ASBU Methodology

Introduction to Information Management (IM) related Modules

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(Kish Island, Iran, 31 August-2 September 2015)

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Global Air Navigation Plan

ICAO

CAPACITY AND EFFICIENCY

2013–2028
Global Air Navigation Plan

Doc 9750-AN/963 Fourth Edition – 2013

What is the GANP?

- Supports a harmonized global Air Navigation System

- It is an overarching framework

- Addresses key civil aviation policy principles

- Assists ICAO Regions and States to establish air navigation priorities for the next 15 years

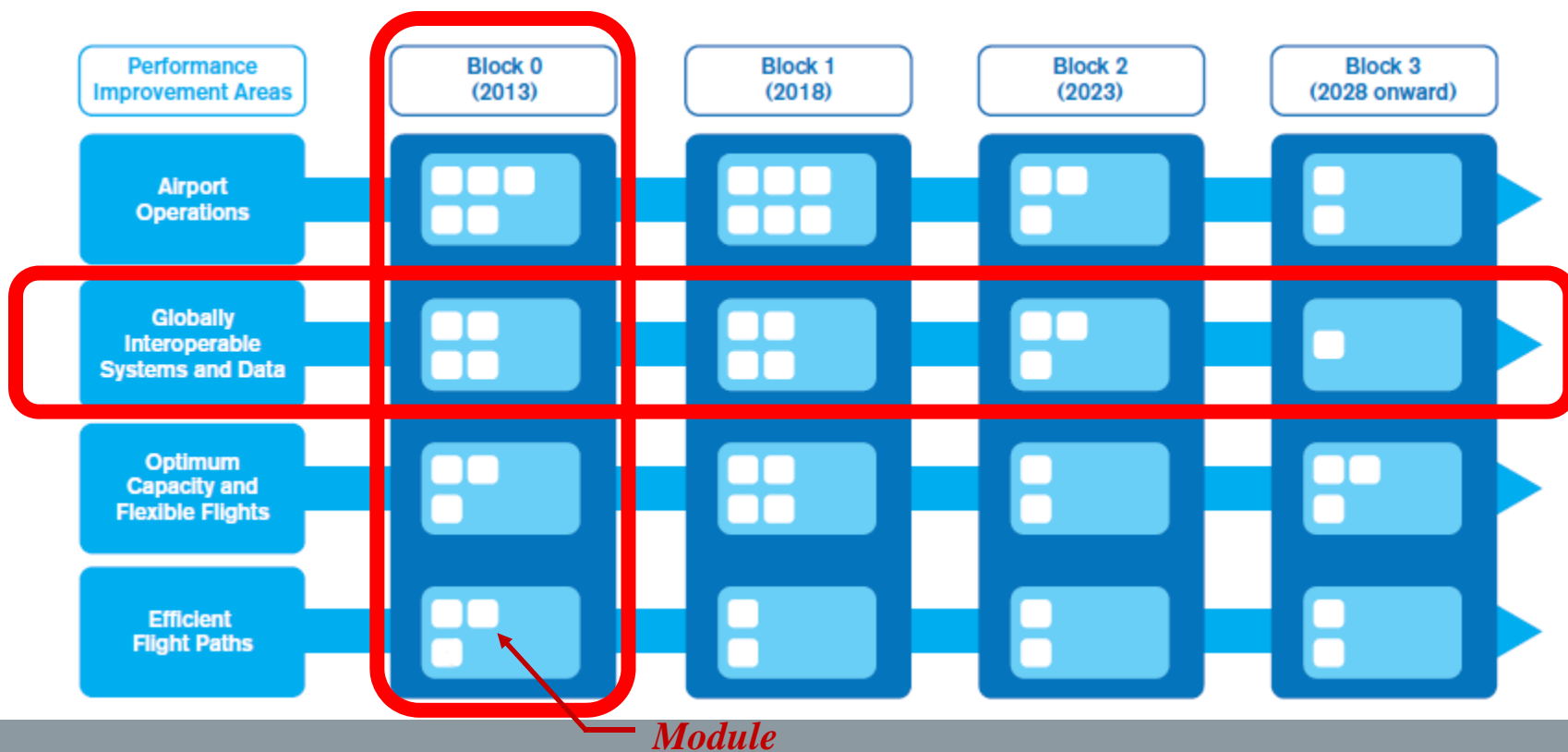- Assists ICAO Regions and States to prepare their navigation plans
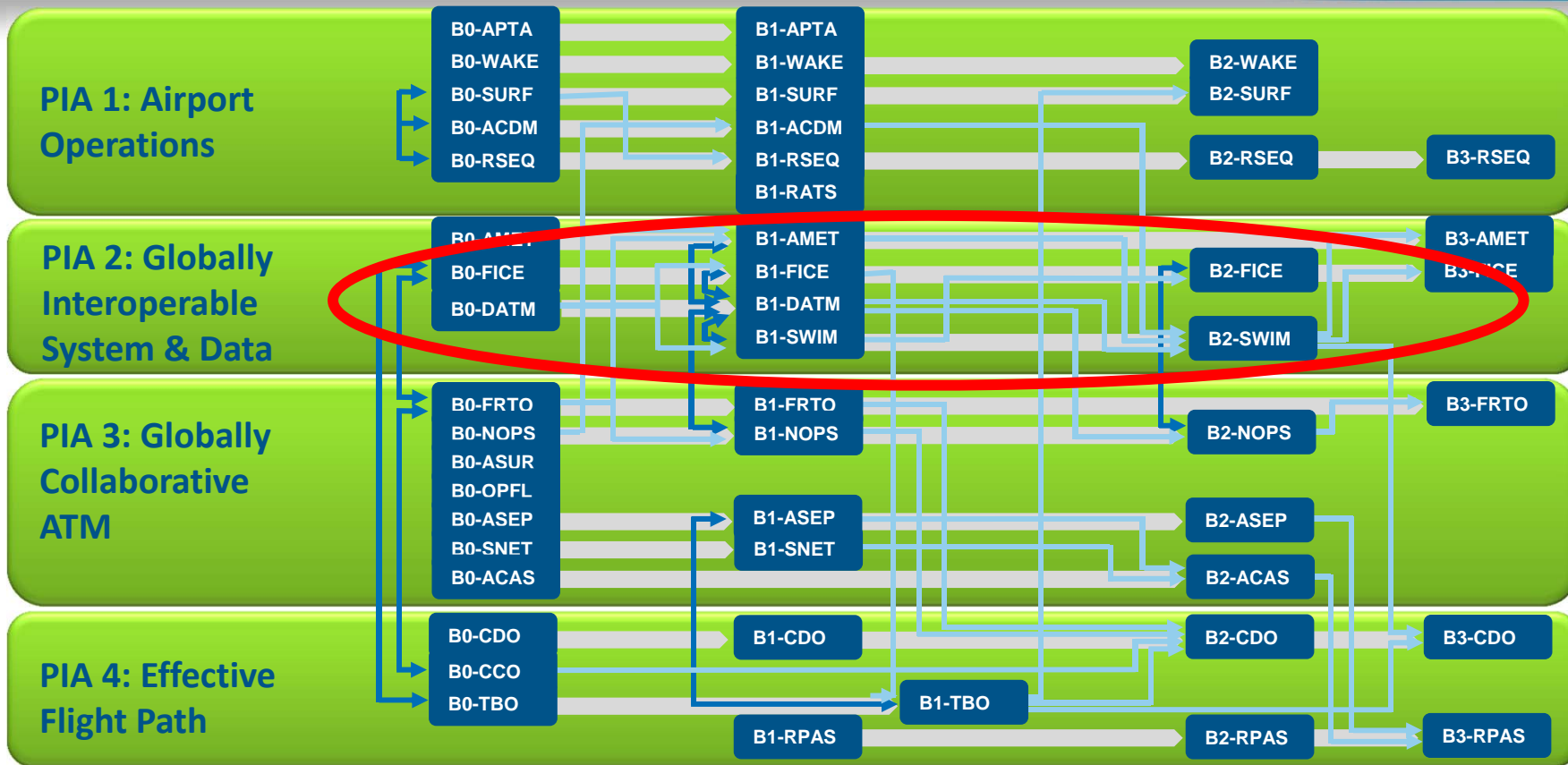
ASBU Methodology

PIA 4
PIA 3
PIA 2
PIA 1

Block 2
2023

B 2

B 3

Block 3
2028>

Block 0
Available now

B 0

B 1
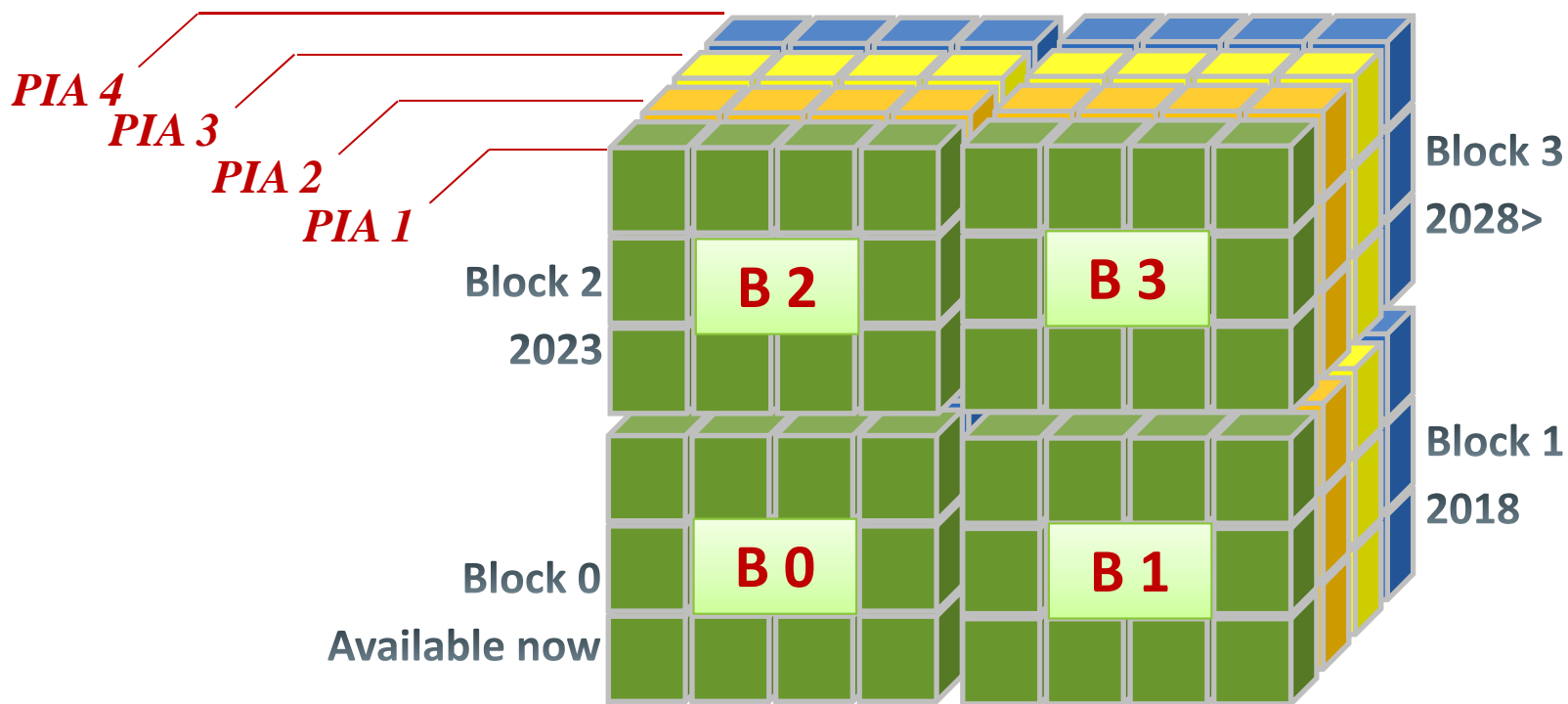
Block 1
2018

ASBU: Performance Improvement Areas, Blocks, Threads, and Modules

Module Dependencies

NO COUNTRY LEFT BEHIND

PIA 1: Airport Operations

B0-APTA, B0-WAKE, B0-SURF, B0-ACDM, B0-RSEQ

B1-APTA, B1-WAKE, B1-SURF, B1-ACDM, B1-RSEQ, B1-RATS

B2-WAKE, B2-SURF, B2-RSEQ, B3-RSEQ

PIA 2: Globally Interoperable System & Data

B0-AMET, B0-FICE, B0-DATM

B1-AMET, B1-FICE, B1-DATM, B1-SWIM

B2-FICE, B2-SWIM, B3-AMET, B3-FICE

PIA 3: Globally Collaborative ATM

B0-FRTO, B0-NOPS, B0-ASUR, B0-OPFL, B0-ASEP, B0-SNET, B0-ACAS

B1-FRTO, B1-NOPS, B1-ASEP, B1-SNET

B2-NOPS, B2-ASEP, B2-ACAS, B3-FRTO

PIA 4: Effective Flight Path

B0-CDO, B0-CCO, B0-TBO

B1-CDO, B1-TBO, B1-RPAS

B2-CDO, B2-RPAS, B3-CDO, B3-RPAS

Thread   Prerequisite   Dependency

ASBU Threads

PIA1: Airport Operations - Full AMAN/DMAN/SMAN	
APTA	Airport Accessibility
RSEQ	Runway Sequencing
ACDM	Airport CDM
SURF	Surface Operations
WAKE	Wake Turbulence Separation
RATS	Remote ATS

PIA2: Globally Interoperable Systems & Data - Full FF/ICE	
AMET	Advanced MET Information
DAIM	Digital ATM
FICE	FFICE
SWIM	SWIM

PIA3: Optimum Capacity & Flexible Flight – Complexity Management	
FRTO	Free Route Operations
ASEP	Airborne Separation
ASUR	Alternative Surveillance
OPFL	Optimum Flight Levels
NOPS	Network Operations
ACAS	Airborne Collision Avoidance Sys
SNET	Ground-Based Safety Nets

PIA 4: Efficient Flight Paths – Full Trajectory-Based Operations	
TBO	Trajectory-Based Operations
CDO	Continuous Decent Operations
CCO	Continuous Climb Operations
RPAS	Remotely Piloted Aircraft Sys

Working Document of ASBU

WORKING DOCUMENT

FOR THE

Aviation System Block Upgrades

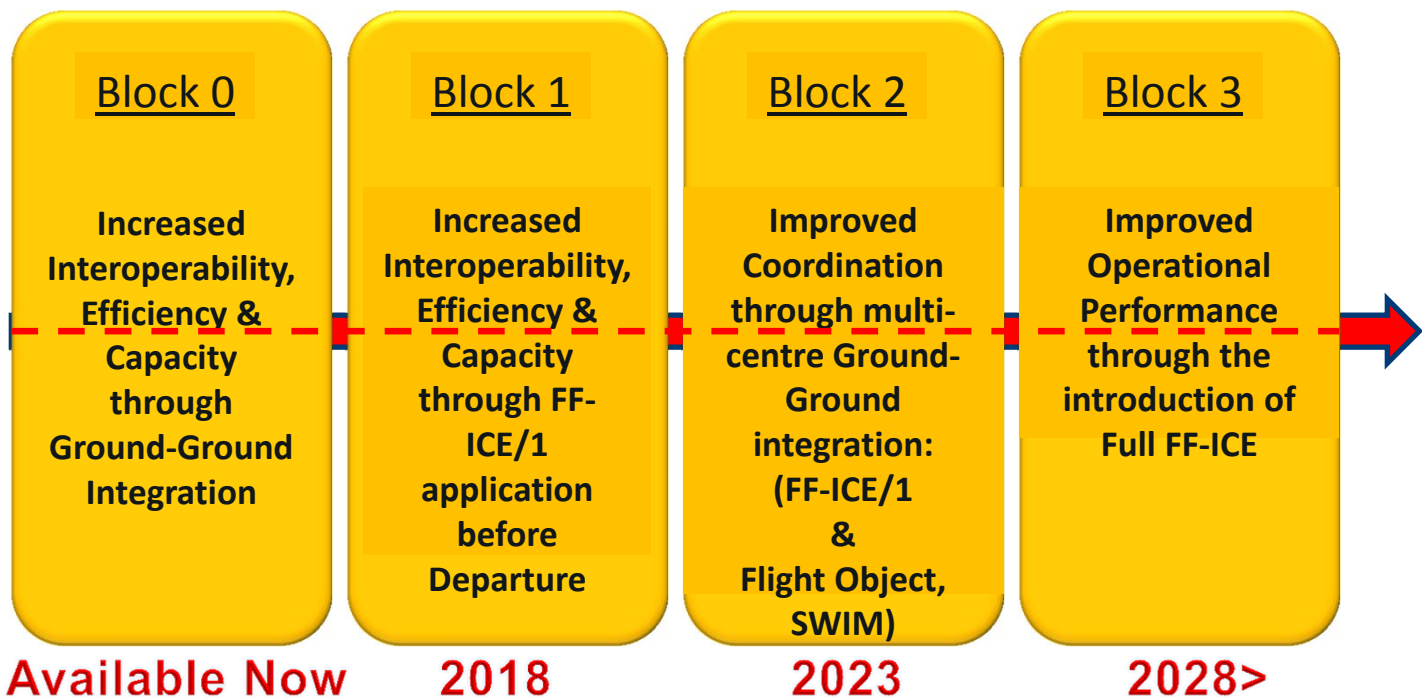THE FRAMEWORK
FOR GLOBAL HARMONIZATION

ISSUED: 28 MARCH 2013

PERFORMANCE AREA 2

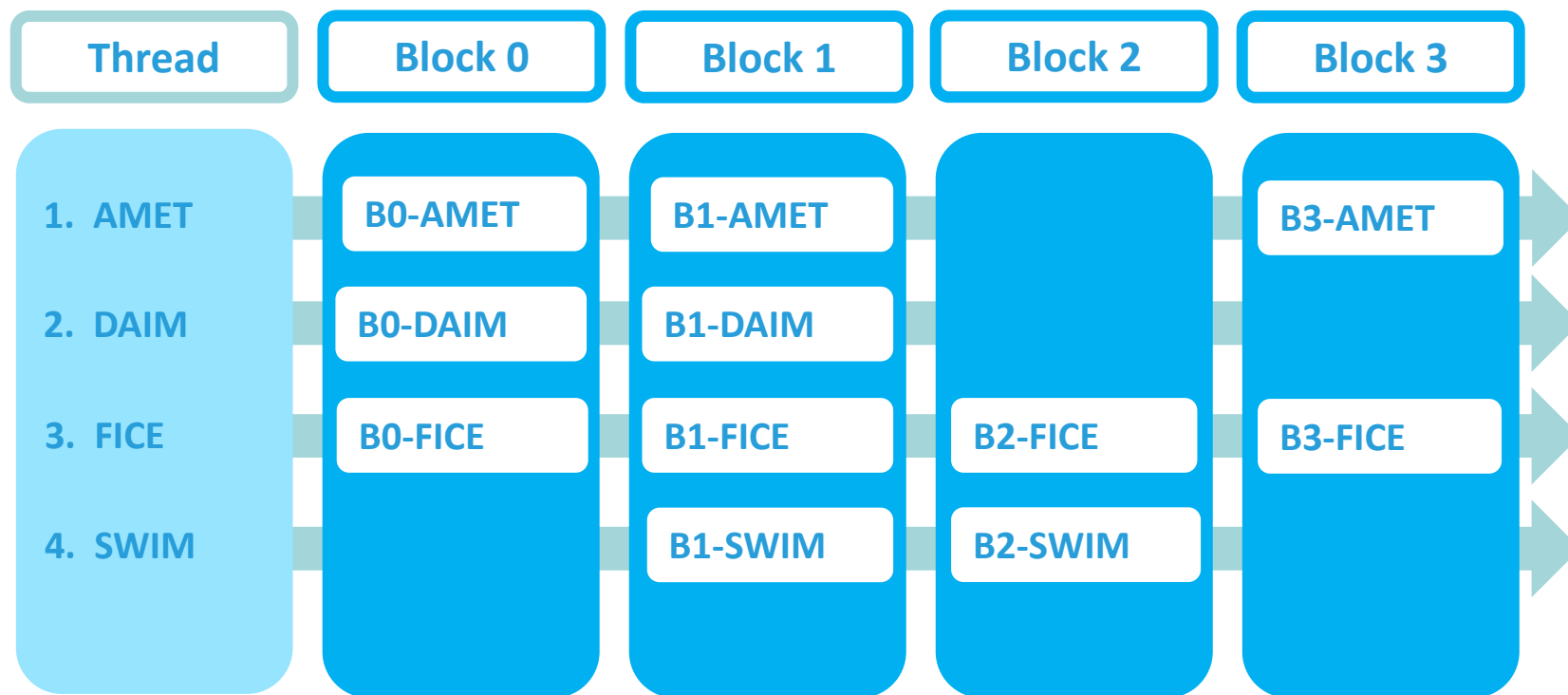## GLOBAL INTEROPERABLE SYSTEMS AND DATA

Performance Area 2
Global Interoperable Systems and Data

Block 0	Block 1	Block 2	Block 3
Increased Interoperability, Efficiency & Capacity through Ground-Ground Integration	Increased Interoperability, Efficiency & Capacity through FF-ICE/1 application before Departure	Improved Coordination through multi-centre Ground-Ground integration: (FF-ICE/1 & Flight Object, SWIM)	Improved Operational Performance through the introduction of Full FF-ICE
Available Now	**2018**	**2023**	**2028>**

PIA 2: Globally Interoperable Systems and Data

Thread	Block 0	Block 1	Block 2	Block 3
1. AMET	B0-AMET	B1-AMET		B3-AMET
2. DAIM	B0-DAIM	B1-DAIM		
3. FICE	B0-FICE	B1-FICE	B2-FICE	B3-FICE
4. SWIM		B1-SWIM	B2-SWIM	

Block 0

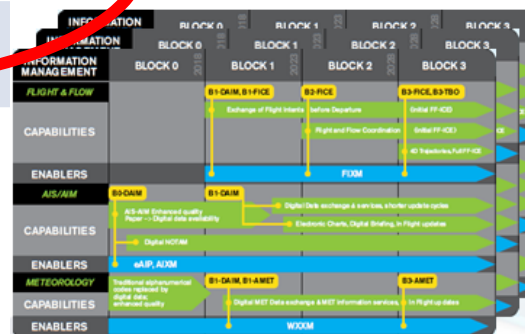| B0-DATM	B0-AMET	B0-FICE
Service Improvement through Digital Aeronautical Information Management Initial introduction of digital processing and management of information, by the implementation of AIS/AIM making use of AIXM, moving to electronic AIP and better quality and availability of data.	**Meteorological information supporting enhanced operational efficiency and safety** Global, regional and local meteorological information provided by world area forecast centres, volcanic ash advisory centres, tropical cyclone advisory centres, aerodrome meteorological offices and meteorological watch offices in support of flexible airspace management, improved situational awareness and collaborative decision-making, and dynamicallyoptimized flight trajectory planning.	**Increased Interoperability, Efficiency and Capacity through Ground-Ground Integration** Supports the coordination of ground-ground data communication between ATSU based on ATS Inter-facility Data Communication (AIDC) defined in ICAO Doc 9694.
- % States having implemented an integrated aeronautical information database *- % States having implemented QMS*	*- % of States having implemented SADIS / WIFS* *- % of States having implemented QMS*	*- % of FIRs within which all applicable ACCs have implemented at least one interface to use AIDC / OLDI with neighboring ACCs*

Block 1

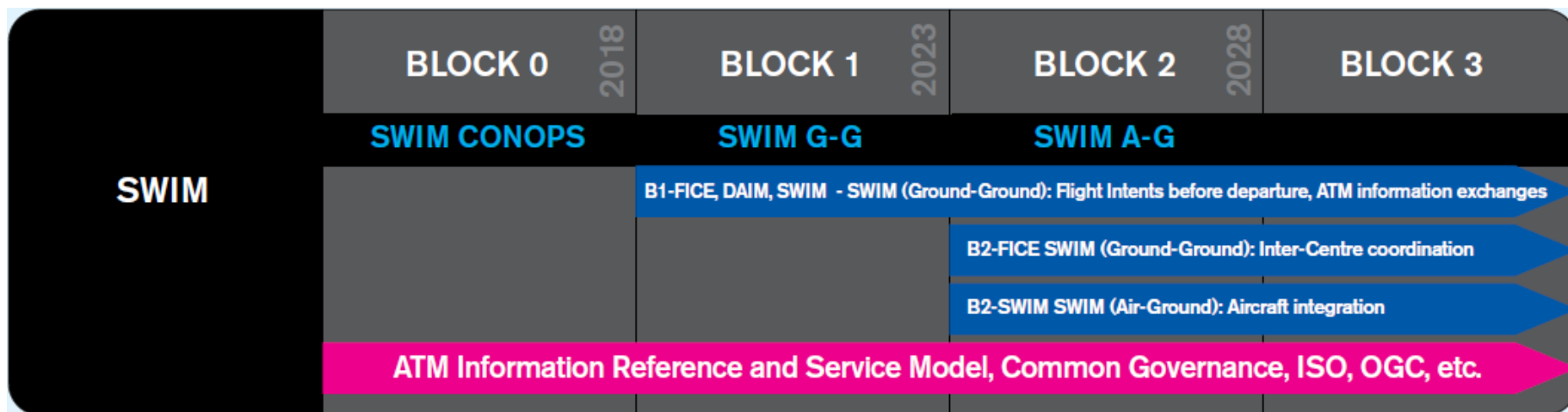| B1-DATM	B1-SWIM	B1-AMET	B1-FICE
Service Improvement through Integration of all Digital ATM Information Implementation of the ATM information reference model integrating all ATM information using UML and enabling XML data representations and data exchange based on internet protocols with WXXM for meteorological information.	**Performance Improvement through the application of System-Wide Information Management (SWIM)** Implementation of SWIM services (applications and infrastructure) creating the aviation intranet based on standard data models, and internet based protocols to maximize interoperability.	**Enhanced Operational Decisions through Integrated Meteorological Information (Planning and Near-term Service)** Meteorological information supporting automated decision processes or aids involving: meteorological information, meteorological translation, ATM impact conversion and ATM decision-making support.	**Increased Interoperability, Efficiency and Capacity though FF-ICE, Step 1 application before Departure** Introduction of FF-ICE Step1, to implement ground-ground exchanges using common flight information reference model, FIXM, XML and the flight object used before departure.
XXX	XXX	XXX	XXX

Technology Roadmaps

1. Communication	3. Navigation	5. Avionics
• A/G Data comm	• Dedicated technology	• Communications
• G/G com	• PBN	• Surveillance
• A/G voice com		• Navigation
2. Surveillance	**4. Information Management**	• Aircraft safety nets
• Surface surveillance	• SWIM	• Onboard systems
• Ground-based surveillance	• FF, AIS/AIM and MET	
• A/A Surveillance		

Technology Roadmap 7: System wide-information management (SWIM)
(Domain: Information Management)

SWIM	BLOCK 0	2018	BLOCK 1	2023	BLOCK 2	2028	BLOCK 3
	SWIM CONOPS		SWIM G-G		SWIM A-G		
			B1-FICE, DAIM, SWIM - SWIM (Ground-Ground): Flight Intents before departure, ATM information exchanges				
					B2-FICE SWIM (Ground-Ground): Inter-Centre coordination		
					B2-SWIM SWIM (Air-Ground): Aircraft integration		
	ATM Information Reference and Service Model, Common Governance, ISO, OGC, etc.						

Technology Roadmap 8: Flight and Flow, AIS/AIM and MET
(Domain: Information Management)
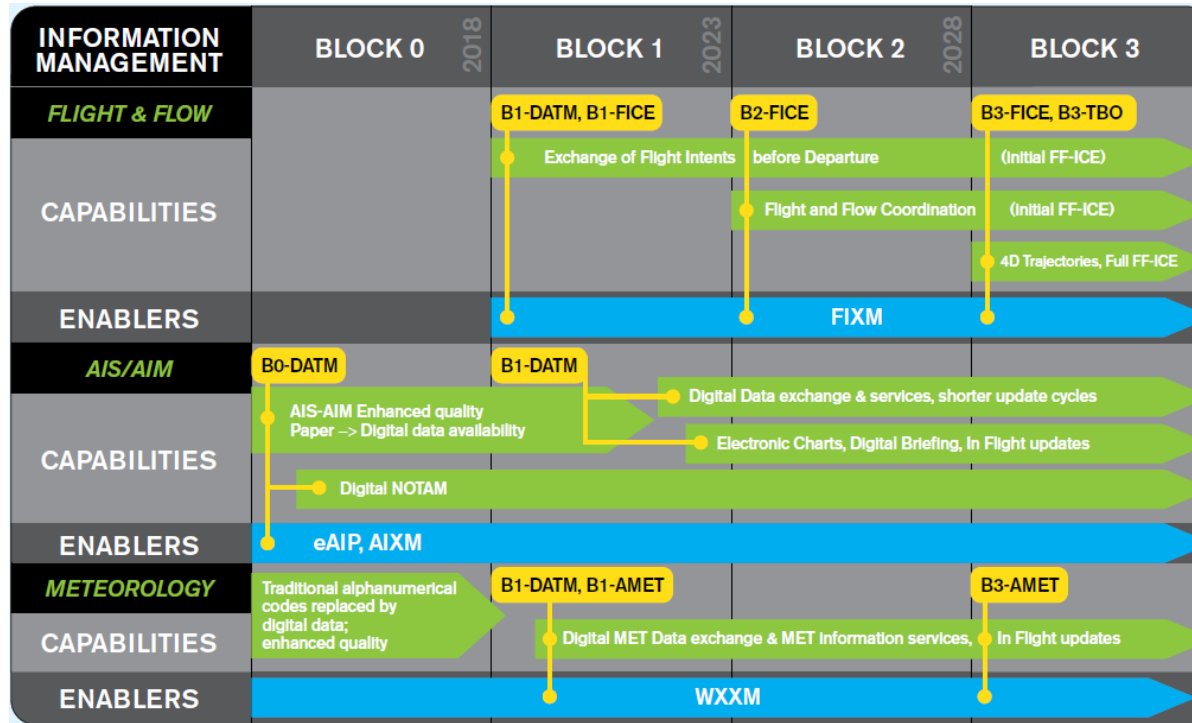
Implementation Support

- Consolidation of material into iKITs:
  - Provide complete reference for operational improvement implementation
  - iKITs currently available for PBN, RPAS, Runway Safety, Aircraft Operator Certificate, B0 Modules implementation and Safety Management
  - Available at: http://www.icao.int/safety/Implementation/Pages/iKITs.aspx

Implementation Support

- Regional ASBU implementation plan/strategy:
  - EUR ASBU Implementation Plan
  - MID Air Navigation Strategy
- ICAO ESAF/MID ASBU Implementation Workshop (Cairo, Egypt, 23-26 November 2015)
- EUR/MID Interregional Seminar on "**Service Improvement through Integration of Digital AIM, MET and ATM Information**" in 2017

Implementation Monitoring

|ICAO

North American
Central American
and Caribbean
(NACC) Office
Mexico City

South American
(SAM) Office
Lima

ICAO
Headquarters
Montréal

Western and
Central African
(WACAF) Office
Dakar

European and
North Atlantic
(EUR/NAT) Office
Paris

Middle East
(MID) Office
Cairo

Eastern and
Southern African
(ESAF) Office
Nairobi

Asia and Pacific
(APAC) Sub-office
Beijing

Asia and Pacific
(APAC) Office
Bangkok

THANK YOU