

### AFI-CAD Regional Database Service Providers Meeting Dakar, Senegal, 6 – 7 October 2016

**EAD Overview** 



#### Topics



- EAD at a Glance
- EAD for AIS to AIM Transition
- EAD Certification by European Aviation Safety Agency (EASA)
- EAD Client Status
- EAD E Learning
- EAD Support Tools



#### European AIS Database (EAD) Overall Objectives

Provision of a service in order to:

- Make available a reference repository of quality-assured aeronautical information to its stakeholders:
  - AIS provider organisations, airspace users, military organisations, commercial organisations, EUROCONTROL, etc.
- Support AIS provider organisations in the maintenance and publication of validated aeronautical information in EAD through:
  - Consistent data checking , cross border data coherence verification, etc.
- Contribute to the enhancement of the data quality, consistency and completeness by performing data review processes
- Provide a centralised facility supporting the exchange of aeronautical information:
  - amongst AIS Provider organisations
  - With airspace users community and any other interested party

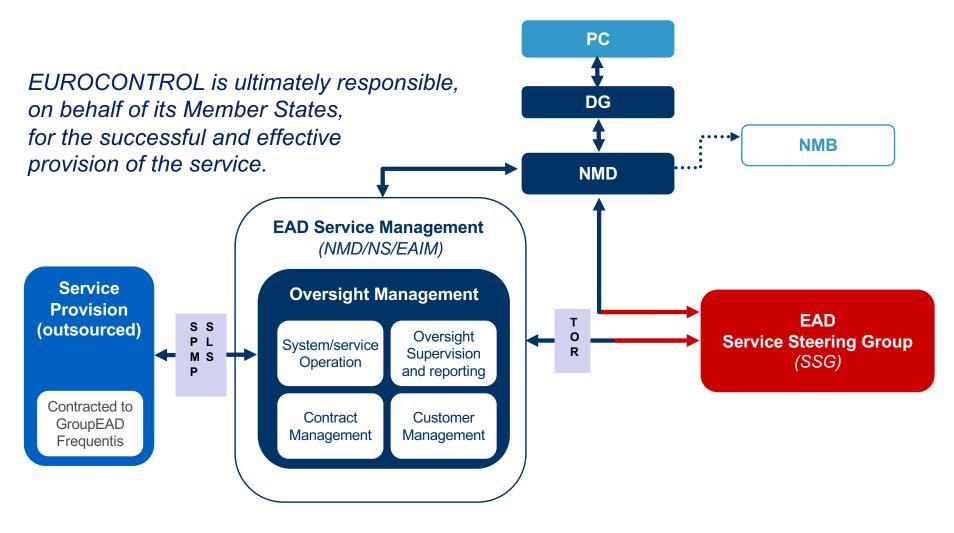
### European AIS Database (EAD) *Principles*



- EUROCONTROL:
  - Provides a system and associated services to AIS Provider organisations supporting the delivery of AIS Services as defined by ICAO Annex 15
  - Operates and manages the EAD on behalf of its Member States
  - Management of IT, data operations and training service provision contracted to industry
- States/ANSP migrated to EAD:
  - Are the only entities responsible to maintain their national aeronautical information directly in the EAD



#### EAD Management Oversight by EUROCONTROL / NM



SPMP: Service Provision Management Plan SLS: Service Level Specifications TOR: Terms of reference



#### EAD Service Sub-systems / Components available for AISP

The following sub-systems can be constituents of the AISP System:

- **WFM** : Workflow Management Tool
- **SDO** : Static Data Operations
- **AIP** : AIP production
- **CHP** : Chart production
- **PAMS** : AIP Library Published AIP Management System
- **INO** : International NOTAM Operations

ARO Briefing Facility (Pre-Flight Information Bulletin)

# Workflow Management Tool *Facilities*



- ✓ Manual data entry restricted to data originator;
- ✓ All data transfer is via electronic means;
- Traceability established through entire data chain and data lifecycle;
- Data management processes supported by automation (workflow system);
- ✓ Generic Metadata store for all subsystems covering both data and non-data related Metadata.

# SDO – Static Data operations *Facilities*

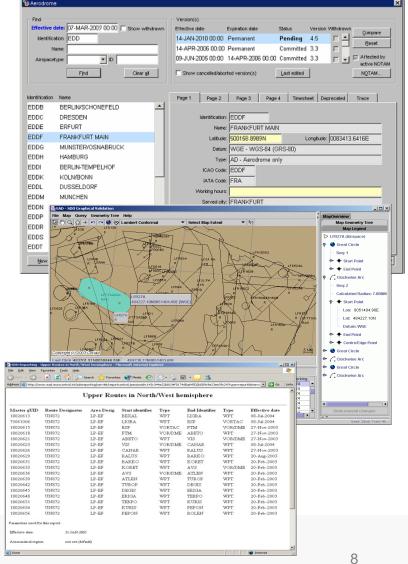


Data Maintenance

- Static data update (new, update, withdraw)
  - According to SDO timeline
- Graphical validation facility of pending data
- EAD Workflow Management tool
  - Manage maintenance process including data originators
- Upload Facility (AIXM 4.5 & 5.1)
  - Direct upload of data received from originator
  - Dedicated software (e.g. Procedure Design Tool)

#### Data Reporting

- Data Download
  - AIXM 4.5, AIXM 5.1, ARINC format
- Data Reporting
  - Pe-defined report, user defined report,
  - Graphical report, etc.

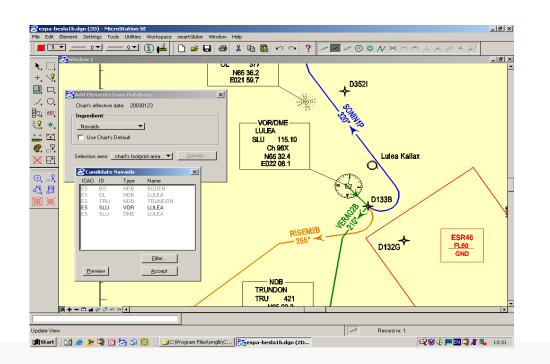


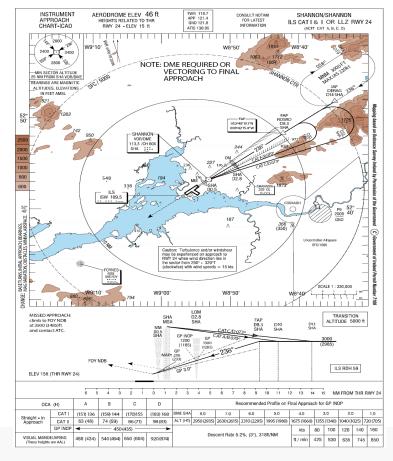
### CHP– Chart Production *Facilities*



Production of Charts for Aeronautical Publications

- All charts part of ICAO Annex 4
  - Using static data stored and validated in EAD SDO
  - Automatic generation of amended charts

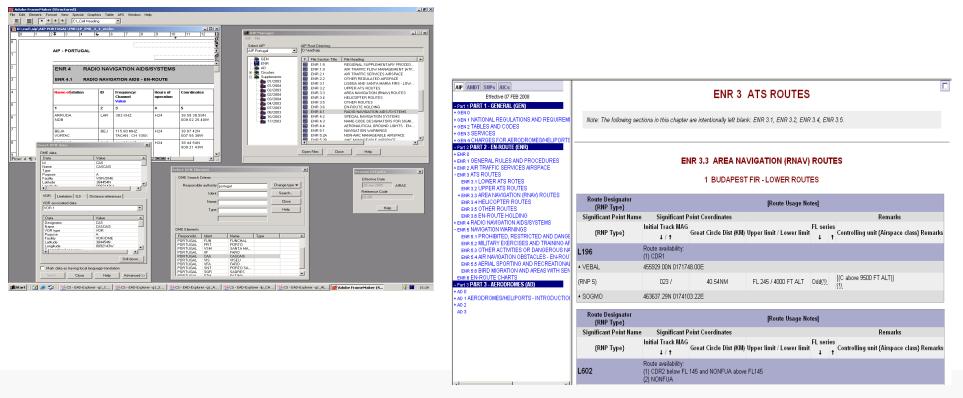




### AIP – AIP Production *Facilities*



- AIP, Amendments, Supplements, Circulars (ICAO Annex 15)
  - Using static data stored and validated in EAD SDO
  - Automatic generation of amendments



**EUROCONTROL** 

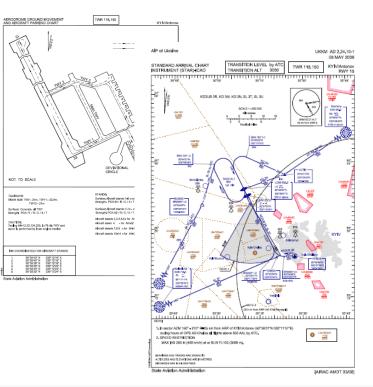


## PAMS – AIP Library *Facilities*

Maintenance

- Publications of aeronautical documents and charts Reporting
- Search, view, download, print aeronautical documents and charts

leta Information:		File Management:
Authority: Germa	ry (ED) Y Type: C Y Lang.: EN Y	Look in: 📄 pams 💌 🏂
Responsible:	dp_edc	ED_Amdt_A_2006_03_en.pdf
Effective Date:	03-Aug-2006	ED_Amdt_A_2006_07_en.pdf
Heading:	GEN 0.1 Preface	ED_ENR_0_1_en.pdf     ED_ENR_1_1_en.pdf
Remark:		ED_GEN_0_1_en.pdf
		ED_GEN_0_2_en.pdf
Pre-Publication:	Publication Date: 02-Aug-2006 🐏	ED_GEN_1_1_en.pdf
AIP Type:	AIP 👻	ED_SUP_2006_01_en.pdf     ED_SUP_2006_04_en.pdf
Part:	GEN C ENR C AD     C	File name: ED_GEN_0_1_en.pdf
Section:	0.1	Add
		Files of type: PDF Files (*.pdf)
		Selected file:
		D:\pams\ED_GEN_0_1_en.pdf Remove



## INO– International NOTAM Operations *Facilities*



A1531/12

Data Maintenance

- NOTAM, SNOWTAM, Checklist creation
  - Using static data stored and validated in EAD SDO

Data Reporting

- Pre-Flight Information (PIB) generation
- ARO Briefing Facility based on FPL



#### EBBR - BRUSSELS/BRUSSELS-NATIONAL

+ IAP VOR RWY 07L OCA 660FT DUE TO CRANE FROM: 31 JUL 2012 18:00 TD: 31 JUL 2013 17:59

	+ ENY 25% PONNGRADADE TO CAT 1. PPR 30 MIN FROM: 15 FEB 2013 09:00 TO: 22 FEB 2013 15:00 A0290/13 SCHEDULE: DAILY 0630-1500
	Client name: Brussels Artines P REG (DOSFY
Elle Edit Ylew Qata Tools Help Window           Image: Ser View Contained and the service of the service	Flight Plan Buggementagy       05 01023 NOSIG=         Addresses       110         Story Tes       100         (10) Equipment (DBERGHJALLIGONOVY       100         (10) Equipment (DBERGHJALLIGONOVY       100         (11) Oppadure:       EBERG (DBERGHJALLIN ONE)         (12) Oppadure:       EBERG (DBERGHJALLINGNOVY)         (13) Oppadure:       EBERG (DBERGHJALLINGNOVY)         (13) Oppadure:       EBERG (DBERGHJALLINGNOVY)
Icaa location of the NU Ivak Unice. Record: 1/1 List of Valu <000C>	

### EAD in supporting States for AIM transition



#### AIS to AIM Roadmap Digital NOTAM Electronic aeronautical charts Aeronautical data exchange Agreements Aeronautical Communication with data Information briefing networks originators MET/AIM Training interoperability Electronic AIP Aerodrome mapping Integrated database Obstacles Unique identifiers Terrain Al conceptual model Data Integrity Monitoring Data Quality Monitoring Quality Management Systems Annex differences WGS-84 Adherence to AIRAC





- Data integrity monitoring: EAD ensures the integrity of data from the point of entry in the EAD system until its extraction. Thus reducing the States effort in monitoring the integrity for at least the sectors within the database.
- Data quality monitoring: EAD business rules for data entry serves as a barrier for checking and monitoring on the quality of data (at least for resolution and completeness). Additional tools e.g. SIGMA and SDO Data completeness contribute to the improvement of data quality and thus helping the States to monitor the quality of their data.
- AIRAC Adherence monitoring: Indirectly, EAD data provision timeline and schedule, basically makes it impossible not to adhere to the AIRAC. Since 2003, we have not heard that the States part of EAD have published late an AIRAC Amendment.
- Integrated aeronautical information Database : All EAD States can put a tick for this step since the EAD provides them with such database.

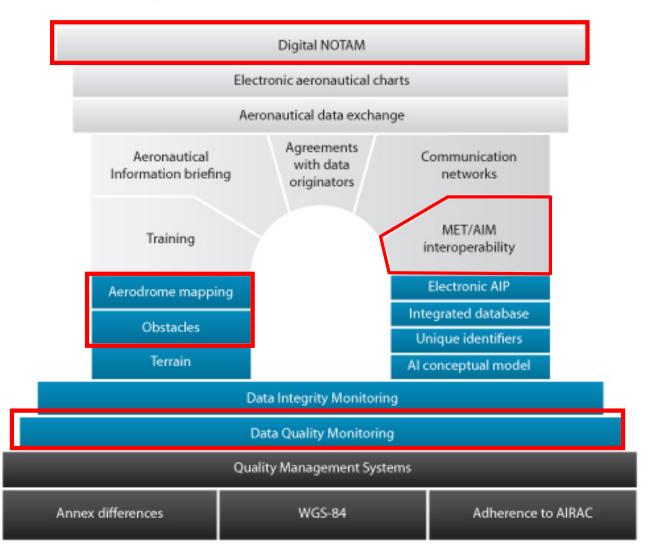


- Unique identifiers: Although not yet totally clear at ICAO level this requirement, being part of EAD will ensure that your data will always have an unique identifier.
- Al Conceptual Model: Another tick from EAD: EAD is based on AICM
- Electronic AIP: EAD provides its States the facility to produce electronic AIP
- Aeronautical Data Exchange: AIXM was specifically build for EAD to exchange aeronautical data. Another step achieved by the States through the EAD
- Communication networks: EAD is using PENS for communication, thus States of the EAD have this step completed
- Aeronautical Information Briefing : EAD is supporting States willing to provide Briefing through its briefing box/facilities
- Training: GEAD provides trainings on INO, PAMS, Briefing, SDO but also recent ADQ awareness training is offered as required by the ADQ IR.
- QMS: Contract with EAD requires an established QMS by the data provider.



### EAD in further developments for supporting States in AIM transition

#### AIS to AIM Roadmap





- **Data quality monitoring**: completeness and consistency improved with the Data Harmonisation Objectives project..
- **Obstacles**: EAD will provide this possibility with AIXM 5.1
- **AMDB**: EAD considers the implementation for R11
- **Digital NOTAM**: EAD will provide the tool to all migrated State to publish Digital NOTAMs.
- **MET data provision:** MET service under the state responsibility and legal issues have to be solved by states.

#### Conclusions



- EAD is a service created by the ECAC States in order to support them in Transition from AIS to AIM beside other objectives
- With EAD, States cover ~ 12 of the transition objectives (steps)
- Further EAD developments are required in order to assist States with the required steps (e.g. obstacle, dNOTAM)
- Close contact and coordination with the AIM/SWIM Team to be maintained on the usage and development of EAD for achieving AIM.

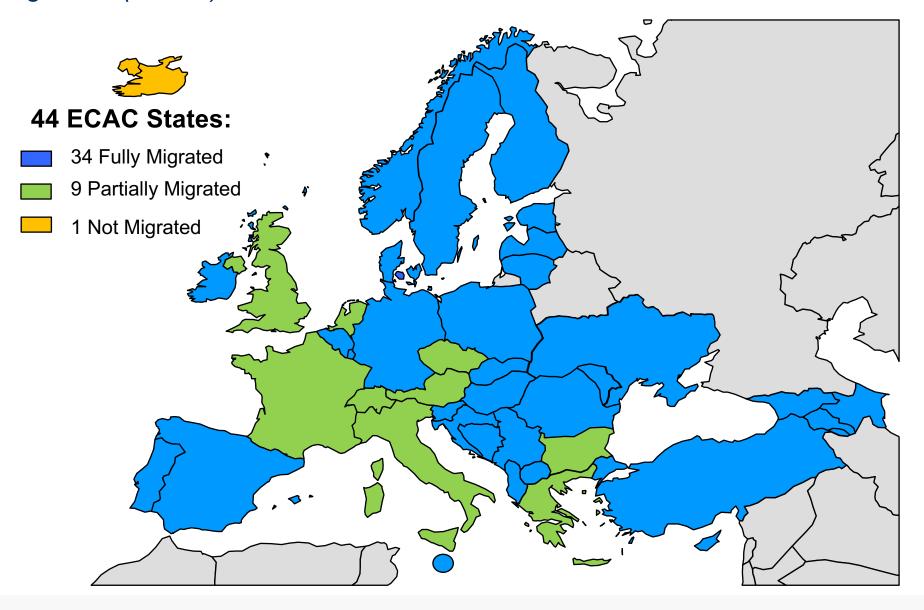
# EUROCONTROL

#### EAD Certification Background

- Why?
  - ANSPs using the EAD services and their National Supervisory Authorities (NSA) are relying more and more on EAD to demonstrate their compliance with the relevant Single European Sky (SES) Regulations (e.g. IR 73/2010 on Aeronautical Data Quality)
  - European Commission and European Aviation Safety Agency (EASA) stated that the EAD services are required to be certified and overseen by EASA, in the same manner as the NSAs certify and oversee national AISP
- Official application for EAD Certification provided to EASA and accepted on June 16<sup>th</sup> 2015.
  - Subject: ATM/ANS Service Provider Organisation
  - Compliance according to:
    - ICAO: Annex 15, Annex 4, Annex 3
    - Regulation EU 1035, 1034, 552, 73
- EAD expected to be certified by EASA October 2016

#### Data Providers - Current Situation Migration (ECAC)





#### Migration Status (ECAC)

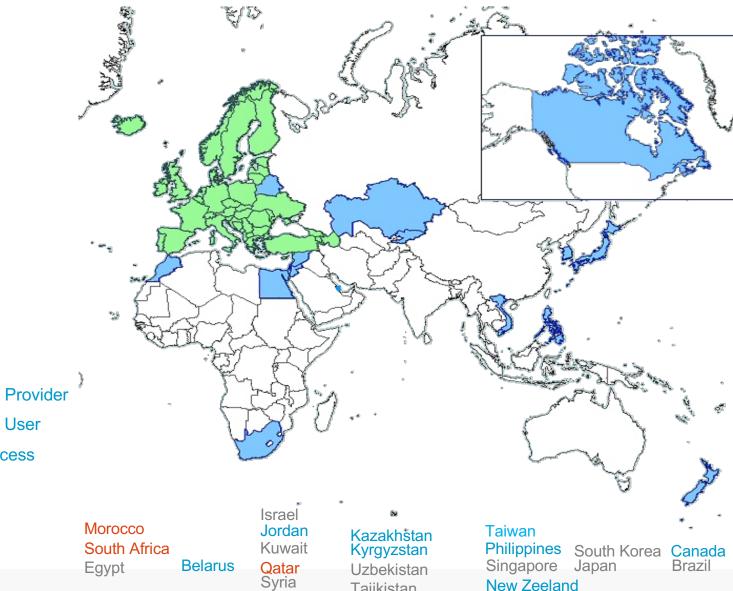


ECAC - Fully	migrated (34)
Albania (NATA)	Latvia (LGS)
Armenia (Armats)	Lithuania (Oro Navigatia)
Azerbaijan (AZANS)	Malta (ATS)
Belgium (Belgocontrol) incl Luxemb	Moldova (MOLDATSA)
Bosnia Herzegovina (BIH)	Norway (AVINOR)
Croatia (CroControl)	Poland (PANSA)
Cyprus (DCA)	Portugal (NAV-EP)
Denmark	Serbia (SMATSA) + Montenegro
Estonia (EANS)	Romania (CAA)
Finland (Finavia)	Slovak Republic (LPS)
FYROM (M-NAV)	Slovenia (Slovenia Control Ltd.)
Georgia (Sakaeronavigatia)	Spain (ENAIRE)
Germany (DFS)	Sweden (LFV)
Hungary (Hungarocontrol)	Turkey (DHMI Genel)
Ireland (IAA)	Ukraine (UkSATSE)

	ECAC - Partially (10) and not migrate	ed (1)		
States / CAA - ANSP	Status	INO	SDO	PAMS
Austria (Austrocontrol)	Partially	OK	OK*	OK
Bulgaria (BULATSA)	Partially		OK	OK
Czech Republic (ANS)	Partially		OK*	
France (SIA) + Monaco	Partially		OK*	OK
Greece (Hellenic CAA)	Partially	2016	2016	2016
Italy (ENAV) + San Marino	Partially		OK*	OK
Netherlands (LVNL)	Partially	OK	OK*	OK
Switzerland (Skyguide)	Partially		OK*	
UK (NATS)	Partially	OK		OK
Iceland	> Not committed			



#### **Data Providers - Current Situation** Migration (Out of ECAC)



#### 20 States:

- 8 operational as Data Provider 3 operational as Data User
- 9 in the migration process

Tajikistan

#### **Data Users - Current Situation**



AmericanAirline AEROFLOT	es <sup>°</sup> BRITISH AIRWAYS Austrian		ted B <u>usia</u>
<b><i>C</i></b> AirEuropa	<i>reurowing</i>	S ICELANDA	
طیـران الخلیــج GULFAIR			R ARHUS AIRPORT LTD.
	🗲 MONTENEGRO AI	RLINES MNG	TIG
🛞 AirData 🦸	et2.com		Aviation Itsa
	atlantic 🔺	IRBOX	Airport Management & teronautical Industries Inc.
Pine de konct-Leas STEREOFT LINERATE		Graf	fica
AIR S Meridiana 🏾 🖘 .	JEPPESEN.	AvBrief U	
	CIS there is a second s	right data t place	wst
	SI SI		
	yrolean Istrian Airlines Group	AIRSERVICES AUSTRALIA	

	Aug 2016		
Airline	61		
Commercial	79		
ANSP/Airport	10		
Other Military, Developers, Educational, Research, ECTRL	17		
Under Discussion	20		
	Total 187		

#### Data Users Presented by States



1.	Australia	2	22.	Luxembourg	3
2.	Austria	5	23.	Malaysia	1
3.	Azerbaijan	3	24.	Malta	3
4.	Bahrain	1	25.	Monaco	2
5.	Belgium	6	26.	Montenegro	1
6.	Canada	5	27.	Morocco	1
7.	Croatia	1	28.	Netherlands	6
8.	Czech Republic	1	29.	Poland	3
9.	Denmark	4	30	Portugal	2
10.	Fiji	1	31.	Qatar	2
11.	Finland	2	32.	Russia	2
12.	France	11	33.	Slovak Republic	1
13.	Germany	16	34.	Spain	3
14.	Hungary	1	35.	Sweden	3
15.	Iceland	1	36.	Switzerland	11
16.	India	2	37.	Turkey	8
17.	Israel	1	38.	UAE	2
18.	Italy	4	39.	UK	22
19.	Kosovo	1	40.	USA	14
20.	Korea	1	41.	Vietnam	1
21.	Lebanon	1			



#### Support Tools Knowledge base – Service Desk

- Knowledge base
  - Available from service desk application
  - To be used prior creation of trouble tickets

			ca Unicente	r ServicePlus Kno	wiedge Tools		
			FAQ NLS Decision Tree		Architect   Submit	t Knowledge   Preference	es   Logout   Help   About Sort Sv:   FAQ Rating 💌
A NES Decision Free ( A NES Decision Free (	E <u>AD Clients</u> > 00 Bulletin Boai	Architect   Subm d B Separate window 🔗 Add b	C Menuals & Handbooks     D T-Enhandl     D I TRONcal     D I TRONcal     D I TRON     D I TRO     D I TRO	Rommary, Utel of patients in Rommary, Utel of patients in Rommary, Utel 30-Marci Rommary, Utel 30-M	utage shuation orders of features, Gemany. Sector 2015 31 32 32 34 34 35 35 35 35 35 35 35 35 35 35 35 35 35	ings the printing area is ropriate paper format of defined memory very big documents this all documents usity undefined.	Once J Back 2 Reference 2 Read Science 2 Research 2 Read Science 2 Read Scie

EAD S	ervice Desk		User: jiratest1 - <u>History   Filters   Profile   Log Out</u> - 🚨 🖗
HOME	BROWSE PROJECT E	ND ISSUES <u>C</u> REATE NEW ISSUE	QUICK SEARCH:
ssue Deta Summary: SDO down		E <u>AD Servicedesk</u> <sup>5</sup> - SDO download request	
Key:	EHD-13	Created: 27/Sep/07 11:23 AM Updated: Thuisday 10:38 AM	
Type:	🔳 Task		
Status:	👌 Work In Progress	Description	<u>« Hide</u>
Priority:	B Severity B	Please send me a download for airspace.	
-	- Unassigned	Kind regards Andreas Stocker	
Reporter: Watchers:			•
Operations		All Comments Change History Transitions	Sort Order: 恭
Attach fi	e to this issue	iiratest1 - 19/0-007 10:38 AM	(Permink   «Hide)
Attach s	creenshot to this issue	Dear All,	1 automatik 1 autoka 2
Commer	<u>t</u> on this issue	we are working on your request.	
		Kind regards Andreas Stocker FRQ sentce desk	

- Service Desk
  - 24h operational and technical service desk
  - Dedicated application
    - create trouble tickets related to problem or service requests.



#### Support Tools To learn more about EAD DU -> E-learning

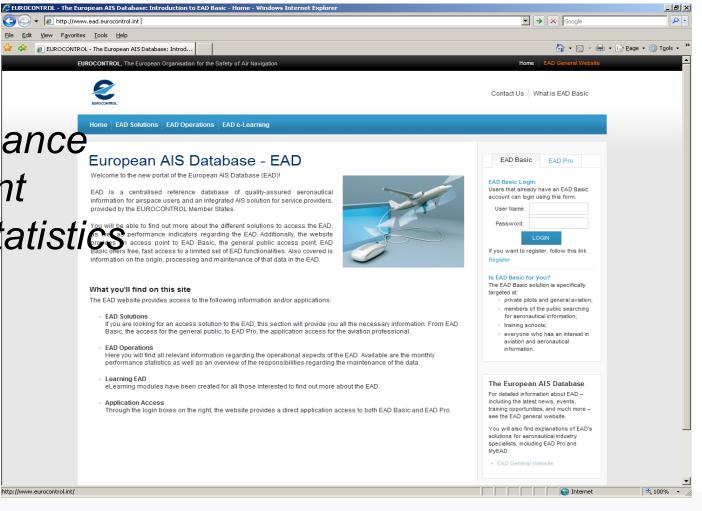
- EAD Operational (EAD\_OPS)
  - General Overview (Helpdesk, Webmail, Add User, Legal Recording..)
  - EADPro Data User: SDO, GT, INO, PAMS
- Can be accessed via;
  - IANS web site (http://trainingzone.eurocontrol.int)
  - CFMU web site (http://www.cfmu.eurocontrol.int)
  - EAD web site (<u>http://www.eurocontrol.int/ead</u>)
- Free of charge, only registration required



#### Support Tools EAD Current Data status and source

### www.ead.eurocontrol.int

- Data & maintenance
- Status of content
- Performance Statistic segurity the general public ded (ED) to indicators regarding the EAD. Additionally, the website access point to EAD Basic, the general public access point to EAD Basic, the general p
- Direct access





#### Support Tools EAD General Website

### www.eurocontrol.int/ead

- General overview
- News
- Events
- Documentation

European AIS Database (EAD): Tomor	row's AIS Provision Today Windows Internet Explorer			_ 8
www.eurocontrol.int/ead/public/subsite_hor	nepage/homepage.html		💌 👉 🗙 Google	P
ites <u>T</u> ools <u>H</u> elp				
IROL - The European AIS Database (EAD):.			🟠 + 🚮 + 🖶 P	age 🔹 🎯 T <u>o</u> ols 👻
	oject finder   FAQ EXTRANET LOG	IN QUICKLINKS 💌 Keywords	SEARCH	
The European Organisa for the Safety of Air Nav		ACTIVITIES PROGRAMMES & PROJECTS	MEDIA CENTRE CAREERS	
EUROCONTROL	ngaton			
	EUROCONTROL > Managing	the Traffic > CFMU > EAD > EAD Home		
EAD Home		EAD		
About EAD				
INO - NOTAM	V VALIDATED L	DATA FOR SAFER FLYING		
SDO - Static Data	The European AIS Database (EAD):	EAD Event Calendar		
PAMS - AIP	Tomorrow's AIS Provision Today.	→ On this page you will find an overview off all upcoming and		
Management	Welcome to the portal of the European AIS Database (EAD). EAD is the world's largest Aeronautical Information System – a	planned EAD Events.  EAD Event Calendar		
Access EAD	centralised reference database of quality-assured aeronautical	EAD Event Calendar		
EAD News	information and, simultaneously, a fully integrated, state-of-the- art Aeronautical Information Services (AIS) solution.	EAD User Solutions		
EAD Events	This website provides: access to all relevant information about	→ EAD User Solutions are a good way to learn about how the		
e-Learning & Training	EAD, including explanations of solutions offered, the latest news,	different EAD services are being applied in real world situations.		
Library	events and training opportunities, contact information and reference documents. It also provides links to all the major	F An Rolanna		
Glossary	organisations and websites associated with EAD.			
Acronyms	News [archives]	EAD Newsletter Spring 2009 → Click on the image below to		
Useful Websites	20 Apr 2010	download the EAD Newsletter		
Frequently Asked	EAD User Day 2010 postponed The yearly organised EAD User Day is a great opportunity for EAD	Spring 2009 in pdf-format.		
Questions	clients to come and hear about the latest developments related to the European AIS Database.	EAD Newsletter		
	2010 however, is a year during which the EAD team is working hard			
	on some major improvements to be implemented in 2011 and beyond. Changes that include implementing Aeronautical Data Quality			
	(ADQ), Digital NOTAM and the migration towards AIXM 5.1. All these developments will produce tangible results near the end of	The second secon		
	2010, allowing us to share all these achievements with all EAD clients at the beginning of 2011.	Martine State and State		
	As a consequence, it has therefore been decided to postpone the	With the existence of the existenc		
	2010 edition of the EAD User Day to the beginning of 2011.	The set of the second s		
	19 Apr 2010			
	ESI Workshop 2010 to take place on 31 May 2010	ana aga ana ana ana ana ana ana ana ana		
	After consultation internally and with a number of attendees, it has been decided that due to the uncertainty of flight arrangements after			
	the Belgian airspace is opened, the ESI Workshop is postponed until 31 May 2010.			
			Trusted sites	100% 🔫



#### From Aeronautical Data to Quality Assured Aeronautical Information

# Questions?

### www.ead.eurocontrol.int

Data & maintenance

- Status of content
- Performance Statistics

#### European AIS Database **2003-2013:** 10 YEARS OF EAD CENTRALISED. SIMPLIFIED. VERIFIED.

