



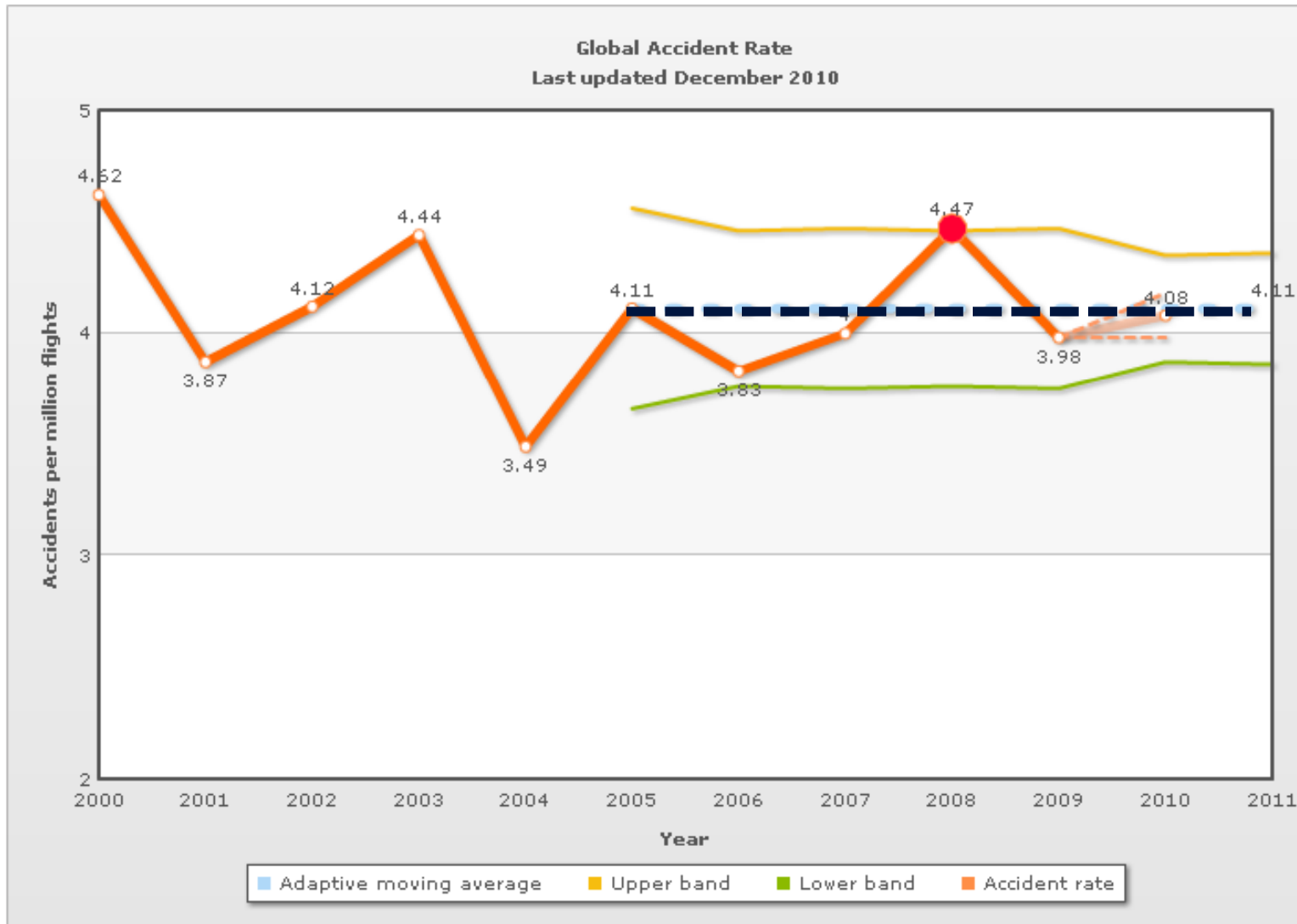
International Civil Aviation Organization

Developing Tomorrow's Aviation System

Briefing on ICAO's Aviation System
Block Upgrades

Issued: December 2011

Our Collective Challenge



Developing Tomorrow's Aviation System



- 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



Developing Tomorrow's Aviation System



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



Developing Tomorrow's Aviation System



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



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

Step 2

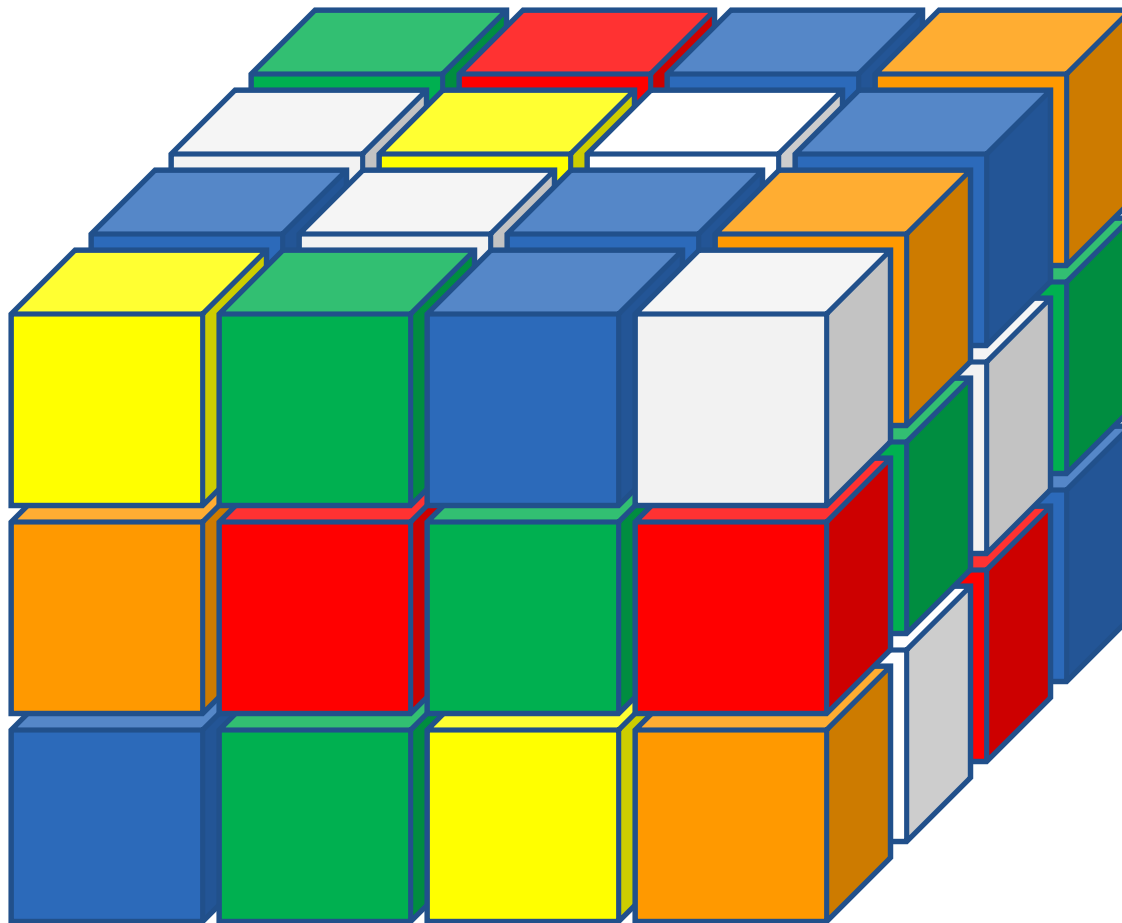
Global Aviation System Block Upgrades



- 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?

The Reality of Our System Today...



A Team Effort



What is a Block Upgrade?



**Measurable
Operational
Improvement**



**Air & Ground
Standards & Procedures**

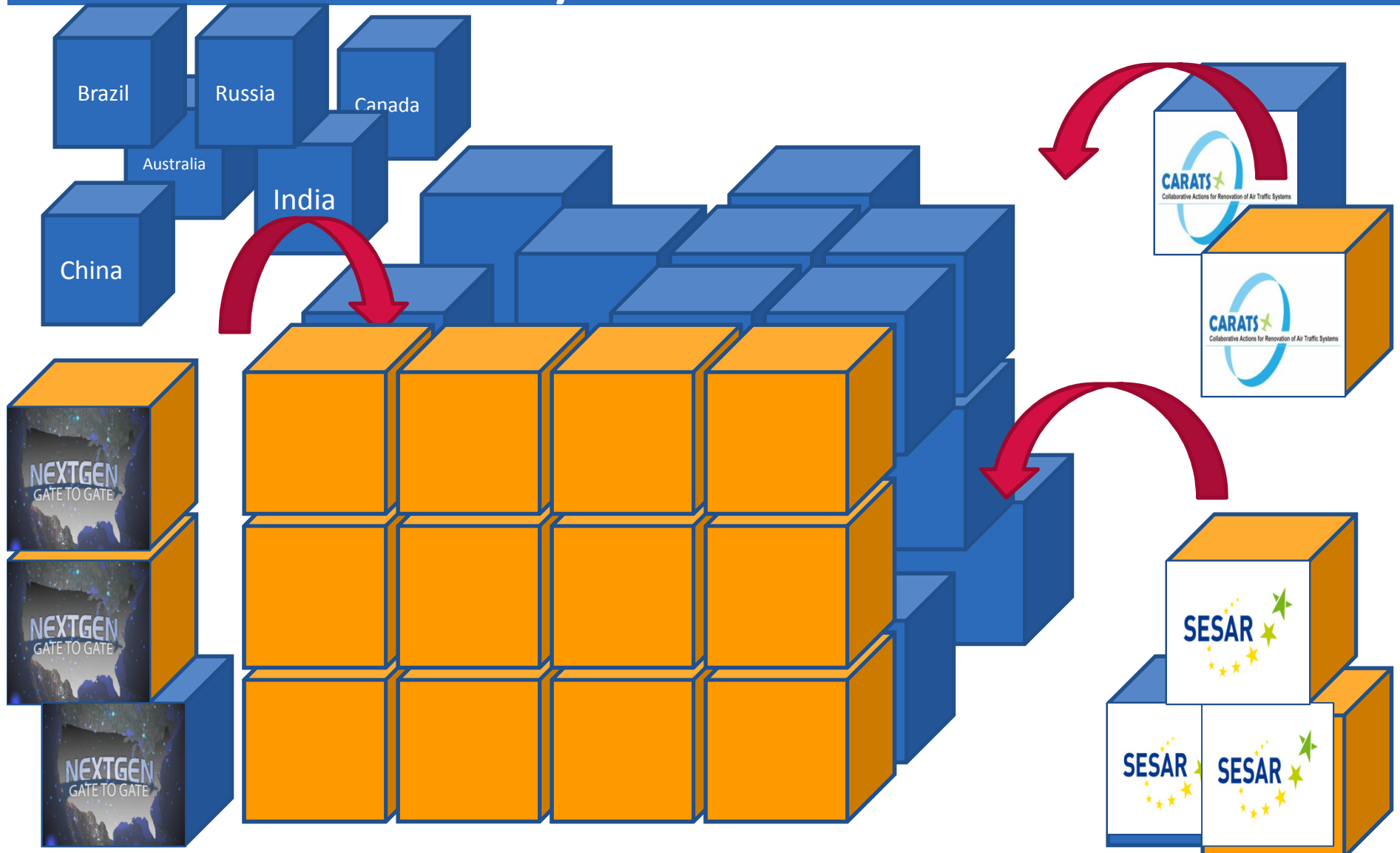


**Air & Ground
Equipment / Systems
+ Approvals**



**Positive
Business Case**

We Can Benefit From What Is Already Out There...



4 Blocks Upgrades are Proposed

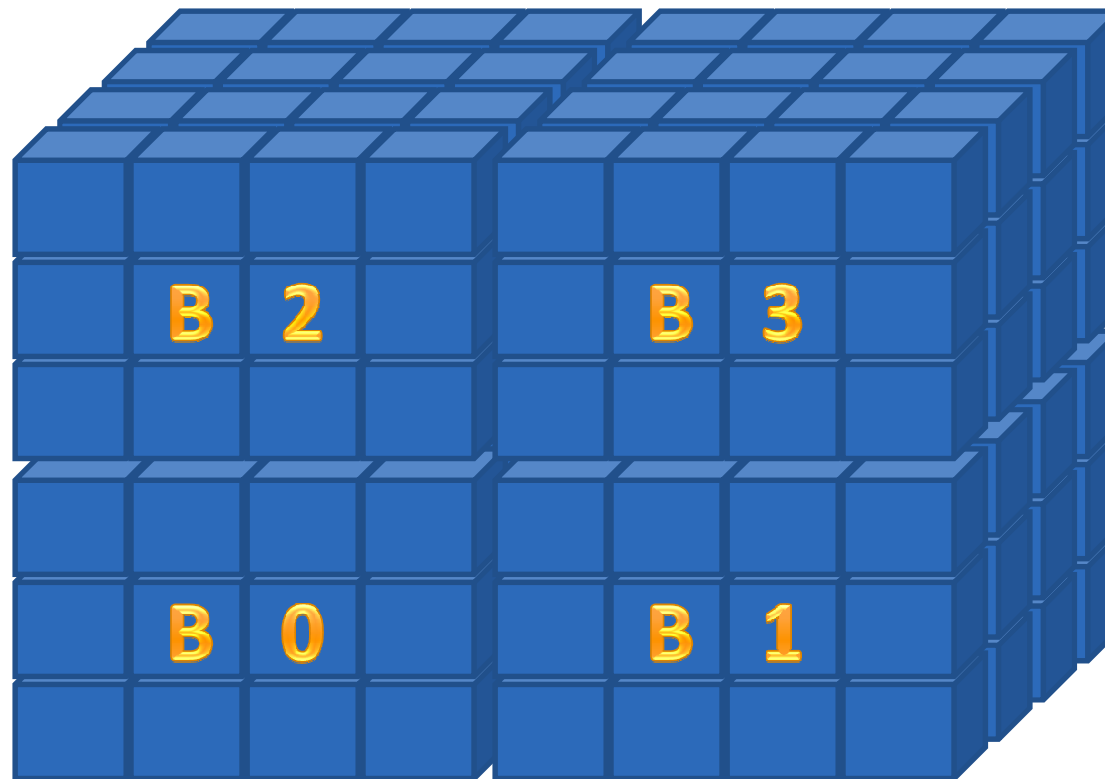


Block 2

2023

Block 3

2028>



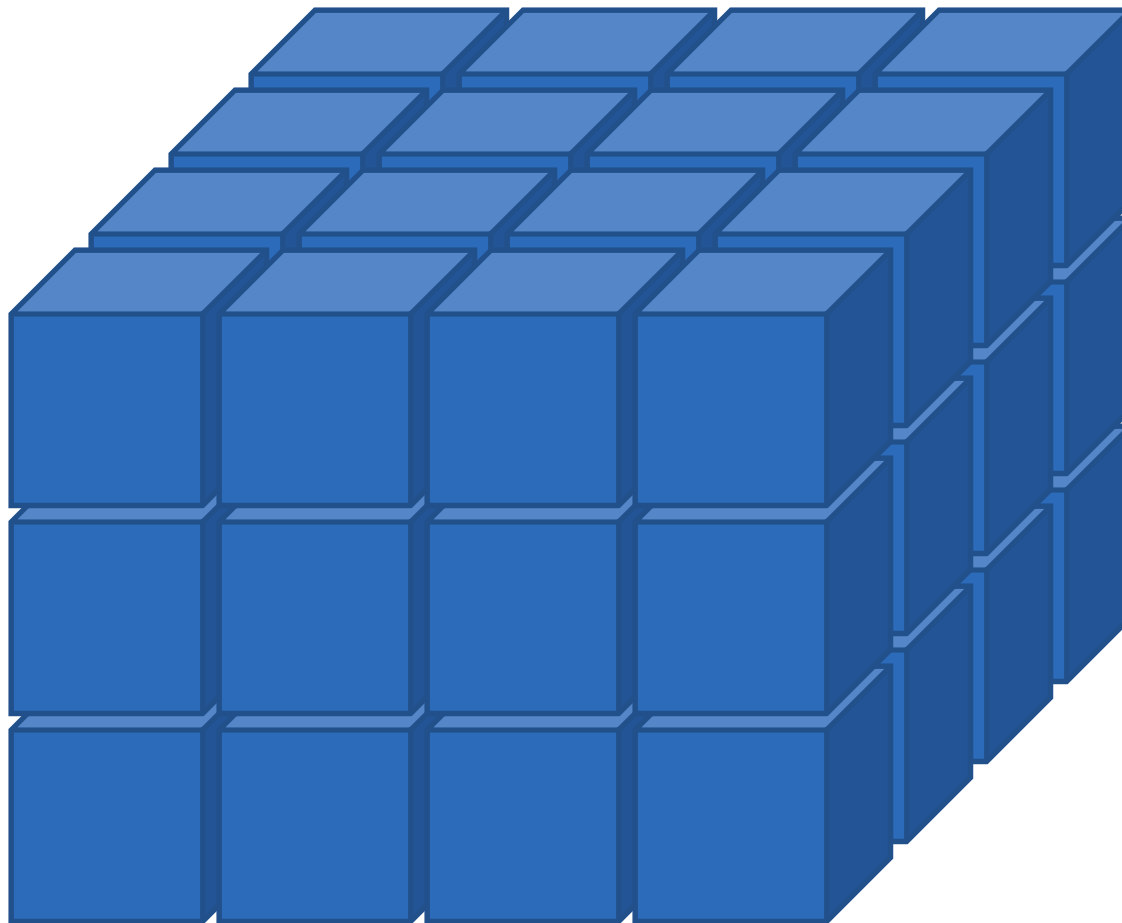
Block 0

Block 1

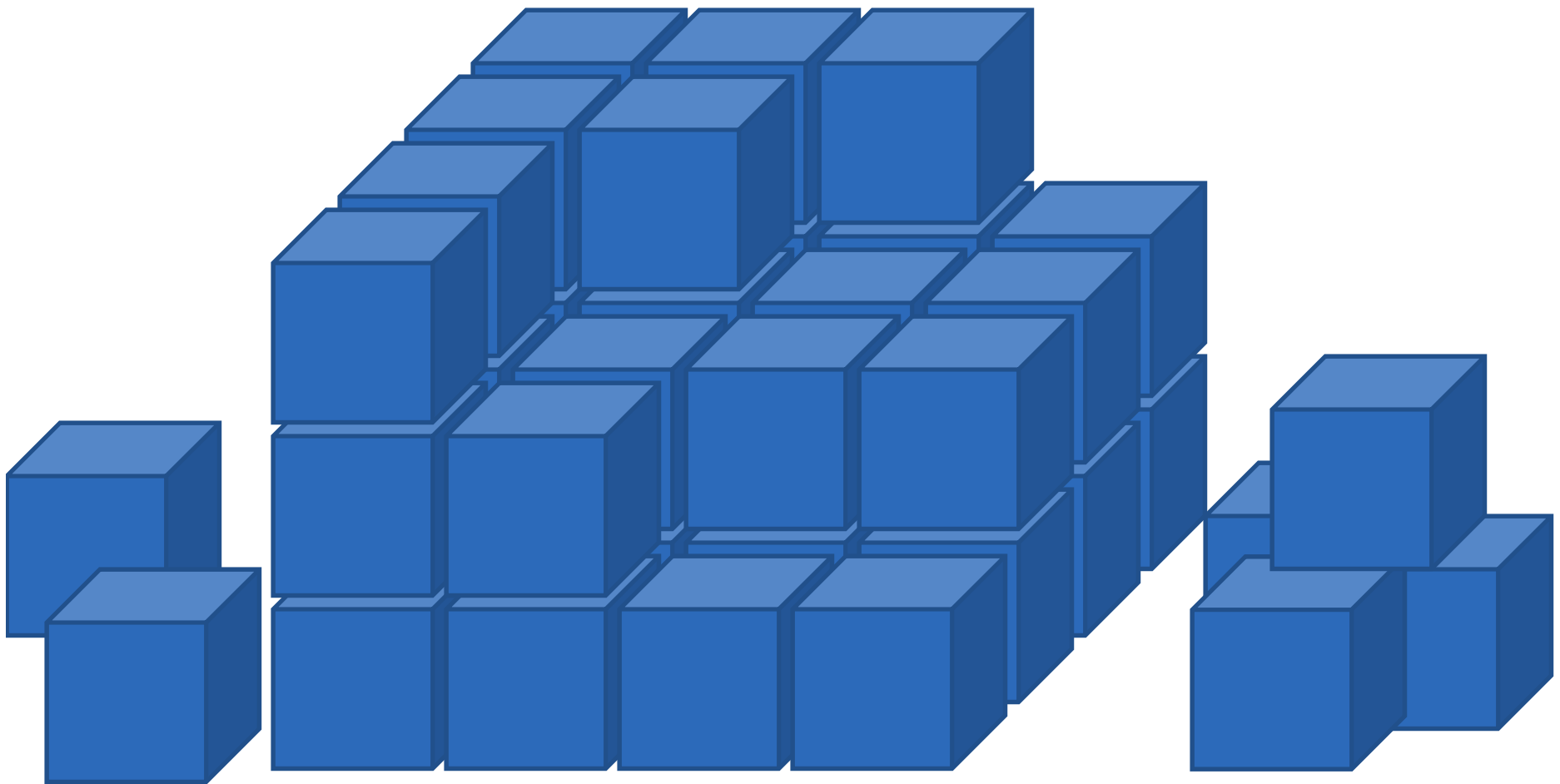
Available now

2018

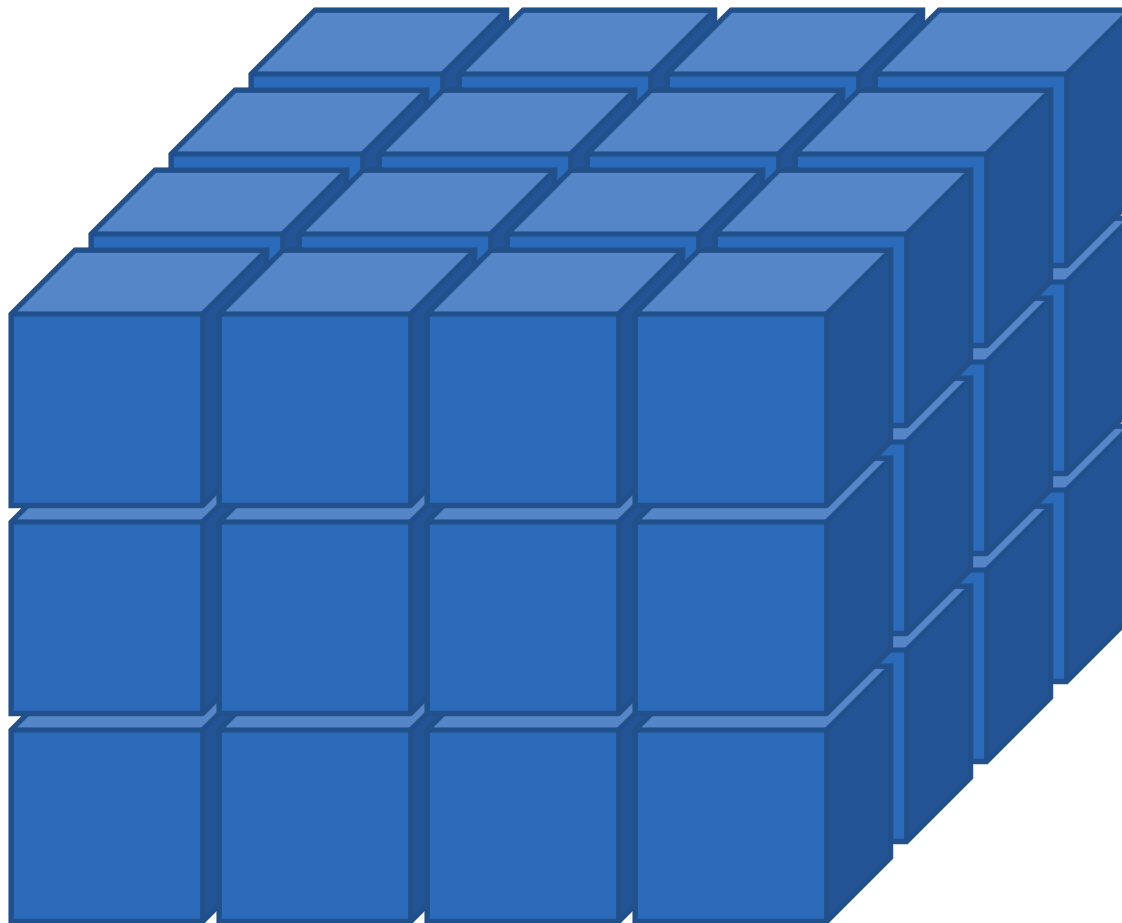
A Block is Made Up of Modules...



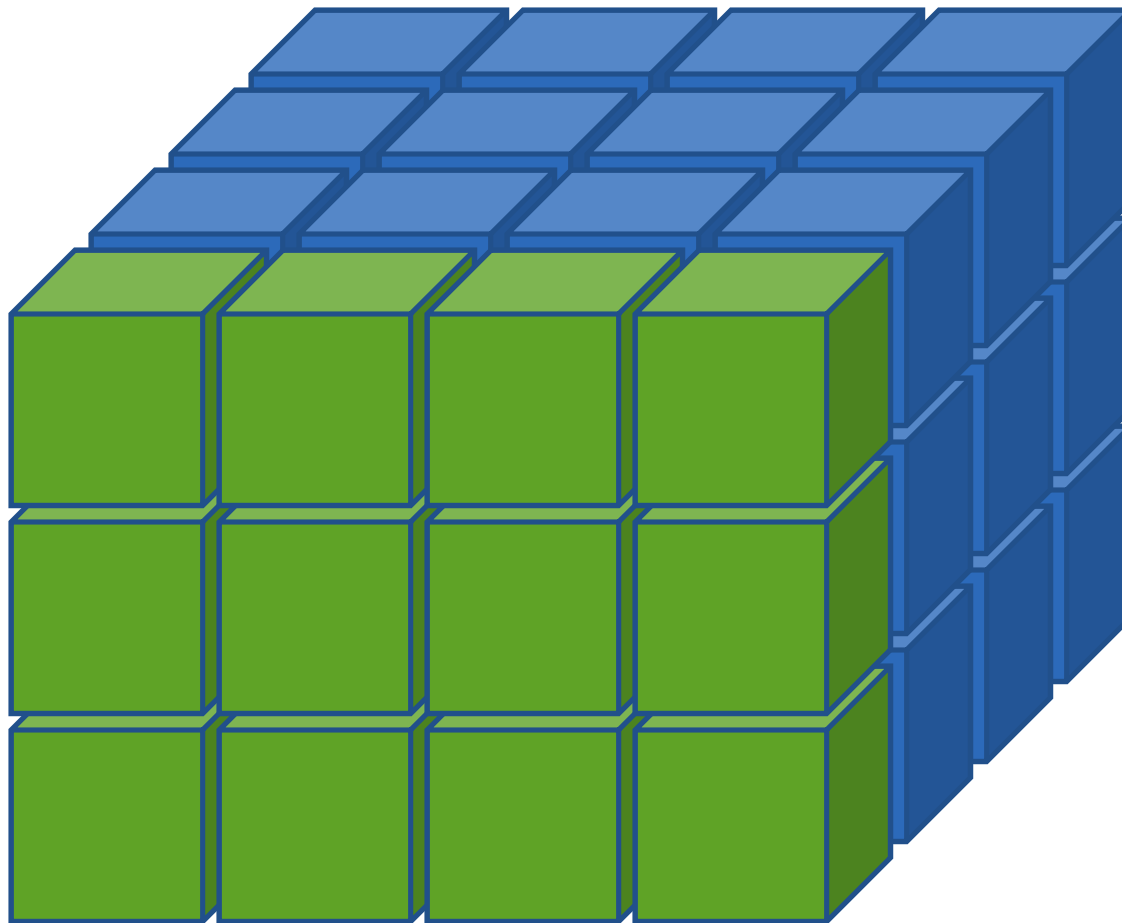
...So a Block is Scalable *to Meet Regional or Local Needs*



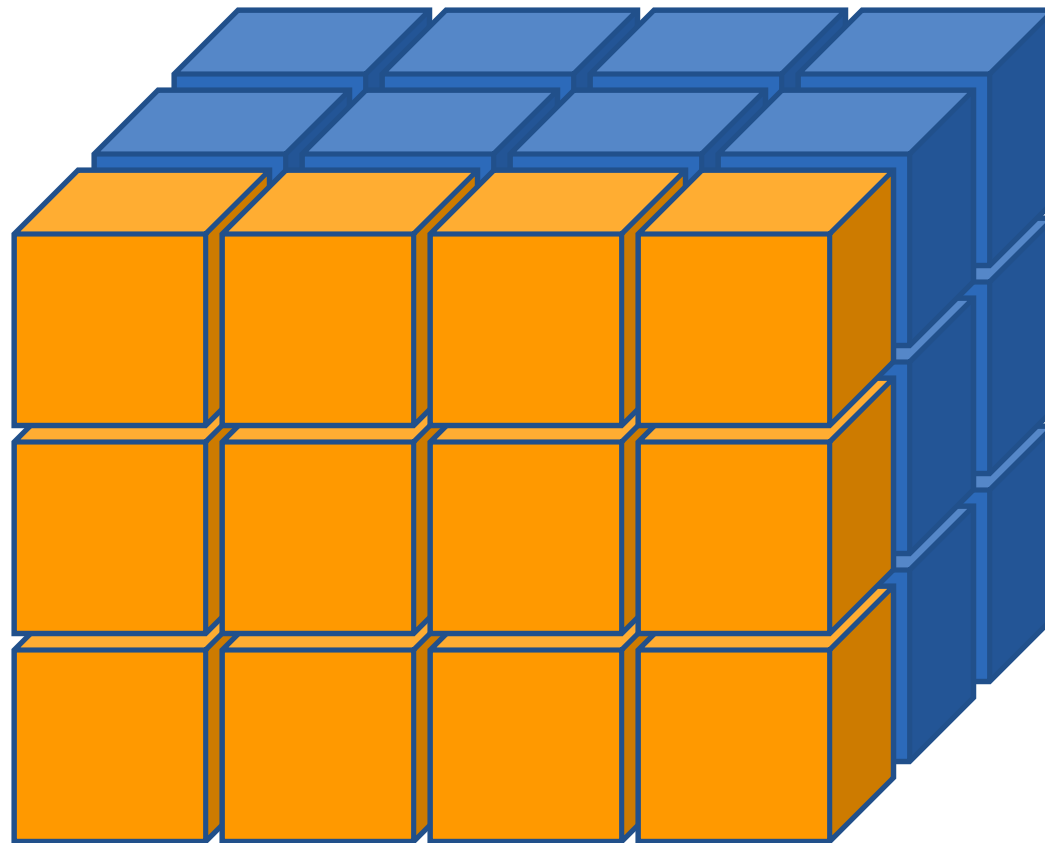
Modules are Grouped in 4 Performance Improvement Areas



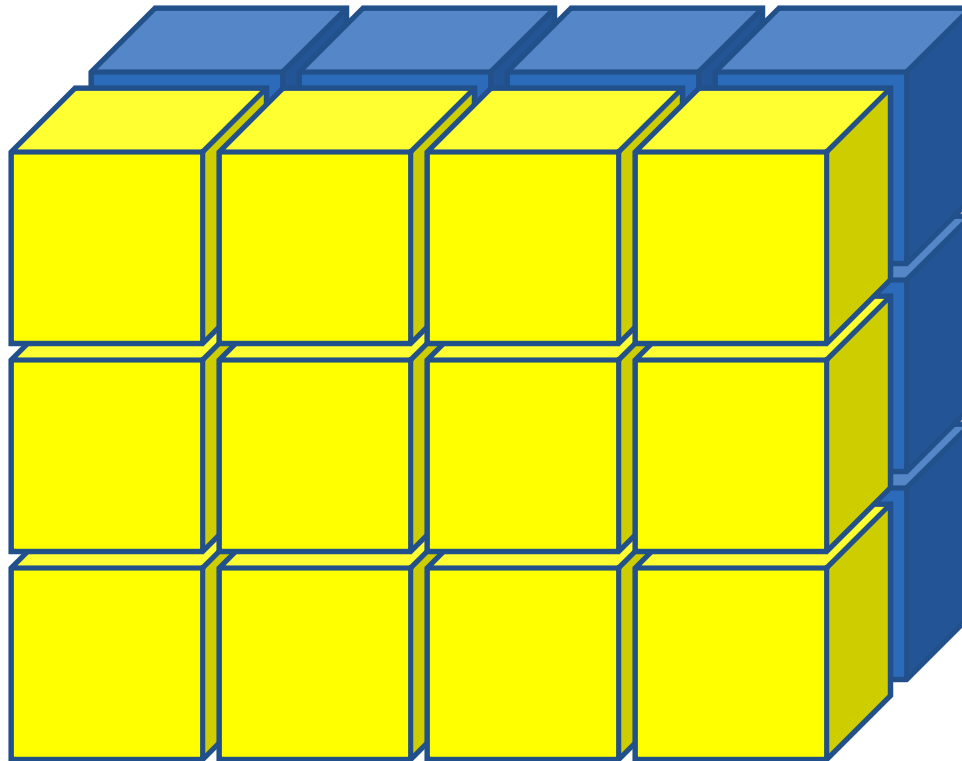
Greener Airports



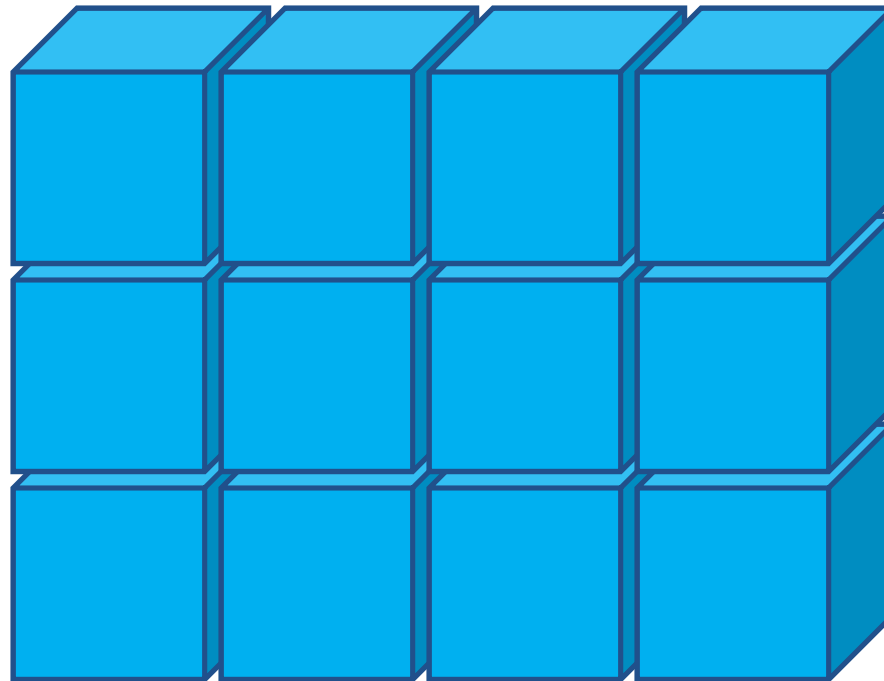
Globally Interoperable Systems & Data



Optimum Capacity & Flexible Flights



Efficient Flight Path



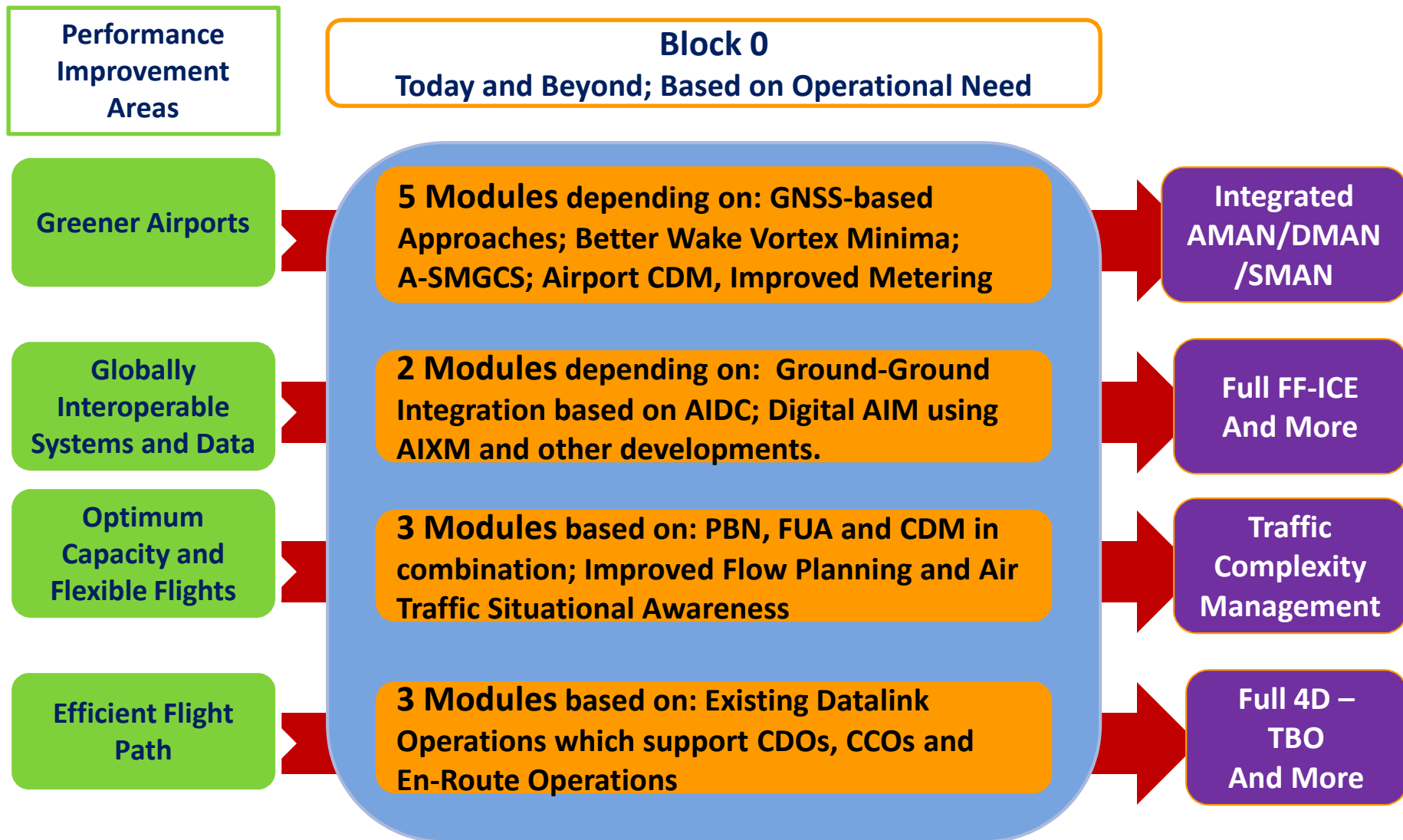
Block 0: Capabilities within our Grasp Today



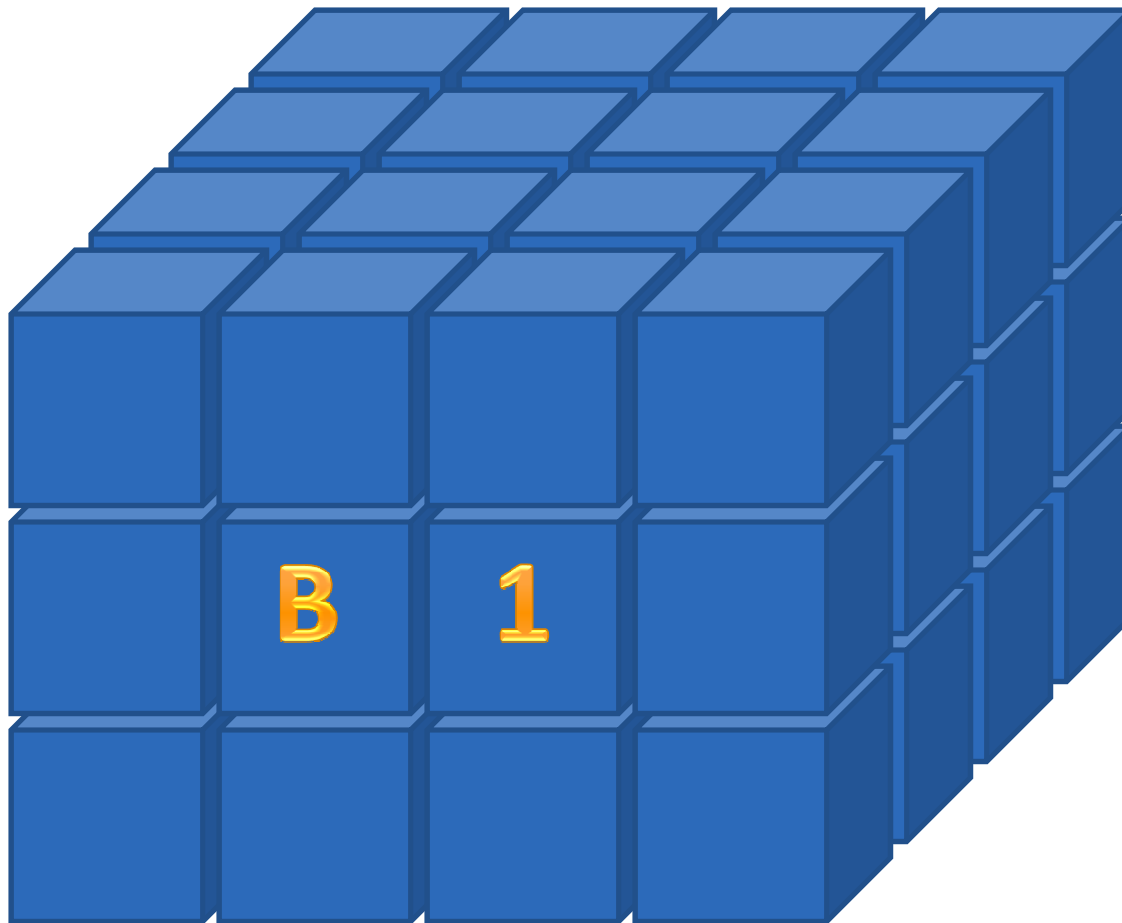
- Block 0 initiatives must leverage on existing on-board avionics
- 3 Priorities have been agreed to:
 - Performance Based Navigation (PBN)
 - Continuous Descent Operations (CDO)
 - Continuous Climb Operations (CCO)



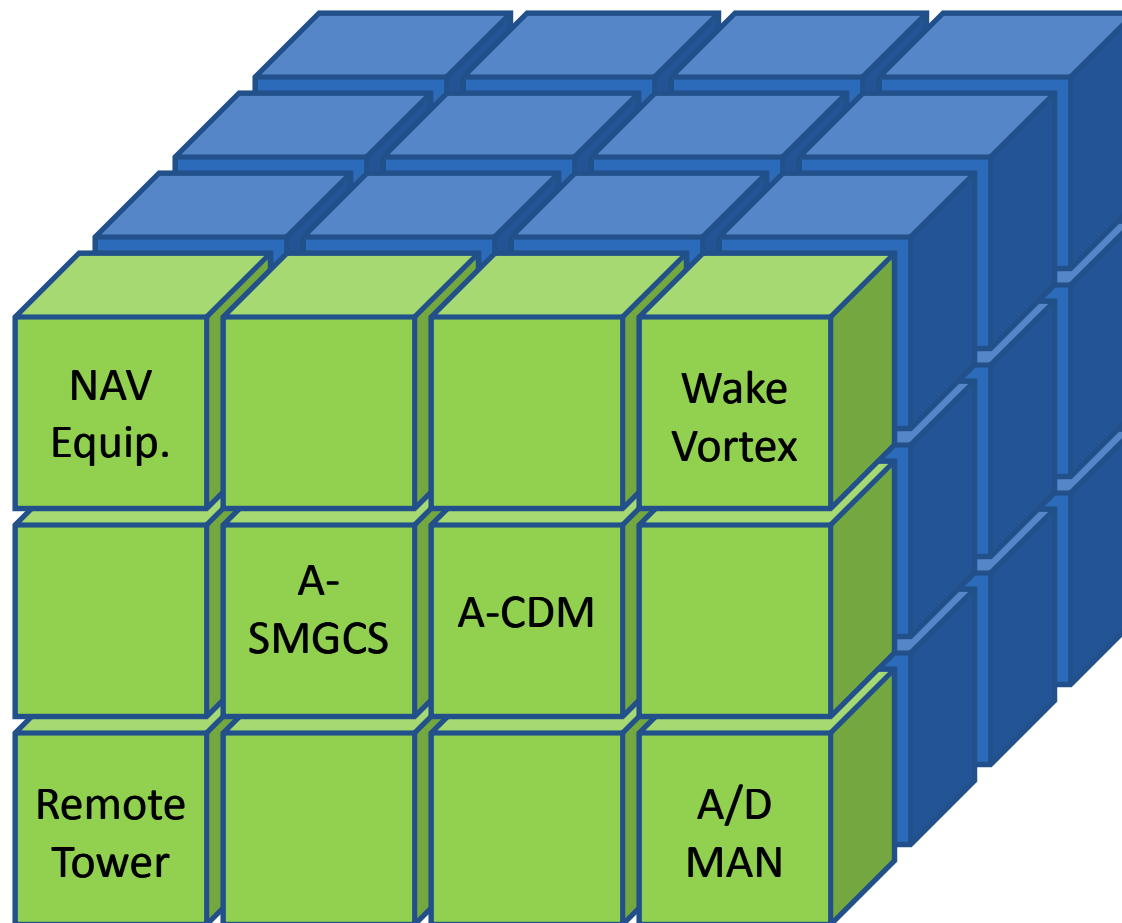
Block 0 - Contents



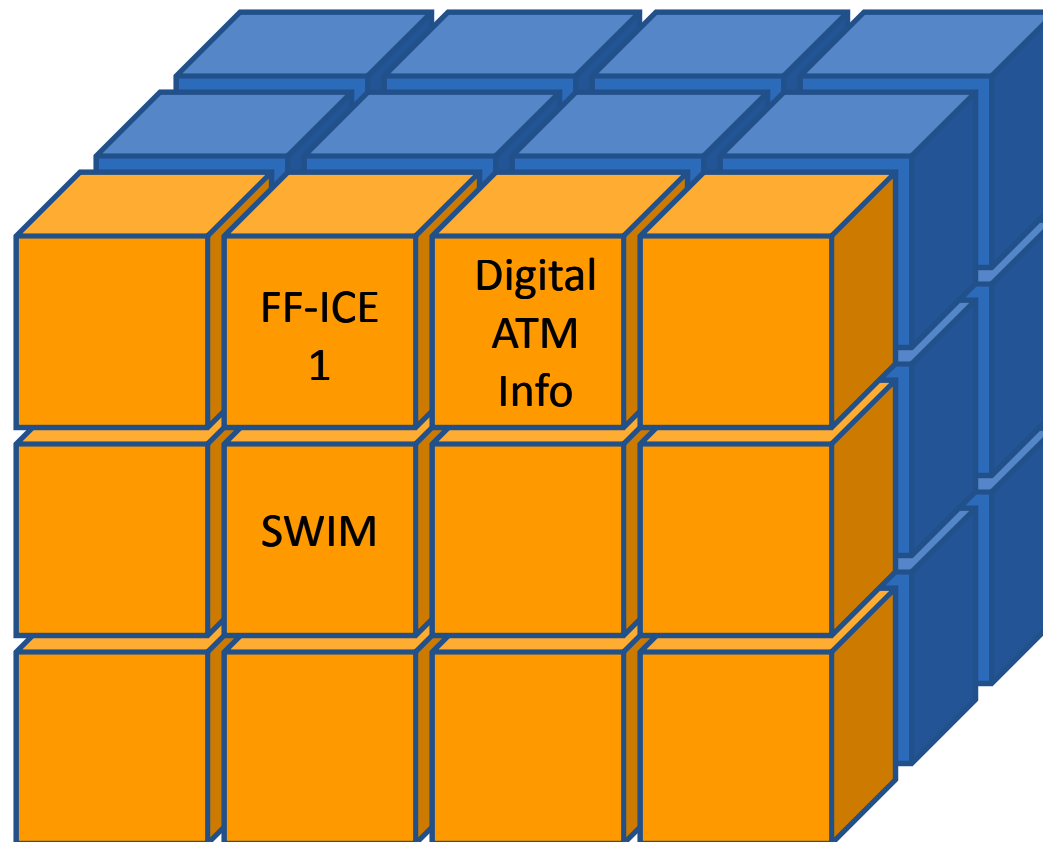
Let's Focus on Block 1...



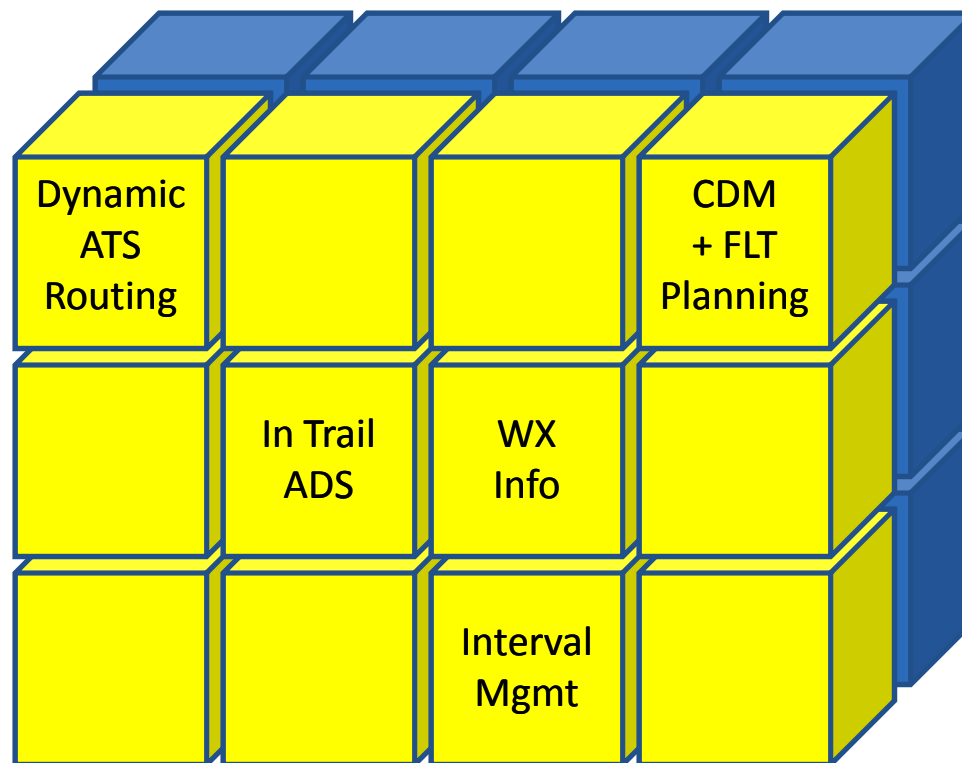
Block 1 Modules for: Greener Airports



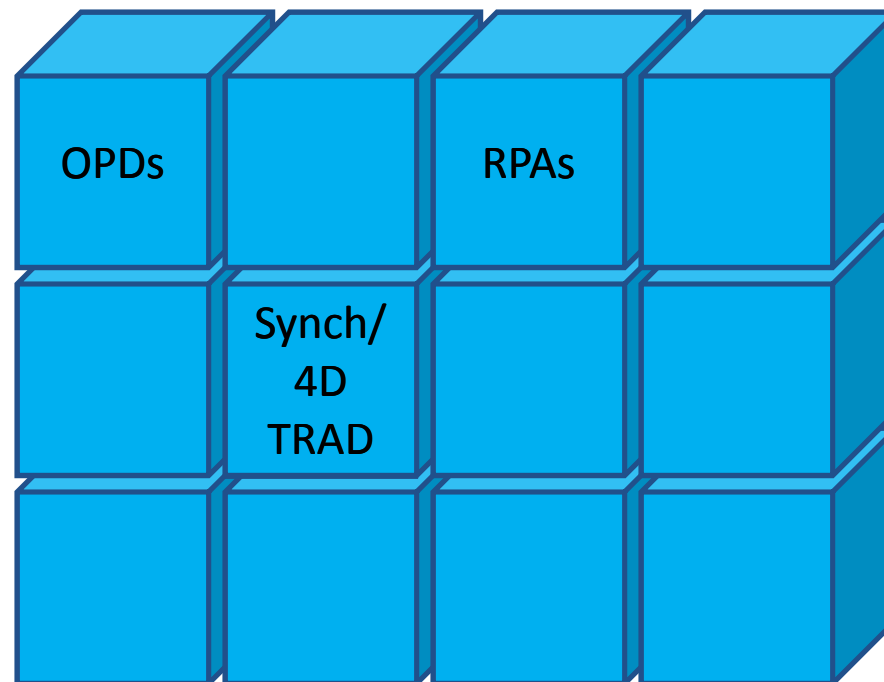
Block 1 Modules for: Globally Interoperable Systems & Data



Block 1 Modules for: Optimum Capacity & Flexible Flights



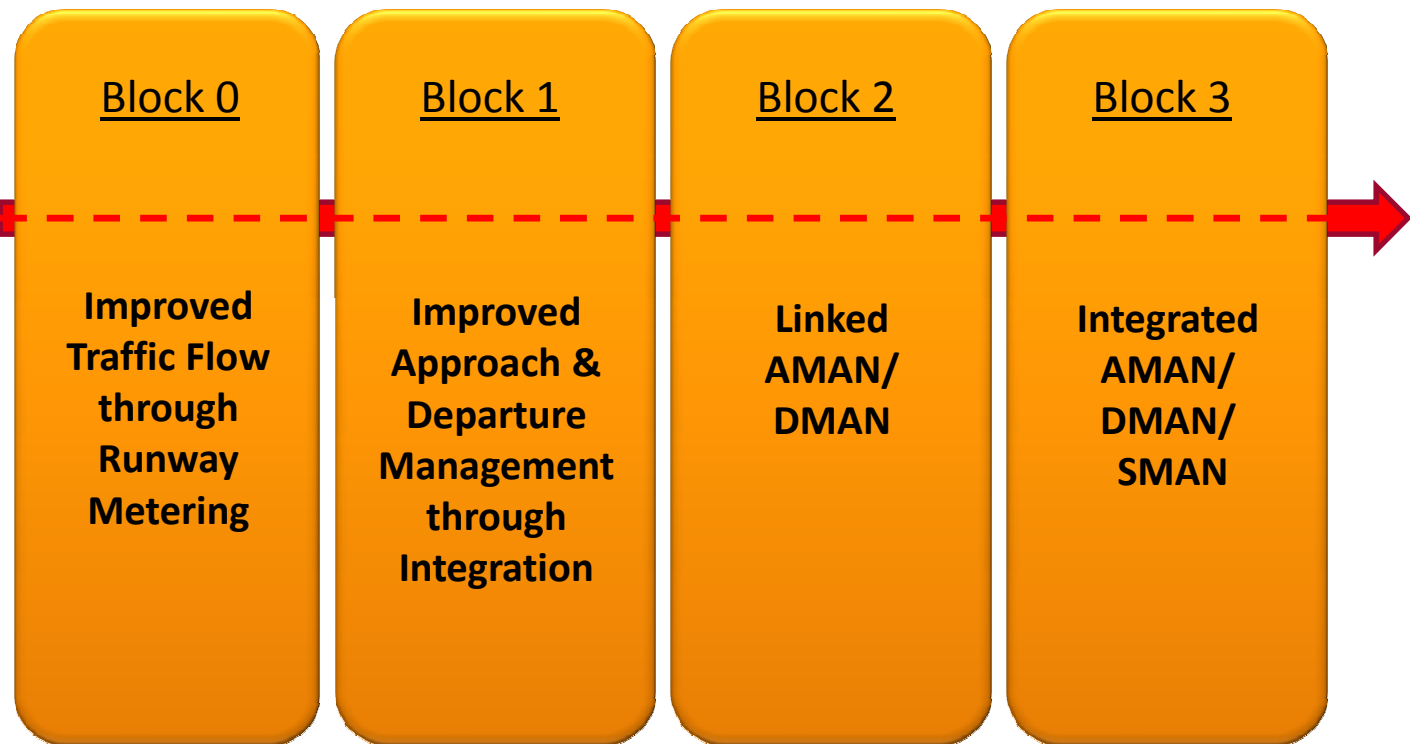
Block 1 Modules for: Efficient Flight Path



Threads Between Modules... and Across Blocks



Greener Airports



Available Now

2018

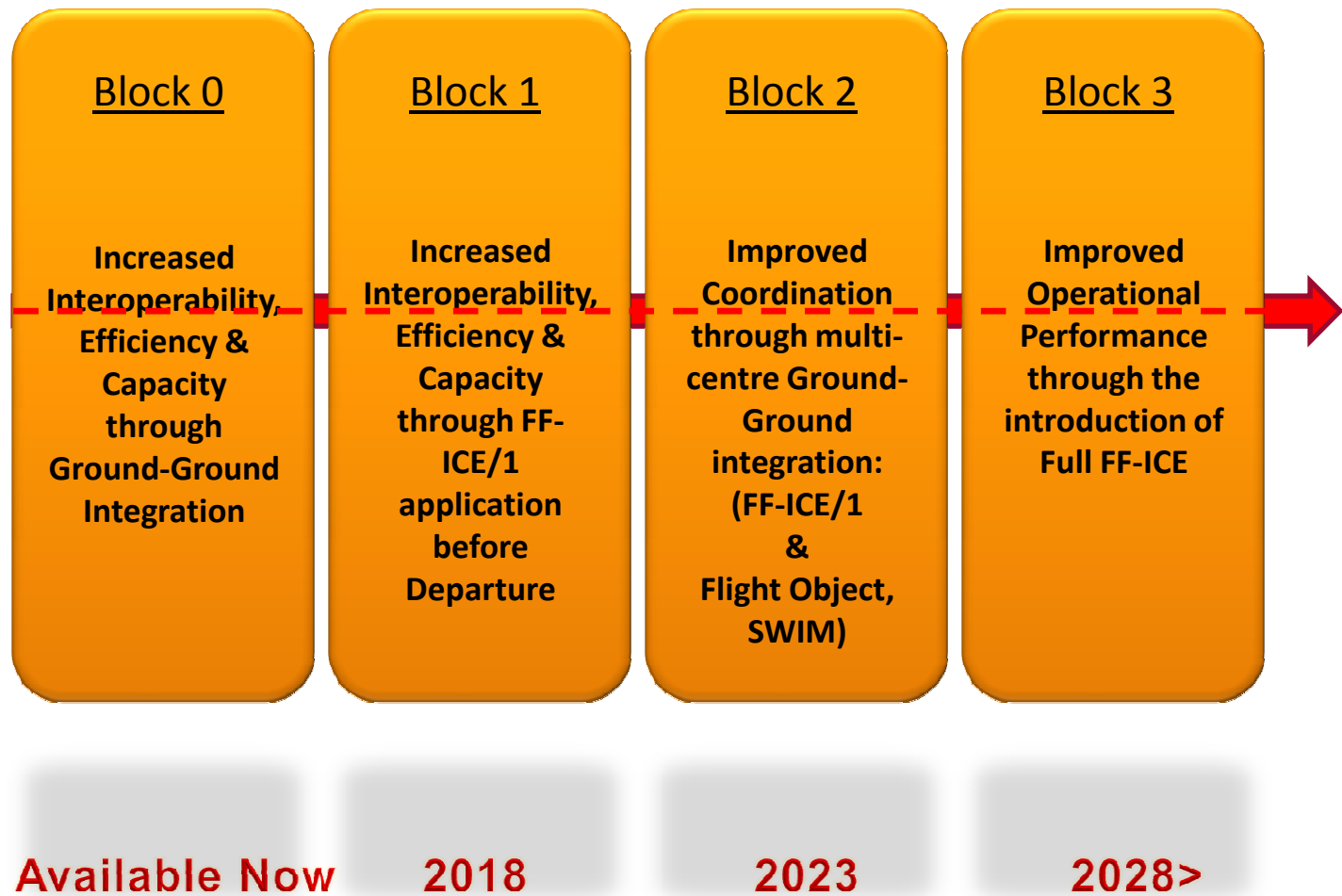
2023

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Threads Between Modules... and Across Blocks



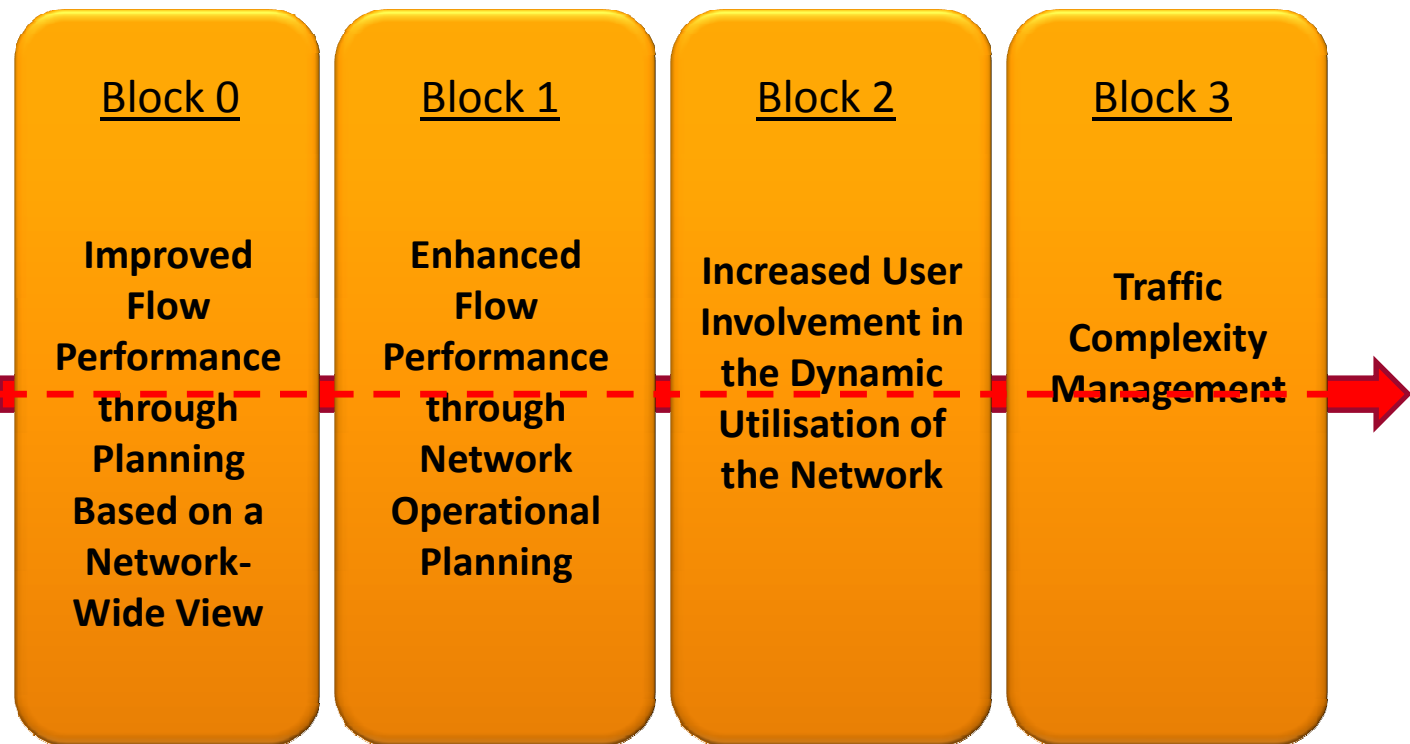
Globally Interoperable Systems & Data *Through Global SWIM*



Threads Between Modules... and Across Blocks



Optimum Capacity & Flexible Flights *Through Global Collaborative ATM*



Available Now

2018

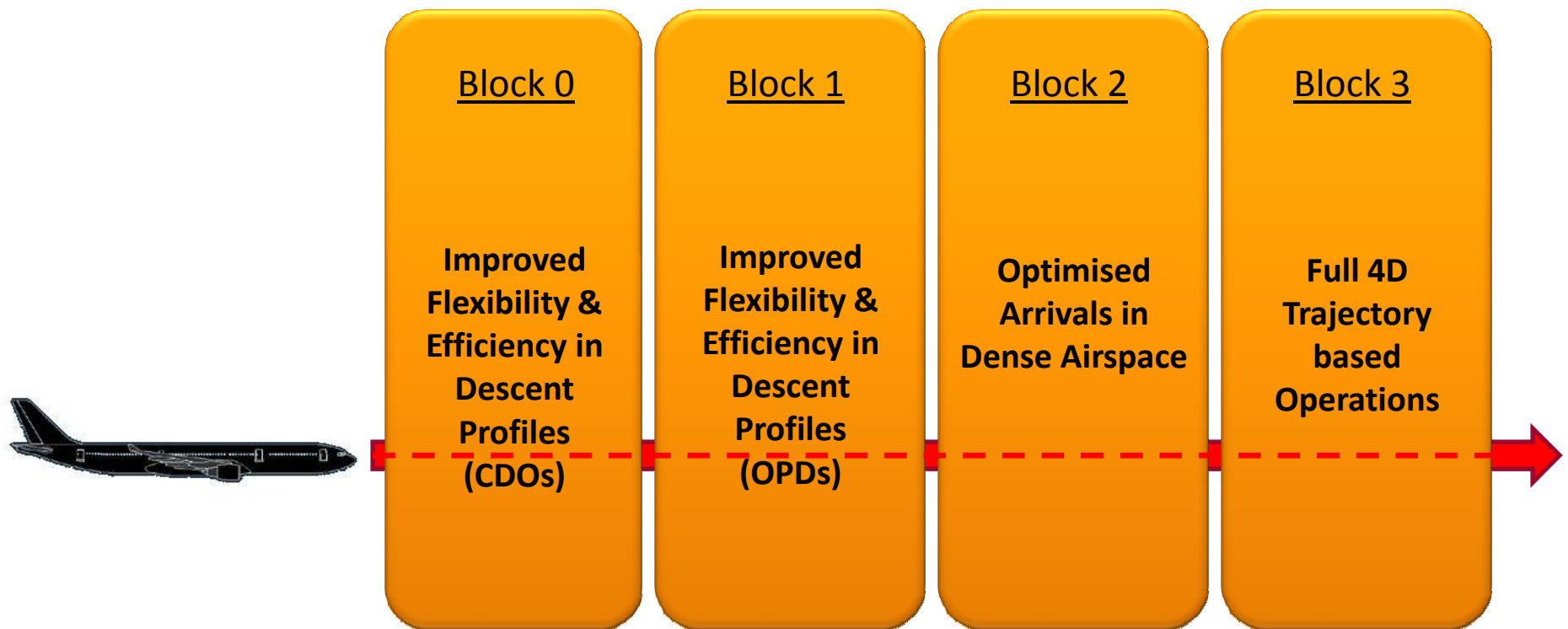
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Threads Between Modules... and Across Blocks



Efficient Flight Path *Through Trajectory-based Operations*



Available Now

2018

2023

2028>

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

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

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



ICAO

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