



**Network Manager**  
nominated by  
the European Commission



# Recap of 2017 and 2018 workshop outcomes

ICAO/IATA Regional Aeronautical Information Services / Aeronautical Information Management (AIS/AIM) Workshop

23 – 27 September 2019

Nairobi, Kenya

*Working together in bring timely, quality assured  
aeronautical information/data to support greater aviation  
community*

Gaston Liegeois

Directorate Network Manager

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# Recap 2017-2018 workshops

## Development of AIS Management and Oversight for CAA and ANSP

- Dakar (31 July - 4 August 2017)
  - 35 Participants
  - 11 States + Intl Organisations
- Nairobi (27 November- 1 December 2017)
  - 27 Participants
  - 7 States + Intl Organisations



# Recap 2017-2018 workshops

## Operational Skills Development for the Transition from AIS to AIM for CAA and ANSP

- Dakar (28 May - 1 June 2018)
  - 36 Participants
  - 10 States + Intl Organisations
- Nairobi (2 - 6 July 2018)
  - 23 Participants
  - 11 States + Intl Organisations



# Recap 2017-2018 workshops

**EU regulations**  
 ADQ  
 EU 73/2010  
 Certification as Service Provider  
 EU 2017/373

## Certification of AISP

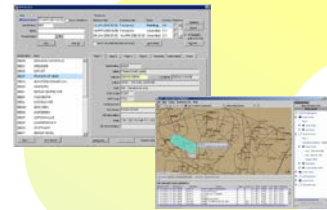


PANS-AIM

IAID  
 AIXM  
 eAIP



ADQ



QMS



Transition AIS to AIM

→ *Going to Digital*

IAIP

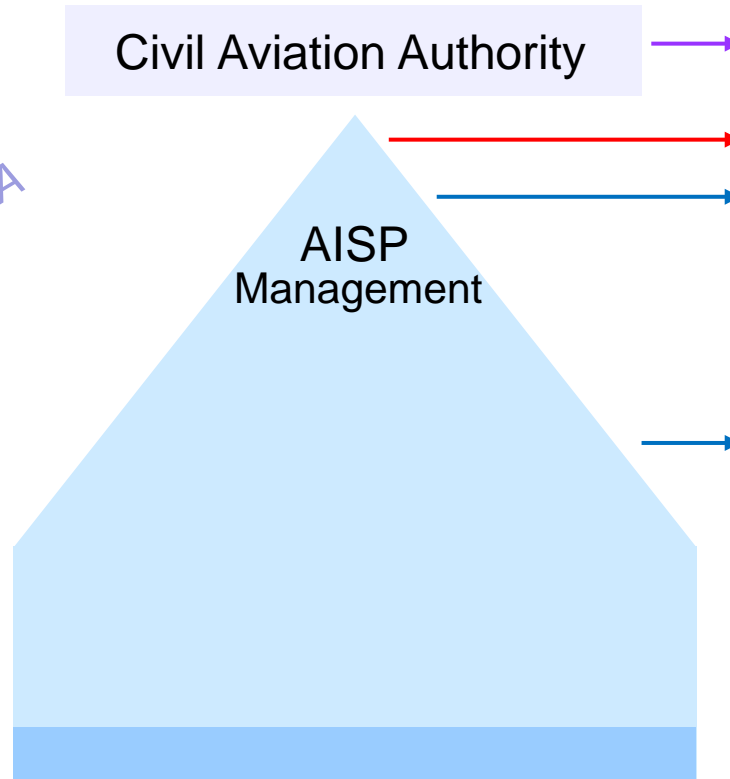


**ICAO**  
 Annex 15  
 PANS-AIM  
 Doc 8126  
 Annex 4  
 Transition  
 From AIS to AIM

*All about the Publication of the IAIP package*

# Recap 2017-2018 workshops

Development of AIS  
Management and  
Oversight for CAA



AISP Oversight?

Ready for Changes?

Competencies ?

1. Profile needed?
2. What is available?
3. Training requirements?
4. Recruitment?

Automation?

1. Specifications
  1. RFI, URS
  2. Target - Tech & Ops:
    1. Stand alone
    2. Multi AISP
    3. Network

# Ready for Changes for the future AIM environment ?

## Feedbacks



- Technology?
- Lack of staff / Training / Bureaucracy / Finance
- No vision / no possibility to share with other
- How to break the image that AIS is not important?



- **AIS is the blood of the body:**
  - Shall move to new perspective
  - Come with positive thoughts
  - New learning attitude
  - Change our habits
  - → what I am doing is important !!



AIS/AIM leaderships/managers must play a leading role in changing the AIS/AIM conversation to align both AIS/AIM as well as their stakeholders towards the future AIM

Have a vision and a sound plan !!!!

Understand the climate / culture

Prepare your team

*Raising the profile of the AIS/AIM function and staff*

*Competency management and development*

*Communicate, Communicate,*

# Ready for Changes for the future AIM environment ?

## Feedbacks

- Technology?
- Lack of staff / Training / Bureaucracy / Finance
- AIM is seen as "dump ground" for who are unsuccessful
- No vision / no possibilities
- How to bring it more important?



Be The Change You Want To See

IF IT IS TO BE..

IT IS UP TO

**ME....**

William H Johnsen

- AIS is the backbone
- Shall manage it
- Competency management and development
- New learning attitude
- Change our habits
- → what I am doing is important !!

Leadership managers must play a role in changing the AIS/AIM environment in both AIS/AIM as well as in the future AIM

and a sound plan !!!!

climate / culture

team

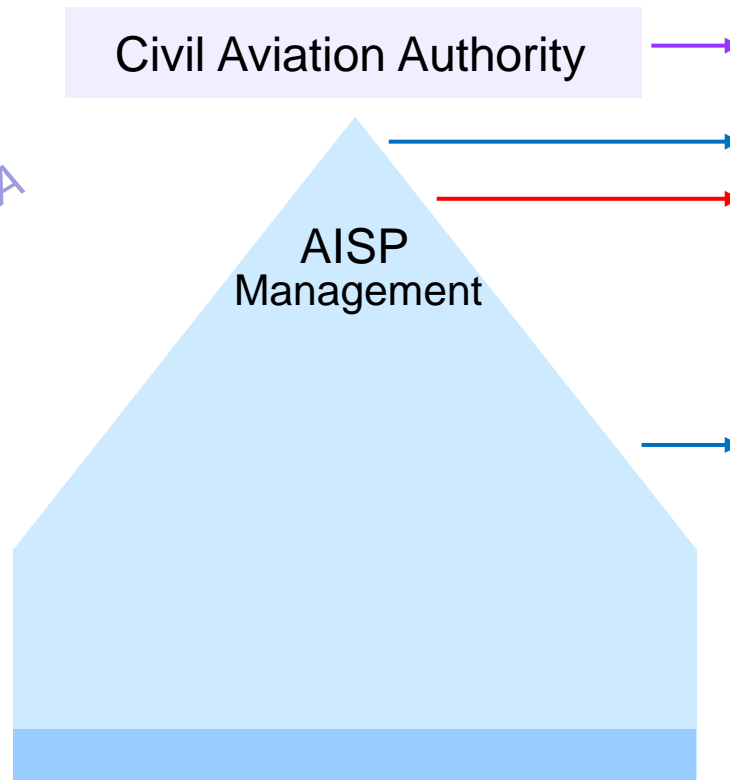
Raising the profile of the AIS/AIM function and staff

Competency management and development

Communicate, Communicate,

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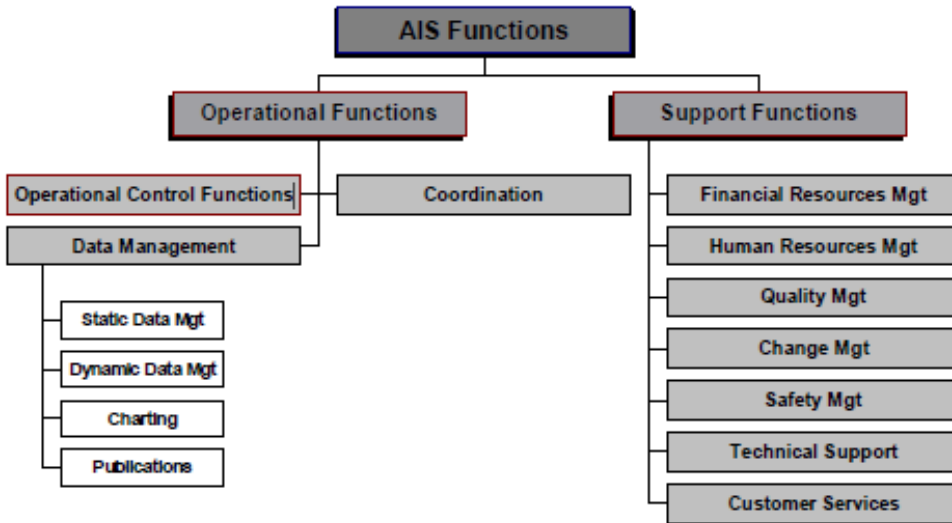
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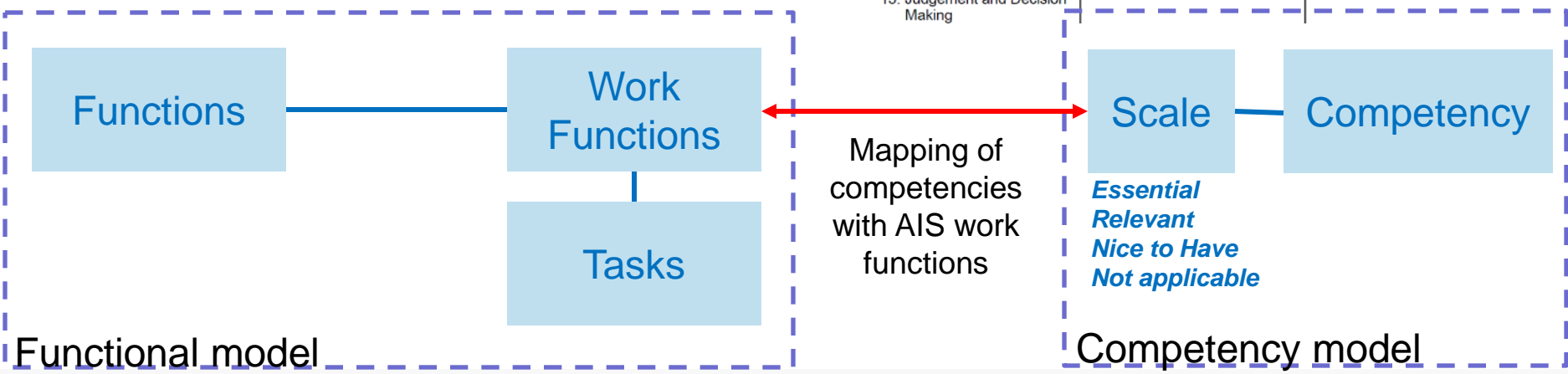


# Common AIS Staff Profiling (CASP)

Guidelines for AIS organisations to support the implementation of competency management processes



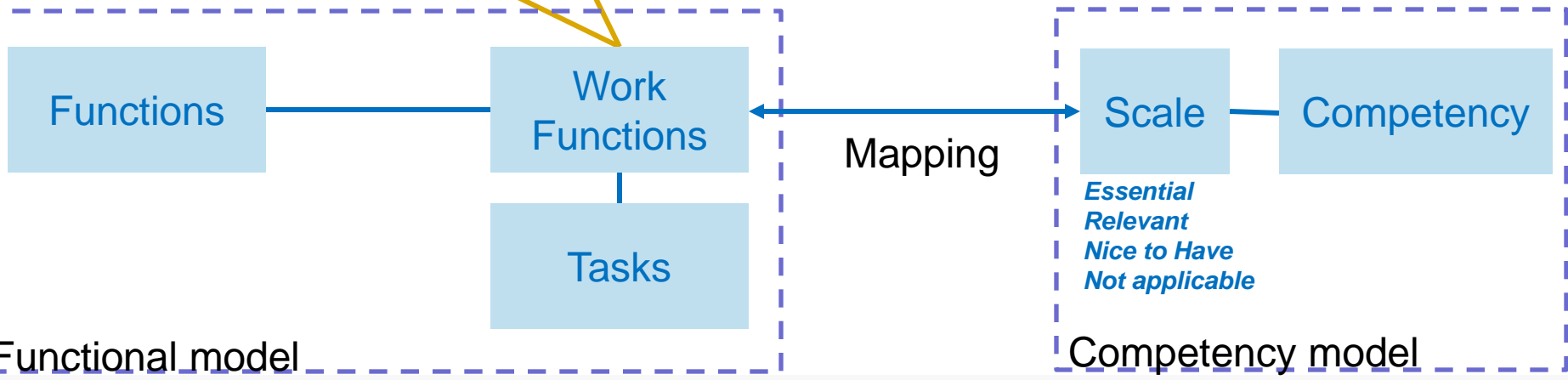
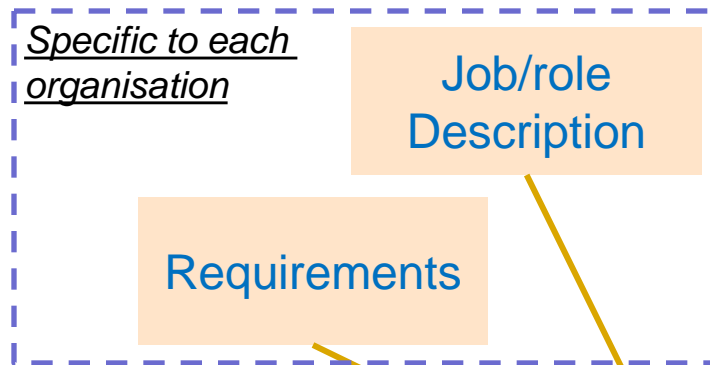
CASP COMPETENCY MODEL		
O. Organising People and Tasks	A. Aligning Organisation	B. Business Leading
1. Objective Setting 2. Motivating Others 3. Proactive Communication 4. Developing Others 5. Management Control 6. Maintaining Discipline 7. Caring for Others 8. Providing Direction	1. Organisational Awareness 2. Creating Awareness 3. Managing Organisation Performance 4. Integrity 5. Role Clarification	1. External Awareness 2. Strategic Thinking 3. Systems Thinking 4. Initiating Change 5. Championing Causes 6. Governance 7. Stakeholder Relations
T. Technical and Professional	I. Individual Specific	C. Culture Specific
1. Critical Examining I 2. Critical Examining II 3. Information Analysis 4. Problem Analysis 5. Problem Solving 6. Operational Knowledge 7. Professional Expertise 8. Adherence to procedure 9. Physical Safety Awareness 10. Aviation Safety Conscious 11. Administrative Skills 12. Flexibility of Closure 13. Judgement and Decision Making	1. Self Confidence 2. Interpersonal Sensitivity 3. Building Relationships 4. Networking 5. Reliability 6. Oral Communication 7. Persuasive Communication 8. Written Communication 9. Stress Tolerance 10. Adaptability 11. Accuracy 12. Methodical 13. Selective Attention 14. Decisiveness	1. Cross Cultural Awareness 2. Empowering 3. Creativity 4. Energy 5. Self Development 6. Quality Focused I 7. Quality Focused II 8. Organisational Learning Focused 9. Customer Focused I 10. Customer Focused II



# Common AIS Staff Profiling (CASP)

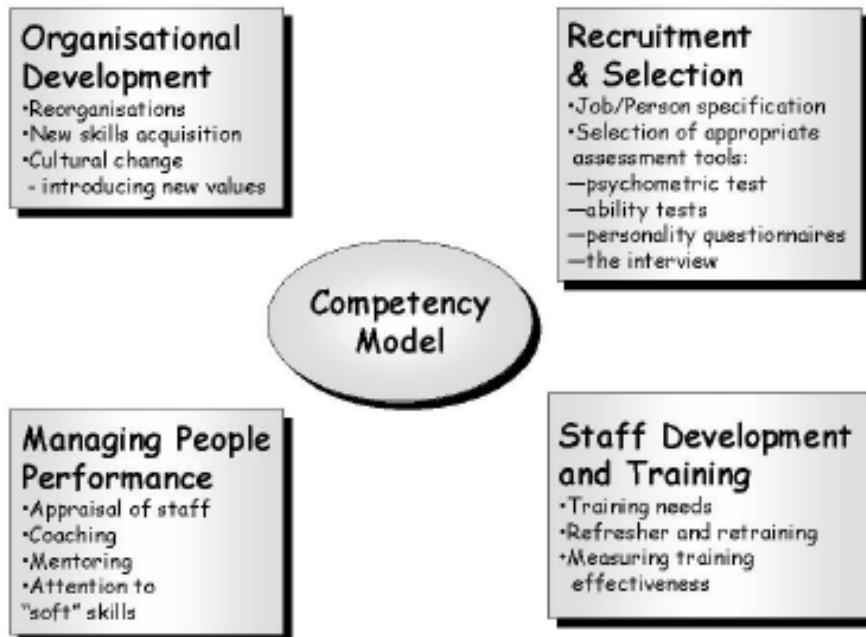
Guidelines for AIS organisations to support the implementation of competency management processes

- Allow to define AIS jobs according to specific AIS organization model
  - Association of one or more AIS functions/tasks per AIS role
  - Definition of job requirements (e.g. study, skills, experience) per AIS role
  - Production of job descriptions, person specifications



# Common AIS Staff Profiling (CASP)

## Enabler for the development of Competency Management System

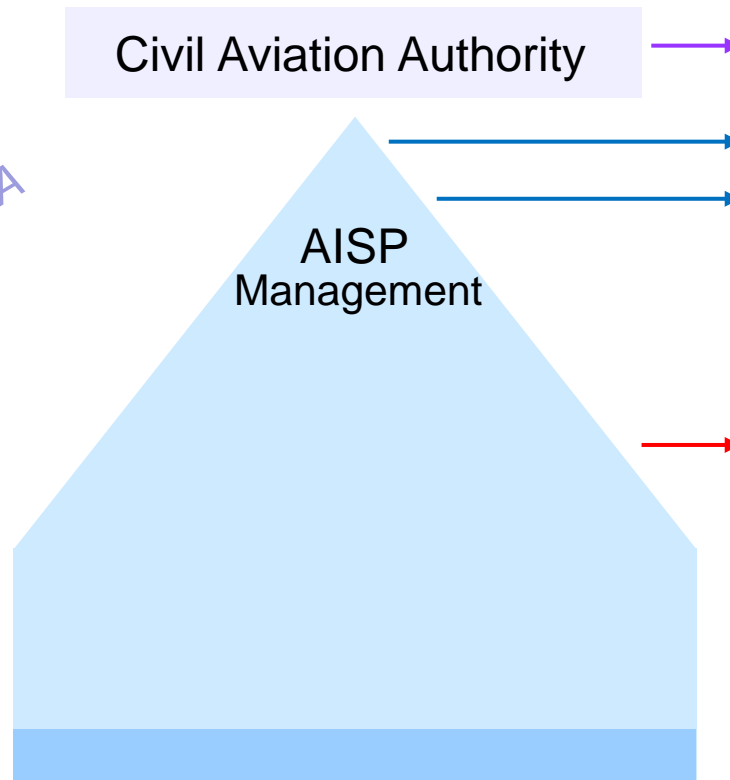


- *Staff matrix/plan – training plan*
- *Development of selection criteria*
- *Essential for proper selection, evaluation, succession planning and for guiding training and development*
- *Identification of training need for development of competences*

- *Competency management ensures that an AIS organisation has the right competencies at the right time by identifying competency gaps and facilitating appropriate training, compensation and recruitment programme based on current or future competency needs.*

# Recap 2017-2018 workshops

Development of AIS  
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AISP Oversight?

Ready for Changes?

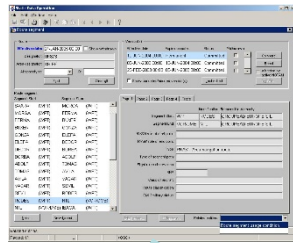
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# Automation Integrated Aeronautical Information database



Static data Update

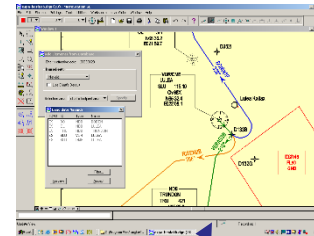
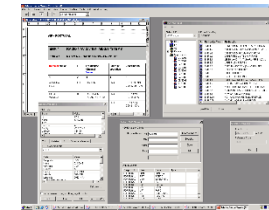


Chart Production



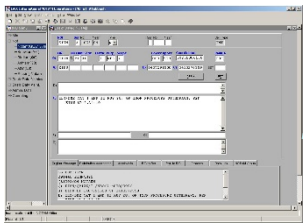
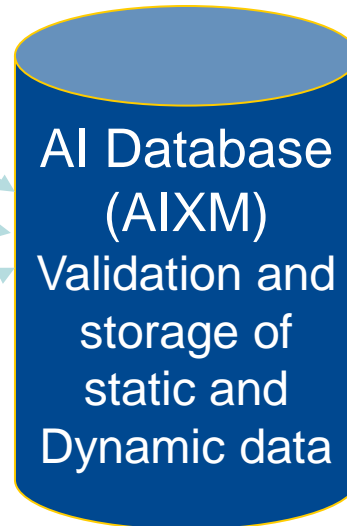
eAIP Production



Delivery of Datasets  
AIXM XML output



Integrated Briefing



Dynamic data Update  
NOTAM/Digital NOTAM

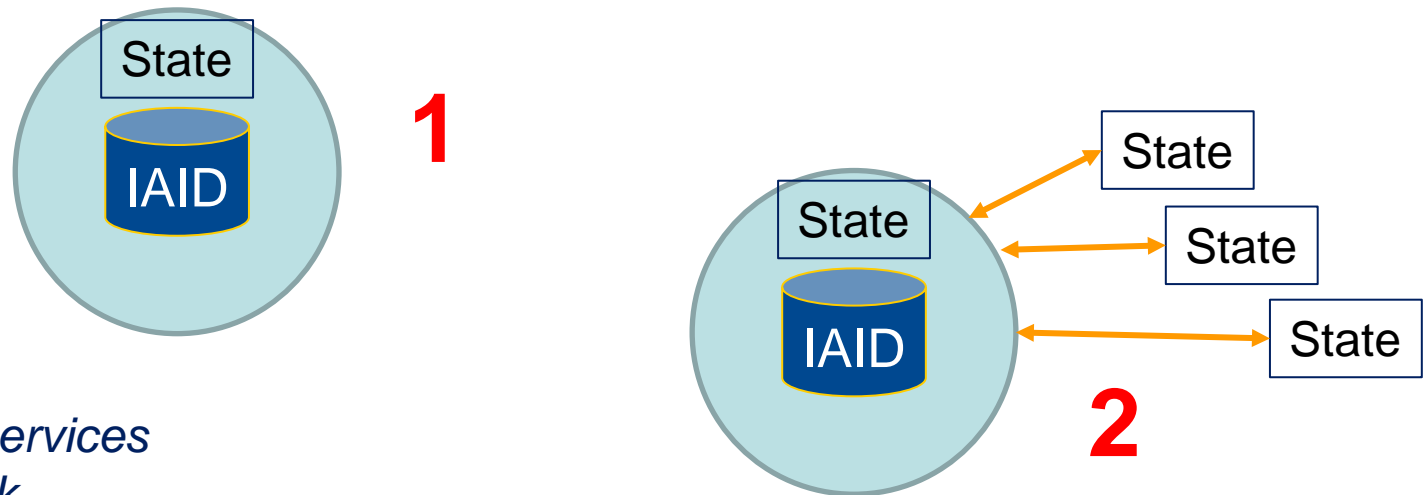
Digital Data Input  
(AIXM XML)



Local DB

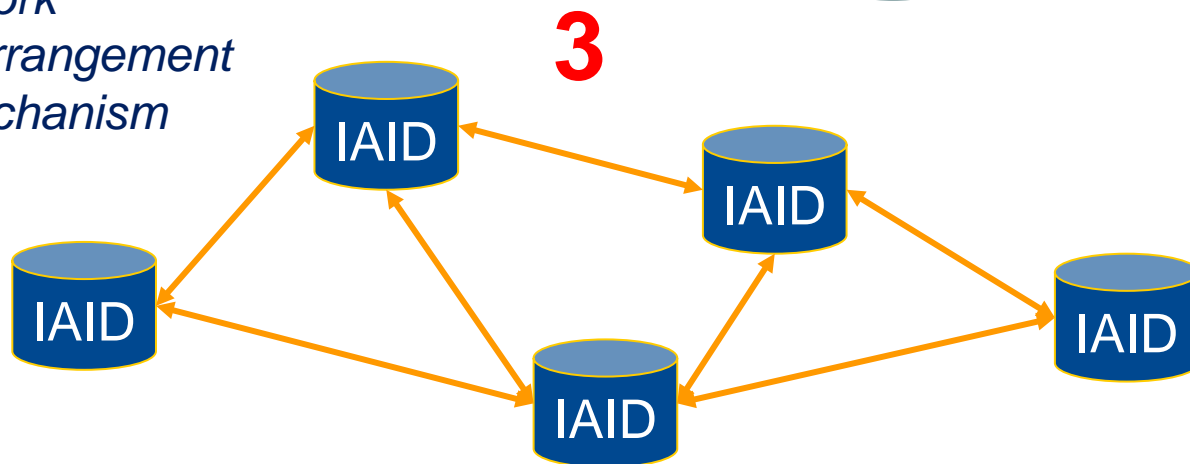
# Automation

## Integrated Aeronautical Information database



Definition of :

- Tech and Ops services
- Legal framework
- Contractual arrangement
- Reporting mechanism
- Etc.



# Automation Terminology

- Call For Tender (CFT)
  - Consultation of the market in order to get a maximum of companies/suppliers that could provide a Request for Tenders (RFT) or Quotation (RFQ) to the tender specifications
  - Evaluation process to measure the level of compliance of the received offers
  - A short list is realized in order to continue the clarifications/negotiations according to the specifications
  - The final selected supplier is going in contract negotiation
  
- Request for Information (RFI)
  - The purpose is to collect written information about the capabilities of various suppliers. Normally it follows a format that can be used for comparative purposes
  
- User Requirement Specification (URS)
  - Document that specifies what the user expects the software to be able to do

# Recap 2017-2018 workshops

Development of AIS Management and Oversight for CAA

Civil Aviation Authority

AISP Oversight?

AISP Management

Ready for Changes?  
Competencies ?

1. Profile needed?
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Senior Management



**AIS to AIM Programme**

*Projects, budget & resources*

Automation?

- Short-long term Strategy
- 5 years (rolling)
- Per projects
  - Overview of project phase
  - Implementation planning
  - Estimated budget, FTE

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Projects Implementation

Project management

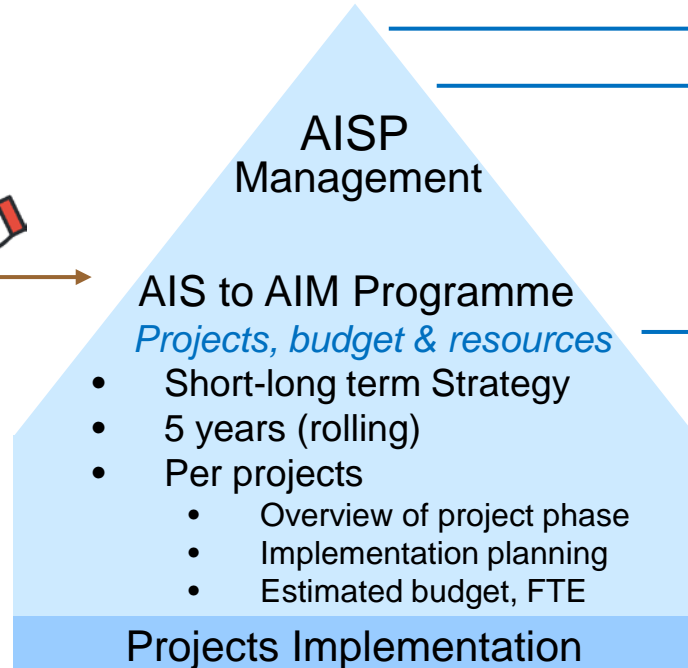


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Project management

Meet end-user expectations

Info distributed:

1. On-time
2. Complete
3. According to required level of quality

Operational Skills Development for the Transition from AIS

Continuous re-enforcement of quality management measures to ensure the required level of quality of the aeronautical information

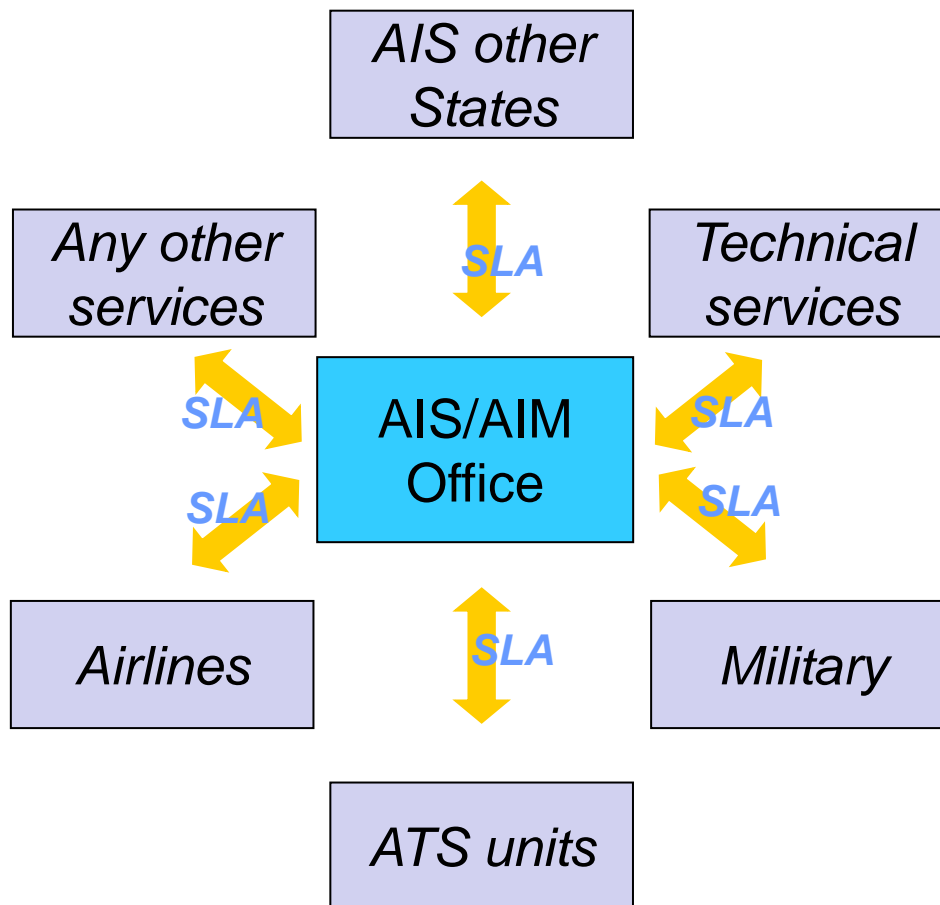
AIS to AIM QMS AIRAC adherence ADP OPADD

CHAIN - ADQ Data Integrity Data originators ICAO Annex 15



# Customer Service

*Liaison of AIS with customers*



*AIS/AIM Office is receiving, assembling, and publishing aeronautical information, and making available all information needed by users*

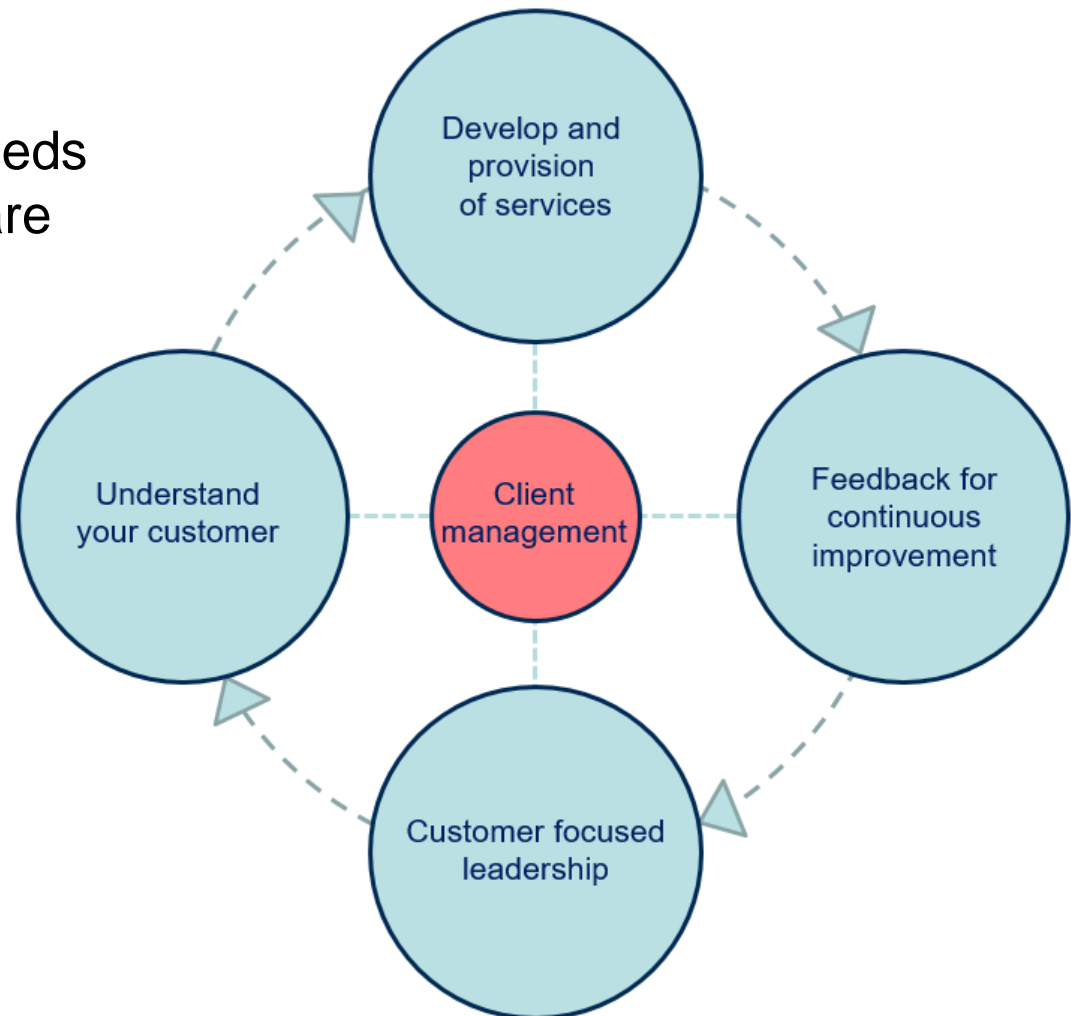
*AIS/AIM office must anticipate the level of service of the customer customers and the specific needs associated*

*(Service Level Agreement – SLA)*

# Customer Service

*Manage relationship with customers*

- The AIS/AIM office should consider a way that the needs of the various customers are collected and understood
- Better monitoring, control, and complete view of the client activities
- Collection of clients feedbacks as input to the evolution of the different services



# Recap 2017-2018 workshops

Civil Aviation Authority

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AISP Management

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Projects Implementation

Project management

Operational Services

*IAIP- AIP, Amdt, Suppl, AIC, NOTAM)*

Meet end-user expectations

*Continuous re-enforcement of quality management measures to ensure the required level of quality of the aeronautical information*

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AIS to AIM

QMS

AIRAC adherence

ADP

OPADD

CHAIN - ADQ

Data Integrity

Data originators

ICAO Annex 15

Operational Skills Development for the Transition from AIS



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AIS to AIM **QMS** AIRAC adherence ADP OPADD

CHAIN - ADQ Data Integrity Data originators ICAO Annex 15

Project management

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Operational Skills Development for the Transition from AIS



# QMS

## *General Principles*

- Formalise all activities, arrangements and measures (KPI) that an organization uses to manage and improve its output/ performance.
- Ensure a more efficient use of resources, better clarity in roles and responsibilities
- Increase the capability to deliver consistent and improved services and products customers
  - KPI monitoring
- Proactive approach to managing risks
- Audits shall confirm the compliance of the quality system. If a non-conformity (NC) is identified, action to correct the cause shall be determined and implemented.

*QMS shall follow the ISO 9000 series of quality assurance standards, and be certified by an accredited certification body*

# QMS

## *General Principles - Personnel*

- The QMS should also include that the personnel to possess and use the skills to operate the QMS
- The QMS skills and competency must contain:
  - Identification of the functions to be performed,
  - Identification of the knowledge and skills required for each step of each process, and
  - Assurance that the personnel assigned to functions have the required knowledge and skills, and competency to perform those functions.
- Records of qualifications and training shall be maintained of personnel based on the specific function they performed
- Periodic checks shall be taken to ensure that personnel continue to meet the required standards

# QMS

## *General Principles - Documentation*

Documentation is associated with:

- How we do our jobs
- How we deal with the incoming data from originators, other States
- How we ensure the traceability of a well done job via quality control
- What are the National rules, regulations and characteristics of facilities and services based on ICAO regulatory, etc.

For this reason, it is advisable that ALL necessary documents are readily available for reference at the AIS headquarters and at aerodrome/heliport AIS units:

- In-house manuals and procedure handbooks
- International standards and guidance material such as the ICAO Documents and Annexes
- Other publications from IATA, WMO, EUROCONTROL, etc.



# QMS

## *PANS-AIM Quality management system requirements (chapter 3)*

- a) Develop a quality manual that includes the scope of the QMS as applied to AIM processes
- b) Identify the processes needed for the QMS
- c) Determine the sequence and interaction of these processes
- d) Determine criteria and methods required to ensure the effective operation and control of these processes
- e) Ensure the availability of information necessary to support the operation and monitoring of these processes
- f) Measure, monitor and analyse these processes, and implement action necessary to achieve planned results and continual improvement
- g) Maintain appropriate records that are necessary to provide confidence of conformity of the processes and resulting product

*In the framework of the quality management system, a user feedback system shall be defined and implemented.*

# Recap 2017-2018 workshops

Operational Skills  
Development for the  
Transition from AIS

Civil Aviation Authority

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AISP  
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*Projects, budget & resources*

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Project management

Operational Services

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*IAIP- AIP, Amdt, Suppl, AIC, NOTAM)*

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CHAIN - ADQ Data Integrity Data originators ICAO Annex 15

Senior  
Management



Management  
review



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AISP  
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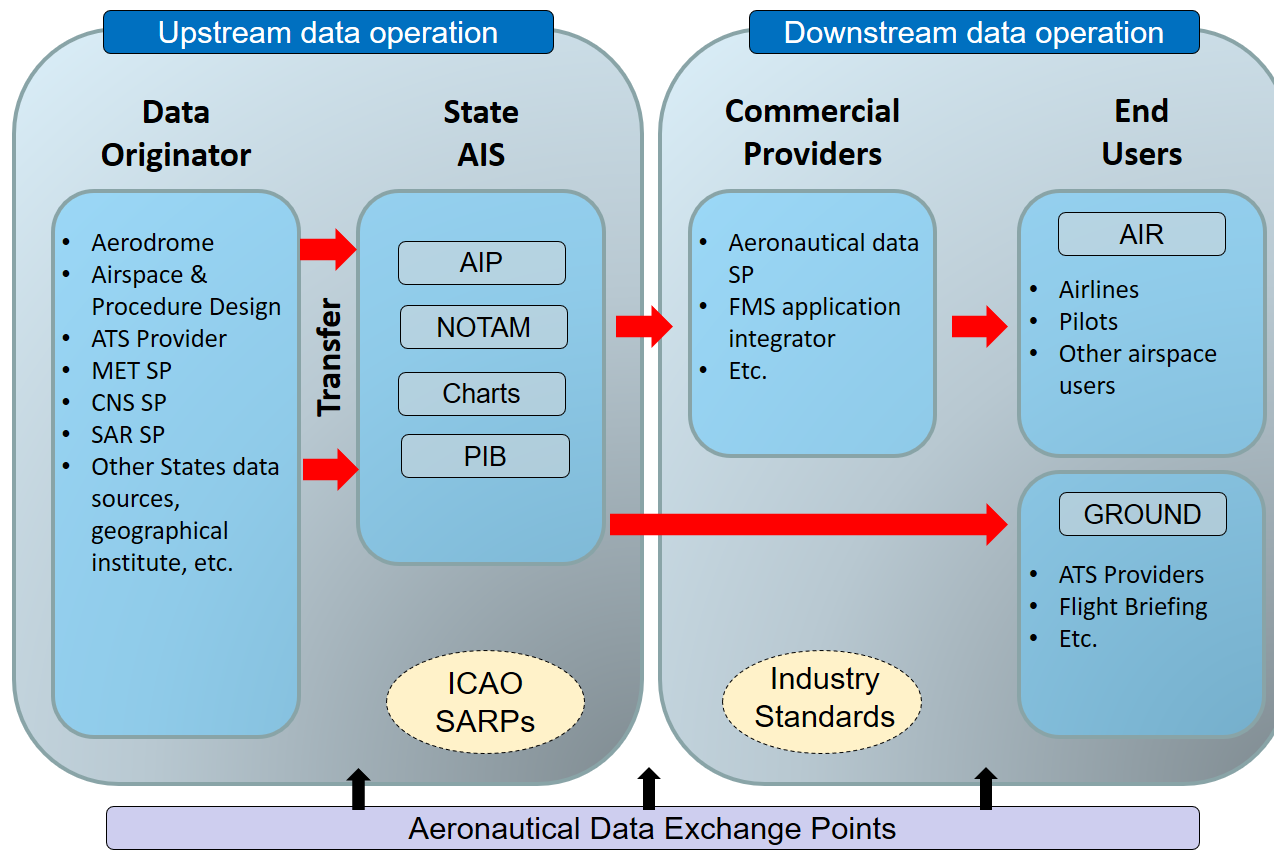
CHAIN - ADQ Data Integrity Data originators ICAO Annex 15

Management  
review



# AIS to AIM roadmap

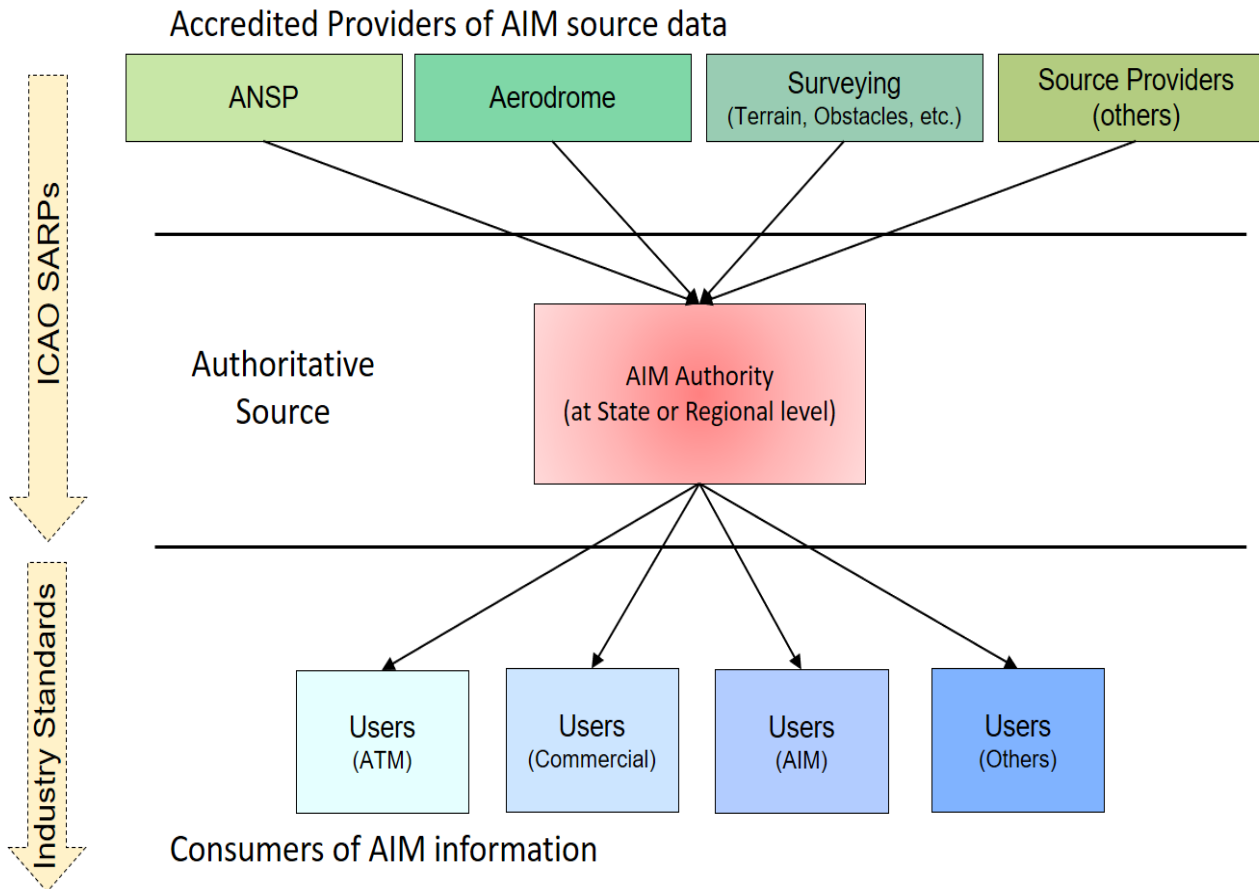
## *From the traditional AIS*



- Reliance on manual processing and manipulation
- Multiple “points” of exchanges
- Duplication of information
- Inconsistencies
- Potential lack of synchronisation of aeronautical data in navigation databases

# AIS to AIM roadmap

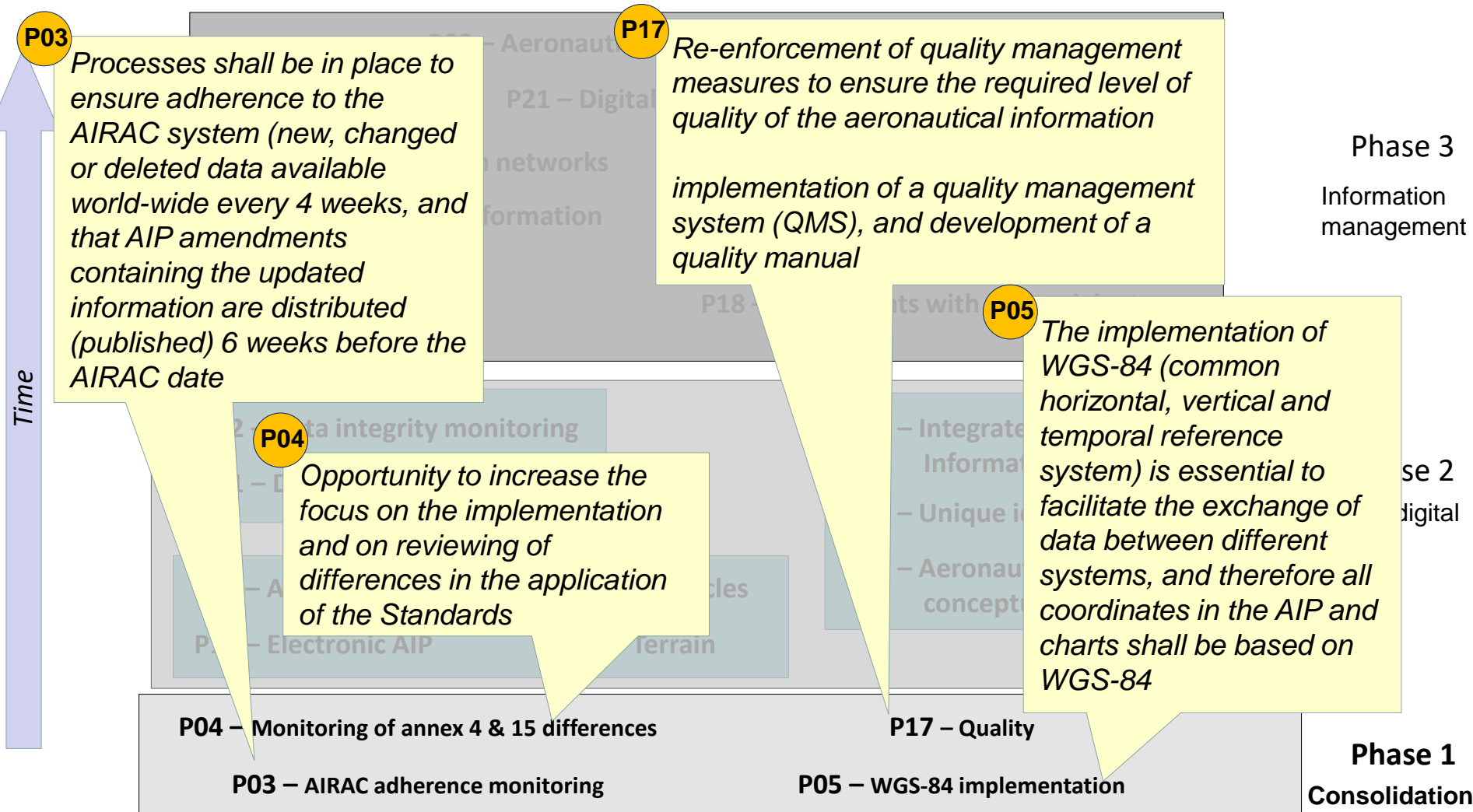
## To the AIM environments



- Aeronautical information coming from authoritative sources
- Aeronautical information is:
  - digitally represented
  - globally harmonised
  - interoperable
- Quality-assured aeronautical information
- The temporality of aeronautical information is adequate for operational decision making
- Separation of information provision and information consumption

# ICAO Roadmap from AIS to AIM roadmap

## Regulatory context





# ICAO Roadmap from AIS to AIXM

**P01** Data Handling processes shall be in place to ensure adherence to the required data quality as specified in ICAO Annex 15.

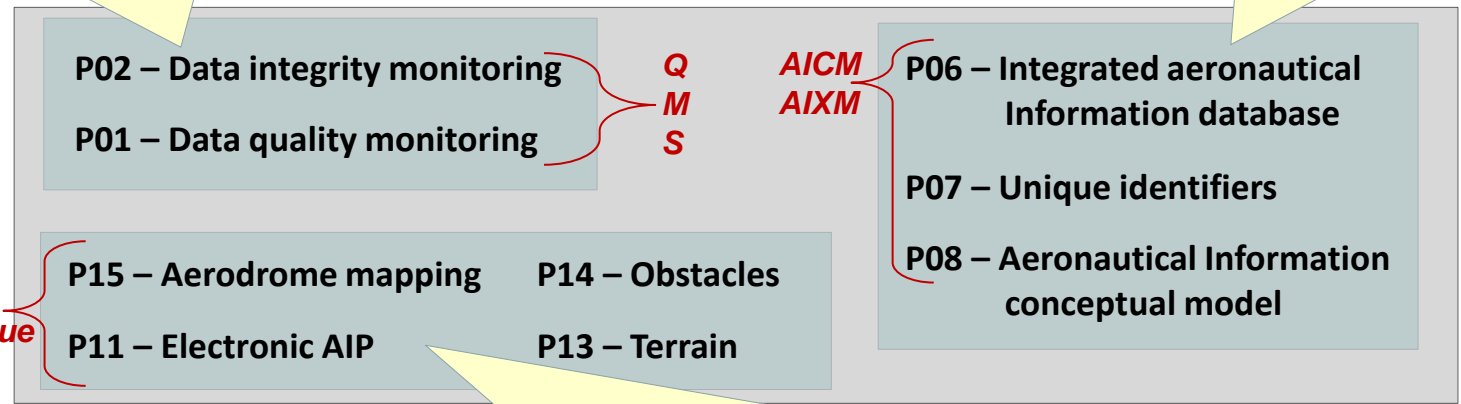
**P02** Integrity of aeronautical data shall be maintained throughout the data process from survey/origination to the next intended user as specified in ICAO Annex 15.  
Data integrity levels are Critical data, Essential data, Routine data

**P06** Implementation of a database of digital aeronautical data that will be used to produce current and future AIM products

**P07** Unique identification of aeronautical features are required to increase the effectiveness of information exchange

**P08** Aeronautical information shall be managed in terms of digital data structures allowing standardisation of the processing of aeronautical information by the end users

Time



Phase 3  
Information management

Phase 2  
Going digital

**P04** - Monitoring

**P03** - AIP

**Provision of:**

- P11** - Electronic version of the AIP (accessible by web browsers)
- P13** - Terrain data sets
- P14** - Obstacle data sets
- P15** - Aerodrome mapping data sets representing the spatial layout of an airport

Phase 1  
Validation

**P10**

*Review of network infrastructure (increase of bandwidth) to cope with these future needs*

# ICAO Roadmap from AIS to AIM roadmap

**P09**

*Implementation of data exchange and access mechanisms between systems through an exchange model*

## Regulatory context

**P09 – Aeronautical data exchange**

**P21 – Digital NOTAM**

**P10 – Communication networks**

**P19 – Interoperability with MET products**

**P12 – Aeronautical information briefing**

**P20 – Electronic aeronautical charts**

**P16 – Training**

**P18 – Agreements with data originators**

**Phase 3**  
Information management

**P21**

*Digitalisation of NOTAM suitable for automatic processing without human intervention  
Extension of static AI data model + new concept of operations*

**P19**

*Interoperability of meteorological data products with the new AIM data products.*

**P16**

*New training manual to reflect the new competencies required*

**P12**

*Improvement of the selectivity of the information presented to pilots in PIB including graphical and textual presentation.*

**P20**

*New electronic aeronautical charts, based on digital databases and the use of geographic information systems*

**P18**

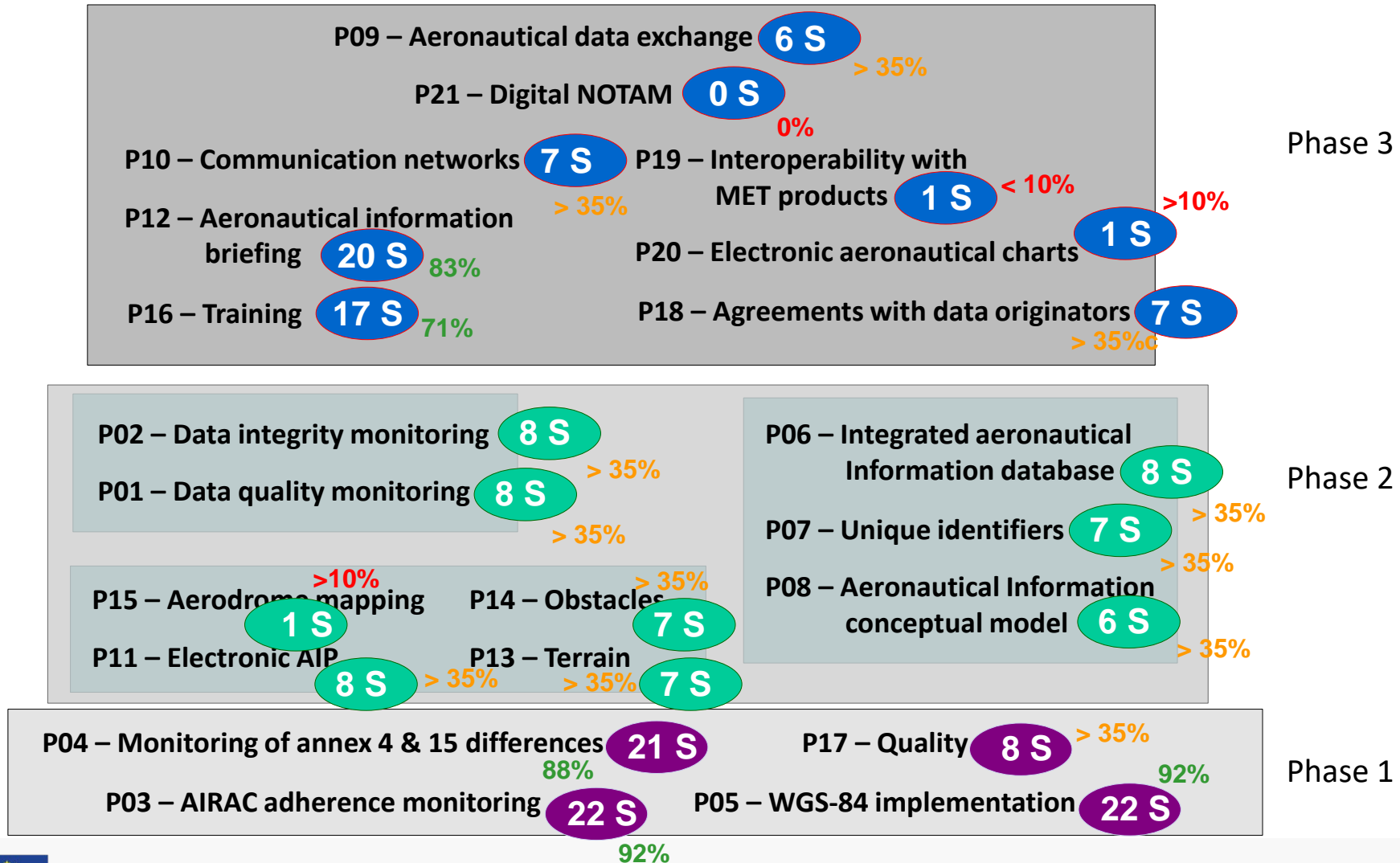
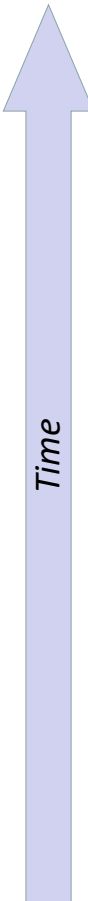
*Service Level Agreements (SLAs) with data originators to better control the whole data chain from the producer to the distributor*

**Phase 1**  
Consolidation



# AIS to AIM roadmap (June 2018)

ESAF (24 States) transition progress status – Steps implemented



# AIS to AIM roadmap

## ESAF (24 States) transition progress status – Summary

**2 States: No progress status received**

**14 States: Implementation of 2 to 6 steps**

**11 of those 14 States have not planned any steps of Phase 2**

**Similar list of States for Phase 3 except for:**

**P12: Aeronautical information briefing**

**P16: Training**

**7 States: Implementation of 11 to 17 steps**

**1 State: implementation of 20 Steps**

South Sudan, Botswana

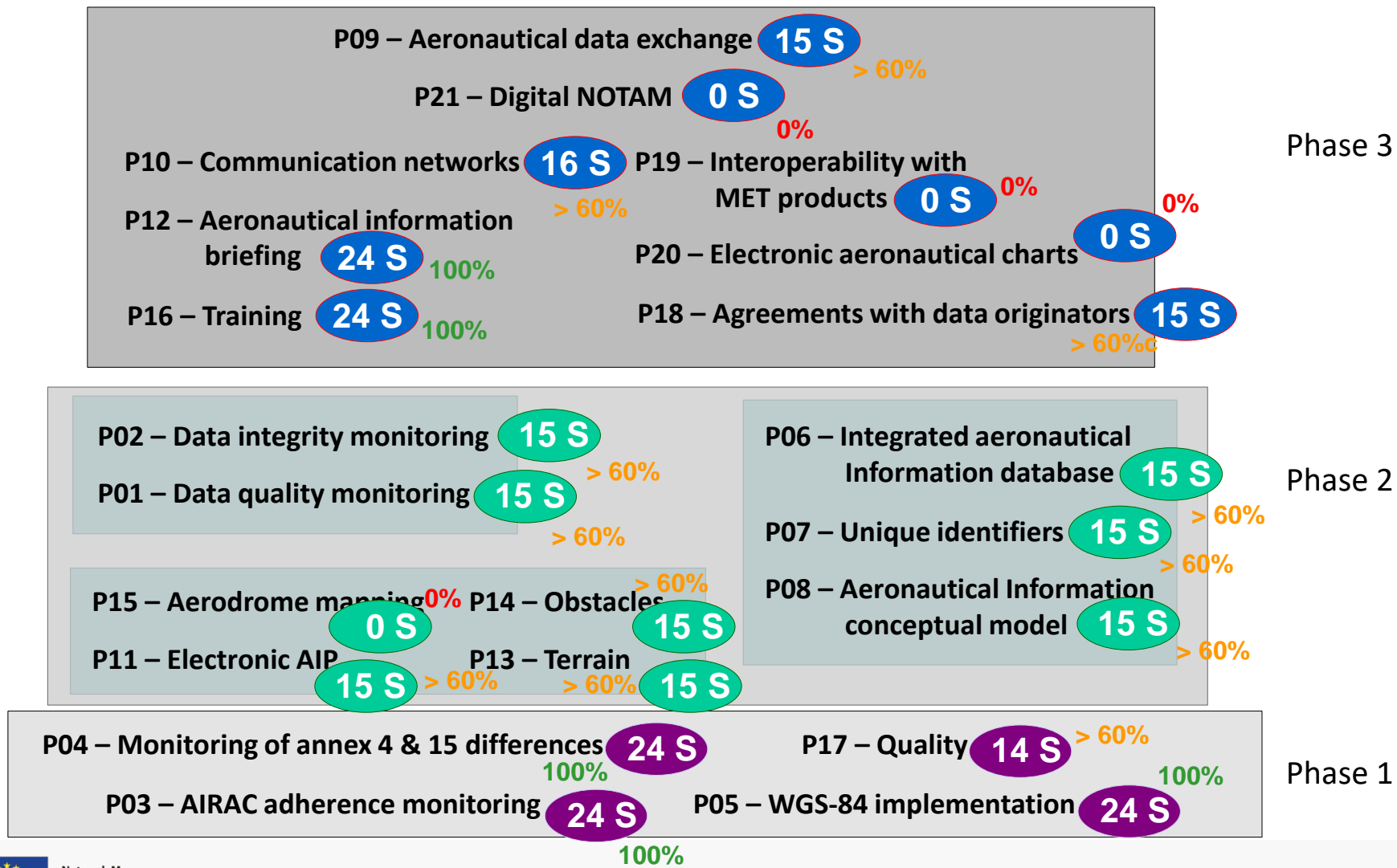
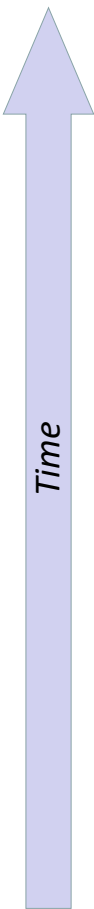
Angola, Burundi, Djibouti, Eritrea, Ethiopia, Lesotho, Malawi, Mozambique, Namibia, Rwanda, Somalia, Swaziland, Zambia, Zimbabwe

Comoros, Kenya, Madagascar, Mauritius, Seychelles, Uganda, Tanzania

South Africa

# AIS to AIM roadmap

## WACAF (24 States) transition progress status – Steps implemented



# AIS to AIM roadmap

## WACAF (24 States) transition progress status – Steps remaining

<b>Phase 1</b>	<b>P17 – Quality</b>
<b>Phase 2</b>	<b>P01 – Data quality monitoring</b> <b>P02 – Data integrity monitoring</b> <b>P06 – Integrated aeronautical Information database</b> <b>P07 – Unique identifiers</b> <b>P08 – Aeronautical Information conceptual model</b> <b>P11 – Electronic AIP</b> <b>P13 – Terrain</b> <b>P14 – Obstacles</b>
<b>Phase 3</b>	<b>P09 – Aeronautical data exchange</b> <b>P10 – Communication networks</b> <b>P18 – Agreements with data originators</b>

Cape Verde  
Democratic Republic of Congo  
Ghana  
Guinea (ROBERTS FIR)  
Liberia (ROBERTS FIR)  
Sierra Leone (ROBERTS FIR)  
Nigeria  
Gambia (ASECNA)  
Sao Tome and Principe (ASECNA)

<b>Phase 2</b>	<b>P15 – Aerodrome mapping</b>
<b>Phase 3</b>	<b>P19 – Interoperability with MET products</b> <b>P20 – Electronic aeronautical charts</b> <b>P21 – Digital NOTAM</b>

ALL States

# Recap 2017-2018 workshops

Operational Skills  
Development for the  
Transition from AIS

Senior  
Management



Management  
review

Civil Aviation Authority

AISP Oversight?

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  1. RFI, URS
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AISP  
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*Projects, budget & resources*

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- 5 years (rolling)
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AIS to AIM    QMS    **AIRAC adherence**    ADP    OPADD

CHAIN - ADQ    Data Integrity    Data originators    ICAO Annex 15

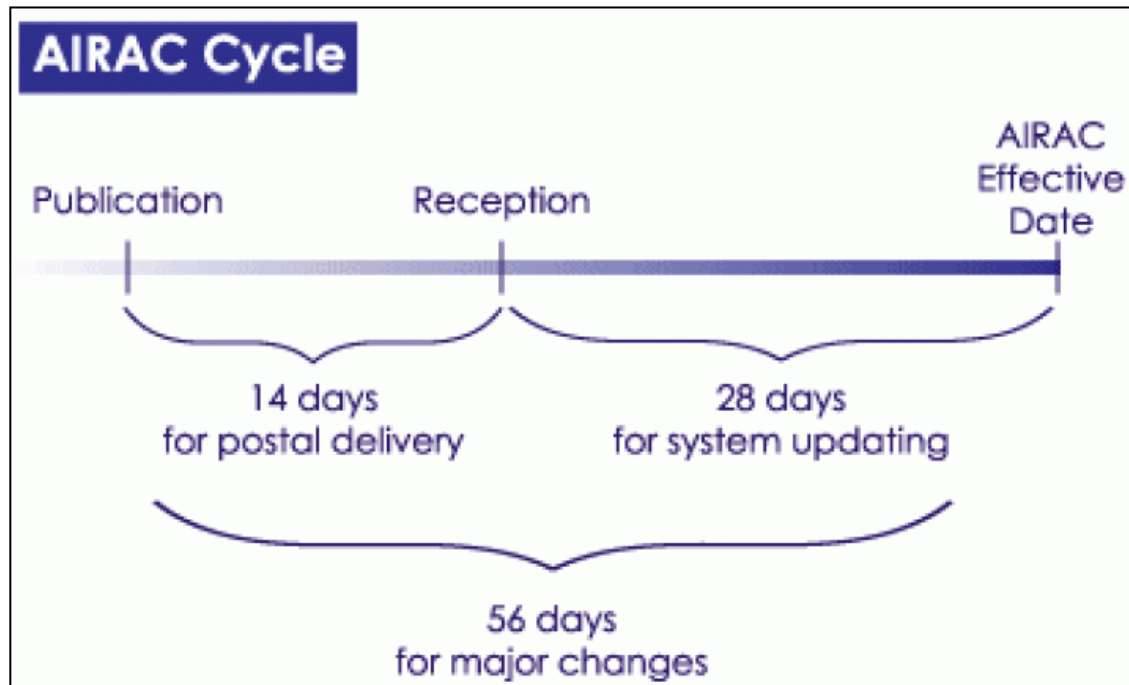
Info distributed:

1. On-time
2. Complete
3. According to required level of quality



# AIRAC Adherence (Phase 1 P-03)

## Analysis



- Effective date:
  - when changes take effect.
- Reception date:
  - When users should receive the publications

- Publication date: when AIS organizations send out the information
  - AIRAC AIP AMDT or SUP:
    - At least 42 days (56 for major changes) before effective date.
    - Publication of a Trigger NOTAM (at publication date) coming to force on respective AIRAC date and remaining in force for 14 days.

# AIRAC Adherence

## Reception Time of Publications in EAD for WACAF region

AIRAC PUBLICATIONS (Jan 16 to Jun 17)												
Document type	28d+	15 to 27d	10 to 14d	5 to 9d	0 to 4d	0 to -10d	-11 to -20d	-21 to -50d	51 to -100d	-100d+	Total	
AIRAC AMDT	3	0	0	0	2	3	0	0	0	0	8	4%
AIRAC SUP	59	52	7	6	4	32	30	4	0	5	199	96%
Total	62	52	7	6	6	35	30	4	0	5	207	100%
	30%	25%	3%	3%	3%	17%	14%	2%	0%	2%	100%	

28d+ (30% (62))      28d to 0d (34% (71))      After AIRAC date (36% (74))

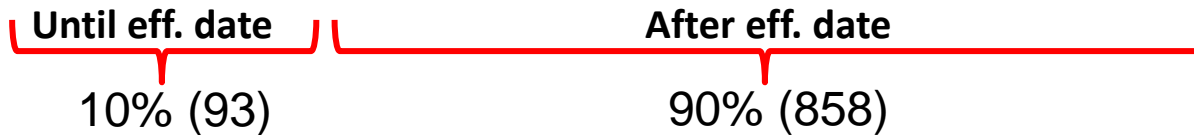
AIRAC PUBLICATIONS (Jun 2017 to Apr 2018)											
Document Type	28d+	15to27d	10to14d	5to9d	0to4d	0to-10d	-11to-20d	-21to-50d	-51to-100d	-100d+	Total
AIRAC AMDT	2	1	0	0	0	2	0	0	0	0	5
AIRAC SUP	30	38	1	3	0	4	1	0	0	0	77
Total	32	39	1	3	0	6	1	0	0	0	82
	39%	48%	1%	4%	0%	7%	1%	0%	0%	0%	100%

28d+ (39% (32))      28d to 0d (52% (43))      After AIRAC date (9% (7))

# AIRAC Adherence

## Reception Time of Publications in EAD for WACAF region

REGULAR PUBLICATIONS (Jan 16 to Jun 17)									
Document type	5d+	0 to 4d	0 to -10d	-11 to -20d	-21 to -50d	-51 to -100d	-100d+	Total	
AMDT	7	4	11	11	5	5	1	44	5%
SUP	38	24	374	140	106	4	12	698	73%
AIC	12	8	82	41	49	5	12	209	22%
Total	57	36	467	192	160	14	25	951	100%
	6%	4%	49%	20%	17%	1%	3%	100%	



REGULAR PUBLICATIONS (Jun 2017 to Apr 2018)								
Document Type	5d+	0to4d	0to-10d	-11to-20d	-21to-50d	-51to-100d	-100d+	Total
AMDT	0	1	6	3	4	1	0	15
SUP	5	5	89	45	39	3	0	186
AIC	1	0	26	15	5	0	0	47
Total	6	6	121	63	48	4	0	248
	2%	2%	49%	25%	19%	2%	0%	100%



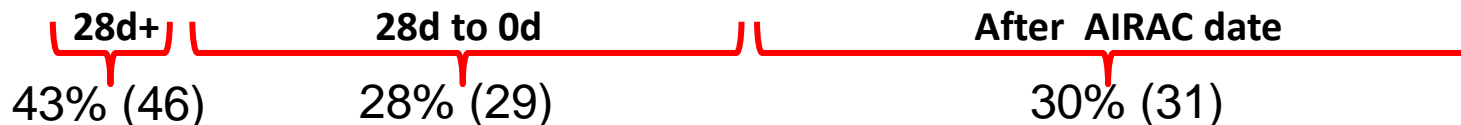


# AIRAC Adherence

## Reception Time of Publications in EAD for ESAF region

**AIRAC PUBLICATIONS (Jan 2016 to Aug 2017)**

Document Type	28d+	15to27d	10to14d	5to9d	0to4d	0to-10d	-11to-20d	-21to-50d	51to-100d	-100d+	Total
AIRAC AMDT	4	2	0	0	0	1	2	2	3	2	16
AIRAC SUP	42	16	3	8	0	0	0	2	1	18	90
<b>Total</b>	<b>46</b>	<b>18</b>	<b>3</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>20</b>	<b>106</b>
	43%	17%	3%	8%	0%	1%	2%	4%	4%	19%	100%



**AIRAC PUBLICATION (Jan to May 2018)**

Document Type (15 States)	28d+	15to27d	10to14d	5to9d	0to4d	0to-10d	-11to-20d	-21to-50d	51to-100d	-100d+	Total
AIP - AIP NEW EDITION	0	0	0	0	0	1	0	0	0	0	1
AIRAC AMDT	5	3	1	0	0	2	0	0	0	2	13
AIRAC SUP	8	11	0	3	5	2	0	0	0	1	30
<b>Total AIRAC Publications</b>	<b>13</b>	<b>14</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>43</b>
	30%	33%	2%	7%	12%	9%	0%	0%	0%	7%	100%



No PUBLICATIONS
CAA/ANSP (7 States)
BURUNDI
ERITREA
ETHIOPIA
LESOTHO
MALAWI
MOZAMBIQUE
ZIMBABWE

# AIRAC Adherence

## Reception Time of Publications in EAD for ESAF region

REGULAR PUBLICATIONS (Jan 2016 to Aug 2017)								
Document Type	5d+	0to4d	0to-10d	-11to-20d	-21to-50d	51to-100d	-100d+	Total
AIC	4	1	16	23	21	11	23	99
AMDT	1	0	1	2	3	2	1	10
SUP	7	4	55	6	13	6	14	105
Total	12	5	72	31	37	19	38	214
	6%	2%	34%	14%	17%	9%	18%	100%

Until eff. date      After eff. date  
 8% (17)                                      92% (197)

AIRAC PUBLICATION (Jan to May 2018)								
Document Type (15 States)	5d+	0to4d	0to-10d	-11to-20d	-21to-50d	51to-100d	-100d+	Total
AMDT	0	1	4	4	0	0	0	9
SUP	1	2	27	14	19	0	0	63
AIC	0	0	19	5	19	2	1	46
Total	1	3	50	23	38	2	1	118
	1%	3%	42%	19%	32%	2%	1%	100%

Until eff. date      After eff. date  
 4% (4)                                      96% (114)

No PUBLICATIONS
CAA/ANSP (7 States)
BURUNDI
ERITREA
ETHIOPIA
LESOTHO
MALAWI
MOZAMBIQUE
ZIMBABWE

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# ICAO AIM Document framework

Document	Function and Content	Primary Audience
Annex 15	Requirements and performance specifications	States
PANS-AIM	Procedures, processes, formats, technical specifications	States and service delivery organizations
AIS (AIM) Manual	Best practices; guidance on application and implementation	Service delivery organizations

# ICAO AIM Document framework

## Annex 15 restructuring

- Re-development of chapters 4 to 11 and the restructuring of the existing SARPS into three new chapters:
  - Chapter 4 - Scope of Aeronautical Data and Information
  - Chapter 5- Aeronautical Information Products and Services
  - Chapter 6 – Aeronautical Information Updates.



11 Chapters  
6 Appendices  
(core +- 150p)

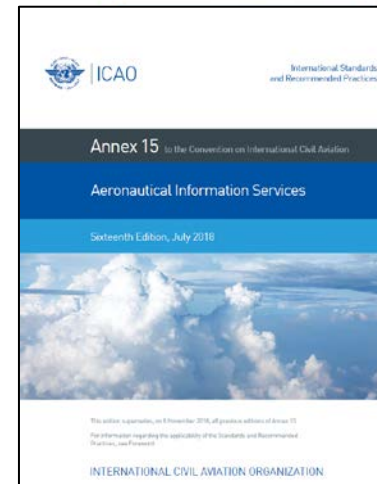
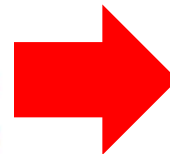


TABLE OF CONTENTS		Page
		(No)
Foreword		
CHAPTER 1. General		1-1
1.1 Definitions		1-1
1.2 Common reference systems for air navigation		1-8
1.3 Miscellaneous specifications		1-11
CHAPTER 2. Responsibilities and functions		2-1
2.1 State responsibilities		2-1
2.2 AIS responsibilities and functions		2-1
2.3 Exchange of aeronautical data and aeronautical information		2-2
2.4 Copyright		2-5
2.5 Cost recovery		2-5
CHAPTER 3. Aeronautical information management		3-1
3.1 Information management requirements		3-1
3.2 Data quality specifications		3-1
3.3 Aeronautical data and aeronautical information verification and validation		3-2
3.4 Data error protection		3-2
3.5 Use of automation		3-3
3.6 Quality management system		3-3
3.7 Human factors considerations		3-4
CHAPTER 4. Scope of aeronautical data and aeronautical information		4-1
4.1 Scope of aeronautical data and aeronautical information		4-1
4.2 Methods		4-2
CHAPTER 5. Aeronautical information products and services		5-1
5.1 General		5-1
5.2 Aeronautical information to a standardized presentation		5-1
5.3 Digital data sets		5-4
5.4 Distribution services		5-8
5.5 Pre-flight information service		5-8
5.6 Post-flight information service		5-9
CHAPTER 6. Aeronautical information updates		6-1
6.1 General specifications		6-1
6.2 Aeronautical information regulations and control (AIRAC)		6-1
6.3 Aeronautical information product updates		6-3

6 Chapters  
(core +- 40p)

Applicable from 08-Nov-2018

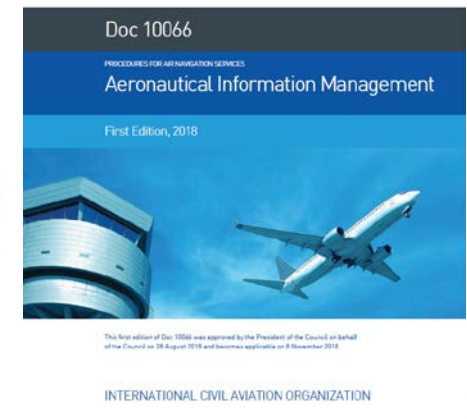
# ICAO AIM Document framework

## PANS-AIM

# PANS-AIM

Since PANS primarily consist of material related to the standardization of how something is to be done material such as product specifications, standard procedures, and protocols are ideal material for promulgation as PANS.

- *Appendix 1 of Annex 15 concerning the formatting of an AIP;*
- *Appendices 2, 3, 5, and 6 of Annex 15 and material from Doc 8126 concerning NOTAM, SNOWTAM, and ASHTAM; and*
- *Material from Doc 8126 concerning AIP, AIP Supplements and AIC where it is desirable to elevate the material to a status beyond guidance.*
- *Quality management practices and data handling to achieve integrity requirements*



# ICAO AIM Document framework

## PANS-AIM Appendix 1 - Data Catalogue

- Description of the AIM data scope
- A common language to facilitate the formal arrangements between data originators and the aeronautical information service
- Single source of all data quality requirements
- Allow the verification of correctness of received data
- Support further electronic processing without any future human intervention

### List of subjects:

- Table A1-1 Aerodrome data
- Table A1-2 Airspace data
- Table A1-3 ATS and other routes data;
- Table A1-4 Instrument flight procedure data
- Table A1-5 Radio navigation aids/systems data
- Table A1-6 Obstacle data
- Table A1-7 Geographic data
- Table A1-8 Terrain data
- Table A1-9 Data types
- Table A1-10 Information about national and local regulations, services and procedures

Table A1-2 Airspace data										
Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Category	Orig. Type	Pub. Int.	Chart Int.
ATS Airspace	True		Text	Airspace of defined dimensions, alphabetically designated, within which specific types of flight may operate and/or within, as traffic services and Type of ATS Airspace according to ICAO Annex 11						
	Designation		Text	The designation given to an airspace by a responsible authority						
	Lateral limits		Polygon	The surface defining the horizontal shape of the Airspace				see Note 1		
	Vertical limits	Upper limit	Altitude	The upper limit of the airspace						
							routine	calculated	50 or 100 ft	50 m or 15
Table A1-3 ATS and other routes data										
Subject	Property	Sub-Property	Type	Description	Note	Accuracy	Category	Orig. Type	Pub. Int.	Chart Int.
ATS Route	Designator		Text	A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services						
	Designator prefix		Text	Designators for ATS routes according to Annex 11 Appendix 1 for Appendix 2 for standard boundaries and arrival routes						
Other Route	Designator		Text	A specified route designed for channeling the flow of traffic, as necessary without provision of air traffic services						
	Type		Text	Type of routing: VFR (uncontrolled navigation routes)						
Route segment	Flight rules		Code list	Information on the flight rules that apply on the route (IFR/VFR)						
	Navigation specification		Text	Description of the navigation specification applicable to a specified segment: There are two levels of navigation specifications: - Required navigation performance (RNP) specification: A navigation specification based on area navigation that indicates the requirement for performance monitoring and alerting, designated by the prefix (RNP), e.g. RNP 4, RNP APCH - Area navigation (RNAV) specification: A navigation specification based on area navigation						

# ICAO AIM Document framework

## *AIM Manual*



- AIS Manual (Doc 8126) is being amended in conjunction with the restructured Annex 15 and new PANS-AIM
- Delete redundant elements
- Bring it in line with the latest Annex 15 and PANS-AIM technical changes
- Expand guidance (AIM organizational development, Data Catalogue, Service Level Agreements, etc.)

- Volume I      AIM organisational development
- Volume II     Processing of aeronautical data
- Volume III    Aeronautical information in a standardised presentation
- Volume IV    Digital products and services



# Aeronautical Data Quality in AFI region

## *Applicability of EU 73/2010 - ADQ*

*ADQ: European Commission regulation (EU) No 73/2010 laying down requirements on the quality of aeronautical data and aeronautical information for the single European sky*

Scope: The aeronautical data and information process chain:

- From the original data sources (e.g. surveyors, procedure designers, etc) through AIS and publication,
- To the end use of the aeronautical data and information either by human users or aeronautical applications

→ ICAO feedback:

- All necessary analysis related to the ADQ requirements have been realised
- Results are included in the new consolidated Annex 15, PANS-AIM and AIS Manual
  - Objective: Have an standard and harmonized implementation of AIM processes and procedures over all AIS/AIM service providers.

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AIS to AIM Programme

*Projects, budget & resources*

- Short-long term Strategy
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AIS to AIM    QMS    AIRAC adherence    ADP    OPADD

**CHAIN - ADQ**

Data Integrity    Data originators    ICAO Annex 15

Info distributed:

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# Controlled and Harmonised Aeronautical Information Network Scope

- Improve the accuracy and quality of the originated aeronautical data and its management from the point of origination to the point of publication.
- Aeronautical information data process chain:
  - from the original data sources through AIS and publication,
  - to the end users of the data for aeronautical applications
- Link to European Commission Regulation EC 73/2010 ADQ
  - The purpose of the implementing rule was to supplement and strengthen the relevant existing requirements of ICAO Annex 15 in order to achieve aeronautical information of sufficient quality (accuracy, resolution, timeliness and integrity).
- Analysis of the ADQ requirements have been realised and are included in the new consolidated Annex 15, PANS-AIM and AIS Manual

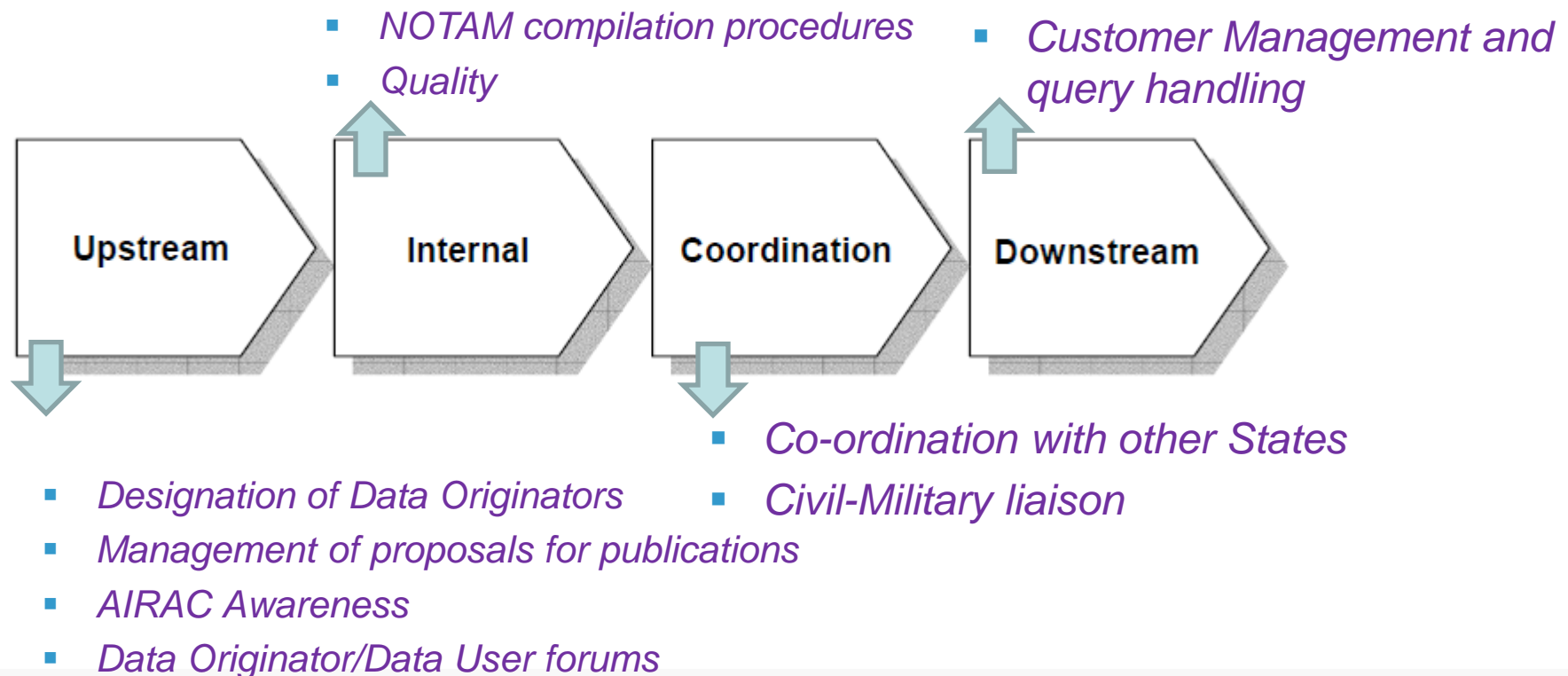
## 5 means of compliance developed by EUROCONTROL

- [AI exchange model \(AIX\)](#)
- [Electronic AIP \(eAIP\) specifications](#)
- [Data Assurance Levels](#)
- [Data Quality Requirements](#)
- [Data Origination](#)

# Controlled and Harmonised Aeronautical Information Network

## Improvements to problems related to AIS data content

- Proposed improvements are categorised in 4 sections, reflecting different phases of the aeronautical information lifecycle



# Recap 2017-2018 workshops

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AIS to AIM QMS AIRAC adherence ADP OPADD

CHAIN - ADQ Data Integrity Data originators ICAO Annex 15

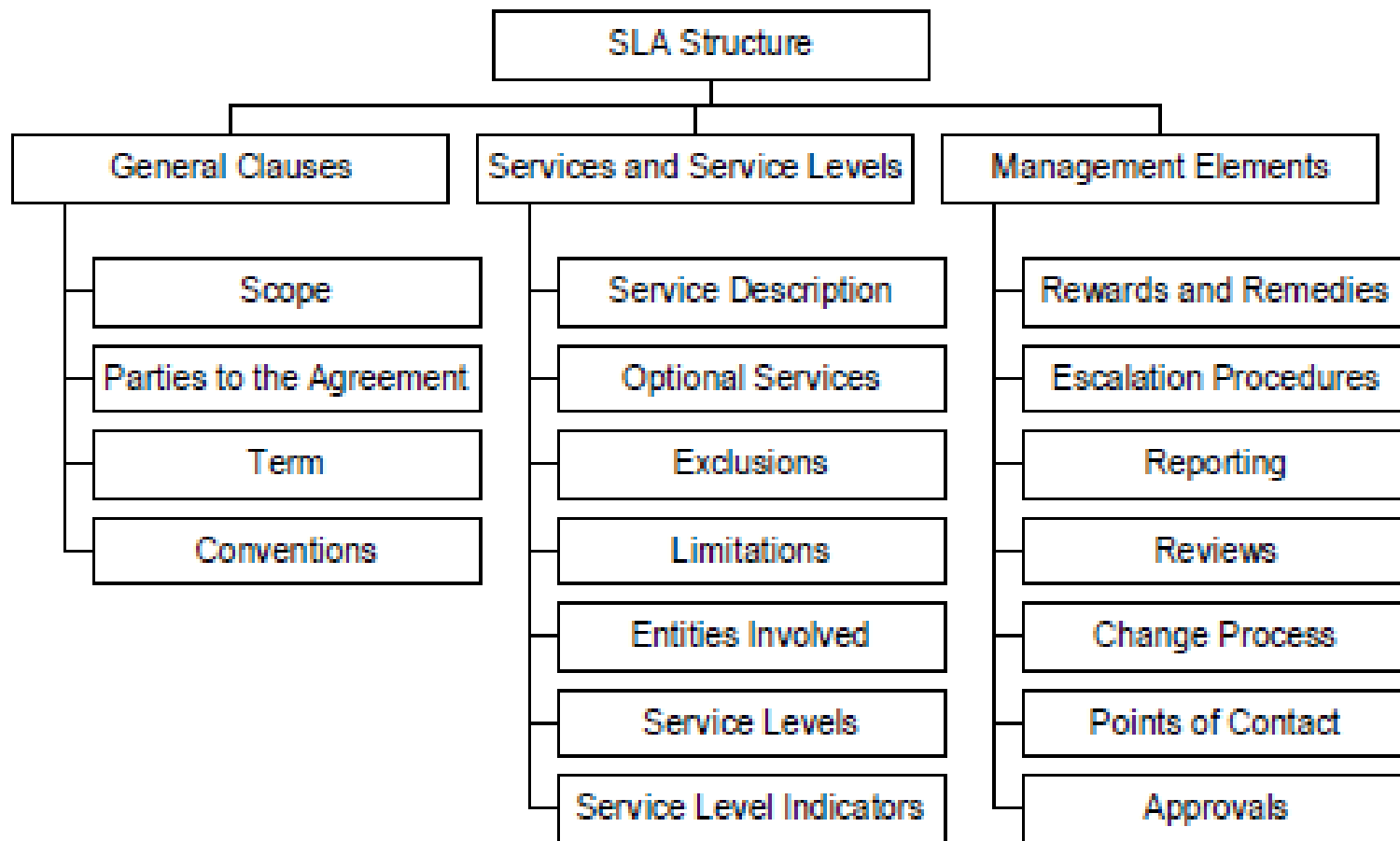
Management  
review



# Information/Data Integrity Monitoring Analysis

- Process and Procedures
  - Automated data integrity process addressing the transfer process in the data chain
  - At each step , ensure that hand-over of data being interoperable, traceable and quality assured
  - EUROCONTROL Guidelines
    - Date Integrity - Practical guide
  
- Fully supported by:
  - QMS, ADP, AIXM, etc.

# Data Originators Agreement Template



# Recap 2017-2018 workshops

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AIS to AIM

QMS

AIRAC adherence

ADP

OPADD

CHAIN - ADQ

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ICAO Annex 15

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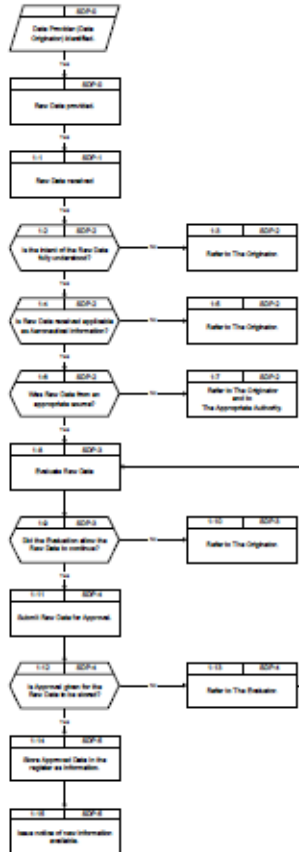
# AIS Data Process ADP

- High-level description of the Aeronautical Information Service (AIS) Data Process related to the provision of the IAIP
- Support Operating Procedures part of:
  - Static Data Procedures (SDPs)
  - Operating Procedures for AIS Dynamic Data (OPADD)
- The document and poster provide process diagrams representing the detailed process that covers the functions of AIS
- EUROCONTROL Guidelines:
  - [AIS Data Process \(ADP\)](#) - describes **WHAT** actions are carried out to produce the Annex 15 Integrated Aeronautical Information Package.
  - [AIS Data Proces Poster](#) - overview of the mapping of the Static Data Procedures to the ADP.
  - <http://www.eurocontrol.int/articles/quality-phase-1-p-17> - eADP/eSDP

# AIS Data Process

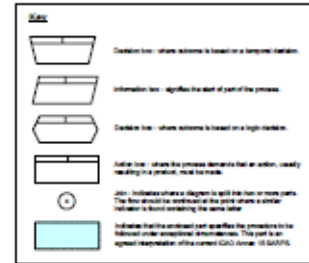
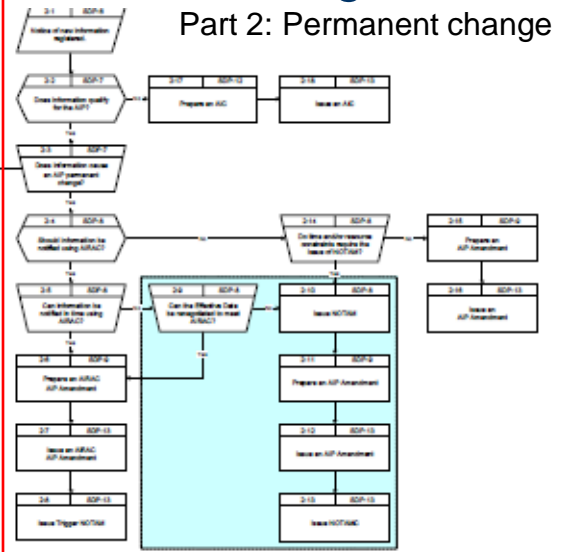
## ADP Data Process – overall diagram

Part 1: initial process

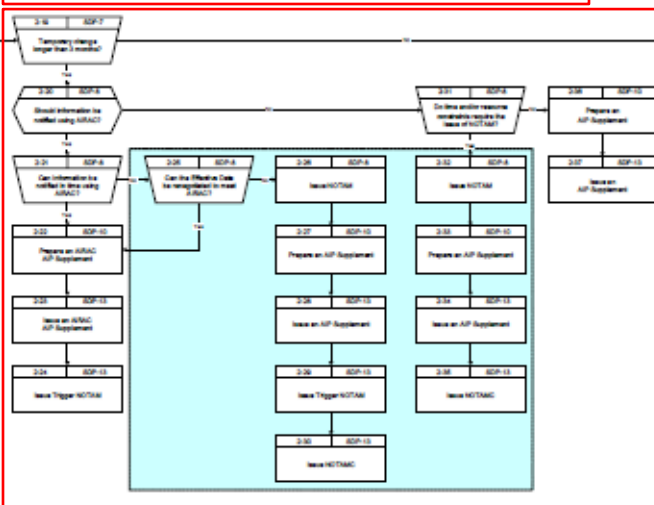


From receipt of raw data until acceptance & registration as AI

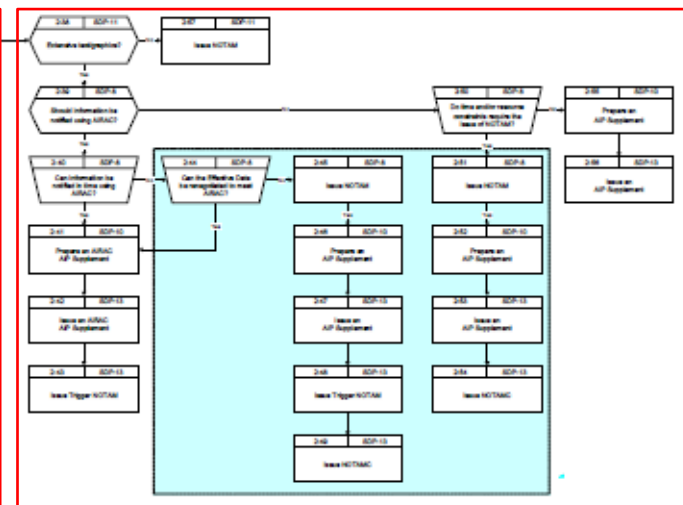
Part 2: Permanent change



Static Data Procedures:	
ADP	AIS Data Process
SDP0	Concept, Index and Glossary
SDP1	Guidelines for the implementation of the SDPs
SDP2	Provision of Originated Data to the AIS
SDP3	Receipt of Raw Data at the AIS
SDP4	Initial Assessment of Raw Data
SDP5	Evaluation of Raw Data
SDP6	Approval of Raw Data
SDP7	Storage of Approved Data
SDP8	Receipt of Newly Registered Information
SDP9	Assessment of Information for Publication
SDP10	Assessment of Information for Publication by AIRAC
SDP11	Preparation of an AIP Amendment
SDP12	Preparation of an AIP Supplement
SDP13	Assessment of Extensive Text and Graphics
SDP14	Preparation of an AIC
SDP15	Issue of Information
SDP16	Preparation of a NOTAM Summary
SDP17	Maintenance of AIS Static Data
SDP18	Use of a Log Sheet
SDP19	Performing a Quality Check
SDP20	Underlying Translations
SDP21	Contacting Appropriate Authorities



Part 3: Temporary change > 3 months



Part 4: Temporary change < 3 months

# OPADD

## *Objectives / purposes*

- OPADD is intended to complement ICAO Annex 15
- Objectives:
  - Procedures and guidance for the handling of dynamic data (NOTAM, SNOWTAM, ASHTAM)
  - Promote uniformity in the collection and dissemination of aeronautical information, in the interest of safety, quality, efficiency and economy
  - Improve overall efficiency of AIS, in terms of speed, accuracy and cost effectiveness, by the increased use of automation
  - Improve readability and understanding of PIB:
    - Reduction of irrelevant NOTAM



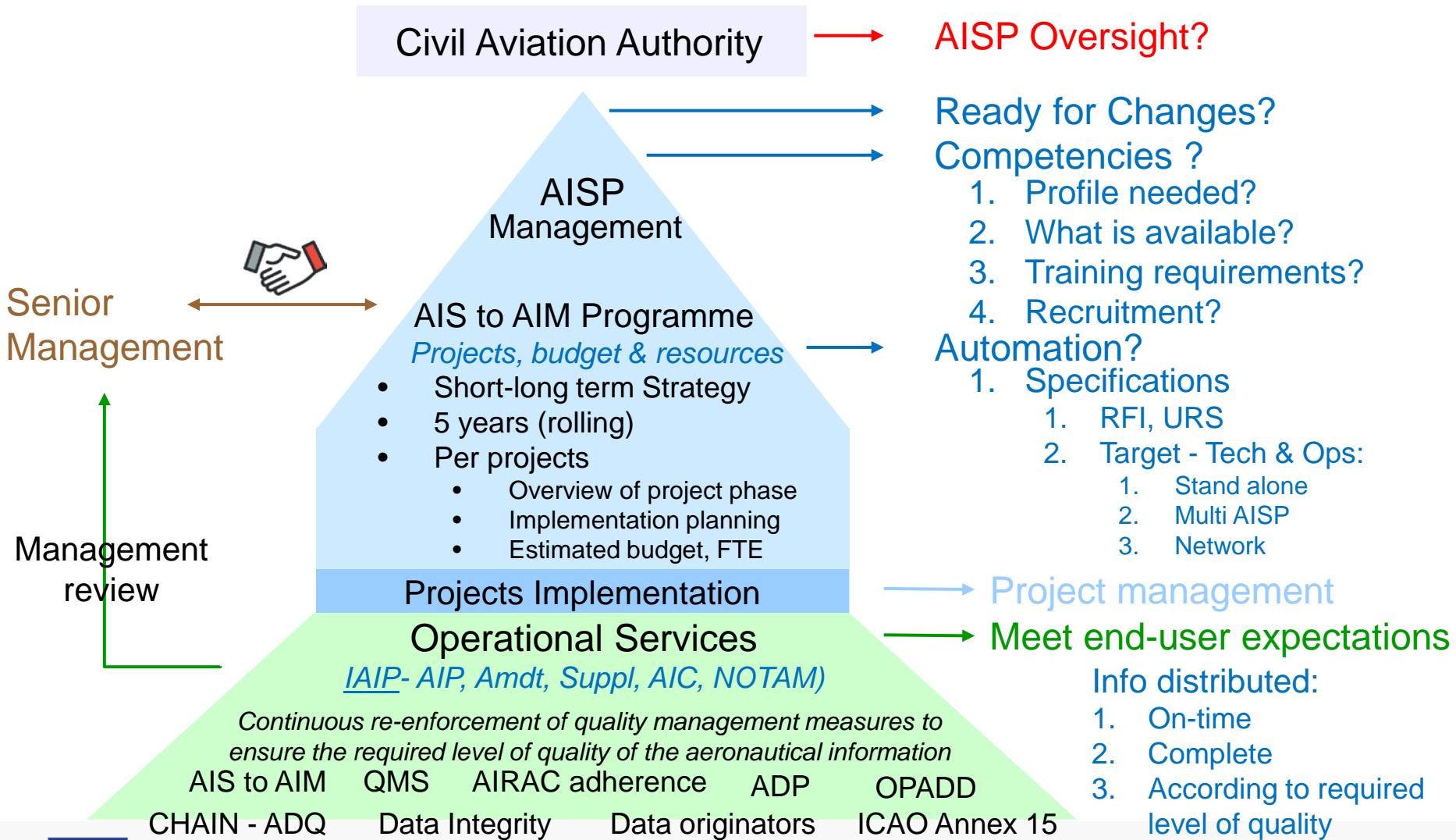
EUROCONTROL Guidelines  
Operating Procedures for  
AIS Dynamic Data (OPADD)

- *NOTAM Creation*
- *NOTAM Processing*
- *Database completeness and coherence messages*
- *Procedure for SNOWTAM, ASHTAM*
- *Specific European agreements*
- *Guidelines for the creation of PIB*

Edition: 4.0  
Edition date: 17 April 2015  
Reference nr: EUROCONTROL-GUID-0121  
ISBN: 978-2-87497-078-8



# Recap 2017-2018 workshops



# Recap 2017-2018 workshops

**That's all for the recap**

Civil Aviation Authority

AISP Oversight?

Ready for Changes?  
Competencies ?

1. Profile needed?
2. What is available?
3. Training requirements?
4. Recruitment?

Automation?

1. Specifications
  1. RFI, URS
  2. Target - Tech & Ops:
    1. Stand alone
    2. Multi AISP
    3. Network

Project management

Meet end-user expectations

Info distributed:

1. On-time
2. Complete
3. According to required level of quality

AISP Management

AIS to AIM Programme

*Projects, budget & resources*

- Short-long term Strategy
- 5 years (rolling)
- Per projects
  - Overview of project phase
  - Implementation planning
  - Estimated budget, FTE

Projects Implementation

Operational Services

*IAIP- AIP, Amdt, Suppl, AIC, NOTAM)*

*Continuous re-enforcement of quality management measures to ensure the required level of quality of the aeronautical information*

AIS to AIM    QMS    AIRAC adherence    ADP    OPADD

CHAIN - ADQ    Data Integrity    Data originators    ICAO Annex 15

Senior Management



Management review

# Data Supply Chain

## *Functions and actors*

- Draw chain process as result of all elements learned during workshops

