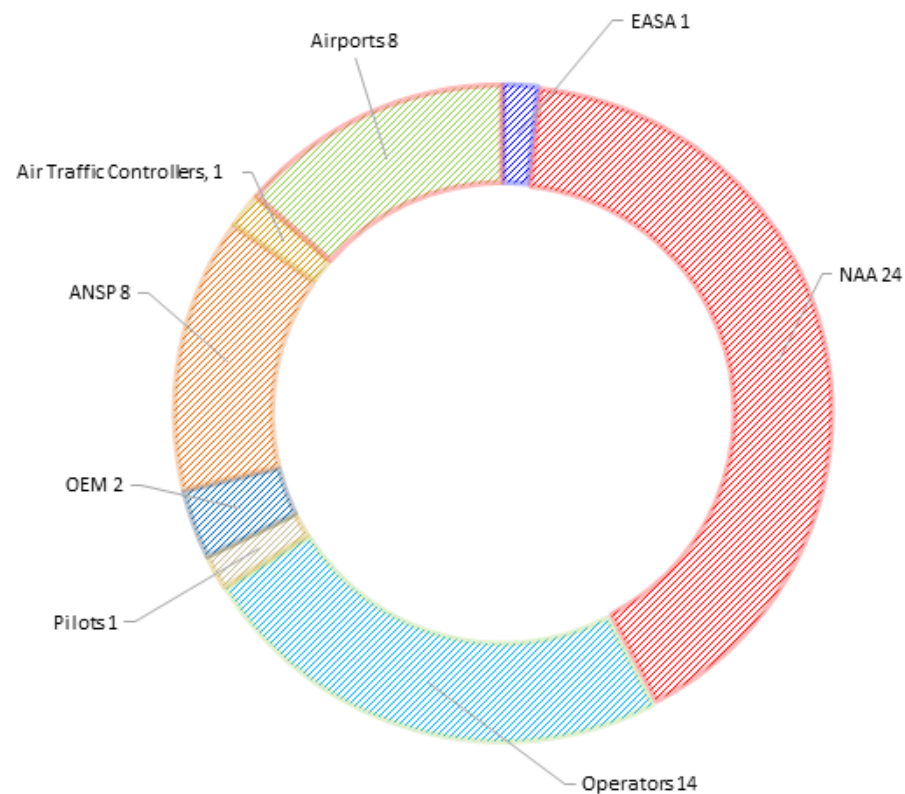


Aviation Professional Representatives

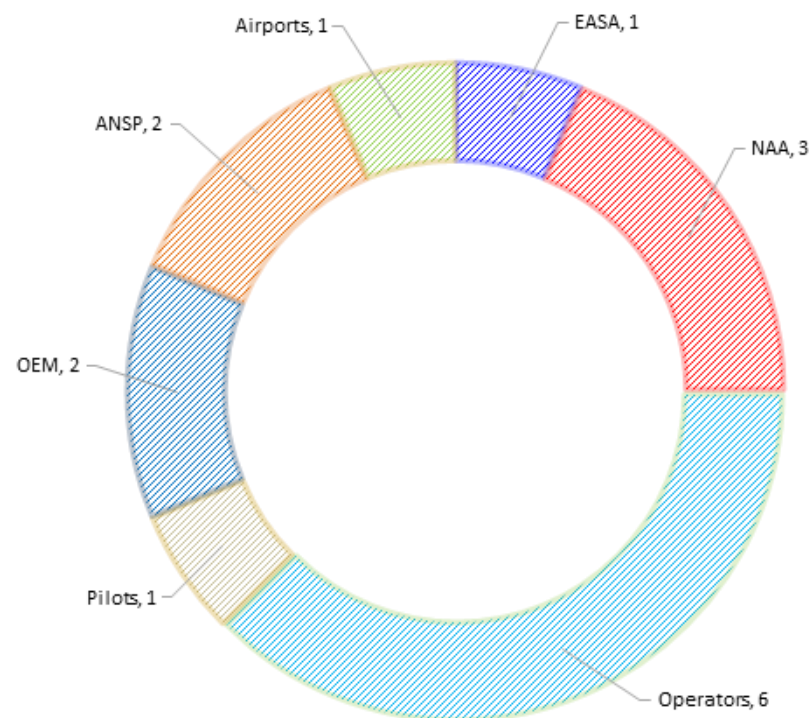
ECA*
IFATCA

*D4S Founding Members
D4S Member at the D4S Gov
D4S Member (wave n°1)
D4S Member (wave n°2)

D4S DEV - Membership and governance overview (Mar 2025)



D4S Membership



D4S Governance

D4S DEV – Expansion Wave n°1 (New Air Operators)

⇒ Anticipated impact on representativeness of the CAT operations within the EASA MSs

Founding Members Air Operators	ERJ	E-Jet	A320	B737	A330	A350	A380	B777	B787
British Airways									
EasyJet									
Ryanair			X	X	X	X	X	X	X
Iberia									
KLM									
Vueling									
Expansion wave n°1 Air Operators	ERJ	E-Jet	A320	B737	A330	A350	A380	B777	B787
Aer Lingus									
Norwegian									
TAP									
Wizz Air	X	X	X	X	X				X
Edelweiss Air									
Luxair									
TUy Fly (Belgium)									
HOP!									
Founding Members + Wave n°1 Air Operators	X	X	X	X	X	X	X	X	X

⇒ Total 1475 CAT aircraft (approx.)

⇒ Total 460 CAT aircraft (approx.)

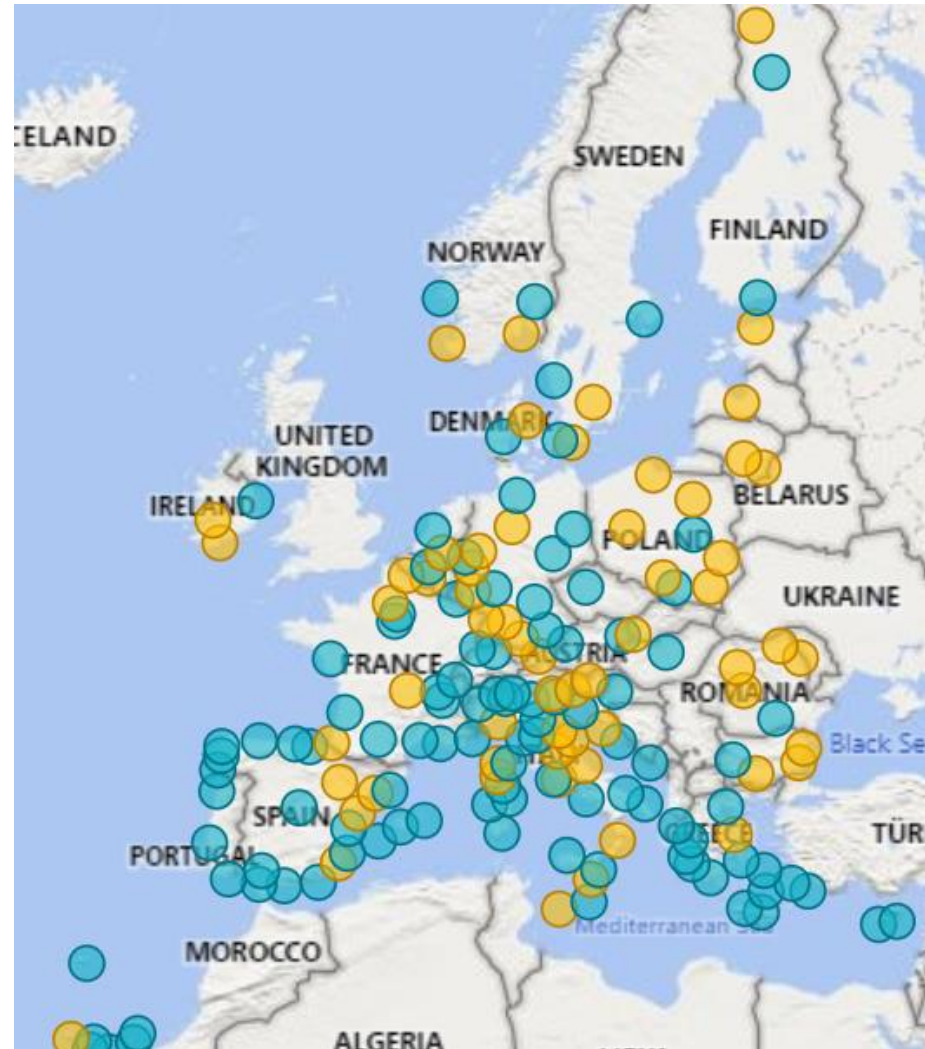
⇒ **Total 1935 CAT aircraft (approx.)**

⇒ **i.e. ~1/3 of all CAT aircraft
registered in the EASA MSs***

**6623 CAT aircraft operated in the EASA MSs in 2022 (Source: EASA ASR 2023)*

D4S DEV – Expansion Wave n°1 (New Air Operators)

⇒ Anticipated impact on the D4S Rule of 3*



R3 Airports
Founding Members +
Wave n°1
Air Operators

R3 Airports
Founding Member
Air Operators

**Impact analysis based on OAG
scheduling data for year 2023*

D4S Dev phase provider – A single trusted 3rd Party Provider contracted by EASA for the benefit of the Data4Safety Programme and the D4S Members

ALG

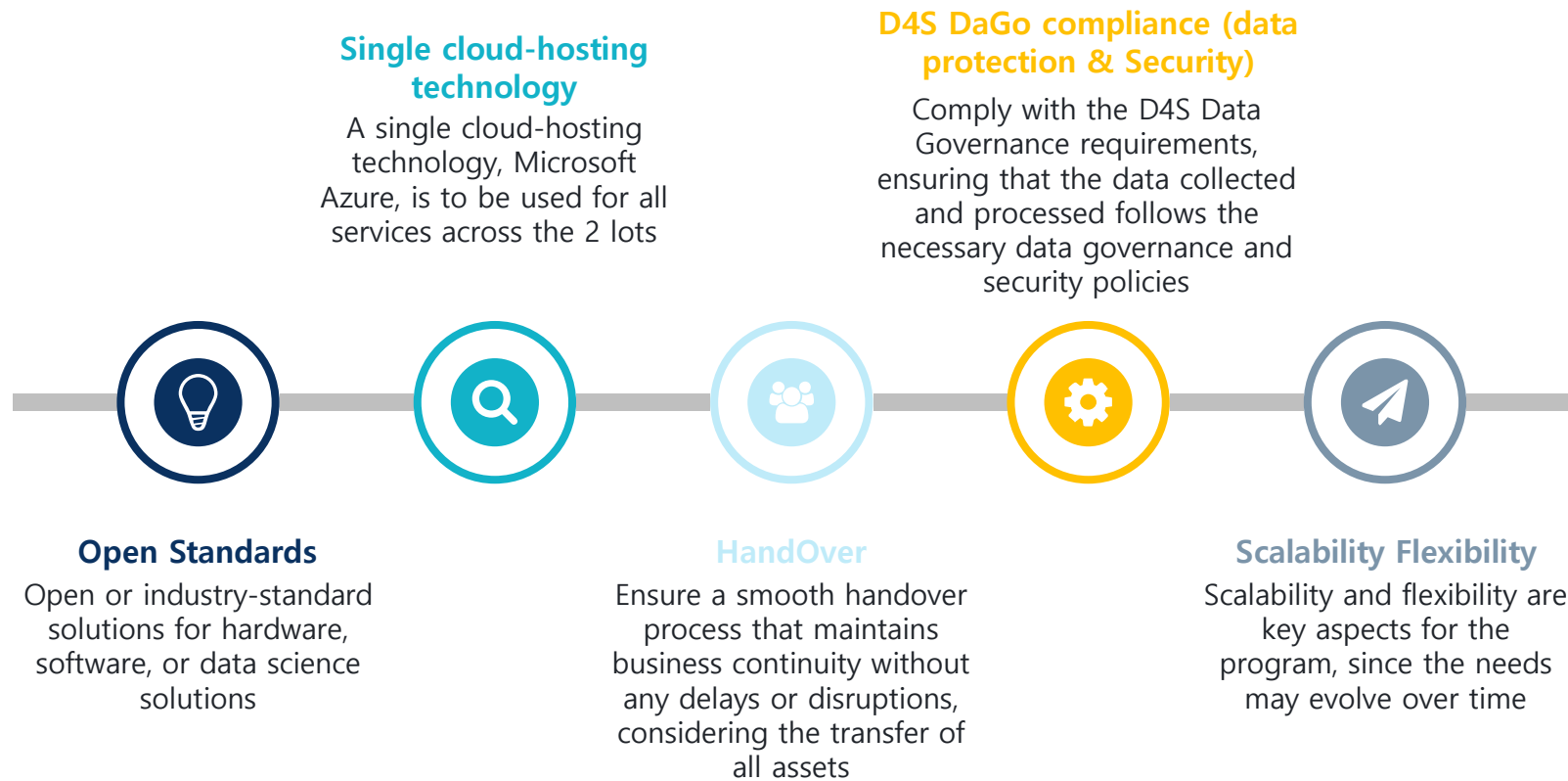
DPPO

 **Paradigma**

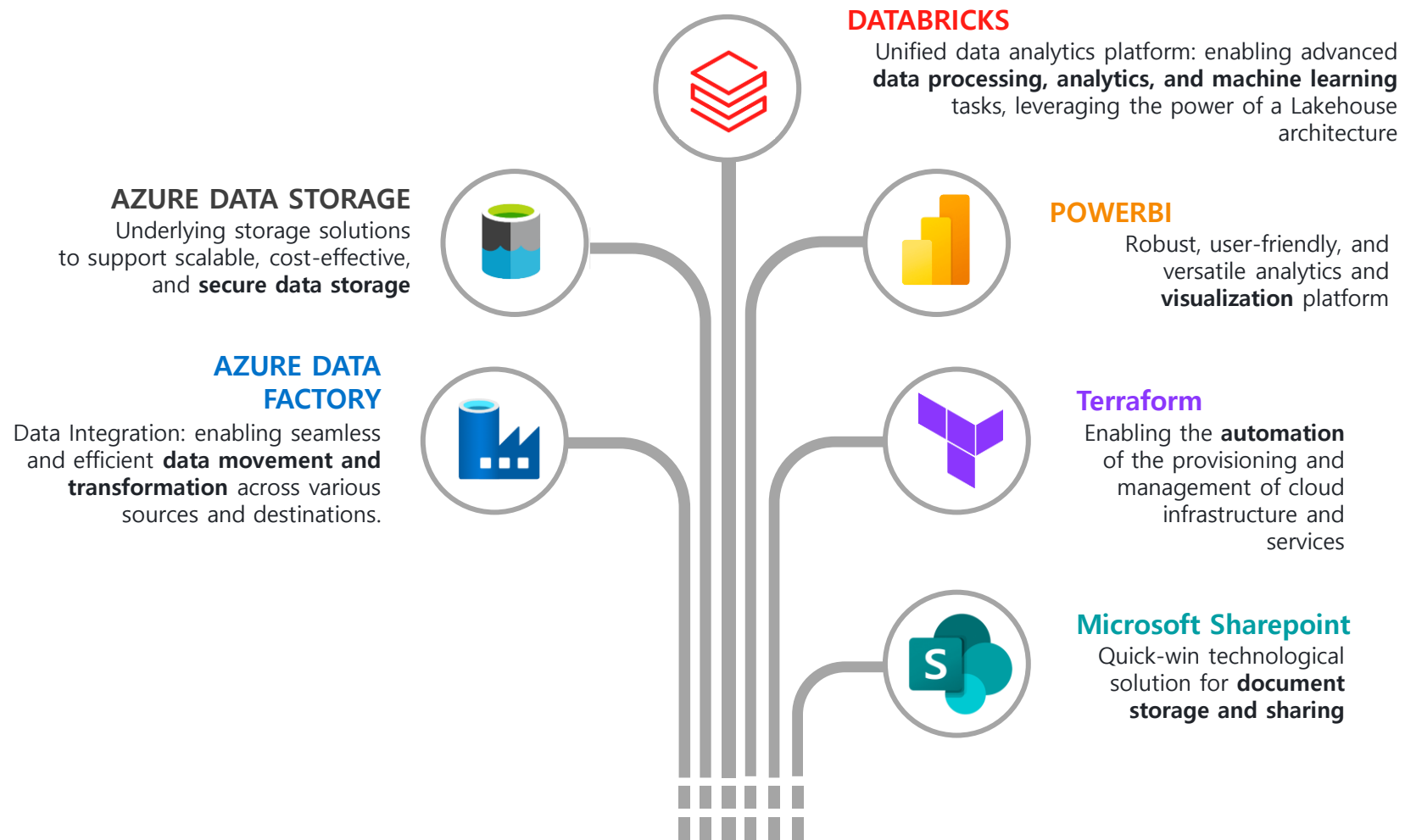
- Transportation consultancy
- Aviation Business and operations, including Safety management and analysis
- Data science team specialised in aviation

- Technological consultancy
- Cloud native; digital transformation, IA & Big data
- Already working with other key aviation projects

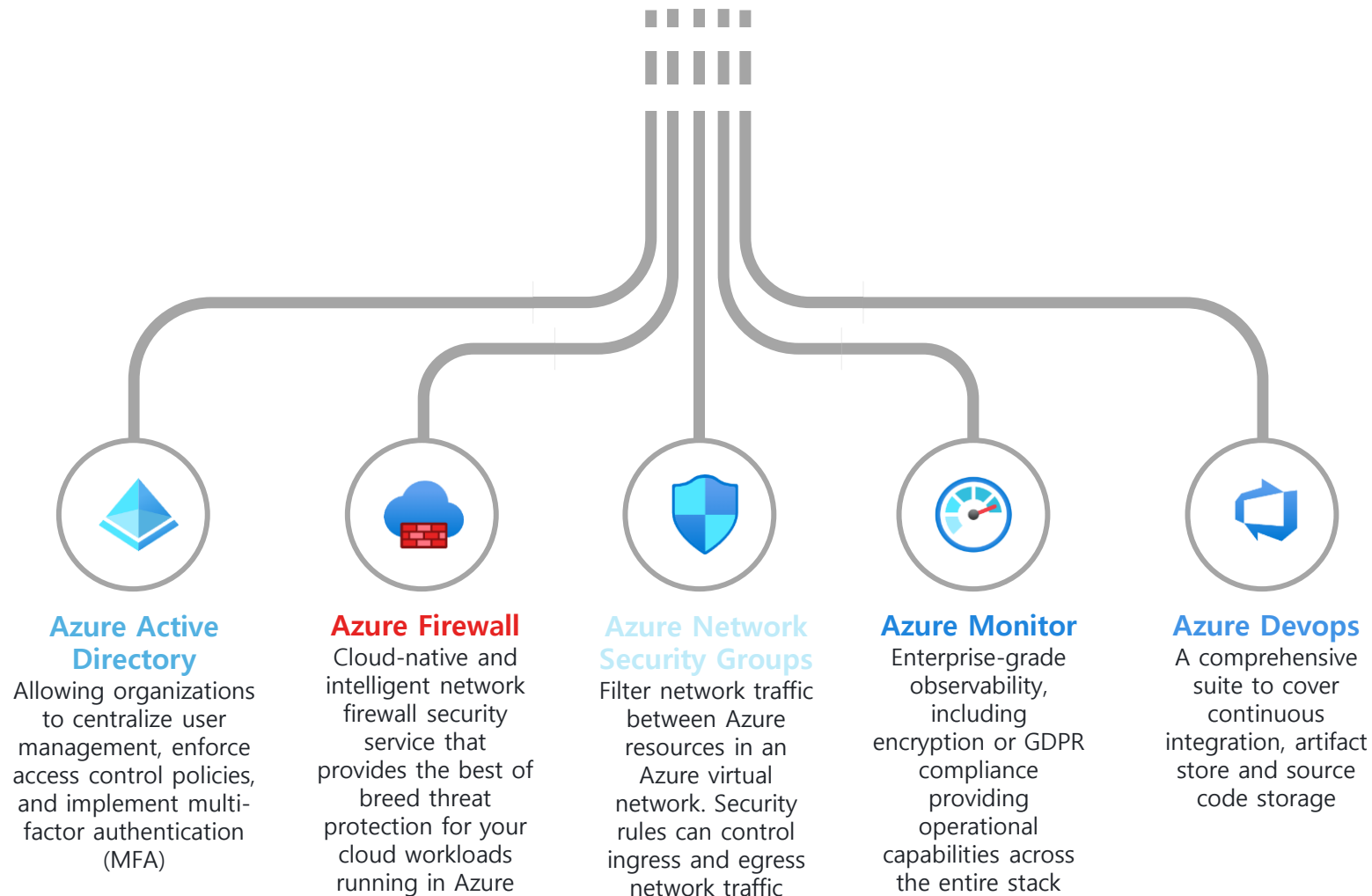
Primary objectives – Five core principles underpin the technical architecture, considering the used technology and the nature of the D4S programme



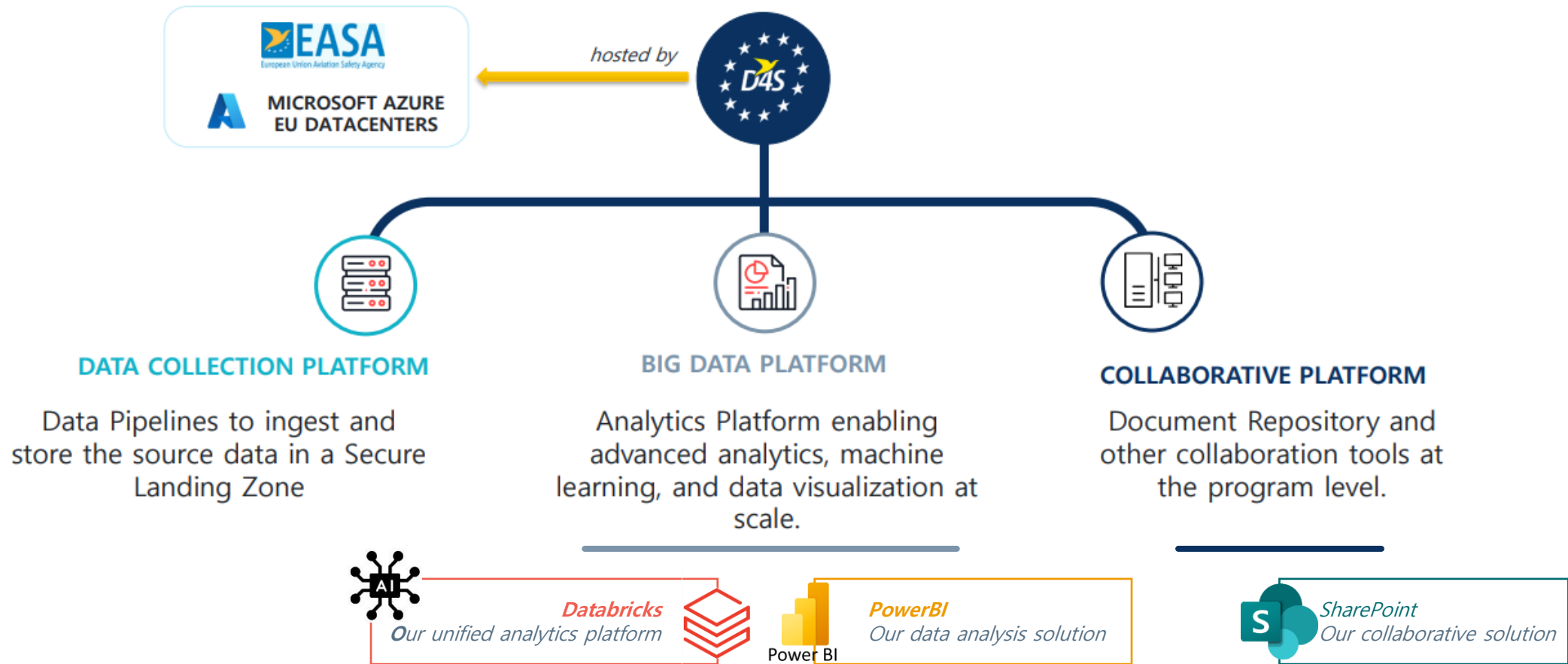
Enabling technologies - A simpler yet robust target architecture to ensure both present and future success fulfilling at any time the primary objectives



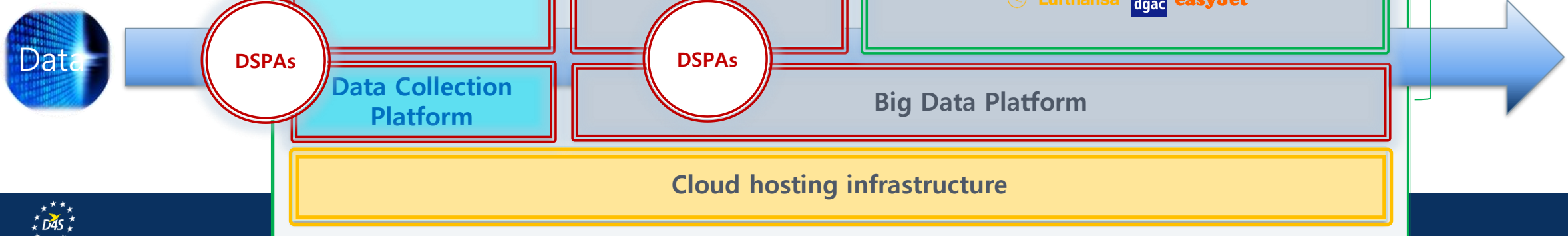
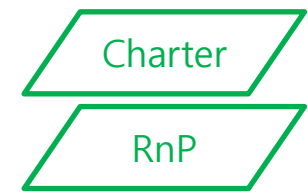
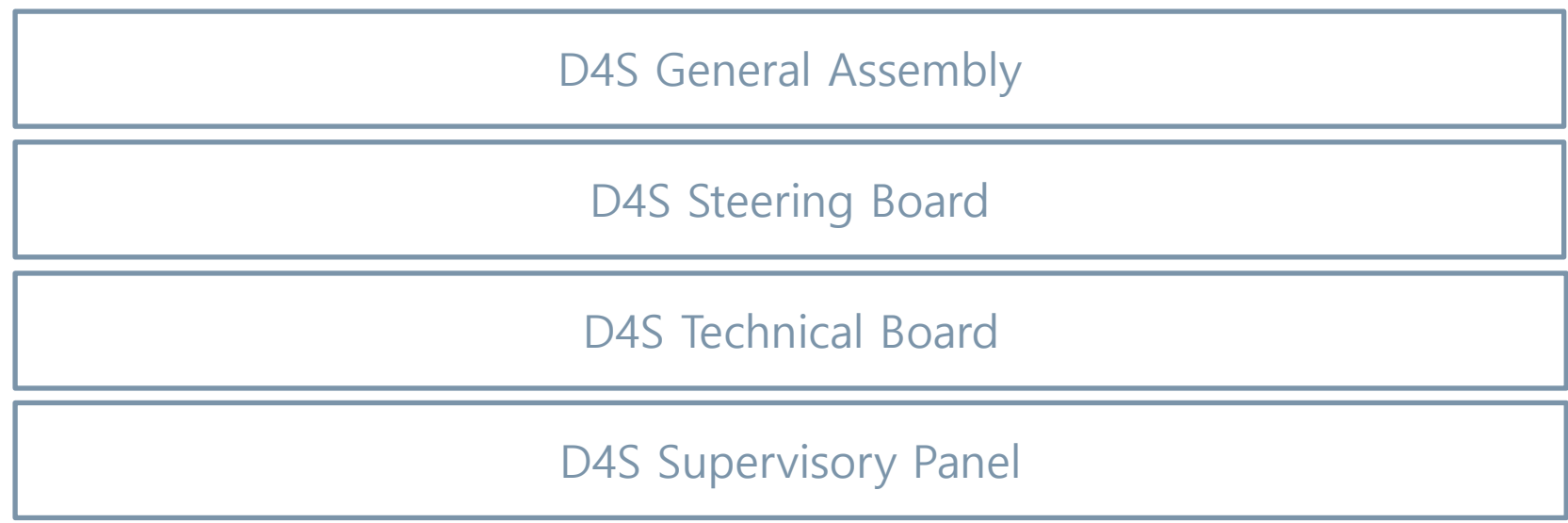
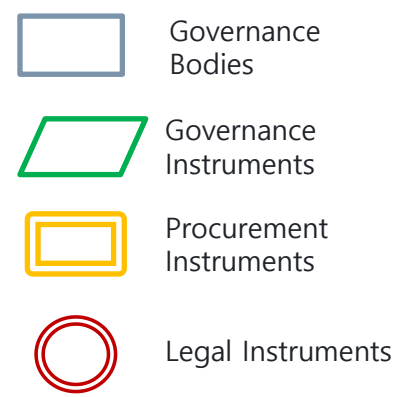
Enabling technologies - A simpler yet robust target architecture to ensure both present and future success fulfilling at any time the primary objectives



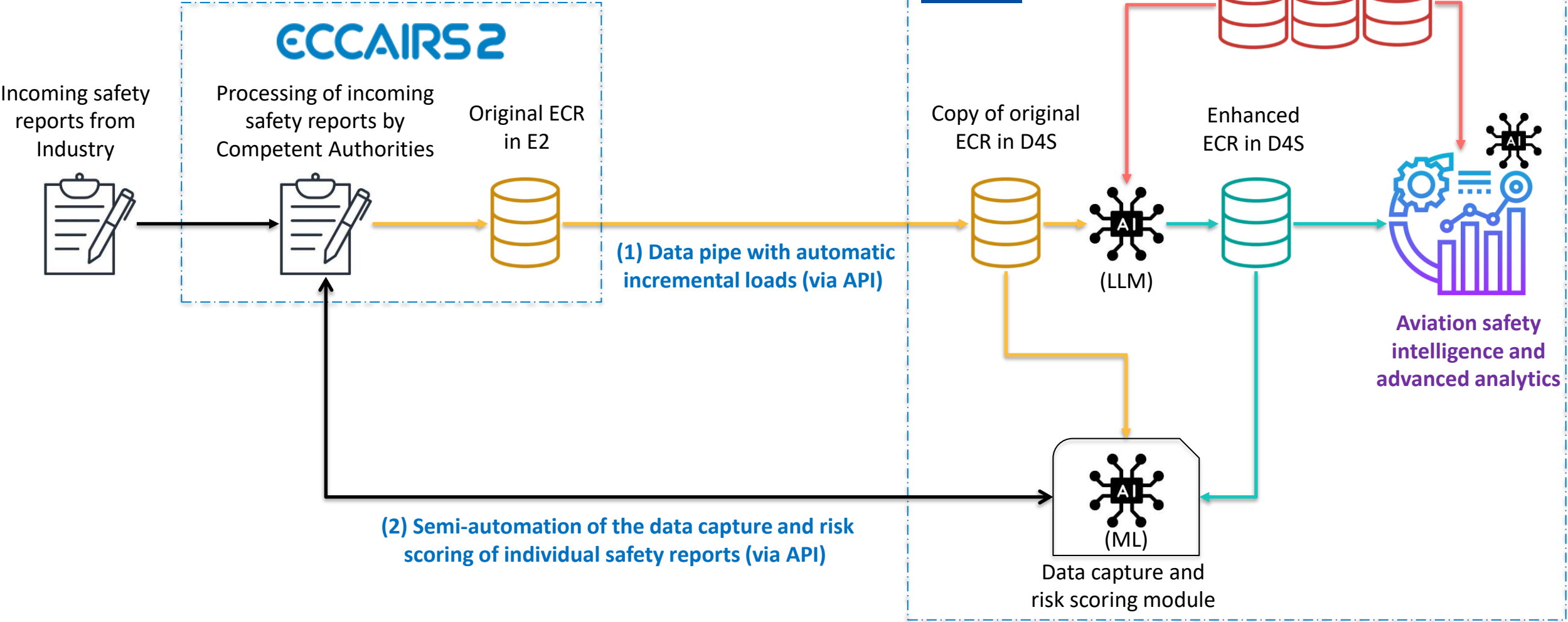
Platforms Overview, Set-up, Staging and Entry into Service



- ⇒ **Entry into Service** of the new D4S Platforms performed in **June 2024**
- ⇒ **80+ EASA users** by **Feb 2025**
- ⇒ **300+ External users** (from EASA Member States and Industry) by **Feb 2025**



Structural link [E2–D4S]



International cooperation: the example of ASIAs and D4S



Setting a new global standard





Data4Safety

Partnership for Data Driven Aviation Safety Analysis

Supported by EASA

D4S is co-funded by
the European Union

