

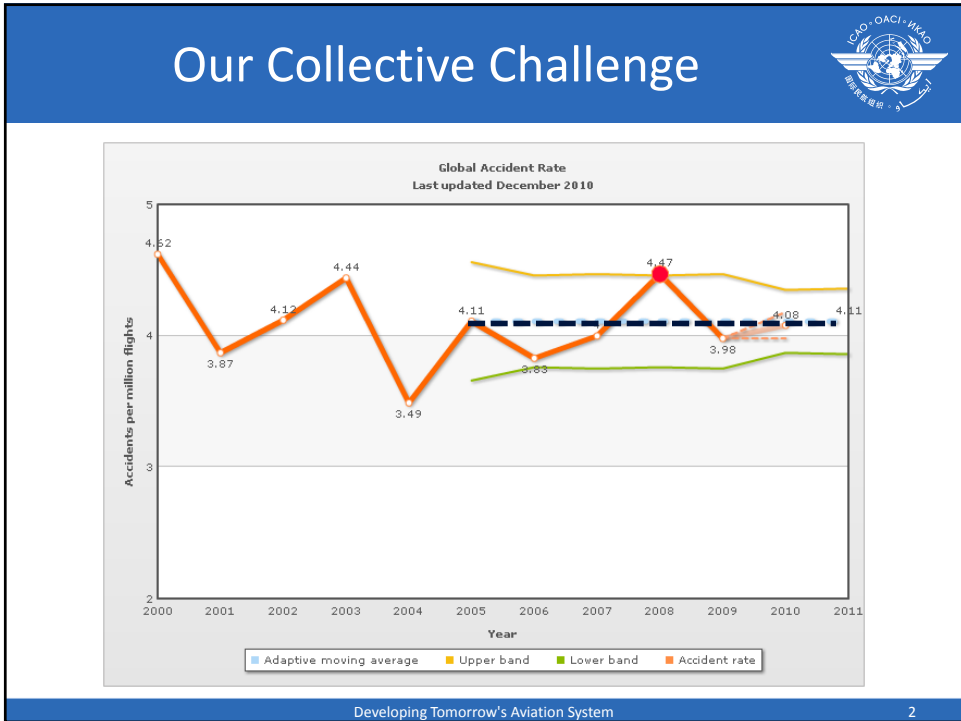
International Civil Aviation Organization

Developing Tomorrow's Aviation System

Briefing on ICAO's Aviation System Block Upgrades

Vincent Galotti
Deputy Director, Safety Standardization & Infrastructure
Air Navigation Bureau, ICAO

Preparations for AN-Conf/12 – ASBU Methodology
Lima, 15 May 2012



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- Global framework is needed to ensure:
 - Safety is maintained and enhanced
 - ATM improvement programmes are harmonized
 - Barriers to future efficiency and environmental gains are removed, at reasonable cost



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- Investment certainty is required for:
 - Operators
 - Infrastructure providers
 - Equipment manufacturers
- Regulatory approval process must be outlined
 - Support States in introduction of significant changes



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- ICAO developed 4-step plan
- Setting the stage for global interoperability



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Step 1 Get Harmonization on the Global Agenda




- Initial NextGen/SESAR Symposium (2008)
- Convened Standards Organization Roundtable (2009)
- Established working agreements with Standards Organizations on shared work programmes

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Step 2

Global Aviation System Block Upgrades




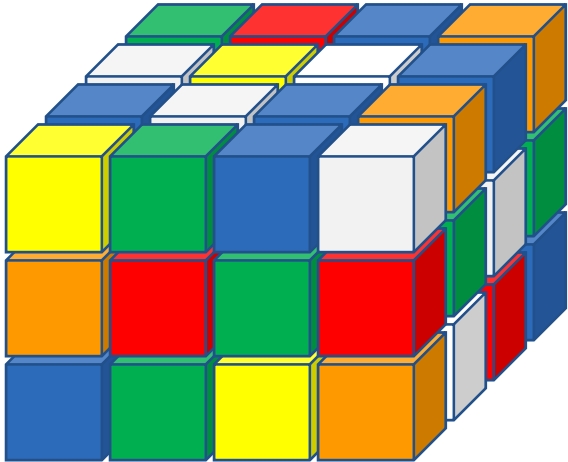
- Define global aviation system block upgrades
- For interoperability purposes
- Independent of when and where specific ATM improvement programmes are introduced

Why is this approach proposed?

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The Reality of Our System Today...





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A Team Effort







































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What is a Block Upgrade?







**Measurable
Operational
Improvement**



**Air & Ground
Standards & Procedures**



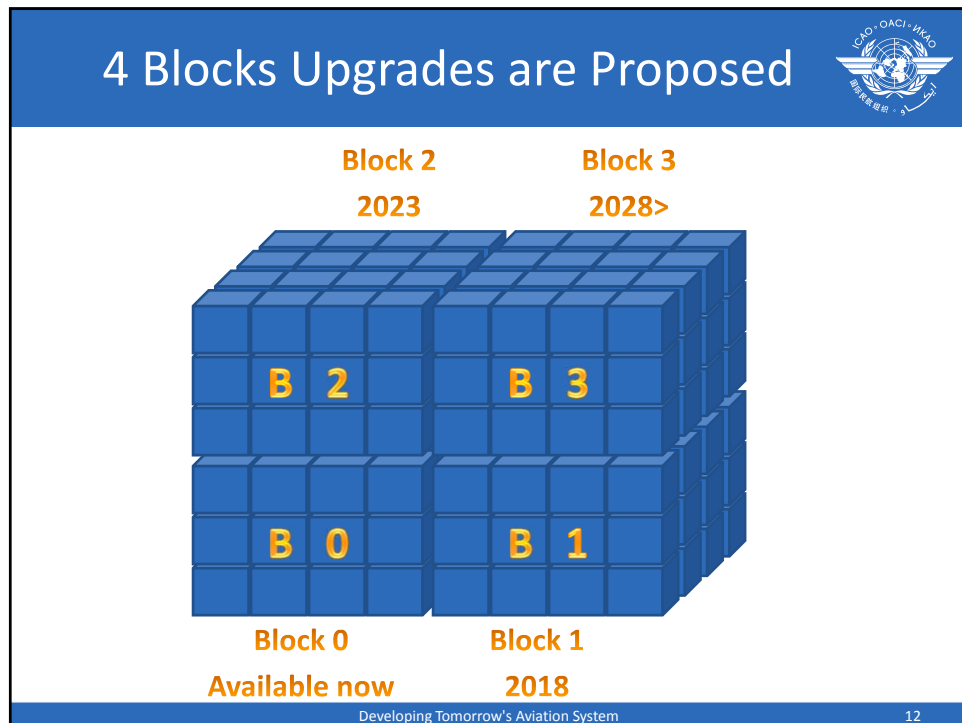
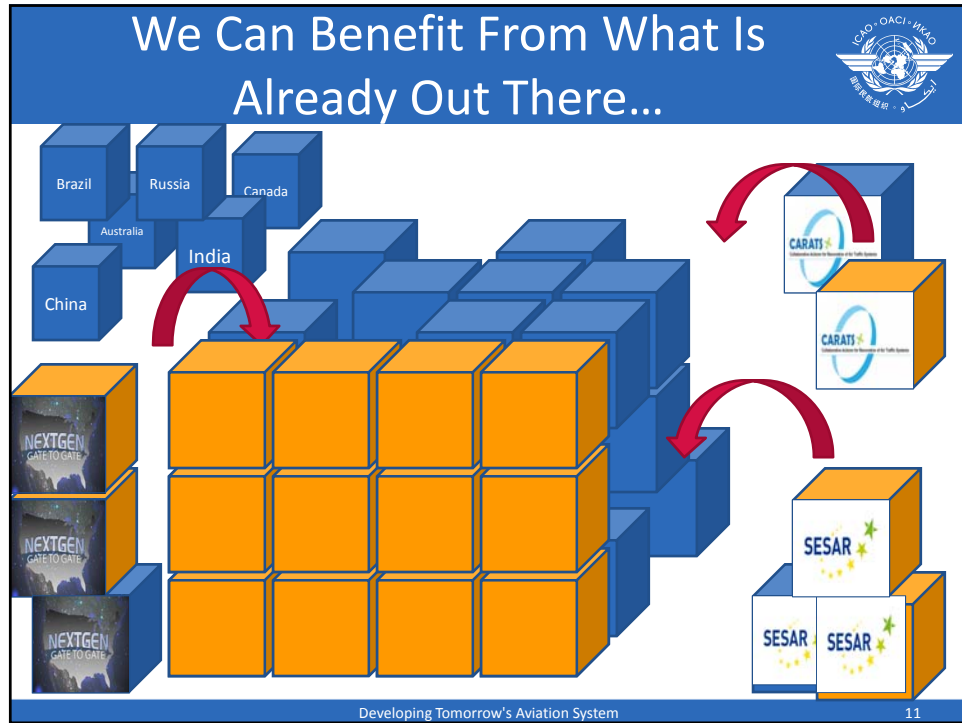
**Air & Ground
Equipment / Systems
+ Approvals**



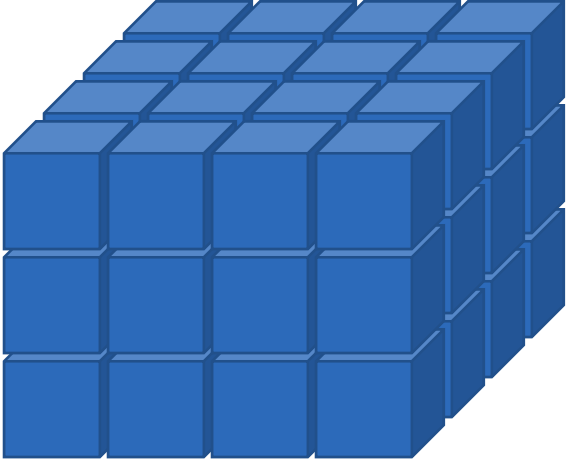
**Positive
Business Case**

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A Block is Made Up of Modules...

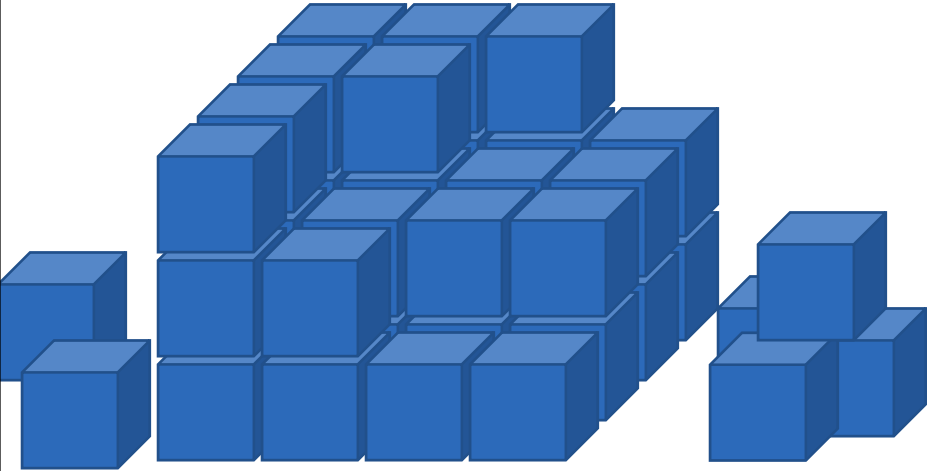


A 3D illustration of a large cube constructed from smaller blue modules. The cube is 4 units wide, 4 units high, and 4 units deep, totaling 64 modules. The modules are arranged in a regular grid pattern.

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...So a Block is Scalable to Meet Regional or Local Needs

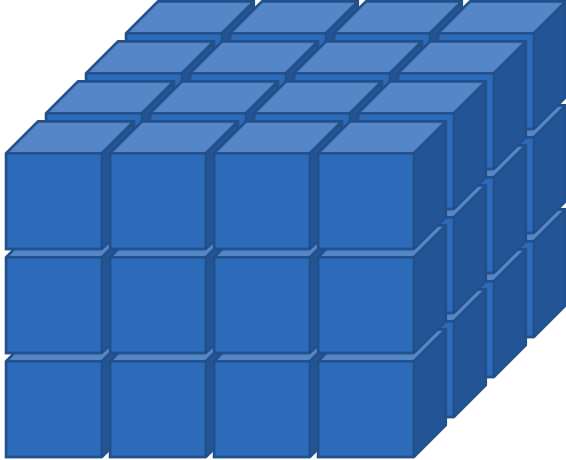


A 3D illustration showing a large central arrangement of blue modules, similar to the one in slide 13, but with additional smaller clusters of modules placed around it. This demonstrates how the system can be scaled or configured to meet specific regional or local needs.

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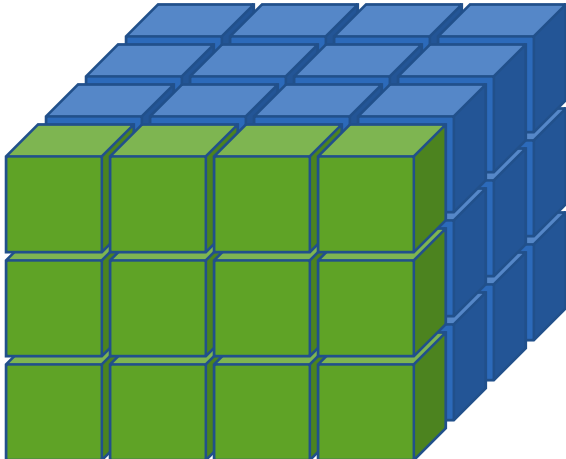
Modules are Grouped in 4 Performance Improvement Areas



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Greener Airports

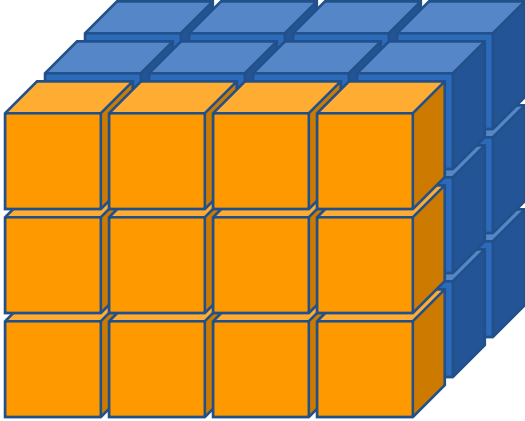


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Globally Interoperable Systems & Data




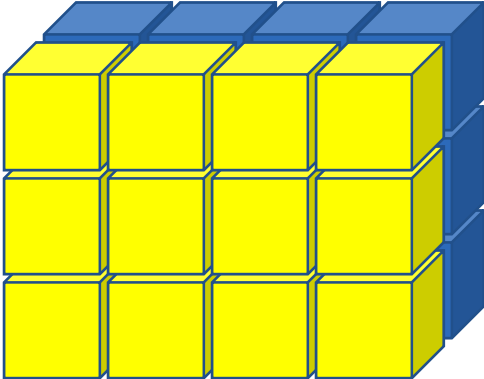


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Optimum Capacity & Flexible Flights

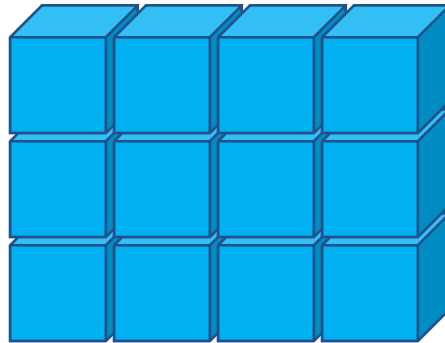




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Efficient Flight Path



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Block 0: Capabilities within our Grasp Today

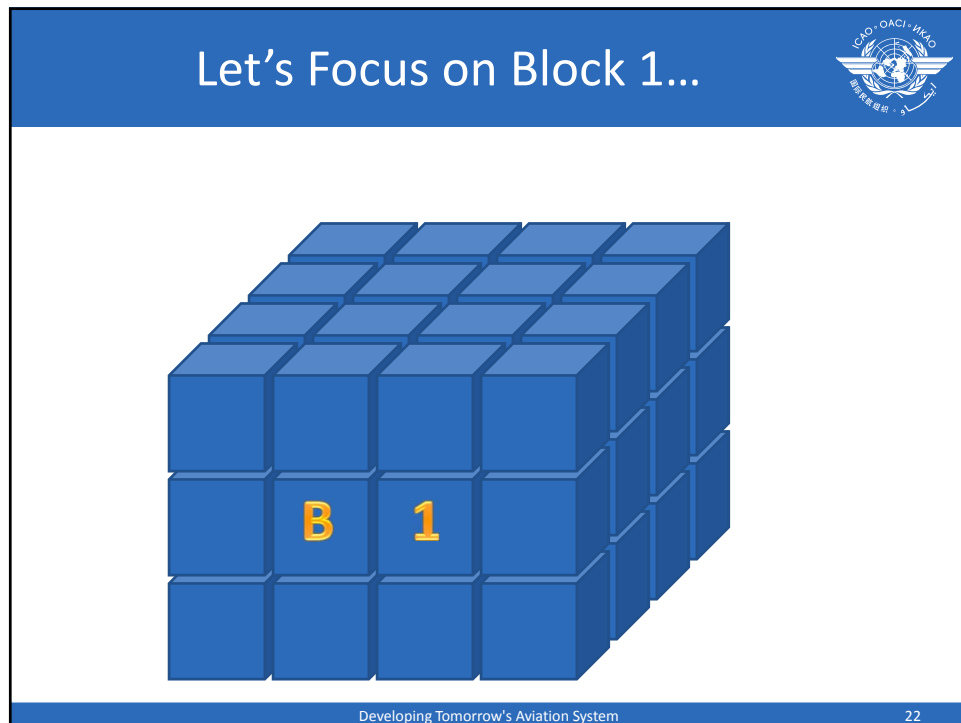
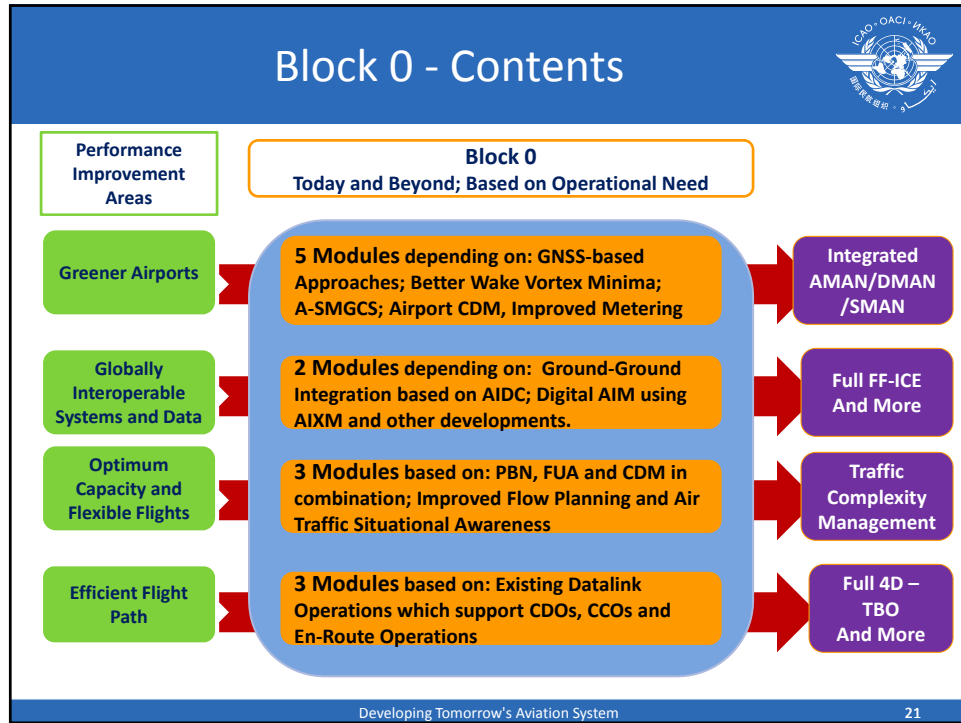


- Block 0 initiatives must leverage on existing on-board avionics
- 3 Priorities have been agreed to:
 - Performance Based Navigation (PBN)
 - Continuous Descent Operations (CDO)
 - Continuous Climb Operations (CCO)




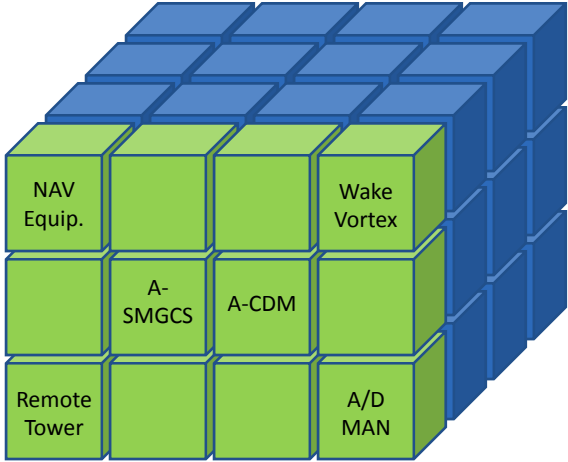
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Block 1 Modules for:
Greener Airports




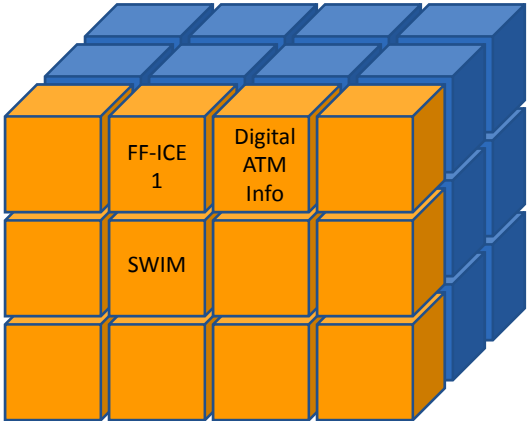


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Block 1 Modules for:
Globally Interoperable Systems & Data




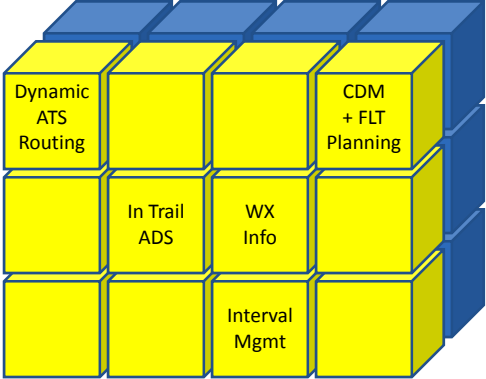


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Block 1 Modules for:
Optimum Capacity & Flexible Flights

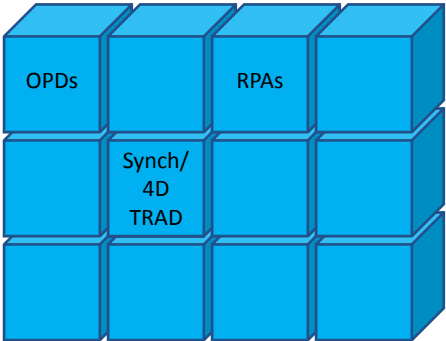




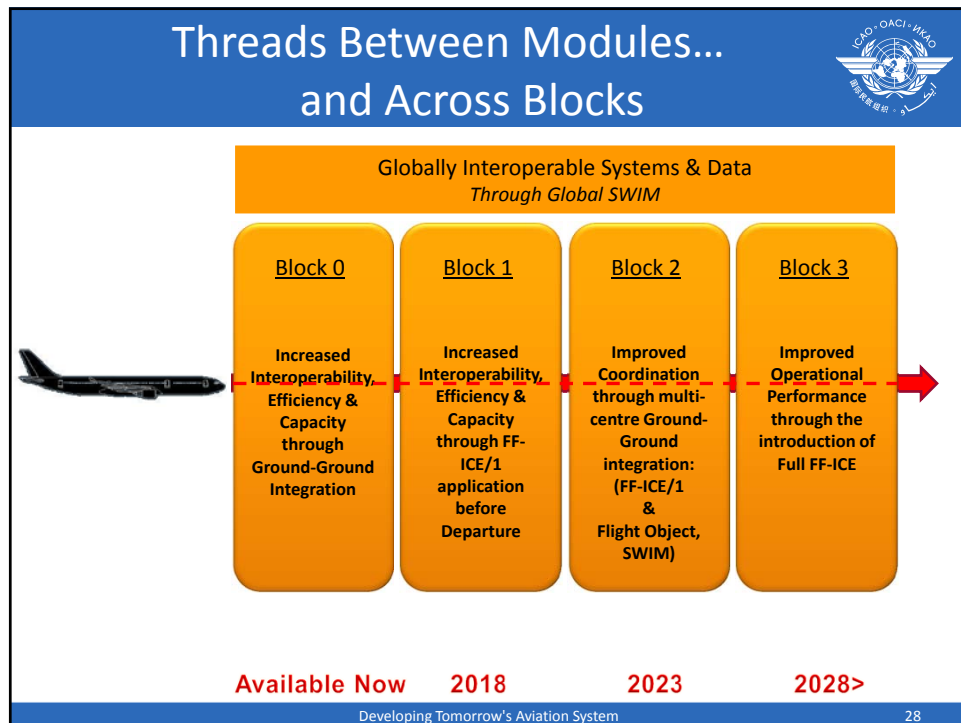
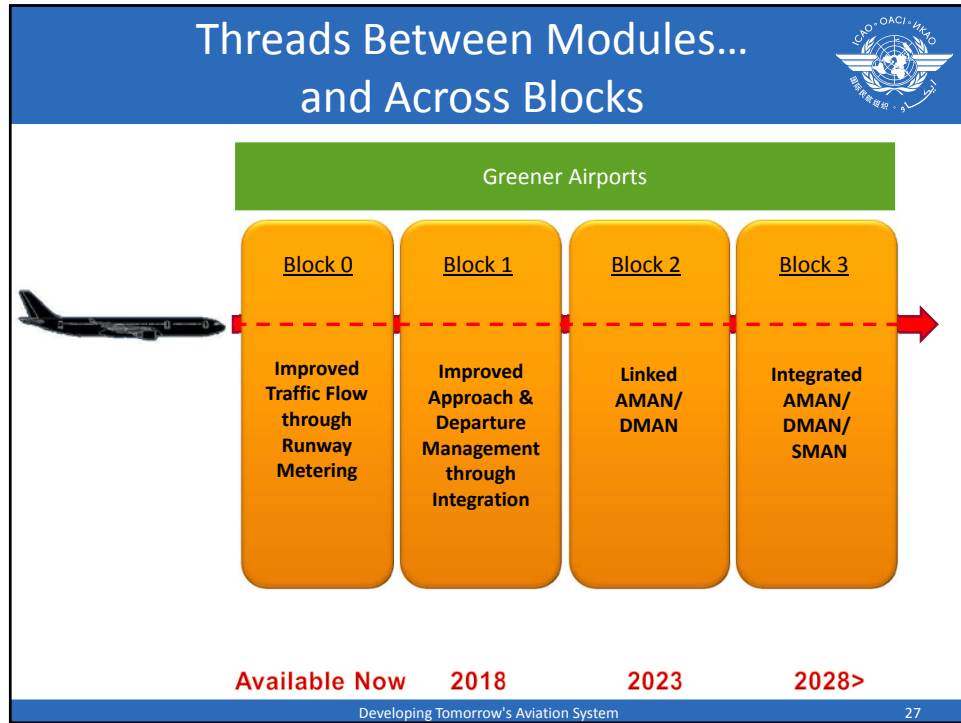
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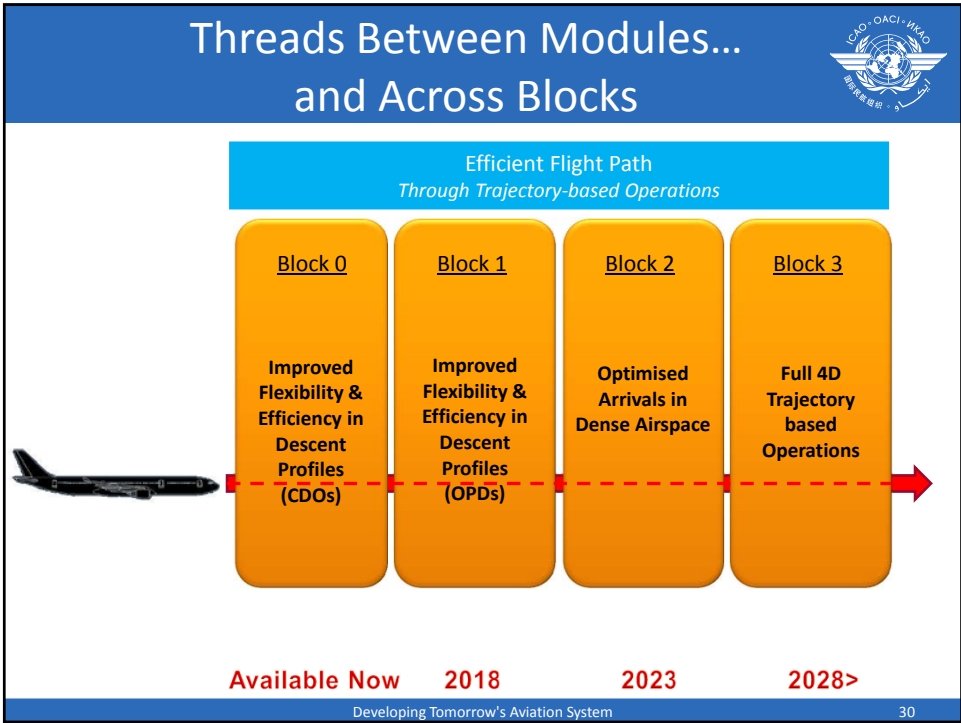
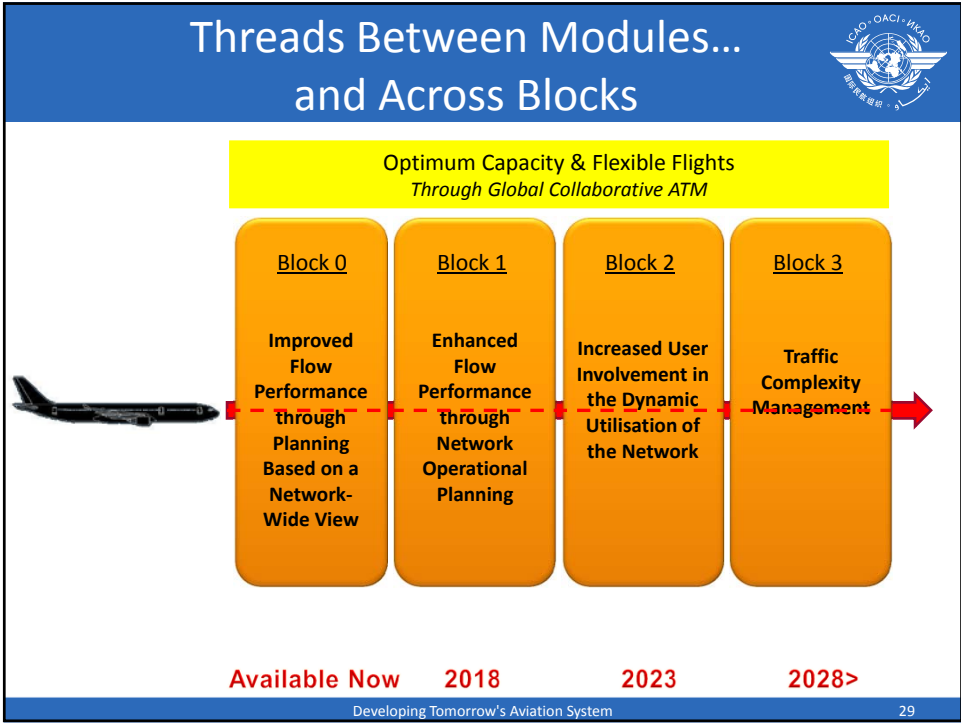
Block 1 Modules for:
Efficient Flight Path





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Step 3

Global Rollout & Feedback at GANIS




- Held Global Air Navigation Industry Symposium
 - September 2011
 - Over 500 participants from Industry, States and international organizations
- Platform to enable feedback
- Industry voice is critical in our planning
- Essential preparation for AN-Conf/12
- Working Document posted on website

www.icao.int/anconf12/asbu

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Step 3

What Happens Post-GANIS?



- Collected feedback on the Working Document
 - Until 17 October 2011
- Technical Team generated Edition 2 (version 3) of the Working Document
 - Week of 24th October 2011
- Edition 2 released for further feedback
 - December 2011
- Proposed revision of Global Air Navigation Plan (GANP)
 - Include technical roadmaps for CNS/AIM, based on ASBUs concept
 - Internal review – May 2012
 - Public consultation – 30 June 2012
 - In all 6 official ICAO languages
- Proposed GANP content will be discussed at AN-Conf/12
 - 19-30 November 2012

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Step 4

International Agreement at AN-Conf/12

- Montréal, 19-30 November 2012
- Opportunity to formalize future of infrastructure & equipage
- Strategies for longer-term requirements
- Agreement of first series of block upgrades
 - Level of certainty for all stakeholders
 - Encourage more efficient implementation
- Revised GANP
 - Operational capabilities to manage ATM system requirements



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ICAO

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