



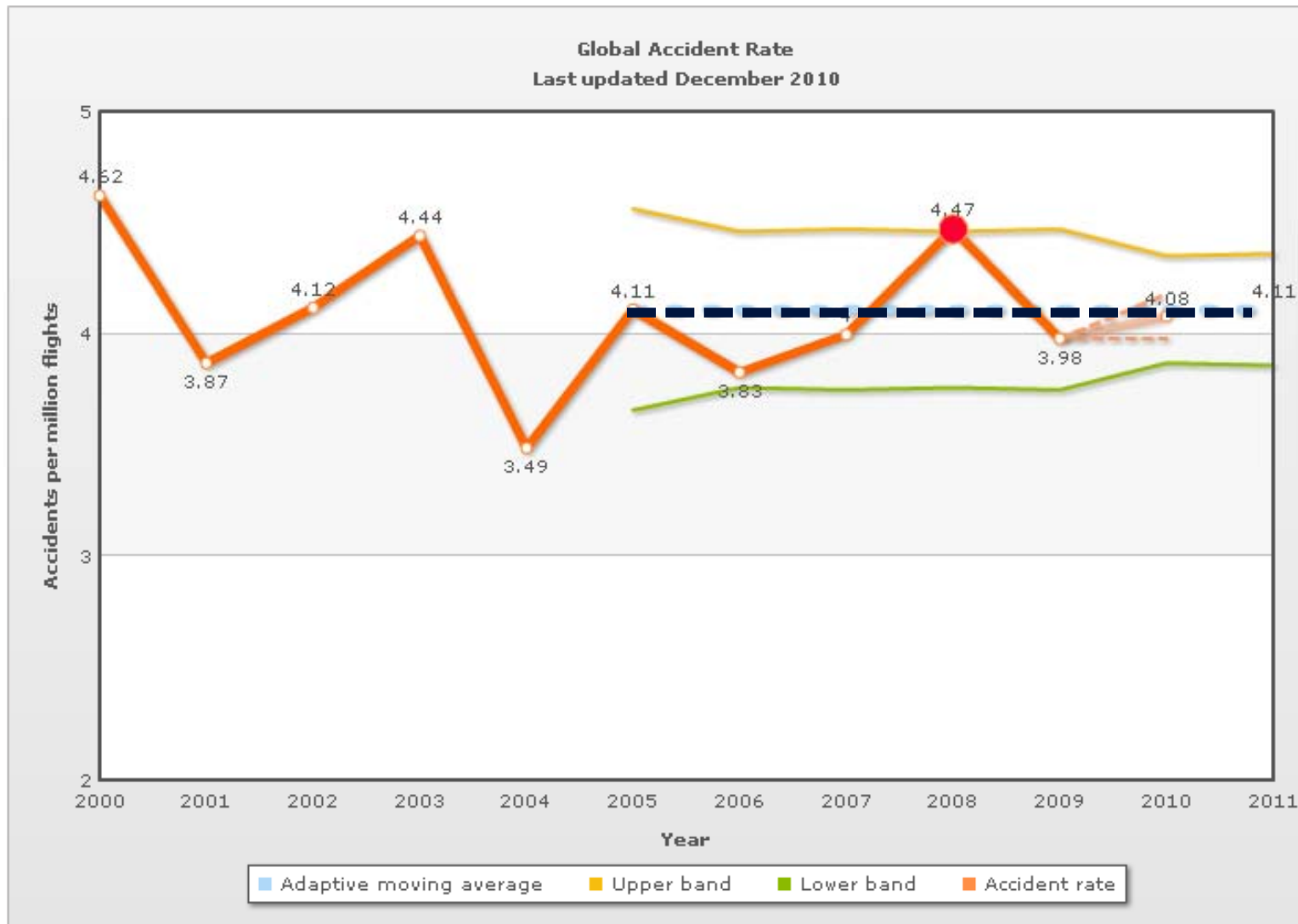
International Civil Aviation Organization

# Creating Operational Improvements Through Aviation System Block Upgrades

Nancy Graham

Director, Air Navigation Bureau

# 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

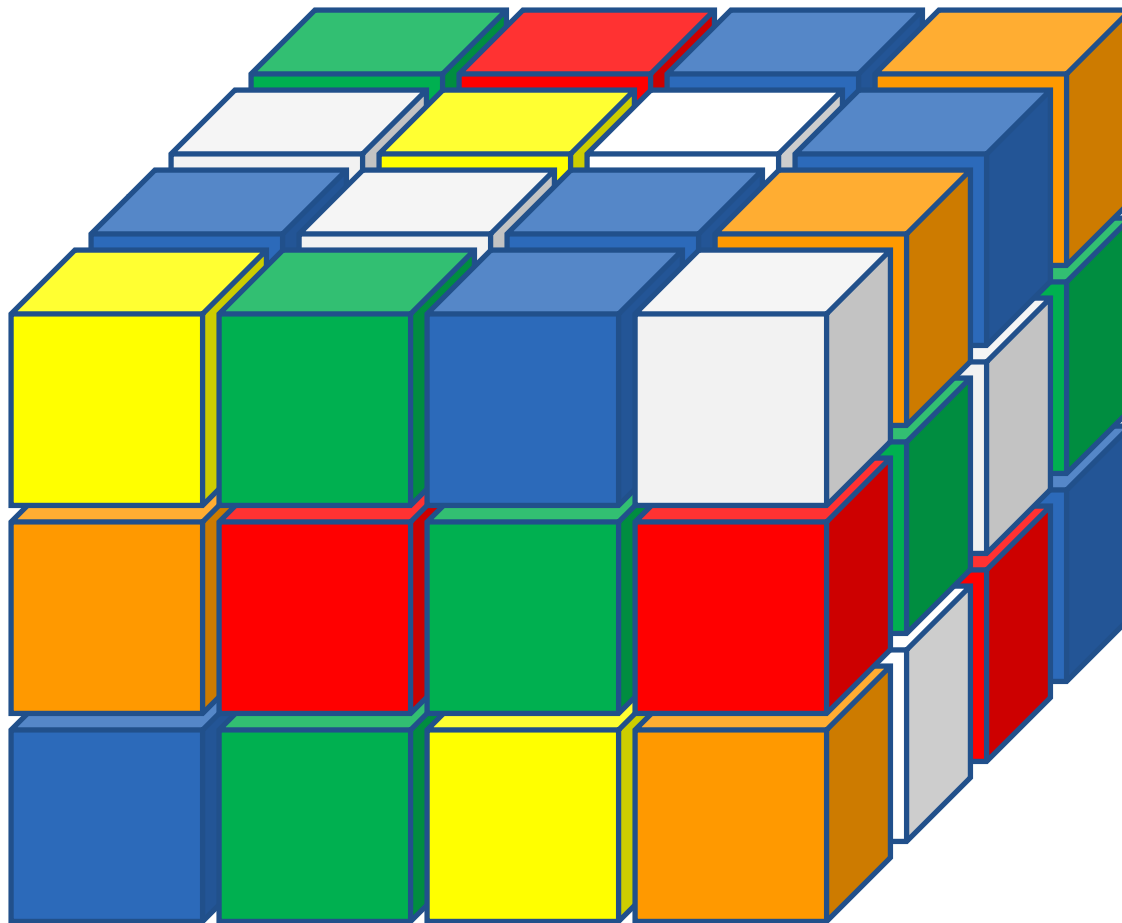
# Global Aviation System Block Upgrades



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

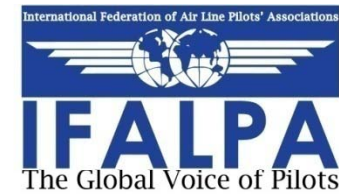
Why is this approach proposed?

# The Reality of Our System Today...





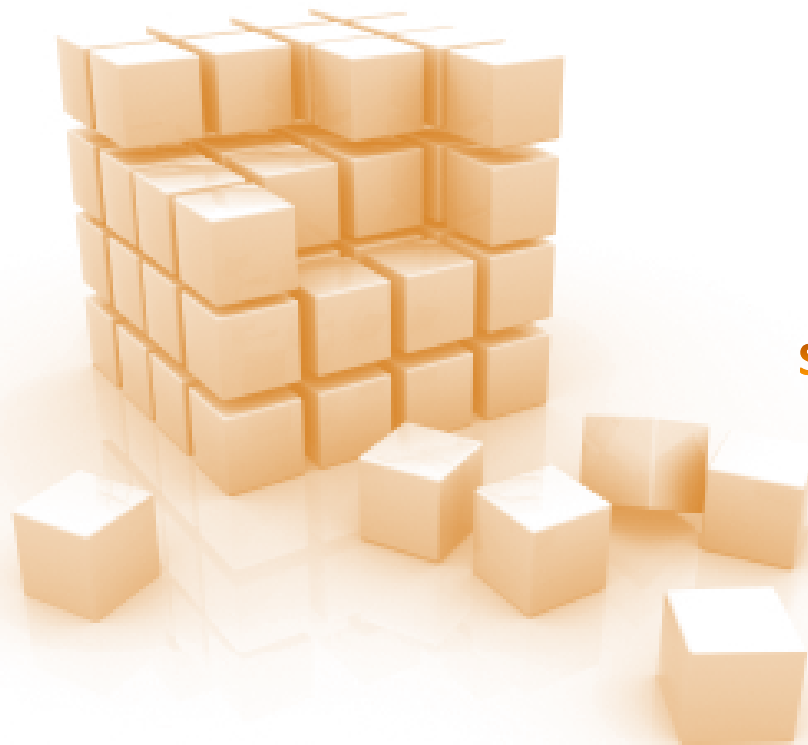
# A Team Effort



# What is a Block Upgrade?



**Measurable  
Operational  
Improvement**



**Air & Ground  
Standards & Procedures**

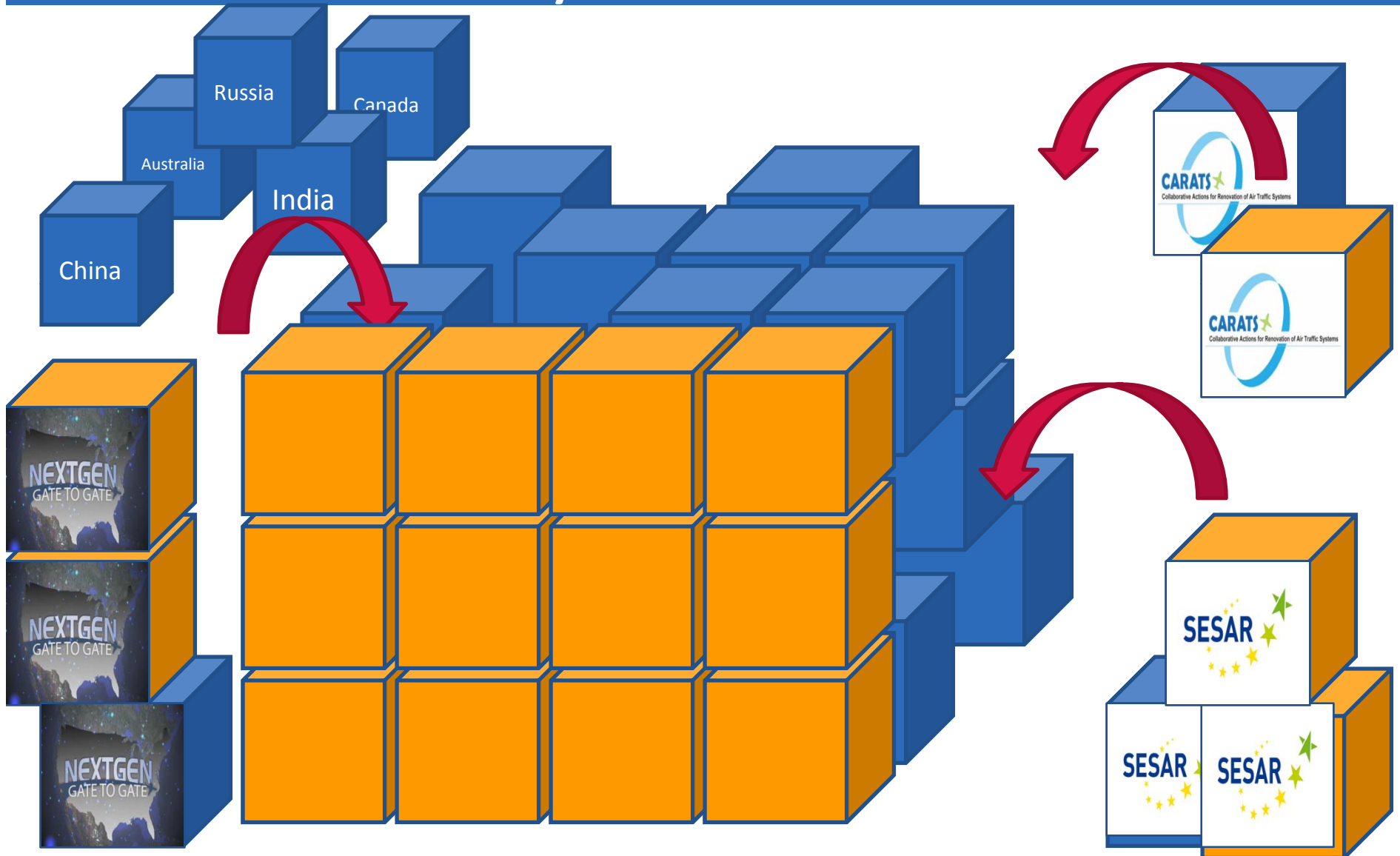


**Air & Ground  
Equipment / Systems  
+ Approvals**



**Positive  
Business Case**

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



# 4 Blocks Upgrades are Proposed

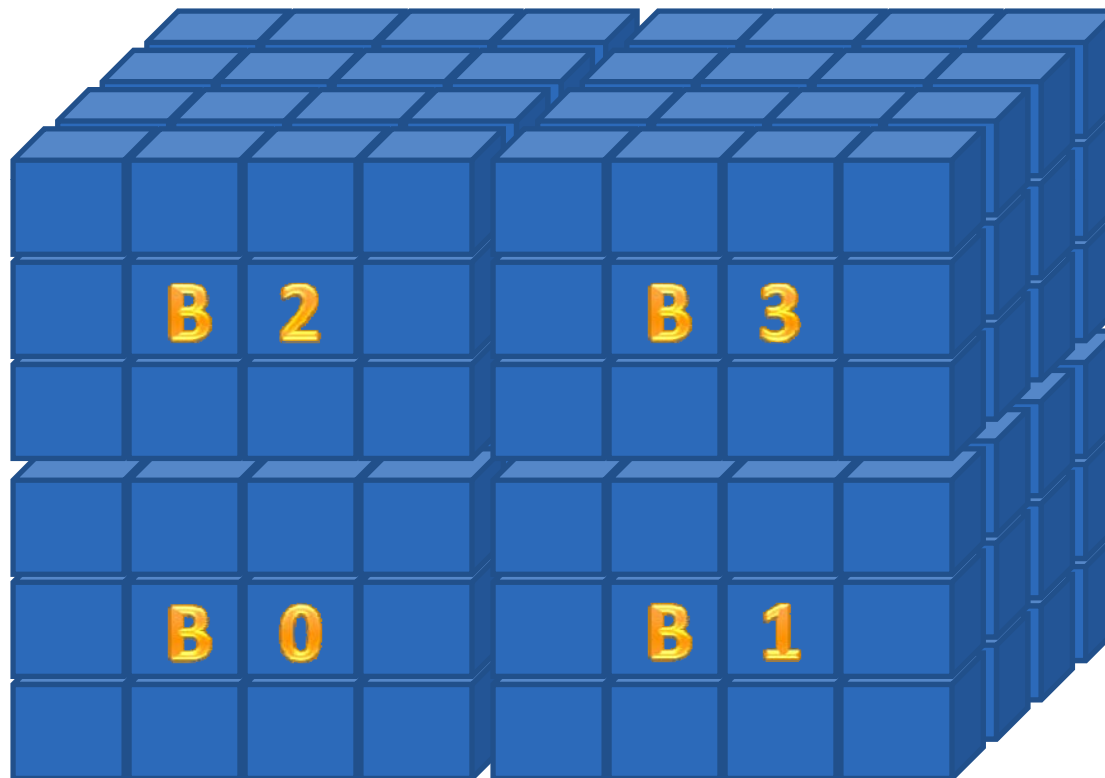


**Block 2**

**2023**

**Block 3**

**2028>**



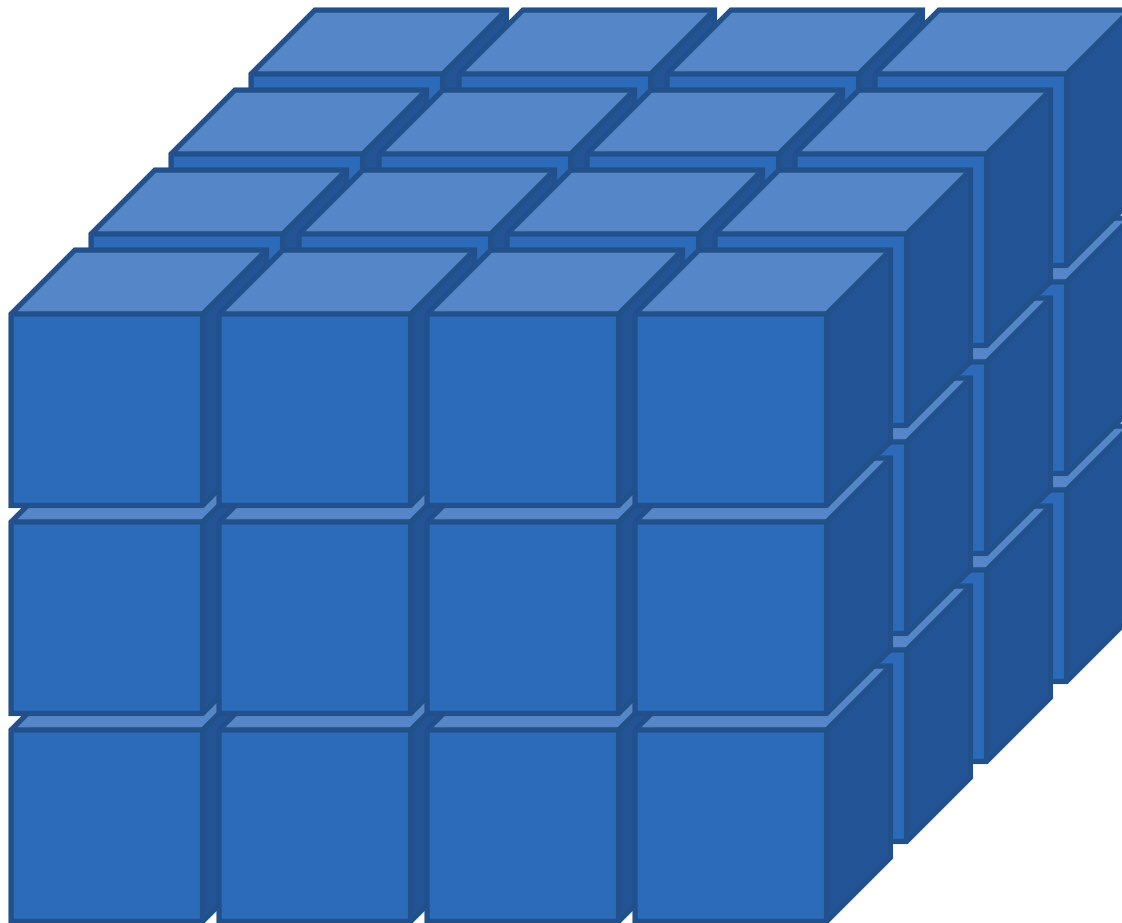
**Block 0**

**Block 1**

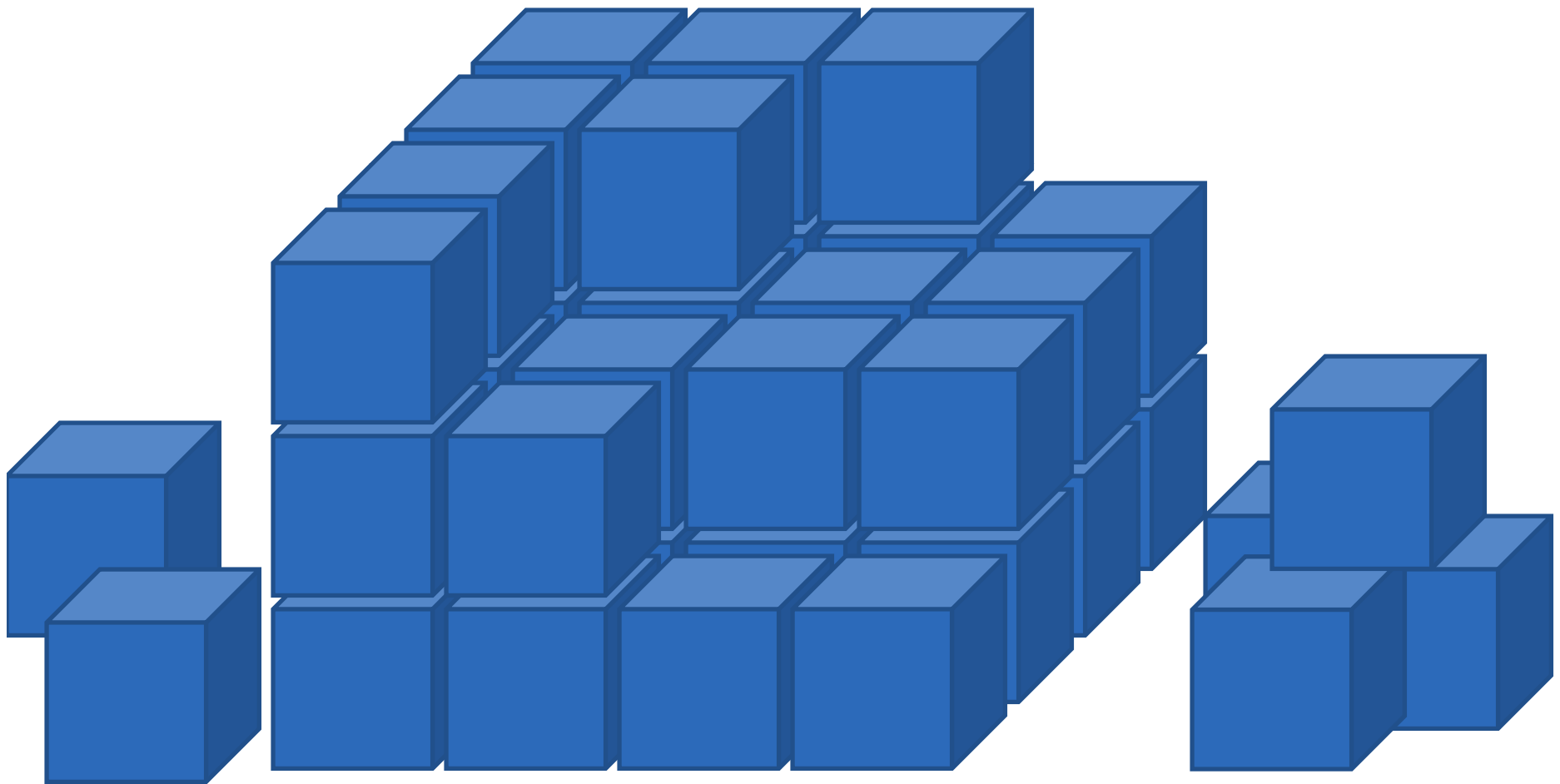
**Available now**

**2018**

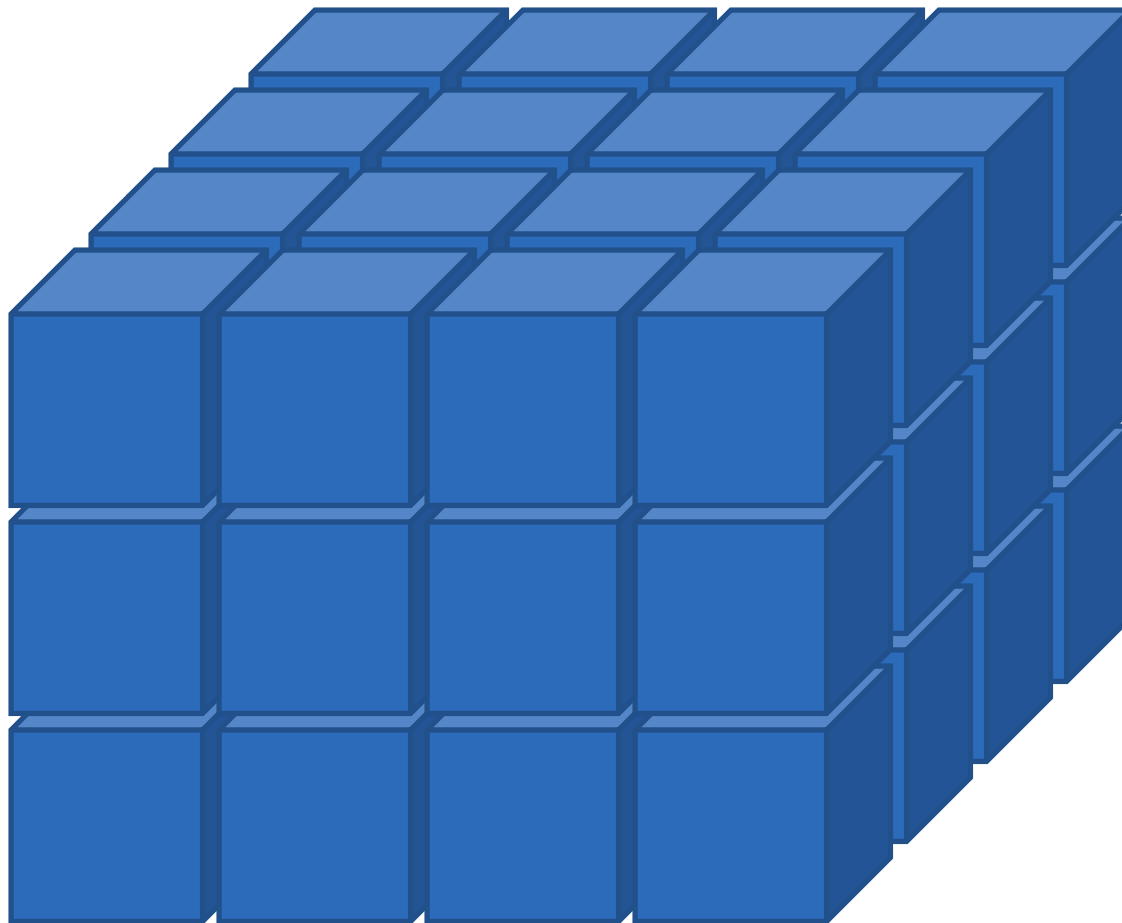
# A Block is Made Up of Modules...



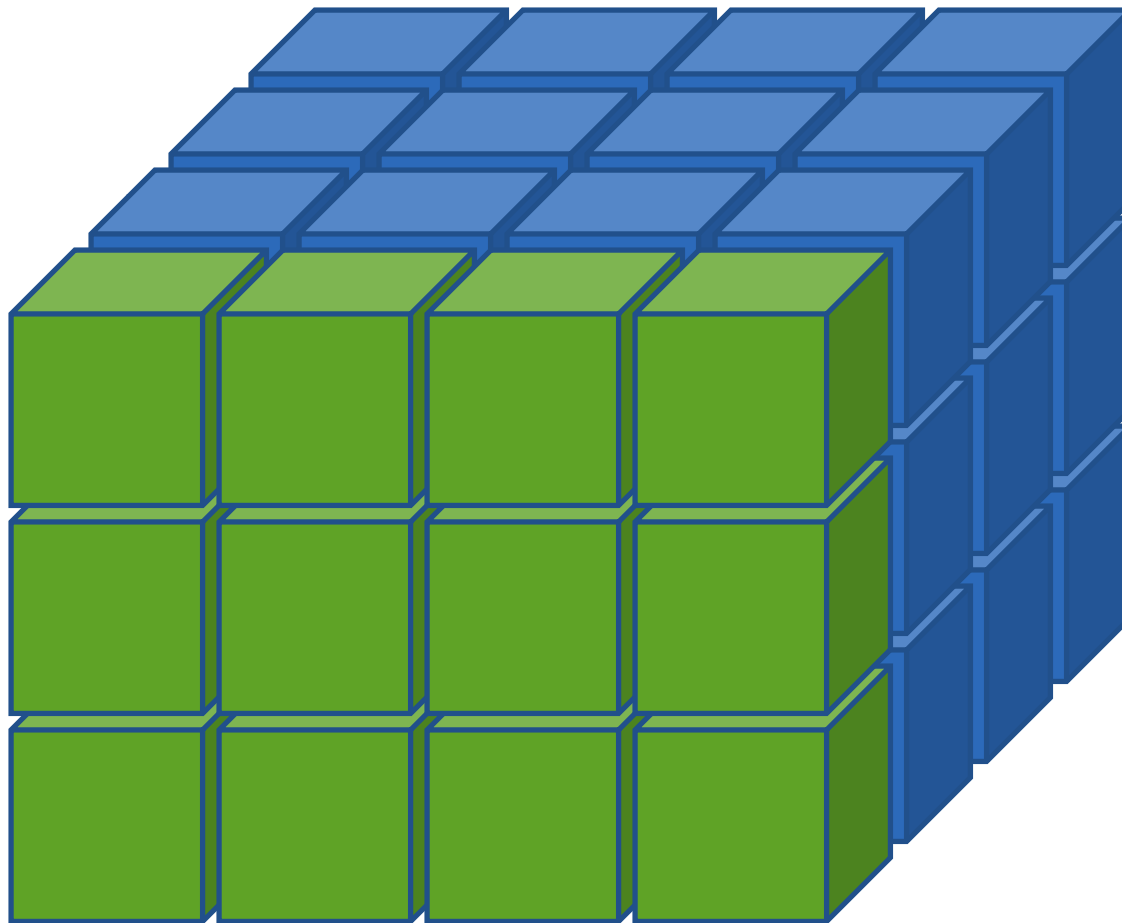
# ...So a Block is Scalable *to Meet Regional or Local Needs*



# Modules are Grouped in 4 Performance Improvement Areas

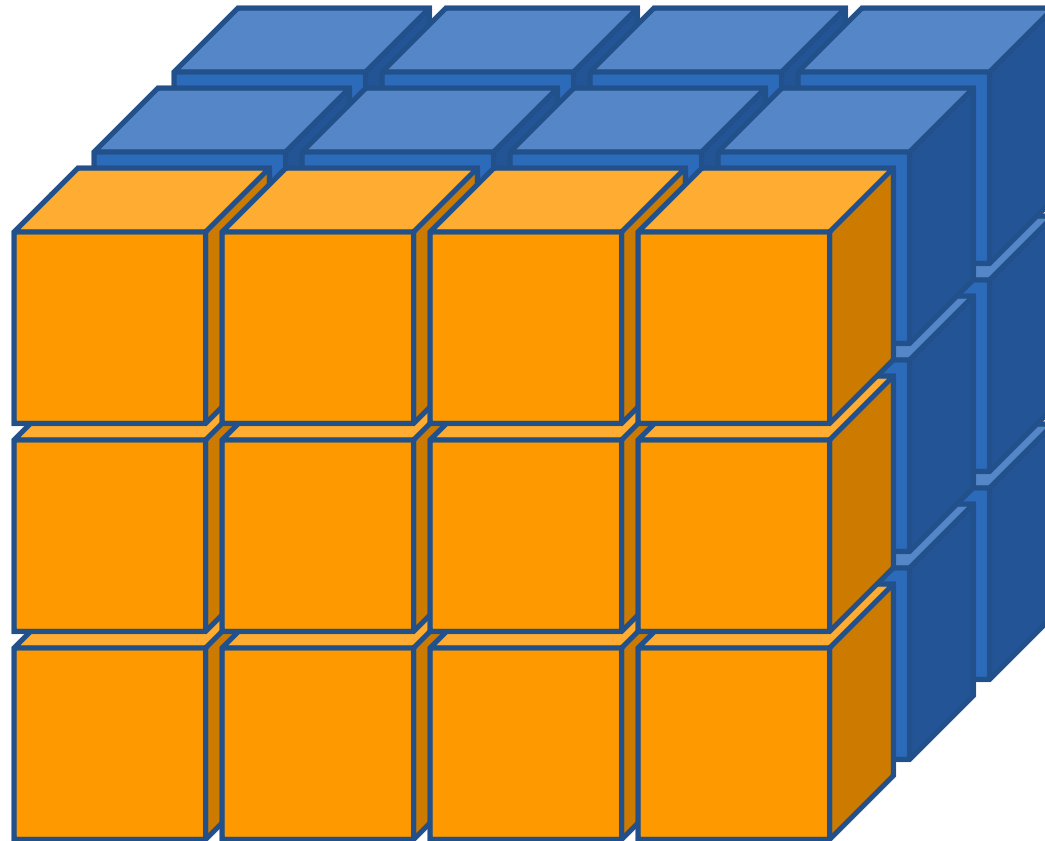


# Greener Airports

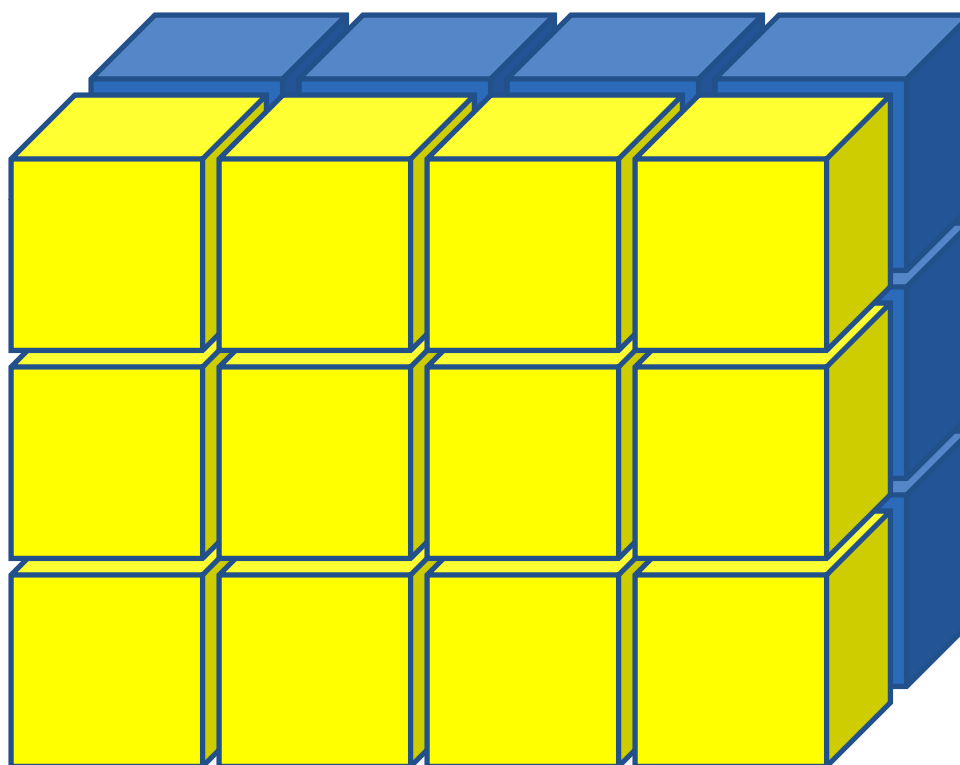




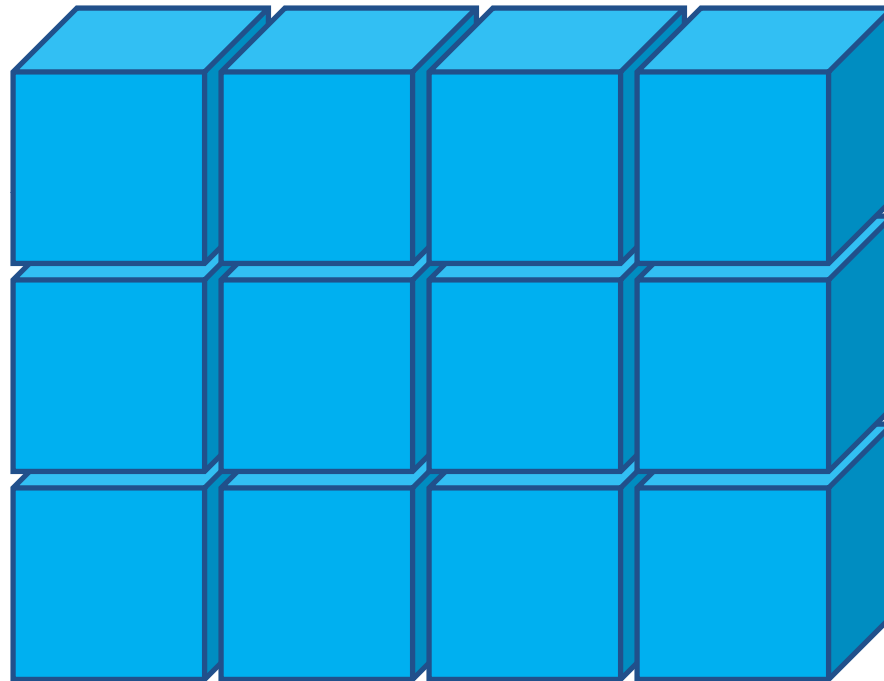
# Global Interoperable Systems & Data



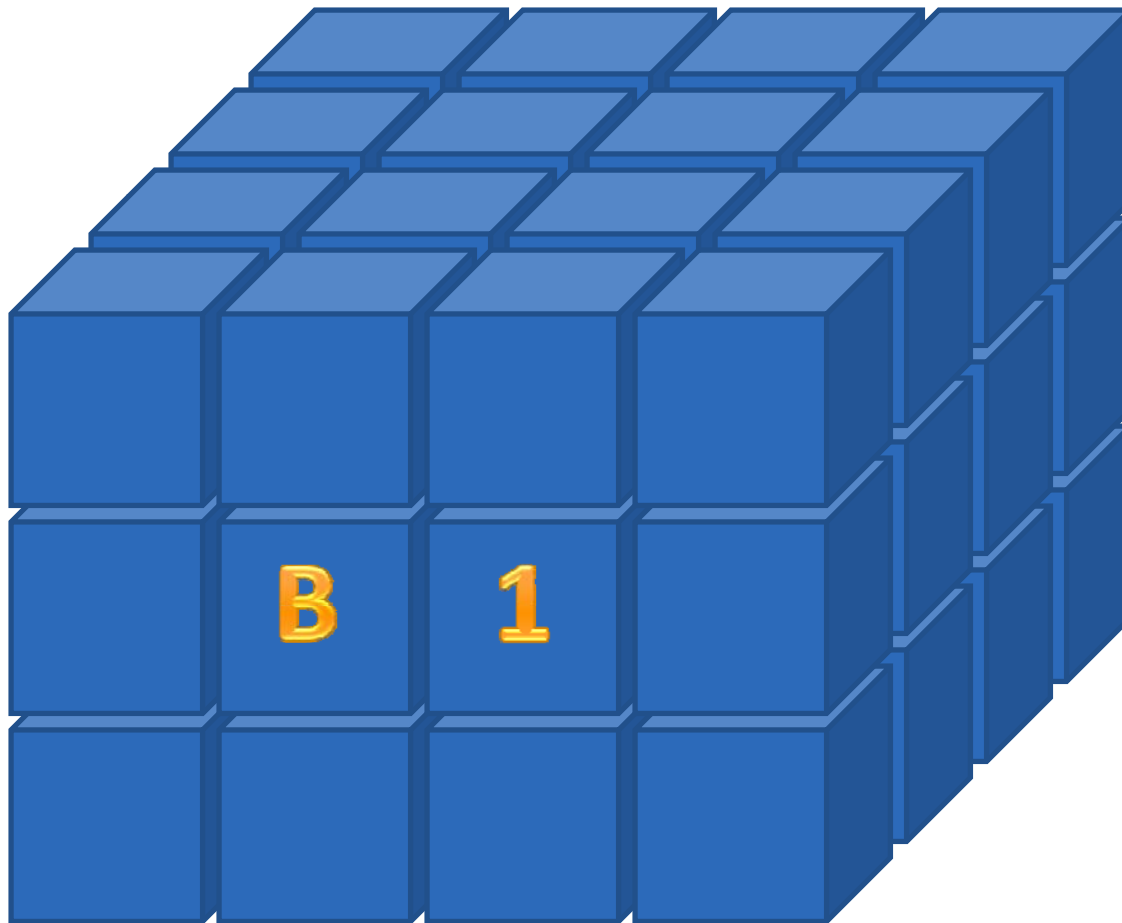
# Optimum Capacity & Flexible Flights



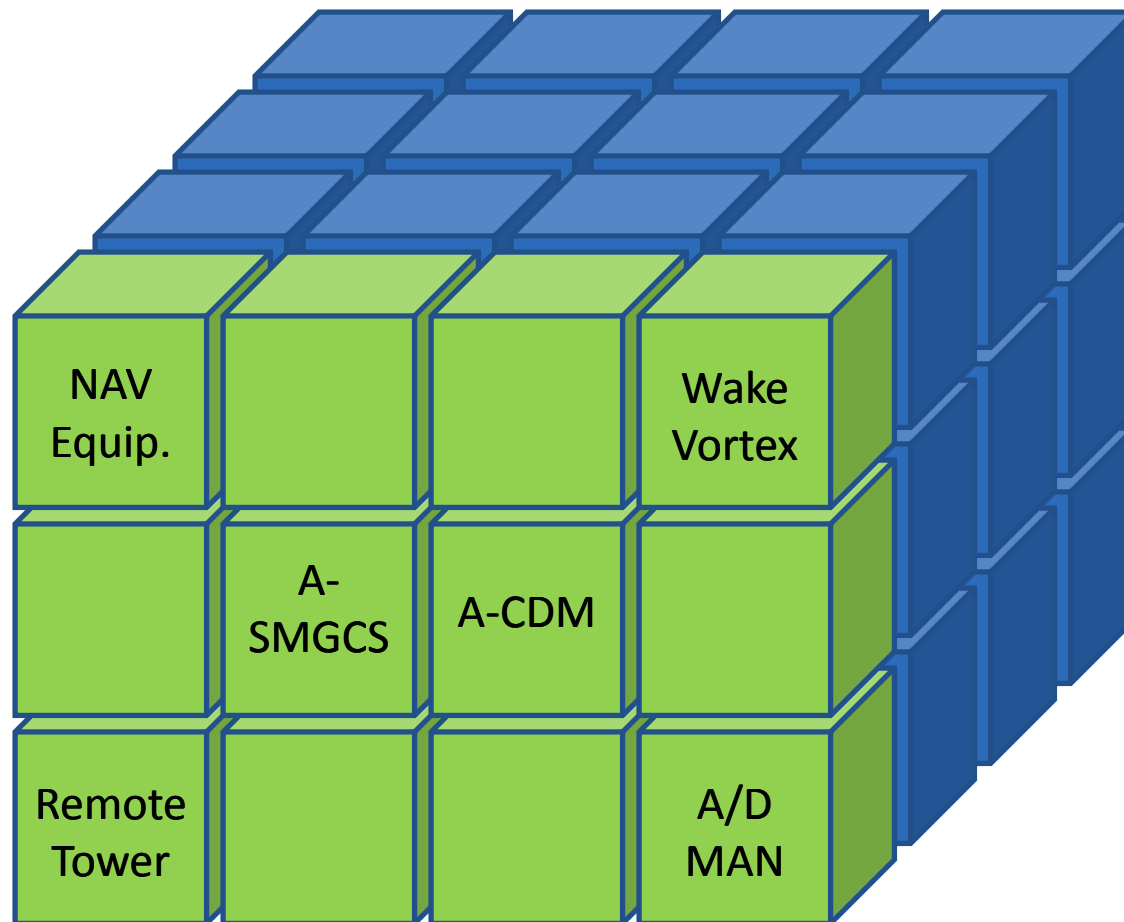
# Efficient Flight Path



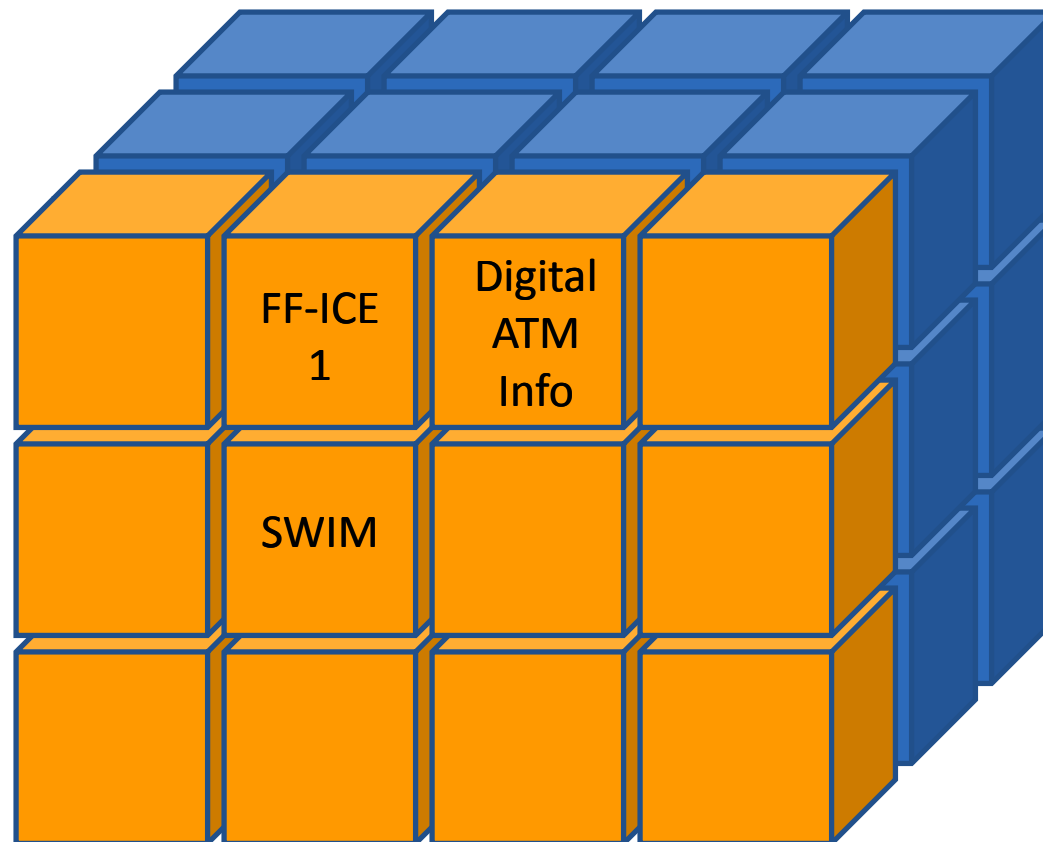
# Let's Focus on Block 1...



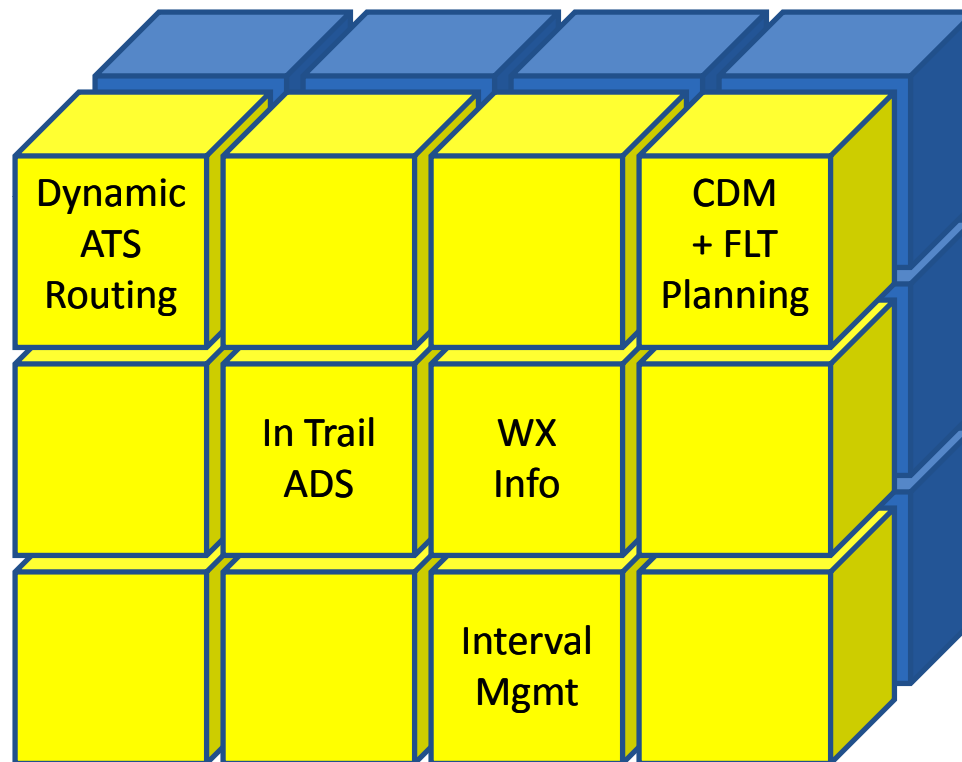
# Block 1 Modules for: Greener Airports



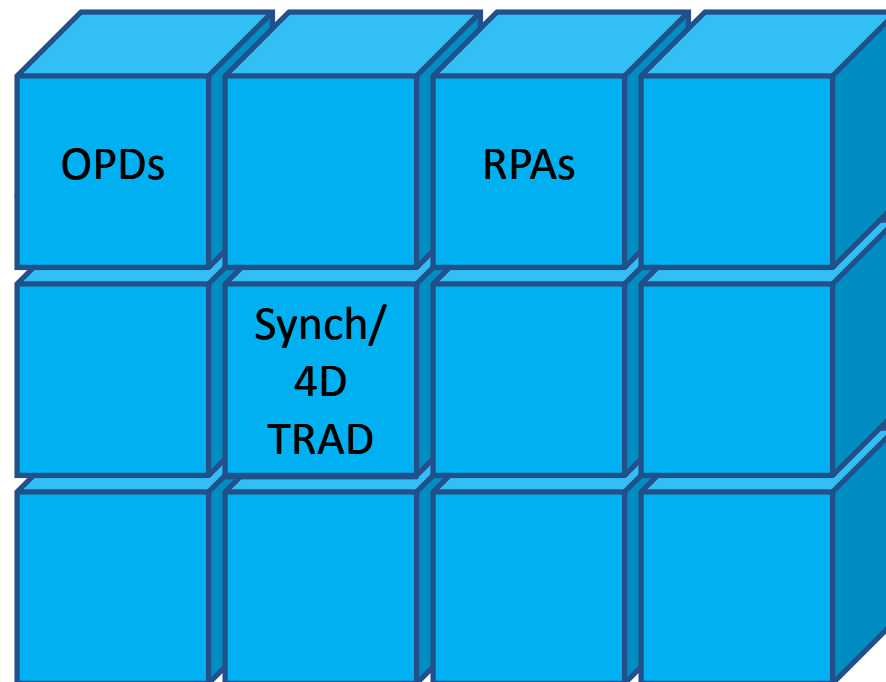
# Block 1 Modules for: Global Interoperable Systems & Data



# Block 1 Modules for: Optimum Capacity & Flexible Flights



# Block 1 Modules for: Efficient Flight Path

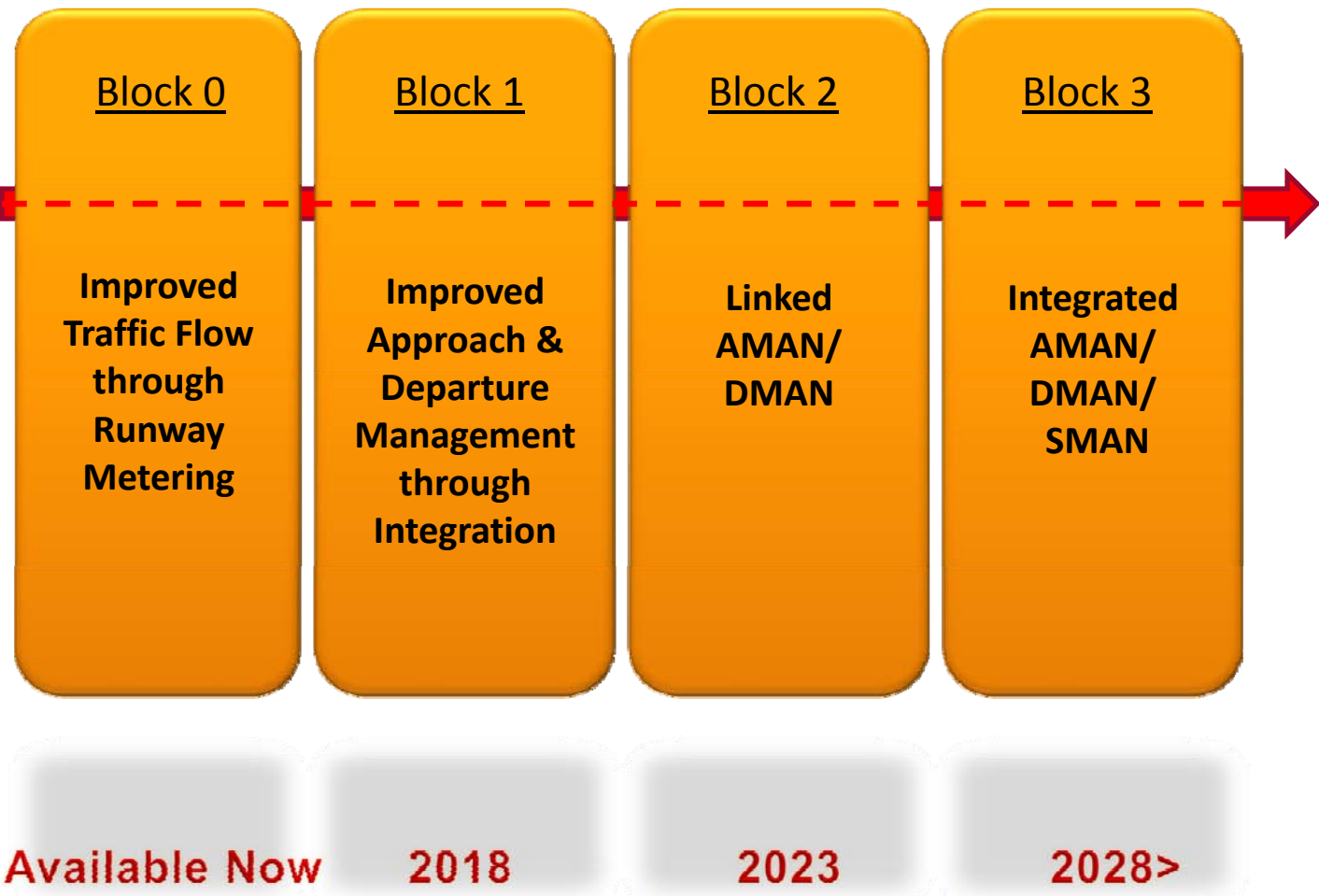




# Threads Between Modules... and Across Blocks



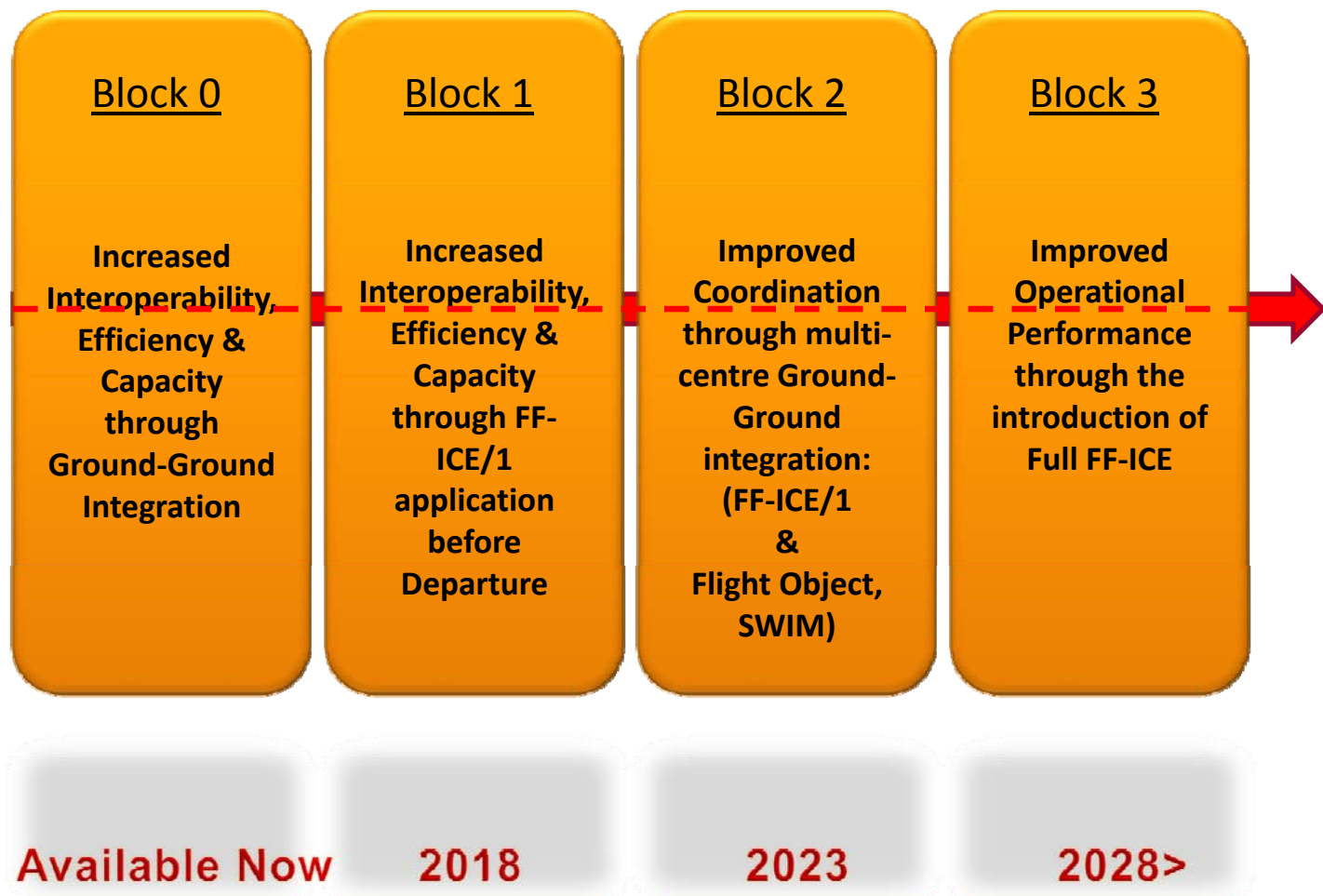
## Greener Airports



# Threads Between Modules... and Across Blocks



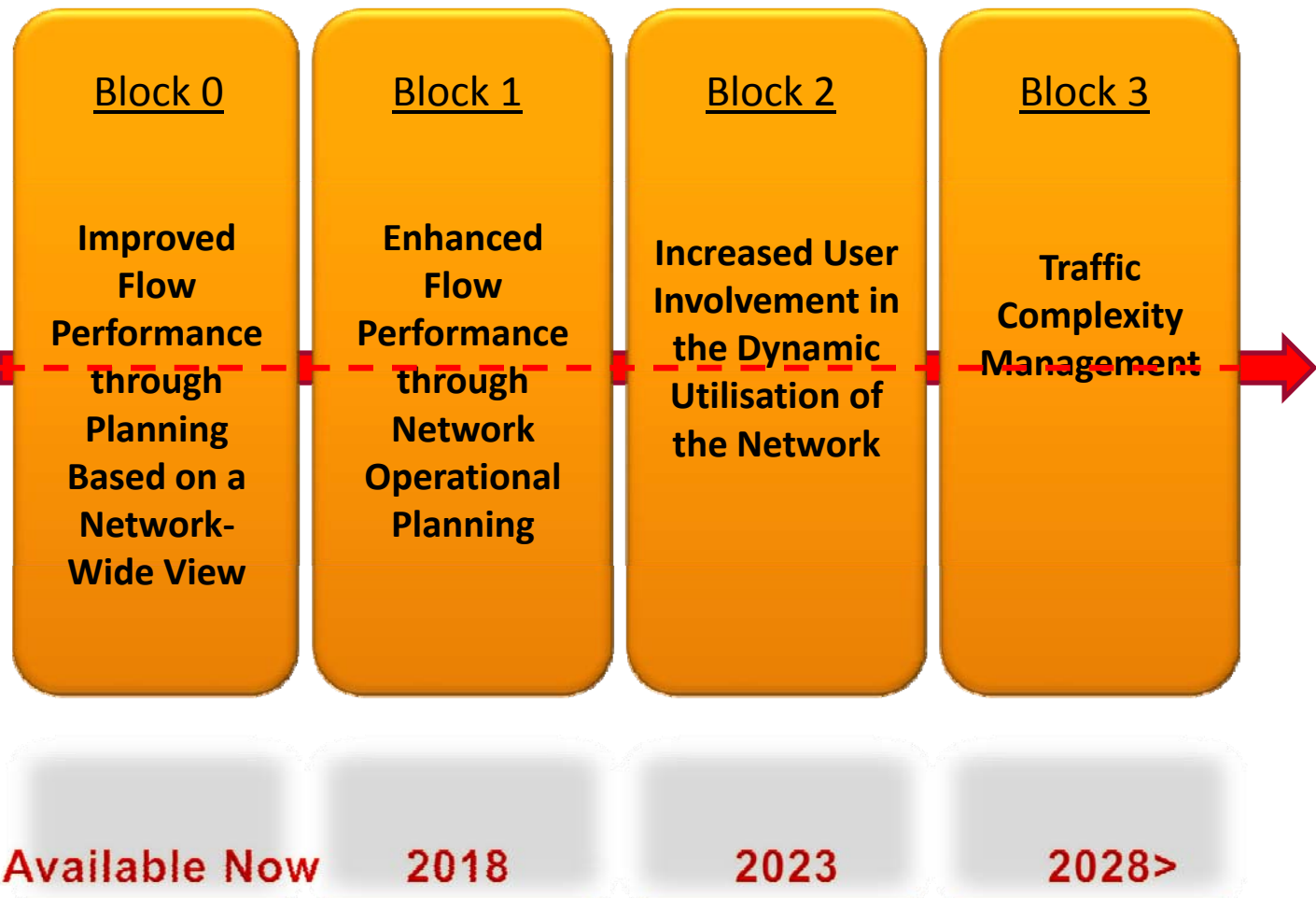
## Global Interoperable Systems & Data *Through Global SWIM*



# Threads Between Modules... and Across Blocks



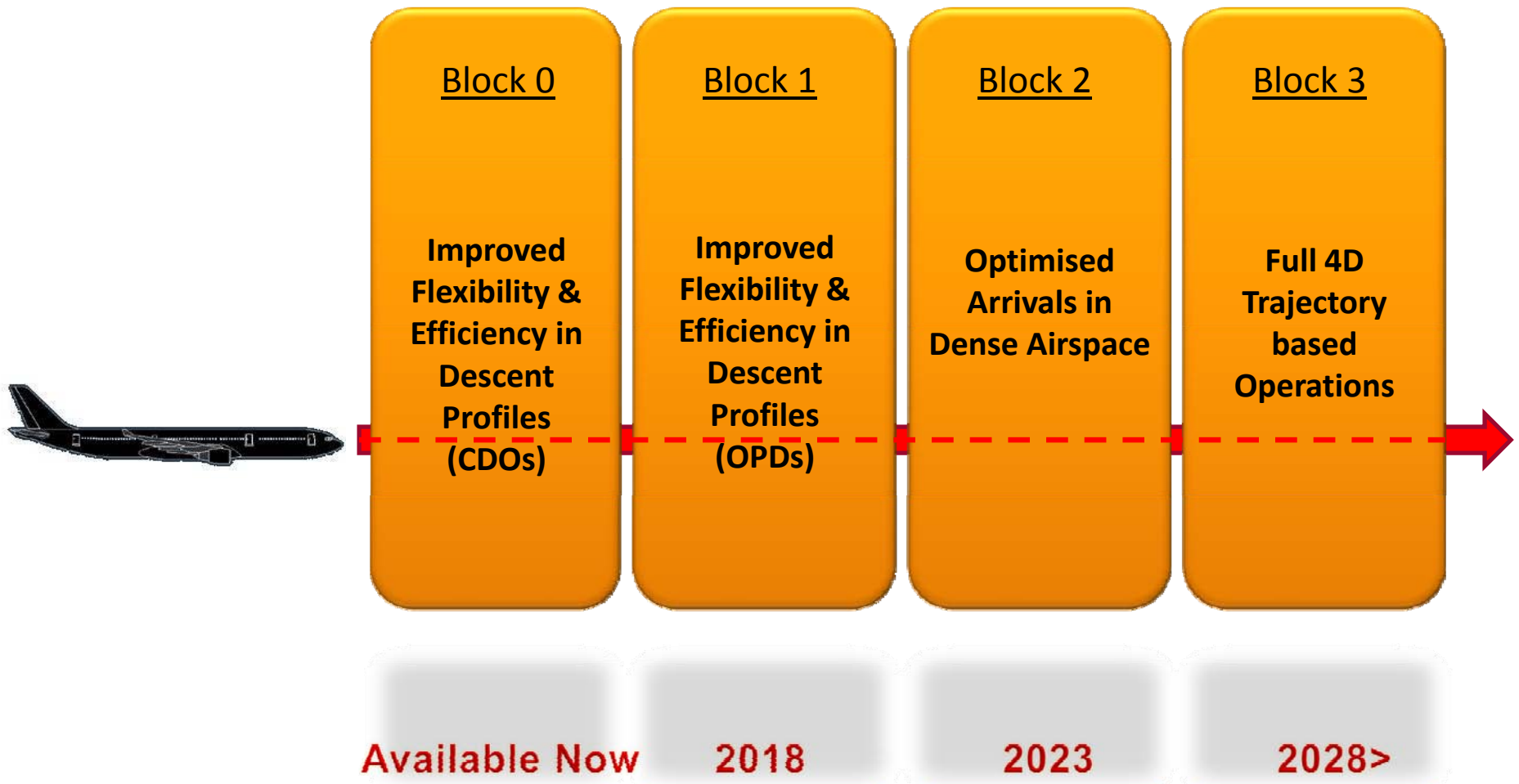
Optimum Capacity & Flexible Flights  
*Through Global Collaborative ATM*



# Threads Between Modules... and Across Blocks



## Efficient Flight Plan *Through Trajectory-based Operations*



# Step 3

## Global Rollout & Feedback at GANIS



- Platform to enable feedback
- Your voice is critical in our planning
- Essential preparation for AN-Conf/12
- GANIS Working Document posted on website

<http://www2.icao.int/en/GANIS/Pages/Documentation.aspx>

# Your Feedback is Important



Appendix D



International Civil Aviation Organization

## GANIS Working Document Feedback Form

Deadline for receipt of comments is **17 October 2011**  
Please submit feedback via email to: [GANIS@icao.int](mailto:GANIS@icao.int)

OK

Cancel

- Elect <http://>
- Work <http://>
- Email [GANIS@icao.int](mailto:GANIS@icao.int)

Attach File | ABC Spelling...

### FOCAL POINT INFORMATION

Name *	<input type="text"/>
Title *	<input type="text"/>
Organization *	<input type="text"/>
Telephone	<input type="text"/>
Fax	<input type="text"/>
Email *	<input type="text"/>

### FEEDBACK INFORMATION

Block and Module Reference Number *	<input type="text" value="--- Select ---"/>
Page Number	<input type="text"/>
Brief description and comment(s) *	<input type="text"/>

# 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

Uniting Aviation on

Safety | Security | Environment

