



EASA

European Aviation Safety Agency



ARISE+

Funded by the European Union and implemented by the
European Aviation Safety Agency

ASEAN ATM Master Plan

ASEAN-wide implementation of agreed initiatives

Civil/Military Coordination

Anders Hallgren
ARISE+ ATM Expert

Your safety is our mission.

An agency of the European Union





ASEAN ATM Master Plan

➤ First-Priority Implementation

Initiative	Focus Area
PBN Approach	Terminal
ATS Surveillance	En-route
ADS-C/CPDLC	En-route
ATS Surveillance with Data Integrated	En-route
Airborne Safety Systems	En-route
Civil/Military Use of SUA:	Civil/Military Cooperation
Strategic Civil/Military Coordination	Civil/Military Cooperation
Tactical Civil/Military Coordination	Civil/Military Cooperation



ASEAN ATM Master Plan

➤ Civil/Military Cooperation on SUA:

States ensure that SUA are regularly reviewed by an appropriate Airspace Authority to assess the effect on civil air traffic and the activities affecting the airspace.

➤ Strategic Civil/Military Coordination:

States ensure that a national civil/military body coordinating strategic civil-military activities is established.

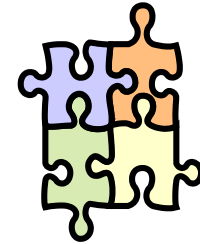
➤ Tactical Civil/Military Coordination:

States ensure that formal civil-military liaison for tactical responses are established.



What are the keys to a successful CIVIL/MILITARY coordination?

- ✓ **Flexible Use of Airspace**
- ✓ **Interoperability of Systems**
- ✓ **Collaborative Decision-making**





The basis of the FUA concept

- Airspace no longer designated as civil or military airspace, **a continuum**
- Airspace used flexibly on a day to day basis → necessary airspace segregation only of **temporary nature**;
- Ensure **more efficient sharing** through joint civil/military strategic planning and pre-tactical airspace allocation: Airspace Management Cells (**AMCs**)

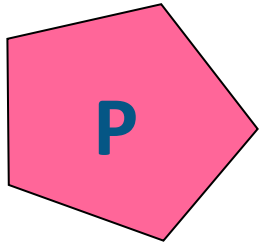


Fundamental principle of FUA

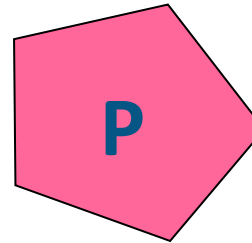
Airspace should **not be designated as either pure civil or military airspace, but rather be considered as a continuum in which all user requirements have to be accommodated to the extent possible.**



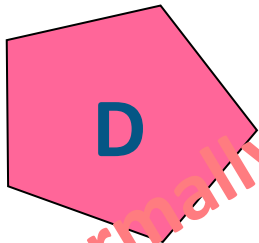
Non-FUA vs. FUA



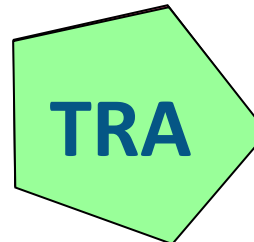
•PROHIBITED



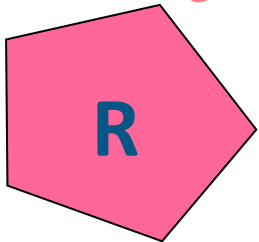
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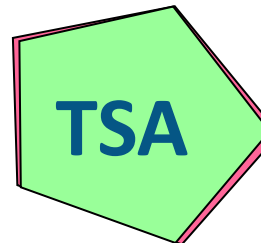
•DANGER



•CROSSING POSSIBLE
WHEN ACTIVE / RELEASED
AS SOON AS ACTIVITY
STOPS



•RESTRICTED



•RELEASED AS SOON AS
ACTIVITY STOPS

•Normally published as
occupied H24



Through Civil / Military Coordination ...

ASM Level 1

Strategic Level

Definition and review of national airspace policy and organisation, establishment of pre-determined airspace structures

High-Level
Civil / Military
Airspace Policy
Body

ASM Level 2

Pre-tactical Level

Day-to day airspace allocation according to user requirements

Joint
Civil / Military
Cell (AMC)

ASM Level 3

Tactical Level

Real-time use of airspace allowing a safe separation between civil and military aircraft

Appropriate
Civil / Military
ATS Units



Strategic Airspace Management (ASM Level 1)

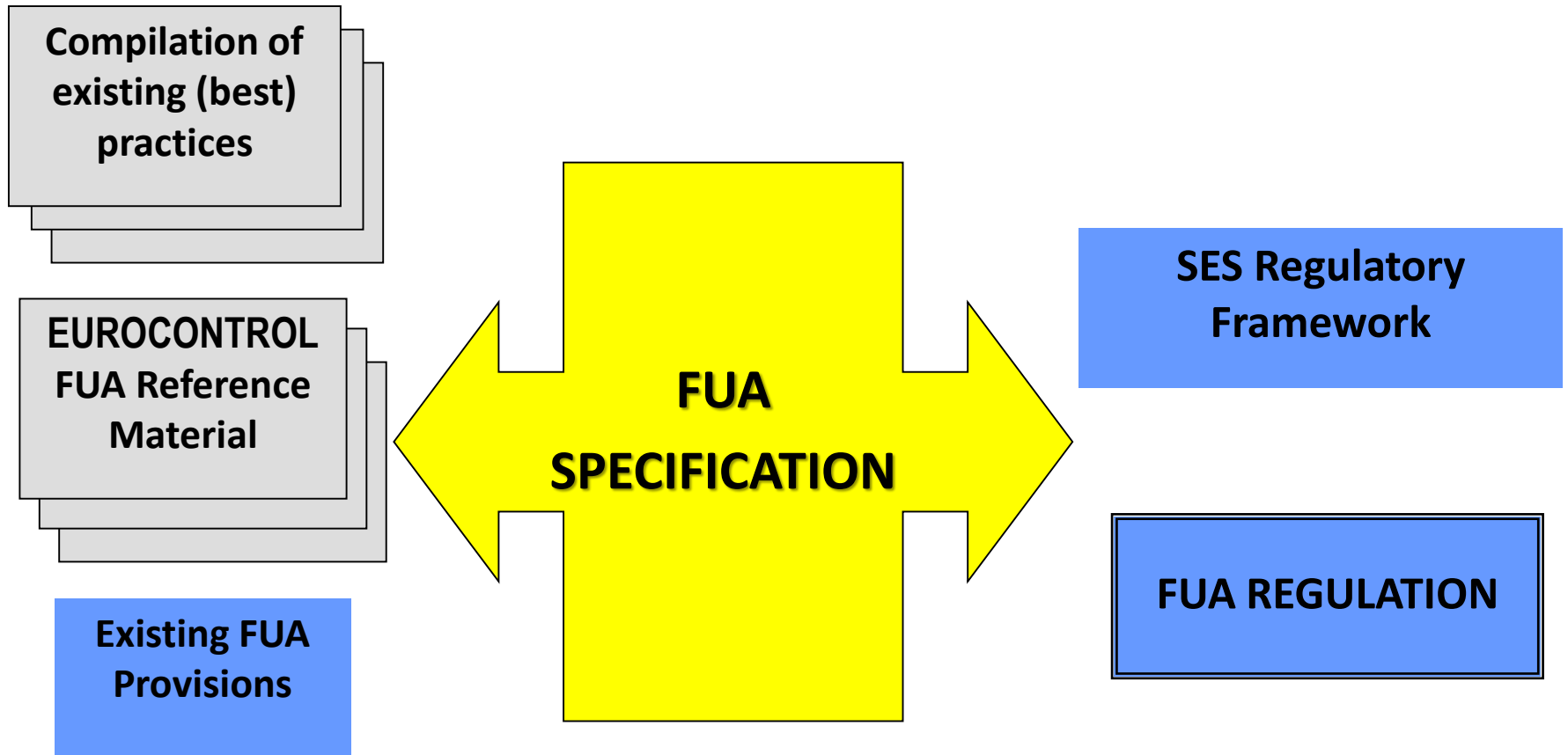
- National HLAPB consists of civil and military stakeholders authorised to formulate national ASM Policy and carry out Level 1 tasks

- HLAPB composition is an individual state's decision
 - Ministry of Transportation / CAA
 - Ministry of Defence / Military Aviation Authority
 - ANSP civil
 - ANSP military
 - Civil airspace users
 - Military airspace users

- National Airspace Management Advisory Committee assists HLAPB



FUA Concept, regulatory aspect



.FUA Specification seen as an interface



Conditional Routes (CDRs) and Temporary Reserved or Segregated Areas (TRA/TSA)

All CDRs are available

All Areas are Inactive

Request for Temporary Reserved Area


Temporary Reserved Area is active. Intersecting CDRs are not available for Flight planning





ASM Notification Process

- Mil airspace users advise on requirement;
- National Airspace Use Plan (AUP);
- Put together by the Network Manager, becomes European Airspace Use Plan (EAUP);
- Used by Aircraft Operators in improving flight trajectory.




NOP
Network Operations Portal

14/01/2013
09:36 46UTC

TARGET DATE: 14/01/2013

14/01/2013 **Set**

D (Tactical)

SEARCH 

Username: guest

PREFERENCES
HELP

Resources
Tactical
Post-Operations
PreTactical
Strategic

Axis Management

SKI Season 2012-2013 update >


05/12/2012 - 04/04/2013

Axis Weekly Management

Please also refer to today's 'Daily Plan' portlet (below) for further details of today's plan or the Pre-Tactical 'Daily Plan' usually available 1600UTC.

Network Operations Weather Assessment

Network Operations Weather Assessment objective



To support ANSPs and AOs in anticipating, identifying, monitoring and planning for potential severe weather events that may impact ATM capacity..

[Daily Update \(click here\)](#)

SKI season 2012 Airfield status

You are not authorised to access to NATS.

Contingency

The status of the Network Manager operations is **NORMAL**.

IIM ATFCM Contingency Plan Winter 2012-13

Valid 28th October 2012 - 30th March 2013

ANM

Valid On 14/01/2013

Last Released **14/01/2013 09:15**

AIM

Description	Released on
TAXI TIME LKPR	14/01/2013 09:25
TAXI TIME EDDL	14/01/2013 09:25
TAXI TIME EHAM	14/01/2013 08:50
TAXI TIME LHBP	14/01/2013 07:35

[more >](#)

European AUP/EUUP

EAUP	14/01/2013 06:00	15/01/2013 06:00
EUUP	13/01/2013 09:00	14/01/2013 06:00
EAUP	13/01/2013 06:00	14/01/2013 06:00

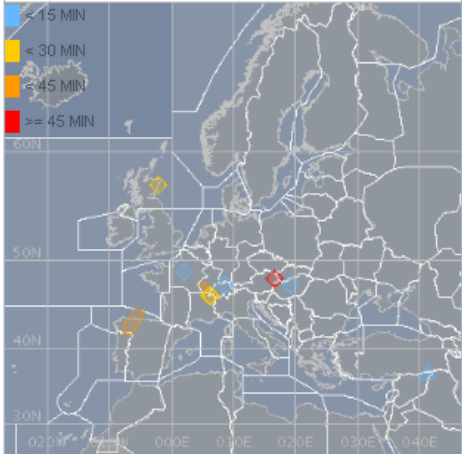
[more >](#)

Daily Plan

All > **Network** > FAB > FMP > AMC >

ATFCM Network Situation

Last update: 14/01/2013 09:30



Legend:
■ < 15 MIN
■ < 30 MIN
■ < 45 MIN
■ >= 45 MIN

Static Map (SM) >

ATFCM Network Situation Data

Last update 14/01/2013 09:26

Flights	
Total	19,480
Landed	4,082 (21%)
Airborne	3,337 (17%)
Expected	12,001 (62%)
Delays	
Cumulate	
Average	
Enroute	
Airport	6,837 (68%)
>= 30 min	87

Delay Causes

Reason	Delay	Delay (%)
Weather	5412	54%
ATC Capacity	1939	19%
Others	1403	14%
Aerodrome Capacity	700	7%
Special Event	502	5%
Airspace Management	68	1%
ATC led Action	12	0%

Network Headline News

14/01/2013 > **Tactical Update 0810 UTC**

11/01/2013 > **HLLL contingency procedure and pilot controller comm. update 27/12/2012**

[more >](#)

EVITA

For more information on the European Crisis Visualisation Interactive Tool for ATFCM (EVITA), please consult the [EVITA web page](#).

Calendar

General event AtfcM event Calendar event

January 2013

Month	Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
			1	2	3	4	5	6
			7	8	9	10	11	12
		14	15	16	17	18	19	20
		21	22	23	24	25	26	27
		28	29	30	31			

•EAUP/EUUP portlet on NOP

E-Helpdesk

To request access to the **E-Helpdesk** please fill in the [IIM service request form](#).

Flights

Access to Flights is restricted to NOP (Protected) Portal Users. For more information on this function consult the online help through the ? button on the right of the title. To read the instructions for subscription please visit the [IIM](#)

Axis Management

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IIM ATFCM Contingency Plan Winter 2012-13

Valid 28th October 2012 - 30th March 2013

This document addresses the contingency procedure to be carried out in the event of a long term failure of Network Operations systems.

ANM

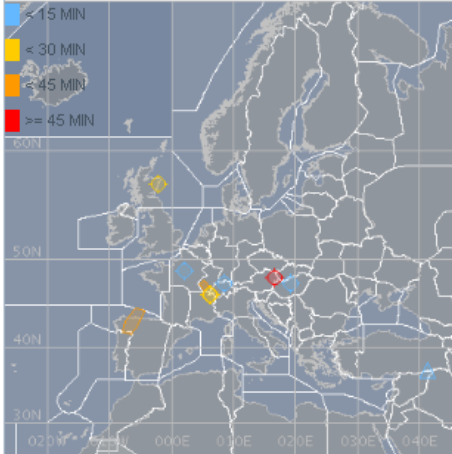
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Static Map (SM) ▶

ATFCM Network Situation Data

Last update 14/01/2013 09:26

Flights

Total	19,480
Landed	4,082 (21%)
Airborne	3,397 (17%)
Expected	12,001 (62%)

Delays (in minutes)

Cumulated	10,037.0
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		28	29	30	31			

European AUP/EUUP		
EAUP	14/01/2013 06:00	15/01/2013 06:00
EUUP	13/01/2013 09:00	14/01/2013 06:00
EAUP	13/01/2013 06:00	14/01/2013 06:00

[more ▶](#)

Delay (%)

54%
19%
14%
7%
5%
1%
0%

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Route ID: _____ RSA ID: _____ FIR ID: _____ UIR ID: _____ WEF: _____ TIL: _____

Type EAUP
 Valid WEF 14/01/2013 06:00
 Valid TIL 15/01/2013 06:00
 Released On 13/01/2013 15:08

ATS Route and CDR Type 1 Closure			CDR Type 2 Availability	Level 1 RSA Allocations		Level 2 RSA Allocations	
Route ID	Between	And	MIN FL	MAX FL	WEF	UNT	FIR
B246	LASDA	ARPOD	065	165	13:00	14:00	UKBV
B246	LASDA	ARPOD	065	165	22:00	00:00	UKBV
B46	UNTOS	ALT	105	245	14:00	15:30	LECB, LECM
G53	ONDAL	YES	095	245	14:00	16:30	LECM
G53	YES	ULSES	095	245	06:00	08:20	LECM
G53	YES	ULSES	095	245	13:15	00:00	LECM
KZ02	ULSED	UNORA	015	055	06:00	06:00	EHAA
KZ07	SOTAP	UNORA	015	055	06:00	06:00	EHAA
KZ08	TEVKA	UNORA	015	055	06:00	06:00	EHAA
KZ40	KOLAV	IBALO	015	055	06:00	06:00	EHAA
L140	ODS	RAPUL	085	095	07:00	00:00	UKOV
L140	ODS	RAPUL	085	095	05:00	06:00	UKOV
L179	NIK	SORAT	045	195	06:00	08:00	EBBU
L179	NIK	SORAT	045	195	20:30	23:00	EBBU
L23	GONTU	OTPES	285	460	06:00	06:00	EPWWV
L23	OTPES	GORAT	285	460	06:00	10:30	EPWWV
L23	OTPES	GORAT	425	460	10:30	20:00	EPWWV
L23	OTPES	GORAT	285	460	20:00	06:00	EPWWV
L29	GRUDA	TUPUR	195	245	06:00	10:30	EPWWV
L29	GRUDA	TUPUR	195	245	20:00	06:00	EPWWV
L29	TUPUR	ALUKA	095	145	06:00	06:00	EPWWV
...



System Support

CIAM

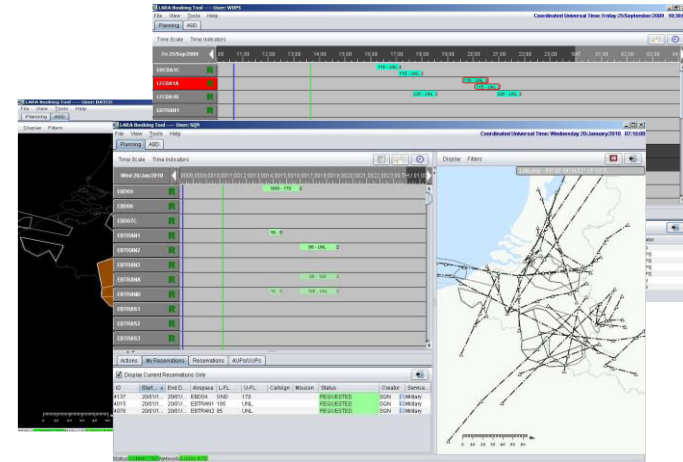
- ▶ Ensure the sharing of information among Airspace Management users

Airspace Data Repository

- ▶ Enables users to keep up-to-date with airspace status data

ASM support system

- **System to support**
 - airspace planning and allocation,
 - CIV – MIL coordination,
 - common situational awareness,
 - collection of statistical ASM data





LARA Users



•HOUSEKEEPER

- administrates users,
- roles, users privileges, setup ASM
- approval process and applicable rules;
- manages airspace
- static data and all data associated with
- airspace reservations/restrictions and
- relevant mission



LARA Users



AMC – responsible for airspace allocation and publication; AUP/UUP and NOTAM (if required) privileges

SUPERVISORS – activate/de-activate airspace structures, approve reservations if required

OPERATORS – request airspace structures; if relevant participate in the approval process



LARA Enables

- Combined, central DB for all airspace demands
requests and their status are shared with all roles/functions involved in the ASM/ATFCM process
- On-line and in real time
- Collaborative Decision Making (CDM)
the decision makers are all connected, using the same data, taking informed decisions
- Awareness
all updates are presented in real time to all users involved in the ASM/ATFCM process
- Consistent Data
all users use a single source DB



LARA Enables

- Interface with

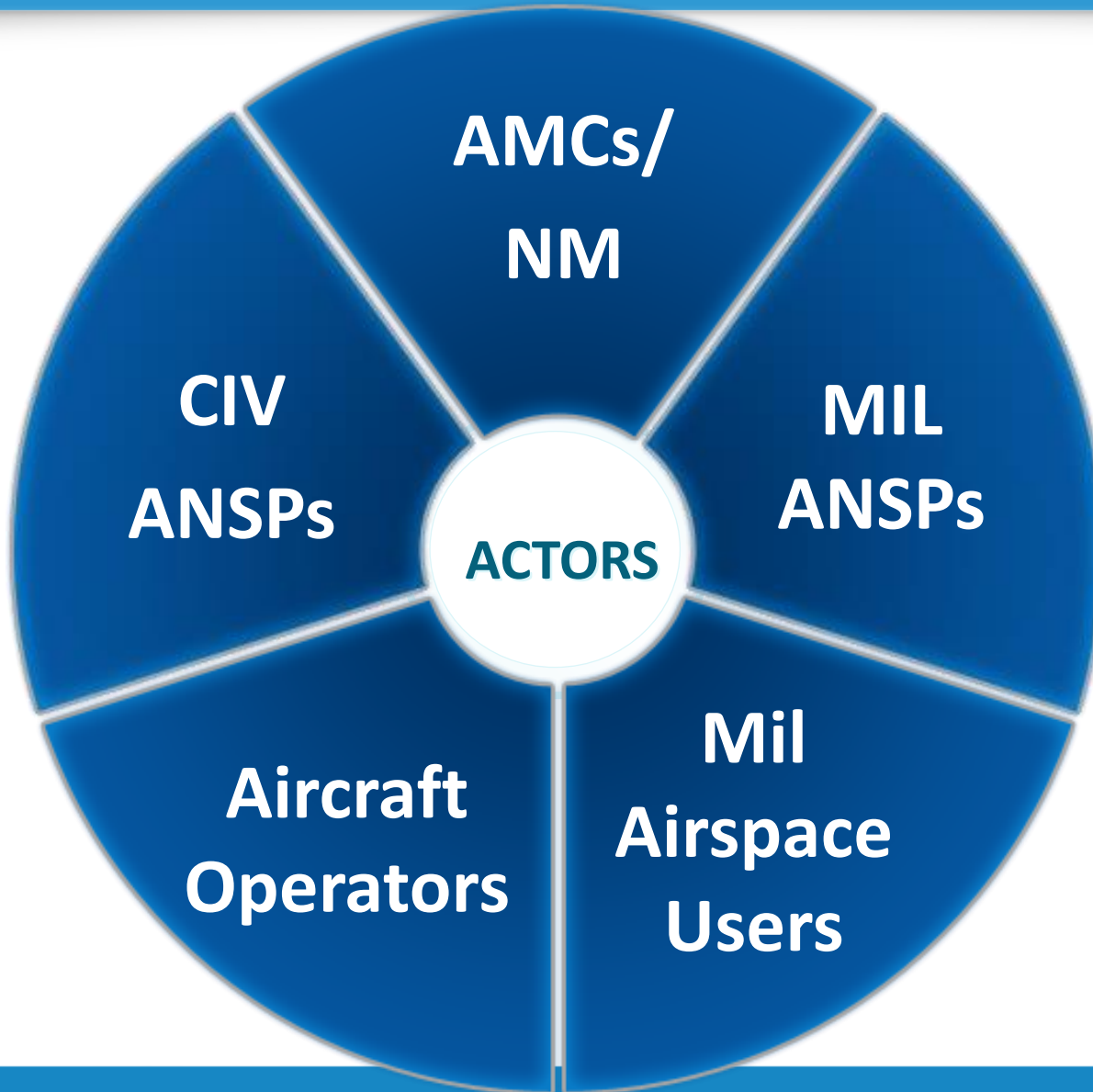
 - NM systems, based on agreed B2B services using AIXM5.1*

 - ATC systems allowing timely updates of the airspace status on the ATCO working position*

- Extension to FAB functionality



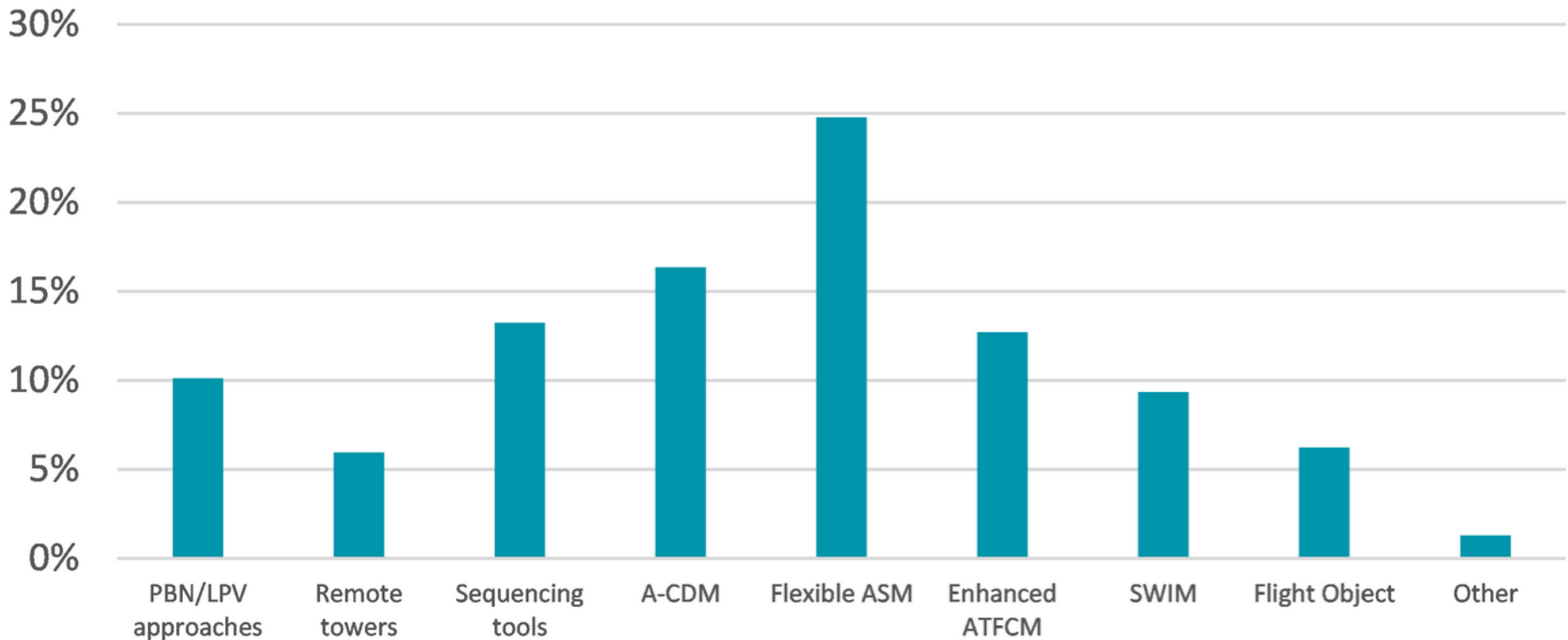
Commitment





Enhanced ASM/ATFCM Process

Which of the following innovations offer the greatest all-round benefits to ANSPs and airspace users?





- **Explain the FUA concept**
- **Promote FUA implementation**
- **Share best practices**
- **Demonstrate support system**



FUA Information toolkit : 5 toolboxes

Awareness

- FUA concept briefing
- FUA film

Education and training

- pro-active FUA exercise
- IANS course

Support systems

- LARA
- PRISMIL
- CIMACT

Guidance material

- ICAO ref

Performance monitoring

**UNDER
CONSTRUCTION**



Toolbox 1: Awareness FUA briefing

- ✓ The purpose of the briefing is to explain what FUA means and how it was defined.
- ✓ Content
 - Basic FUA concept
 - Explain the FUA organization
 - Explain the integration of data in the ATFCM and ATS process
 - Expected benefits

Toolbox 1: Awareness FUA video

- ✓ This video is a promotional overview of FUA.



Toolbox 2: Training FUA exercise

- ✓ The goal of this FUA exercise is to explain in a pro-active manner :
 - the ASM/ATM issues
 - the added value of FUA
 - the added value of automation and system support
- ✓ The exercise is organized in three steps
- ✓ Content of the toolbox:
 - scenario
 - maps



.Toolbox 2: Training IANS courses

- ✓ Information on relevant IANS courses and 2017 Training brochure



Toolbox 3: Support systems Local And sub-Regional Airspace Management support system (LARA)

✓ Introduction briefing

✓ Demonstrator architecture

A dedicated server will be available via the public internet, hosting:

- The LARA Database Server,
- The LARA Cluster Server and
- an Apache Tomcat Server, allowing:
 - remote LARA Client sessions via Java Web Start,
 - access to a LARA documentation library.

Such a deployment approach allows to reduce abroad training and maintenance efforts to the minimum, while allowing a wide accessibility to the LARA Demonstration system.

✓ Demonstration (*scenario, script and manual*)



Toolbox 3: Support systems

Explanation of other support system

- ✓ Briefing on PRISMIL

Programme for the Development, Implementation and Monitoring of Automated Data Collection Supporting Civil-Military KPI

- ✓ Briefing on CIMACT

Civil-Military ATM Coordination Tool

- ✓ Briefing on a Network Manager function and link with ATFCM



Toolbox 4: Guidance material

- ✓ ICAO circular 330/AN 189
- ✓ SWIM concept Doc 10039 AN/511



Toolbox 5: Performance monitoring





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