



MIDAD TF/1

European AIS Database (EAD) Overview

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EAD Overview

- EAD Objectives and Concept
- EAD Model
- History – Creation of EAD
- EAD Service
- EAD Oversight – Contractual relation
- Client Migration status



European AIS Database (EAD) *Objectives*

- Increase the level of service of the overall AIS in the EUR region:
 - Access to worldwide aeronautical data
 - Consistent, up-to-date and complete collection of aeronautical information all over the EUR
 - Decrease overall cost for provision of aeronautical information within EUR

- Develop a new aeronautical information database (EAD) allowing ANSP/AIS to migrate to EAD and use related services in order to operate centrally the database (e.g. data provision, delivery of system functionality, service desk, etc.).

European AIS Database (EAD)

Concept

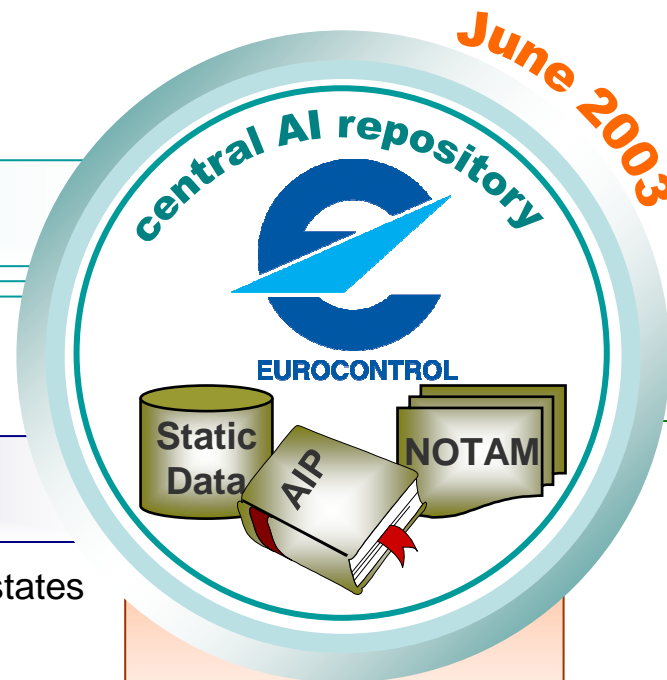
- EAD is a central service provided and owned by EUROCONTROL on behalf of its Member States.

Data Providers

Direct data maintenance

EAD Ops Staff

Non migrated & worldwide states



Data Users

PIB, NOTAM, AIP, Charts...

Data Quality

Harmonisation
and Consistency

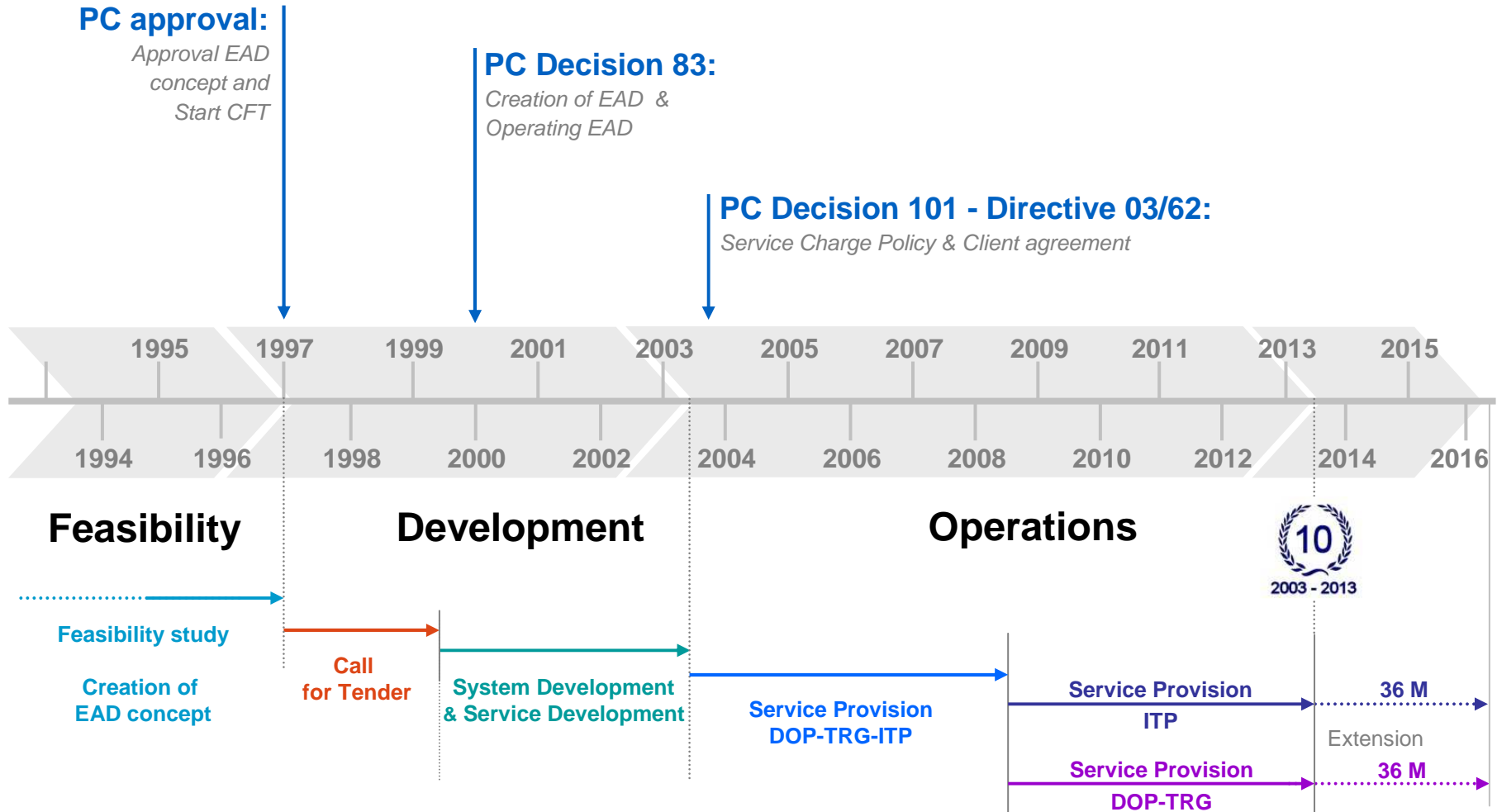
EAD Model

Outsourcing

- EAD is owned by the EUROCONTROL Organisation, managed by the Network Manager inside the EUROCONTROL Agency
- Provision of the EAD services are contracted to private Service Provider Companies or consortium after an open Call for Tender (CFT)
- Objectives of the CFT:
 - Benefit from state of the art technology from industries, and
 - Open competition to get the best operational services for the cheapest price.

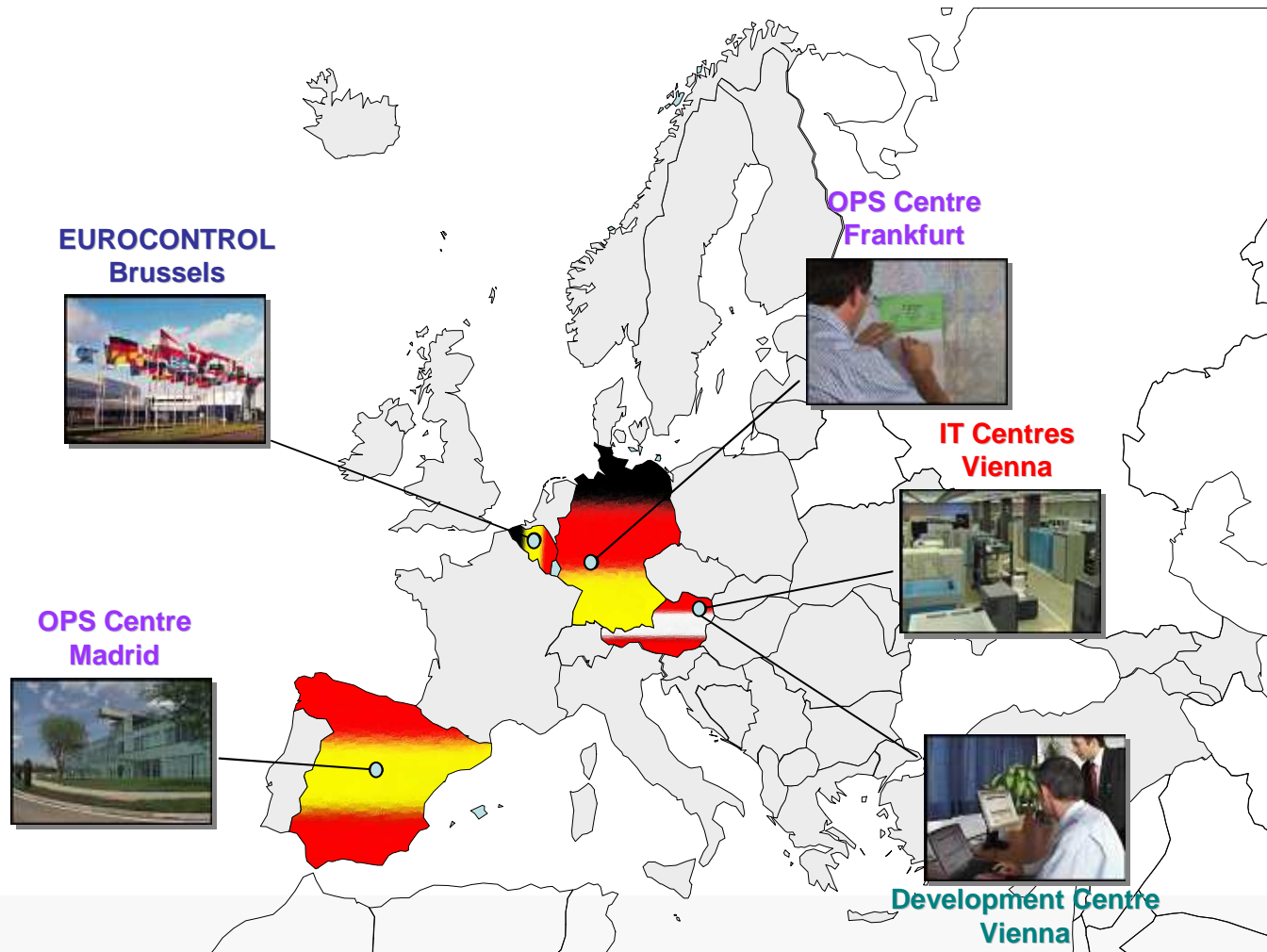
History

Creation of EAD

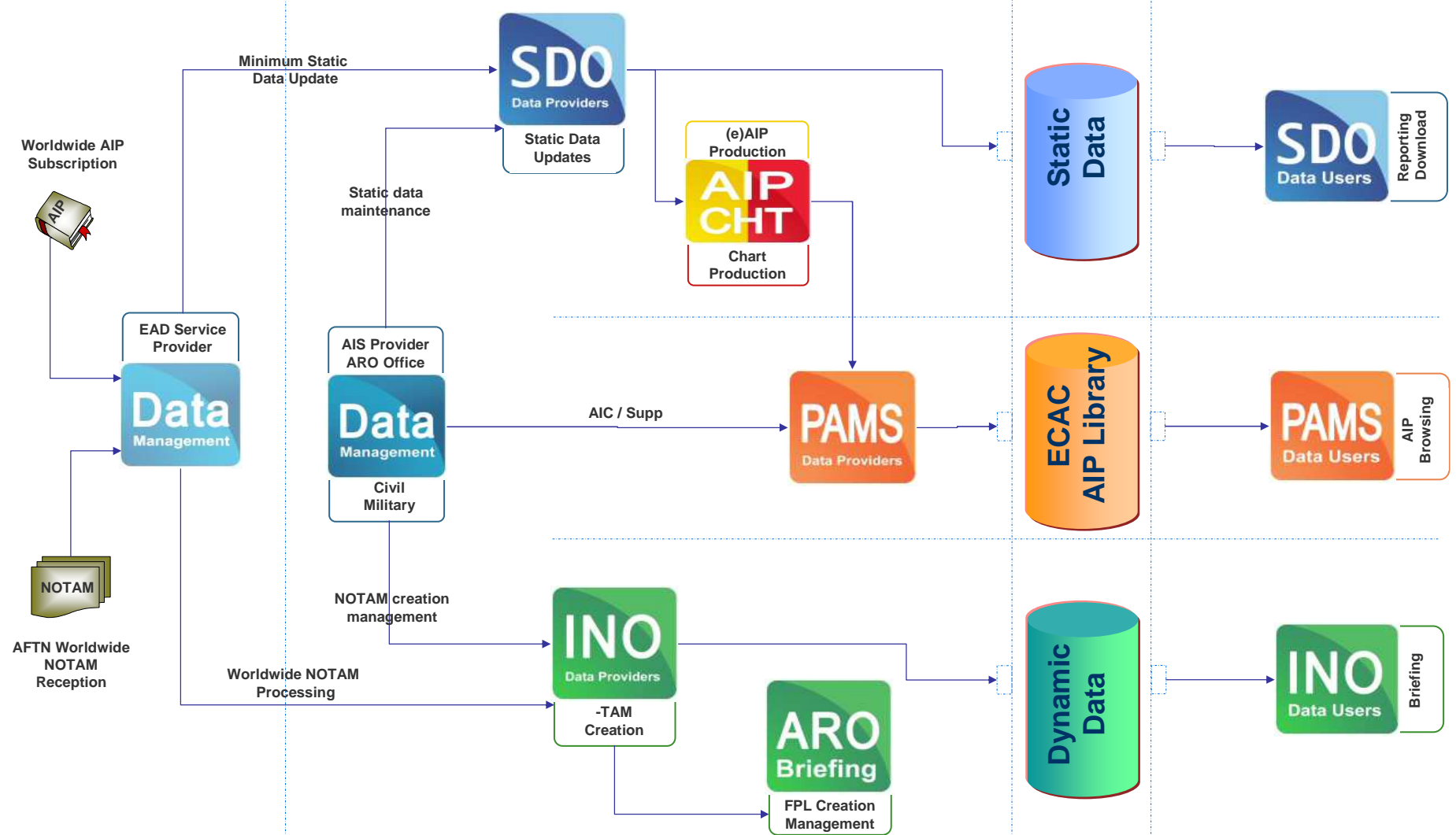


EAD Service

- A EUROCONTROL Service of which the provision of the service is outsourced, a real partnership with industry.



EAD Service Workflow



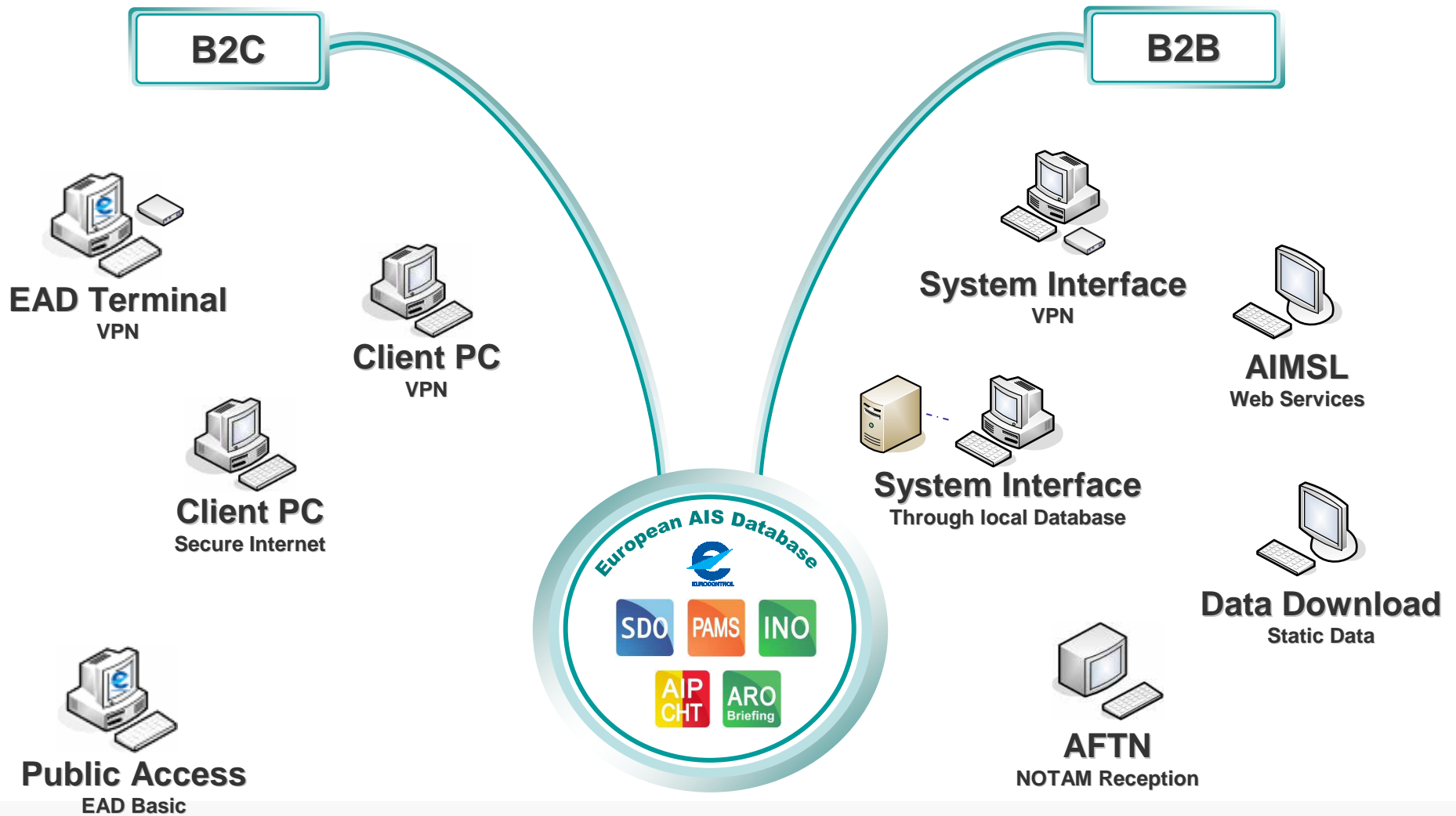
EAD Data Operation Service Provider (DOP)

ANSP / CAA / MIL / ARO

AO / MIL / CFSP
AIS / ATC / GA

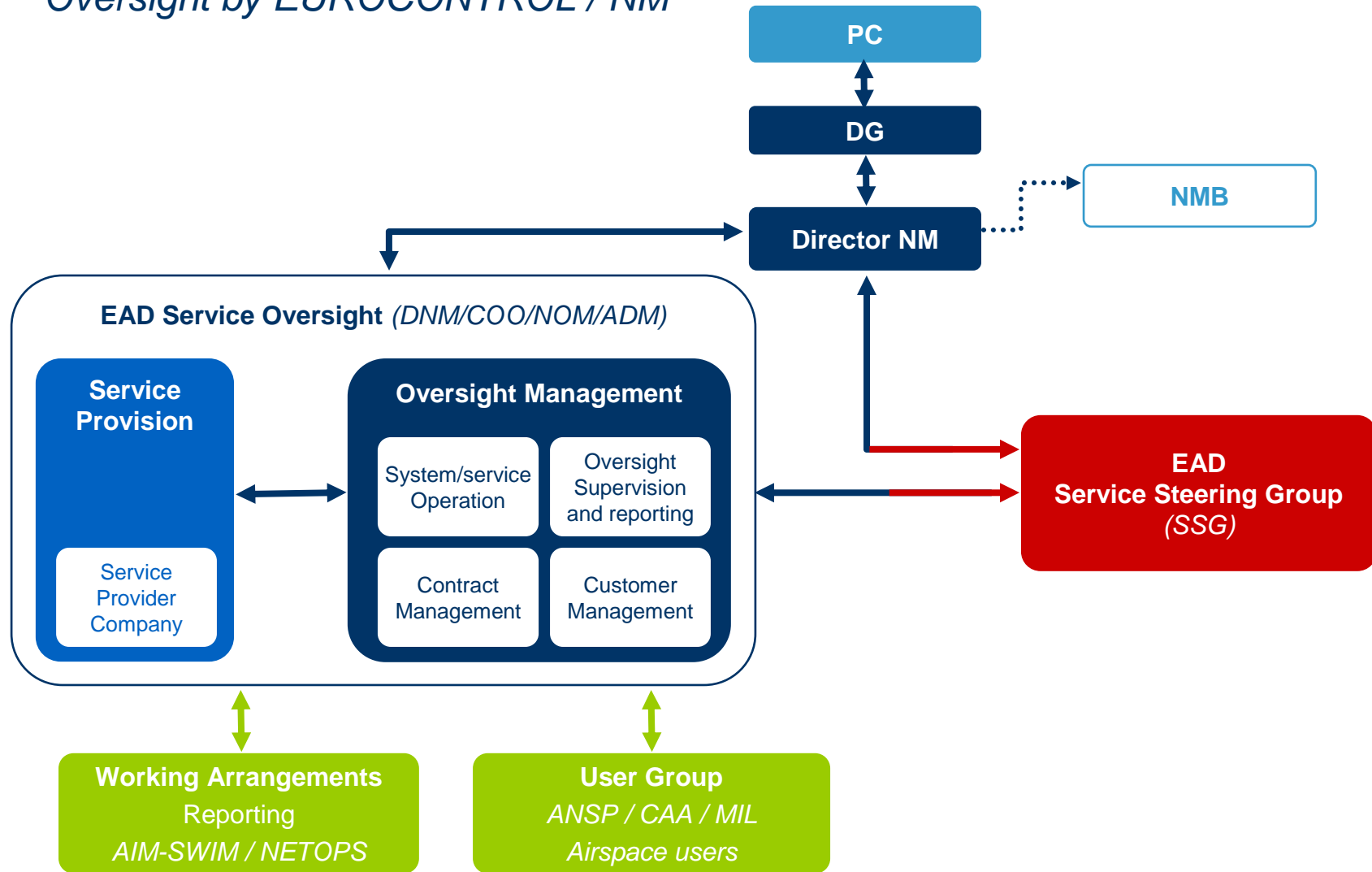
EAD Service

Accessing EAD



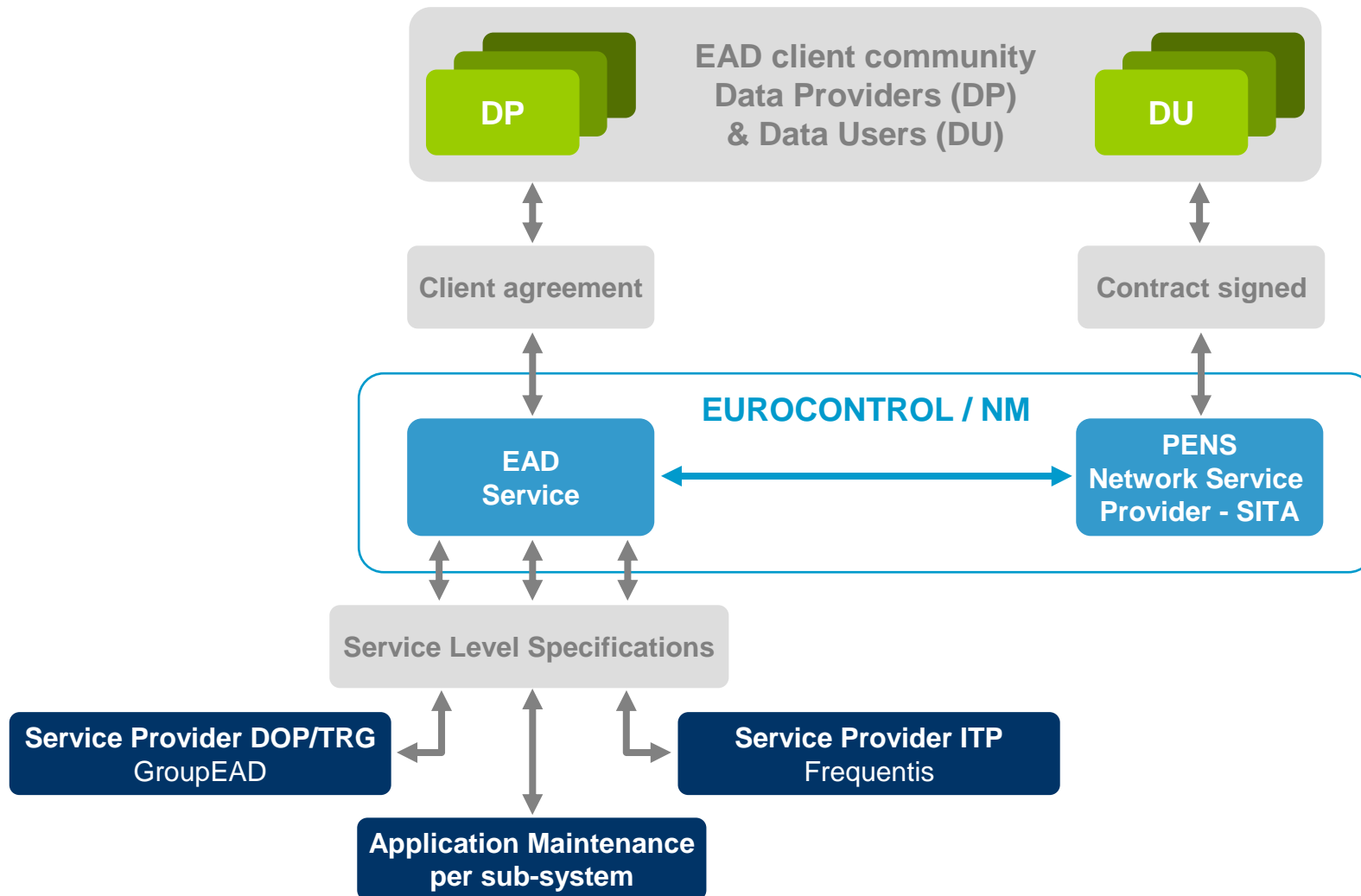
EAD Model

Oversight by EUROCONTROL / NM



EAD Model

Contractual Relation

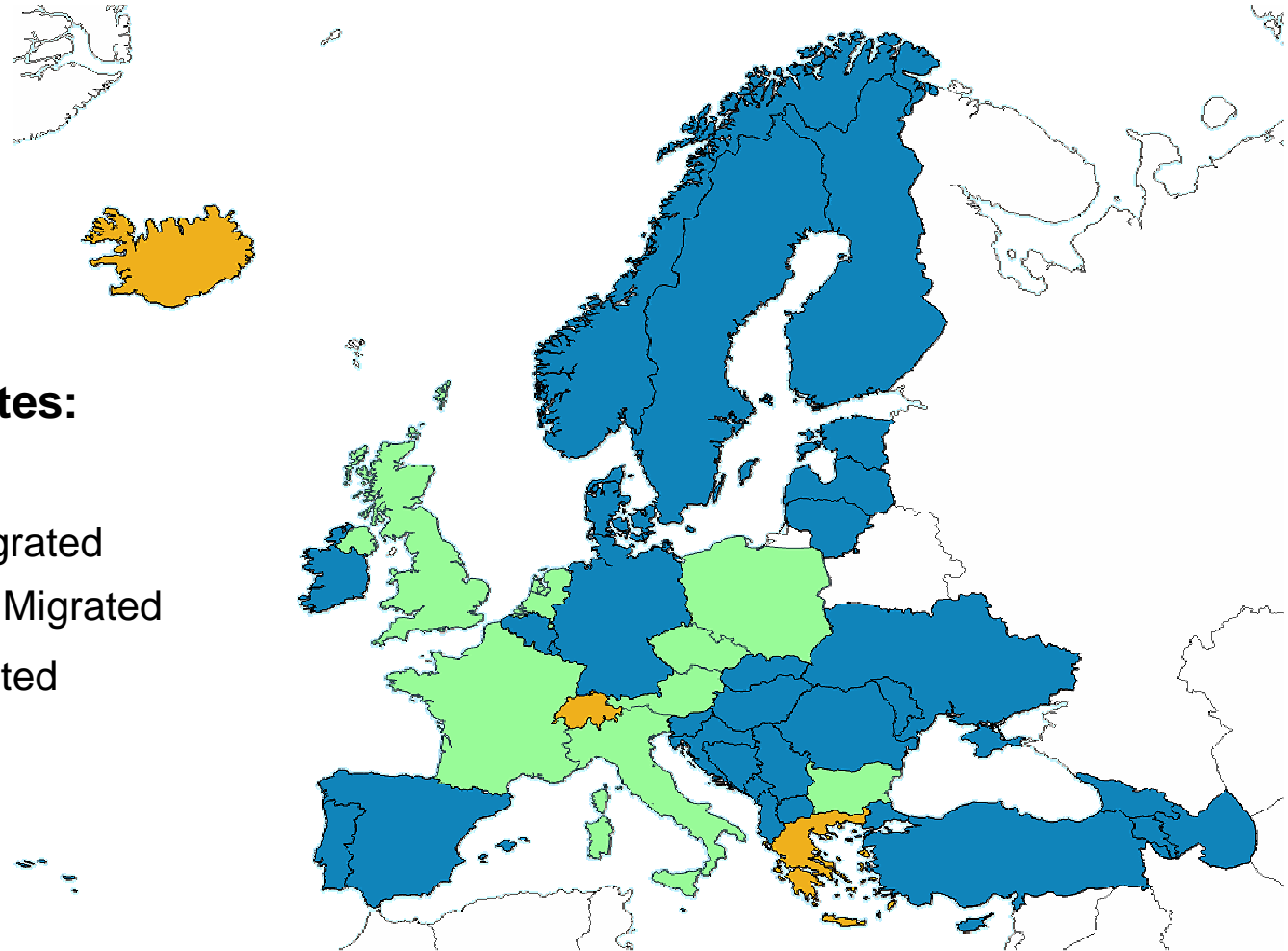


Data Providers - Current Situation

Migration (ECAC)

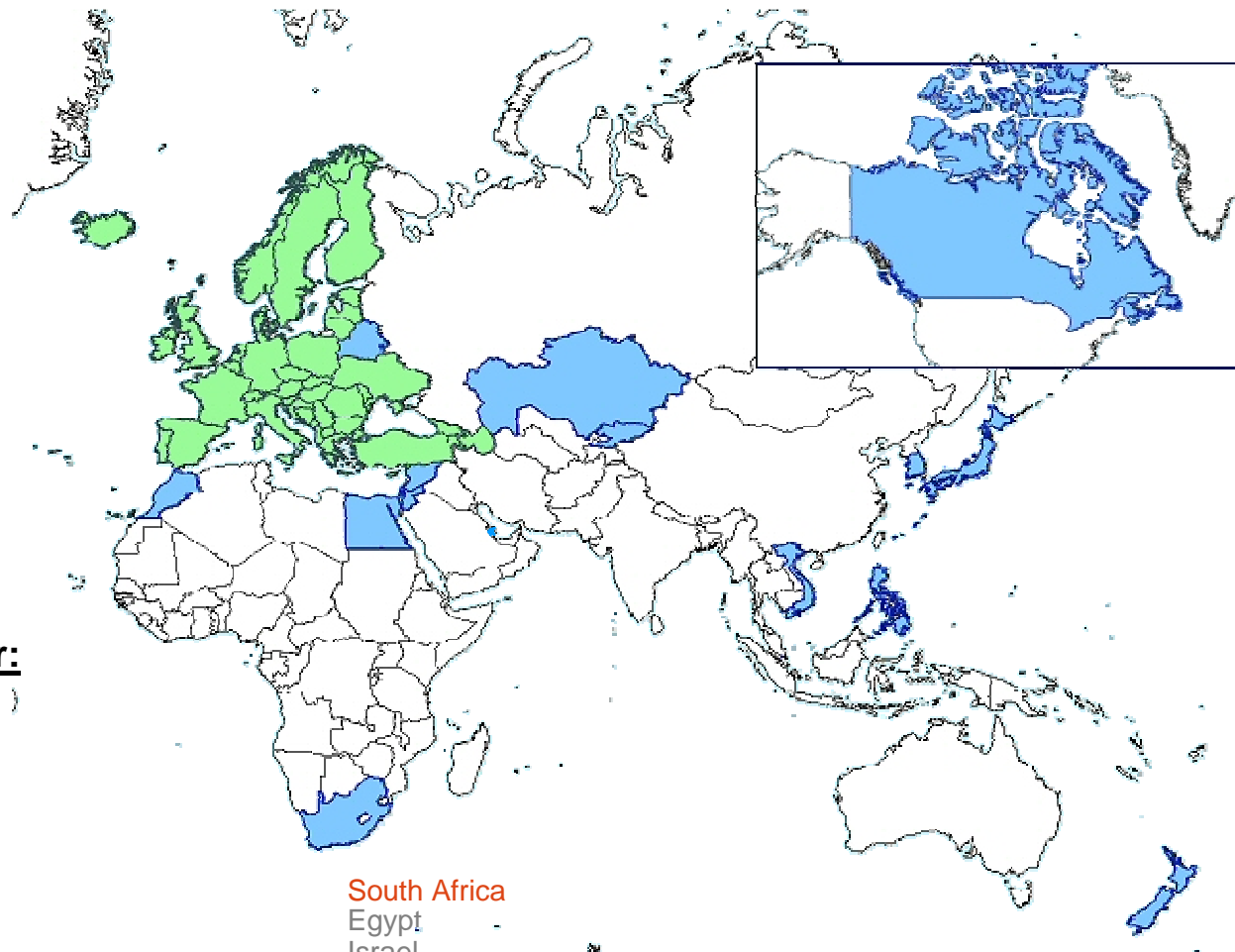
44 ECAC States:

- 31 Fully Migrated
- 10 Partially Migrated
- 3 Not Migrated



Data Providers - Current Situation

Migration (Out of ECAC)



18 States as Data Provider:

- 7 operational as Data Provider
- 2 operational as Data User
- 9 in the migration process

<p style="color: orange;">South Africa</p> <p>Egypt</p> <p>Israel</p> <p style="color: blue;">Jordan</p> <p>Qatar</p> <p>Syria</p>	<p>Morocco</p> <p style="color: blue;">Belarus</p>	<p style="color: blue;">Kazakhstan</p> <p style="color: blue;">Kyrgyzstan</p>	<p>Taiwan</p> <p style="color: blue;">Philippines</p> <p>Singapore</p>	<p>South Korea</p> <p>Japan</p>	<p style="color: blue;">Canada</p> <p style="color: blue;">New Zealand</p> <p>Mexico (stopped)</p>
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Data Users

Jan 2014



Airline / Airport

48

Commercial / Developer

67

Test / Trial

4

Other

ANSP, Military, Developers,
Educational, Research, ECTRL

13

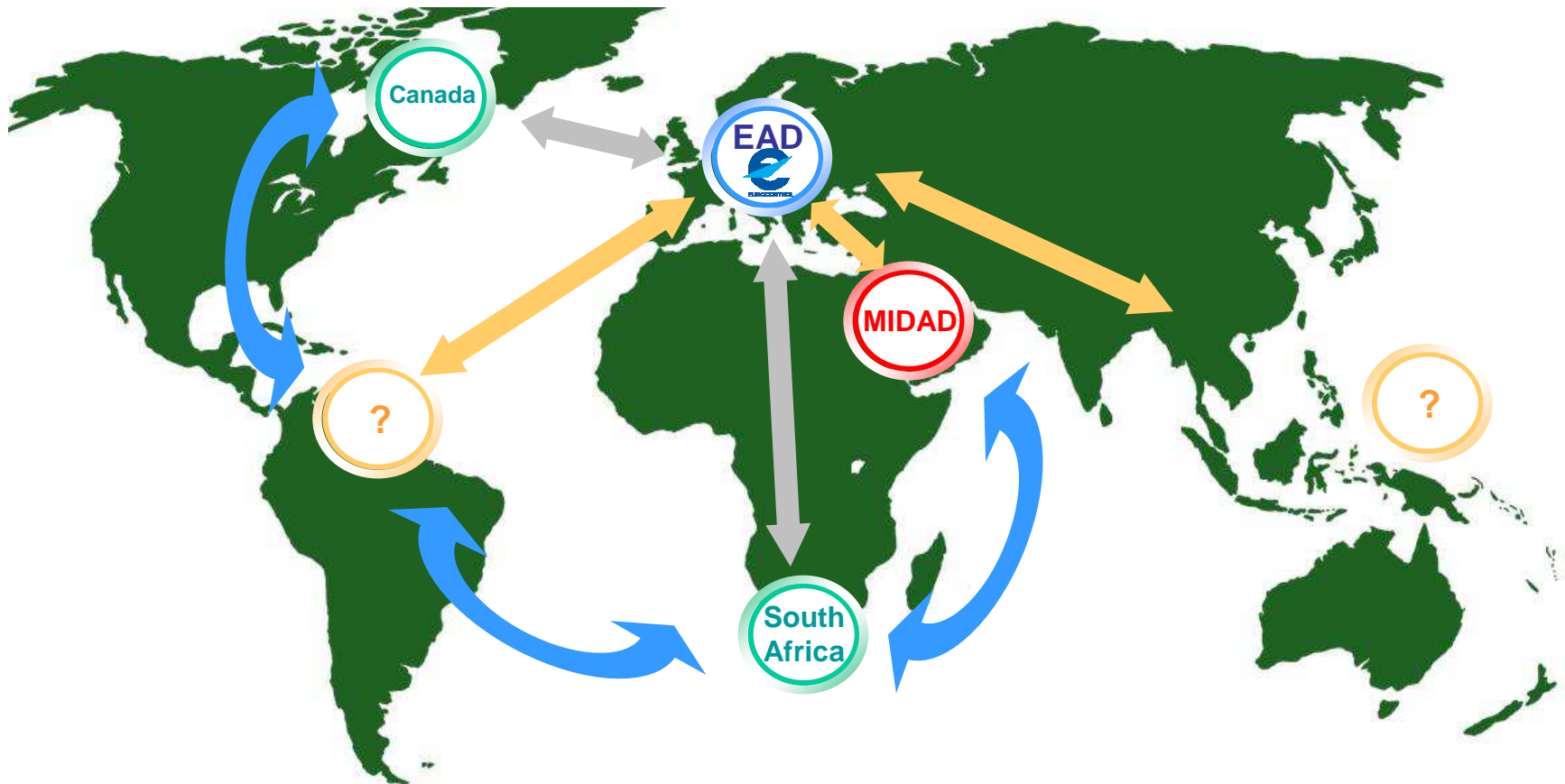
Discussing Data Users Agreements

19

Total
151

EAD – Data Exchange

In future



From Aeronautical Data to Quality Assured Aeronautical Information



Questions?

European AIS Database

2003-2013: 10 YEARS OF EAD

CENTRALISED. SIMPLIFIED. VERIFIED.



**EAD Governance
Information Package**

NMD/NS/ADM/4940

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Abstract

Overall description of the European AIS Database (EAD) service governance including roles, responsibilities, oversight management, and financing aspects.

Keywords

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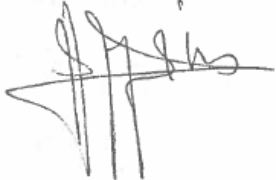


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DOCUMENT APPROVAL

The following table identifies all management authorities who have successively approved the present issue of this document.

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DOCUMENT CHANGE RECORD

The following table records the complete history of the successive editions of the present document.

EDITION	DATE	REASON FOR CHANGE	SECTIONS PAGES AFFECTED
0.1	9 July 2012	New document	All
0.2	16 Aug 2012	Internal review	All
0.3	7 Sep 2012	Proposed issue	All
0.4	15 Oct 2013	Additional input from EAD SSG and additional update related to EAD last events since June 2013	All
0.5	28 Oct 2013	Final NMD review	All

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1. INTRODUCTION

The purpose of this document is to provide an overall understanding of the European AIS Database (EAD) service including roles, responsibilities, oversight management, and financing aspects.

This document is intended primarily to new or existing EAD Service Steering Group (SSG) members, but also to other bodies or organisations wishing to better understand the principles of EAD.

Within the context of this document, the term Client means any organisation who has signed a Client Agreement with EUROCONTROL (as either Data Provider or Data User) in order to access and use the EAD.

This document also contains summaries and pertinent extracts of the relevant decisions, papers, documents, and agreements.

2. FOUNDING OF THE EAD

In 2000, EUROCONTROL was entrusted by the Permanent Commission with the development, establishment and operation of a European Aeronautical Information Services Database (EAD).

The major reason to implement the EAD system/service was to bring savings, harmonisation and quality insurance in the provision of Aeronautical information in Europe:

- Providing a single repository of quality and harmonised aeronautical information for the ECAC area and for worldwide NOTAM accessible by all European aviation community;
- Providing an interoperability capability, through the implementation of a common and standardised interface;
- Providing financial benefits across the ECAC area based on:
 - Reduction of duplication of effort (achieved through e.g. centralised NOTAM processing) ;
 - Removal of dispersed investments in both development and maintenance of systems by ANSP/AIS.

EAD is owned by the EUROCONTROL Organisation, under the Network Manager Directorate (NMD), providing the EAD oversight management. The oversight includes all activities such as contract management, maintenance/evolution of the system and service and stakeholder management.

The provision of the EAD services are outsourced to private Service Provider Companies or consortium by open Call for Tender (outsourcing) in order to benefit from both state of the art technologies from industries, and open competition to get the best operational service for the cheapest price.

2.1 PC Decisions and Directives

Permanent Commission have entrusted EUROCONTROL, through Decision n°83 dated July 2000, with the development, establishment and operation of a European Aeronautical Information Services Database (EAD).

Decision n°83 is supported by the EAD Service Charter describing the context, objectives, purpose and scope of the EAD. It explains the Stakeholders' involvement as well as the

approach taken for the organization of the EAD, including Service Products (oversight & contract management, support to regulation, etc.) and service level agreements;

Permanent Commission took Decision n°101 and Directive n°03-62 (November 2003) to formalise the rules governing the provision of aeronautical information to and by EUROCONTROL for the operation of the EAD service (copyright policy and service charging policy), including the signature of the necessary agreement between State AIS service providers and EUROCONTROL.

2.2 Main steps

Following the successful development of the EAD system and service, a contract for the first service provision period of 5 years (Jun 2003 – May 2008) was signed with the company GroupEAD Europe S.L and encompassed the Data Operations, IT, Training and Network services.

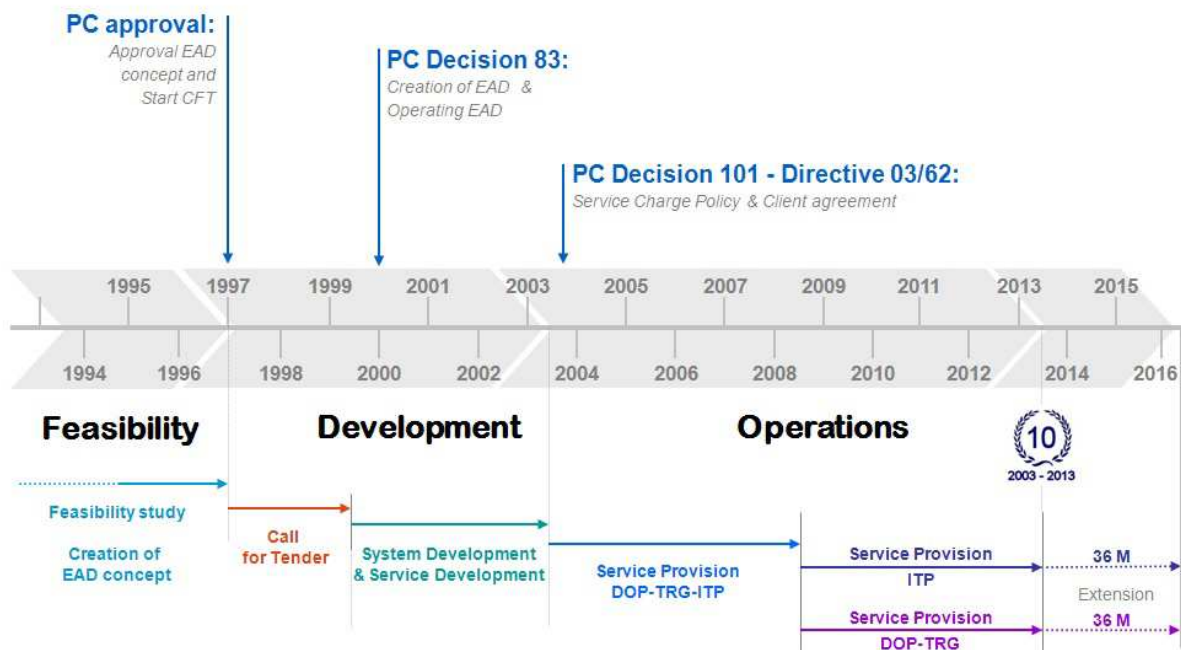
In 2006-2007, EUROCONTROL started a new call for tender process to cover the second service provision period starting from June 2008. In order to open up to more competition two calls for tenders were launched according to the decision to separate the IT, Network services from the Data Operations and Training services.

The Provisional Council agreed for the second service provision period to the letting of two contracts for a period of 5 years (Jun 2008-May 2013) with the possibility to extend these contracts with a further period of up to 3 years after a positive benchmarking of the services .

Respectively EUROCONTROL contracted:

- GroupEAD Europe S.L. for the provision of EAD Data Operations and Training Services;
- FREQUENTIS AG for the provision of EAD IT Services.

In 2012, EUROCONTROL received the approval of the Provisional Council to extent the two EAD service contracts for a period of 36 months, after having realised the necessary benchmark that demonstrated the high quality of the service and financial efficiency delivered by the contracted companies.

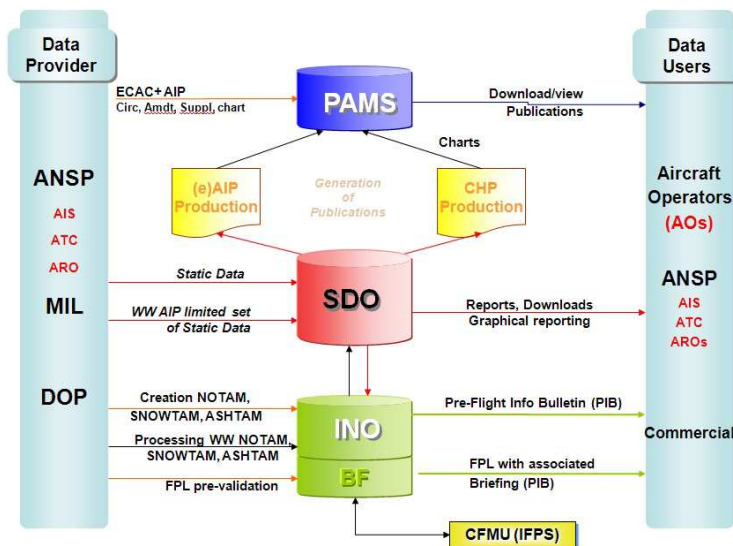


EAD main steps

3. EAD SERVICE

EUROCONTROL has defined operational and technical specifications for a central aeronautical information database allowing ANSP/AIS to migrate to EAD, and be contributory to the States' Aeronautical Information Service taking into account benefits of EAD.

The EAD Service is facilitating the provision of essential sovereign services of public interest and contributing to the timely and efficient flow of quality assured aeronautical information/data necessary for the safety, regularity and efficiency of international air navigation within the area of responsibility of the Participating States.



EAD services and workflow

EAD has developed the following services that can be used by data providers (DP) and users (DU) that have an agreement signed with EUROCONTROL:

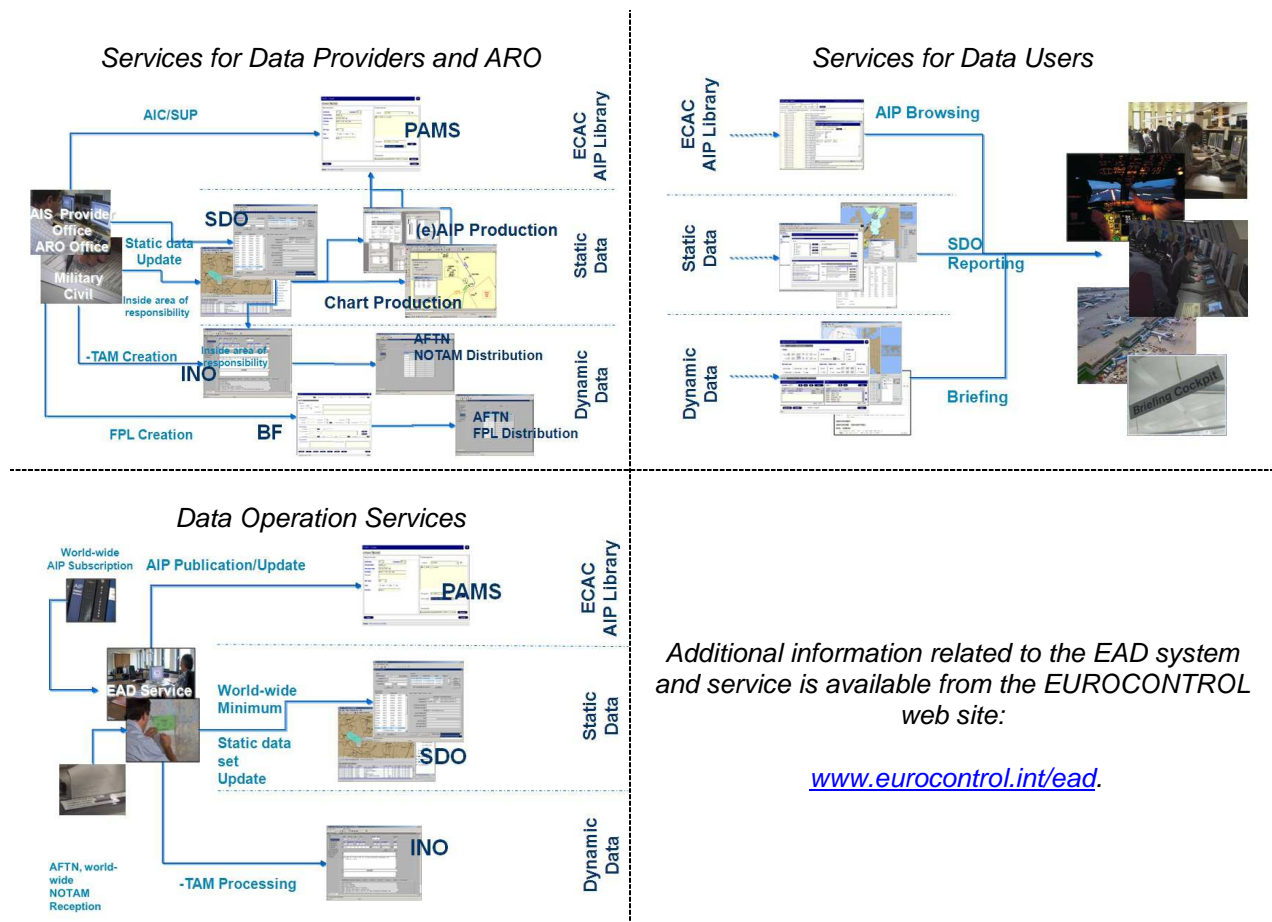
- SDO:** Enables Data Providers to maintain the static data (e.g. aerodrome, runway, routes, NAVAIDs, etc.) for their area of responsibility and Data Users to retrieve static data from any areas for their daily operations;

SDO is the heart of the EAD. After static data validation, the information is made available to the different EAD sub-systems to produce the Aeronautical Publications (AIP), related charts (CHP), validate NOTAM (INO), generate Pre-Flight Information Bulletin (PIB), and perform pre-validation of flight-plans when ATS Reporting Office (ARO) is using the Briefing Facility sub-system (BF);
- (e)AIP/CHP:** Support Data Providers in the publication process of their national Aeronautical Publications consisting of different type of documents as AIP, Amendments, Supplements, AIC, Charts. It can also be used by Data Users who need to create specific documents or charts for their operations. All necessary information to be published is retrieved from the Static database (SDO);
- PAMS:** Enables Data Providers to store and manage their Aeronautical Publications (AIP, Amendments, Supplements, AIC, charts) in a document library for their area of responsibility, and Data Users to retrieve/download any available publications stored in this electronic library;
- INO:** Enables Data Providers to create, maintain and distribute consistent NOTAM, SNOWTAM, ASHTAM messages for their NOTAM Office, and Data Users to generate Pre-Flight Information Bulletin (PIB) from any area for their daily operations;

- **BF**: Enables ATS Reporting Offices (ARO) to create and manage Flight Plans (FPL) based on a pre-validation against the EAD static data before distribution to the EUROCONTROL IFPS service for validation and processing. BF also allow the automatic generation of scheduled Pre-Flight Information Bulleting (PIB) according the FPL parameters.

The scope of the information available for Data Providers and Users is extended by additional services provided by the EAD Data Operation Service Provider and consist in:

- **SDO**: Maintenance of a limited set of world-wide static data based on official State Aeronautical Publications in order to correctly validate world-wide NOTAM, SNOWTAM, FPL;
- **PAMS**: Maintenance of Aeronautical Publications in the electronic library for the European States not yet migrated to the EAD;
- **INO**: Processing of world-wide International NOTAM and SNOWTAM.



Inventory of data management services

The EAD system and service is available 7/7d – 24/24H, and a service desk is in place for clients in case of request for a service or to report incidents at technical or operational level.

3.1 Maintenance - Evolution of the EAD system

To ensure the maintenance and evolution of the aeronautical information database, dedicated maintenance contracts are in place with software developer companies, foreseeing also the deployment of a yearly EAD software release. In case of requests for

major changes to the EAD, negotiations shall take place between involved parties in order to assess impact on existing contracts and financial contractual agreements.

3.2 EAD Service Level Specifications

To ensure adequate quality and performance, all EAD services (data operations, IT, and training) to be provided by Service Provider companies are described in a Service Level Specifications (SLS) document including mechanism to ensure correct monitoring of the services as:

- Measurements: defining which measurements are to be gathered;
- KPI: Key Performance Indicators to be met by the Service Providers in the delivery of the service (e.g. average NOTAM processing time 15 minutes);
- Performance and Volume Coefficients: defining how to calculate from the reported information the performance (e.g. linear cost reduction based on 1% less per 3 min above average NOTAM processing time of 15 minutes) and volume coefficients (e.g. Max. 35000 NOTAM per month) that will be used to determine any bonus/malus applicable to Service Provider Companies.

3.3 EAD Service Providers

The provision of the EAD service for IT, data operations, and training is performed under contract with external service providers (outsourcing) on behalf of EUROCONTROL. EUROCONTROL, owner and sponsor of the service, is responsible to its member States that the Service is rendered satisfactorily, in accordance with appropriate and agreed service levels and performance requirements (SLS).

Service provision contracts together with their SLS represent the tool through which both the compliance with applicable regulation and the quality of the service are ensured.

The EAD IT, data operations and training services to be delivered are specified in 2 different Service Level Specifications (SLS):

- Data Operations Service Provision - EAD/3491;
- IT Service Provision - EAD/3494.

Performance based contract:

- Key performance indicators (e.g. average NOTAM processing time 15 minutes) stipulated in the SLS allow to monitor the performance associated to each service, and are used to determine the bonus-malus (e.g. linear cost reduction based on 1% less per 3 min above average NOTAM processing time of 15 minutes) associated to the different services;
- Monthly reports are delivered to EUROCONTROL for review and approval. Payment schema is driven by the bonus-malus principle and the volume coefficient (e.g. above 35000 NOTAM per month, increase of 0.0020% per each additional NOTAM) of each service.

Limited time contract:

- As service provision contracts resulting from call for tender process are valid for a period from 5 to 8 years maximum, a transition and hand-over periods shall be specified in order to manage the possible change of service provider;
- In case that EUROCONTROL does not wish to extend the period of the contract, the Service Provider shall assist EUROCONTROL in order to hand-over all or part of the services to the new Service Provider.

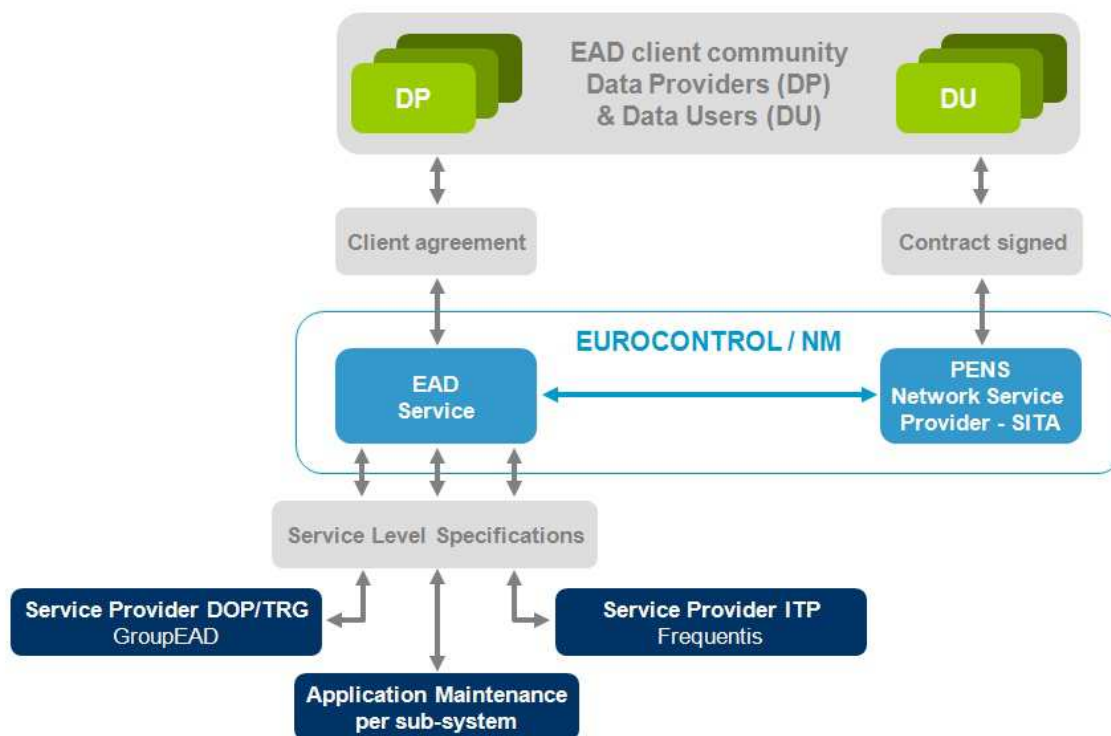
3.4 EAD Client Agreement

A Client Agreement is signed between NM (by delegation of the DG) and each client (data provider and/or data user) of the EAD service. Those agreements define the scope of the services provided to a client, the financial arrangements if clients have to pay as well as the responsibility of each party.

3.5 Contractual Relation

An overall picture of contractual relations between EUROCONTROL, Clients and Service Provider companies is provided hereafter.

Clients can decide to use PENS (Pan-European Network Service) to exchange data with the EAD. The majority of the data provider clients (ANSP) have decided to use PENS and have a contract that is signed with the PENS service.



EAD contractual arrangement

4. OVERSIGHT BY EUROCONTROL

EUROCONTROL is ultimately responsible, on behalf of its Member States, for the successful and effective provision of the service. The service is seen at all times as being a service provided by EUROCONTROL, regardless of the formal execution of the service by EUROCONTROL itself or by external providers.

The oversight management of the EAD service is responsible for the following objectives:

- Oversee the Service provision in order to ensure a continuous quality of the delivered Service;
 - Monitor the provision of the EAD service against contractual SLS KPIs;
 - Carry out regular efficiency measurements and benchmark analyses in order to ensure that the technical and financial competitiveness of the service is being maintained;
 - Guarantee the continuity of the EAD service, prepare and manage the re-tendering of the provision of the service and the letting of the new service provision contract.
- Manage the evolution of the EAD system and service in order to:
 - Ensure that the EAD meets the needs of its stakeholders;
 - Keeps up with state-of-the-art technologies, new regulations (e.g. ADQ IR), and international standards and agreements.

The evolution of the EAD system and service is realised according to the change management plan ([EAD/DOC-FRKEA8](#)) and the Generic Development Plan ([EAD/DOC-FRR74M](#)) identifying the various sources of change, the high level processes which they shall go through and the main actors involved in the management of change within the EAD.

- Ensure stakeholders management in order to:
 - Support the migration of clients to the EAD;
 - Manage the dialogue with all involved stakeholders.

EAD Service Steering Group (SSG)

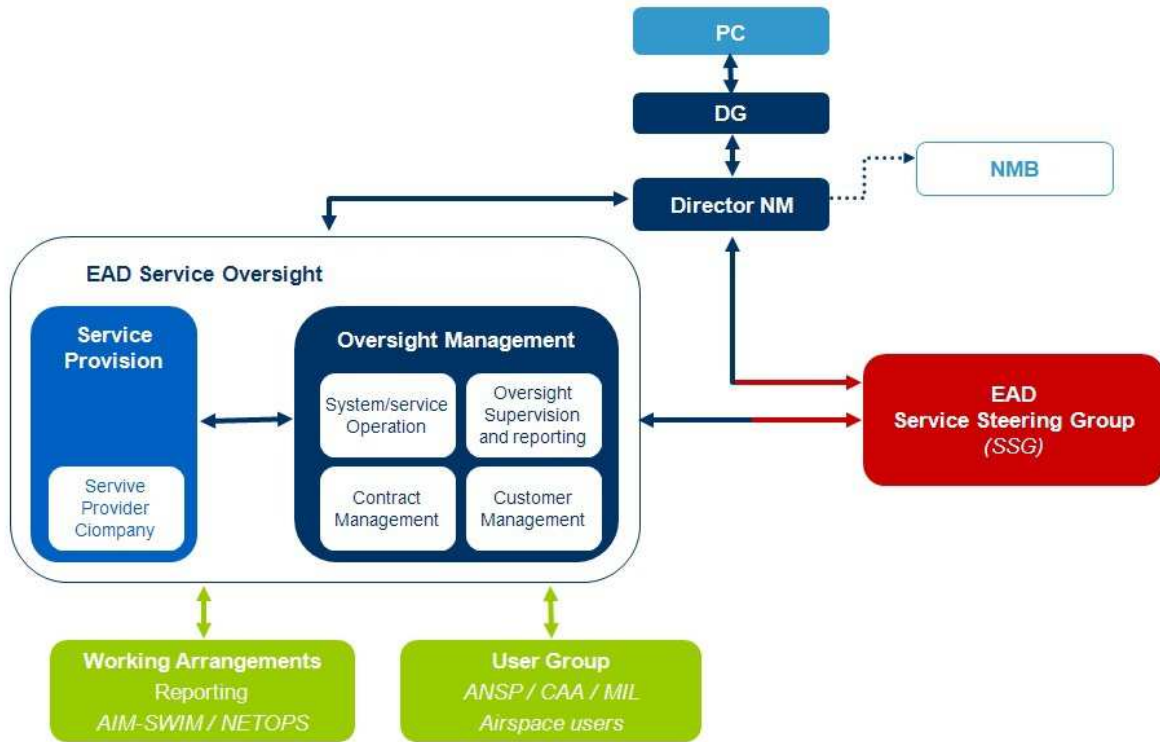
ANSP/AIS are involved in the supervision of the EAD services through the EAD Service Steering Group (SSG) in order to take on board their requirements and expectations.

The EAD Service Steering Group steers the EAD activities, and thus the EAD service provision, through continued involvement in the EAD. The SSG also maintains commitment from its stakeholders, encourage the use of a standardised approach to the exchange of aeronautical information and related data. SSG role and activities are defined in the SSG Terms of Reference (ToR), [EAD/5165](#).

At its sixth meeting, 24th-25th October 2007, the SSG has supported the possibility to create an EAD Evolution Task Force (EETF). The purpose of this Task Force is to define the requirements for the enhanced usability of the EAD and its alignment with external requirements, thus minimising the impact of future changes on EAD clients (Data Providers and Data Users), as well as constant monitoring of such evolution processes. EETF role and activities are defined in the EETF Terms of Reference (ToR), [EAD/3694](#).

Network Manager Directorate (NMD)

NMD ensures the distribution/coordination of the information about the EAD service status and evolution received from both the EAD oversight and EAD SSG to NM Board, Director General, and Provisional Council.



EAD Model – oversight by EUROCONTROL/NMD

5. FINANCE

The primary source of financing to the EAD is the contributions made by the EUROCONTROL Member States directly to the EURCONTROL budget.

Non-EUROCONTROL member States data providers or data users using data for own, non-commercial purposes, and any clients making commercial use of the data pay directly for the use of EAD Service.

The annual contribution for each non-EUROCONTROL Member State Data Provider to the budget is determined, for each financial year, in accordance with the following formula:

1. An initial 30% of the contribution is be calculated in proportion to the value of the Gross National Product of the Contracting Party, as defined below;
2. A further 70% of the contribution is calculated in proportion to the value of the route facility cost-base of the Contracting Party, as defined below.

The Gross National Product to be used for the calculations is obtained from the statistics compiled by the Organisation for Economic Cooperation and Development by calculating the arithmetical mean for the last three years for which those statistics are available.

The route facility cost base to be used for the calculations is the cost-base established in respect of the last year by one preceding the financial year concerned.

For any other type of clients not part of the above definition, the mechanism to calculate the adequate service charge contribution is described in the EAD Service & Royalty Charging document, [EAD/4758 Charging Proposal DU](#).

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