



The Complete Air Traffic System (CATS) Global Council

A shared vision
for 2045

WHY

- As a sector, past approaches to planning and attempts to drive harmonization have not delivered needed results.
- Visions of the future were emerging in silos.
- The interconnected skyscape we are aspiring to is just over two decades away.
- A sense of urgency was needed.



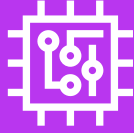
Key elements of the Vision

- We're experiencing physical and **digital connectivity** like never before
- Our skyscape is one of **variety, efficiency and vitality**
- The sky is **quieter and greener**
- Airspace is an **integrated, harmonised, flexible** system
- **Seamless** point-to-point flights, **interoperability and scalability** are powered by advanced technologies
- **Safety standards** have been adopted system-wide
- Global airspace is a **unified environment** accommodating a diverse mix of airborne vehicles, equipment and services

2045 Vision Building Blocks



Services and Service Delivery



Technology and Digitisation



Safety and Regulation



Environmental Sustainability and Social Impact



Airspace Design and Classification



Data and Security



People, Organisation and Talent

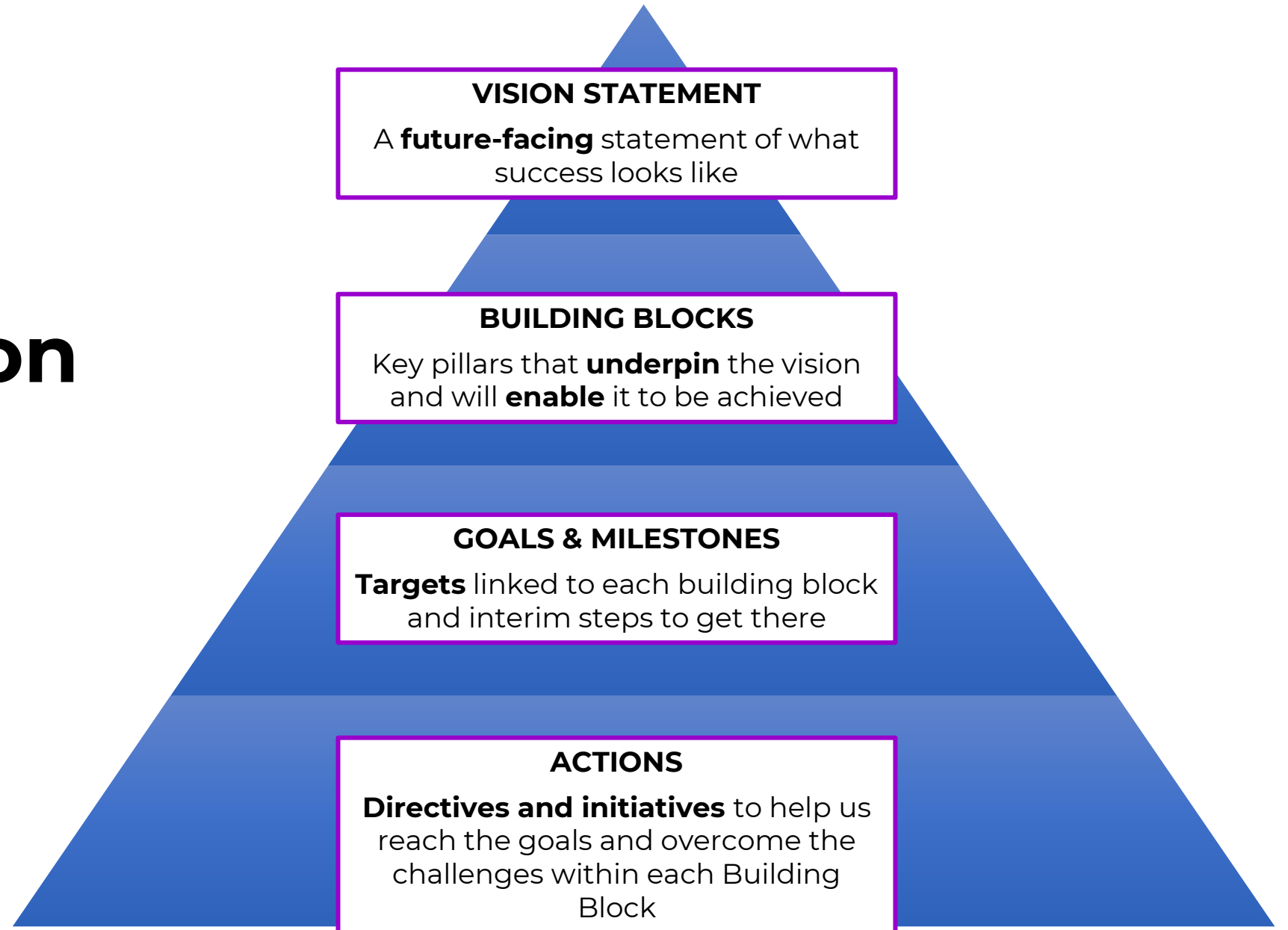
“ A DREAM written down with a date becomes a GOAL.

A GOAL broken down into steps becomes a PLAN.

A PLAN backed by action becomes a REALITY. ”

- Greg Reid

CATS Vision Roadmap



Long Term Goals

GOAL 1
Improved performance
through automation

GOAL 2
Harmonised service
delivery

GOAL 3
Integrated airspace

Overarching
Goals

GOAL 4
Harmonised, efficient
and flexible systems

GOAL 5
Digital Collaboration

GOAL 6
Safety and Security by
design

GOAL 7
Predictive approach to
risk management

GOAL 8
Strong safety and quality
culture

GOAL 9
Towards reduced
climate impact

GOAL 10
Environmental
sustainability and social
impact management are
broadly integrated into
the air transport system

GOAL 11
Integrated and
connected multimodal
transportation network
and infrastructures

Enabling
Goals

GOAL 12
Data-powered ecosystem

GOAL 13
Thriving airspace management community

GOAL 14
High performing teams

2025

2030

2035

GOAL 1

Improved performance through automation

Advancements in technology and digitisation have enabled higher levels of automation and fuelled the rise of new and improved user-centric services.

M1 New CONOPS

M4 Conceptual framework for cross border service delivery and management of sovereign airspace

M9 Technology roadmap

M18 Network of sandboxes

M68 New ANS financing mechanisms

M25 Agile regulatory practices

M31 Sustainable integration of new technologies

M34 Electric UAS and eVTOLS reduce emissions in urban areas

M72 Disruption management

M17 Autonomous and decentralised operation

M50 Digitally connected aviation

GOALS and Milestones

GOAL 2 Harmonised service delivery

The design and delivery of services are harmonised, dynamic, flexible, resilient and scalable to meet the future needs of all airspace users.

2025

M1 New CONOPS

M3 International collaborative ATFCM process

M4 Conceptual framework for cross border service delivery and management of sovereign airspace

M54 Cyber security and resilience

2030

M2 Cross border service delivery

M13 Performance-based CNS

M25 Agile regulatory practices

M60 Flexible deployment of resources

M72 Disruption management

2035

M50 Digitally connected aviation

M52 Secured communications

GOAL DESCRIPTION

GOAL 3 Integrated airspace

Airspace becomes a unified environment that seamlessly integrates a diverse mix of airborne vehicles (piloted and unpiloted), equipment and services.

2025

M1 New CONOPS

M3 International collaborative ATFCM process

M4 Conceptual framework for cross border service delivery and management of sovereign airspace

M6 Harmonised FUA

M18 Network of sandboxes

M39 UAM operations are increasing

M45 Civil-military collaboration

M67 New data requirements for integration of new entrants

2030

M2 Cross border service delivery

M27 New approach to surveillance services and Detect and Avoid for all traffic

M42 Integrated and collaborative information systems

M43 Harmonised and optimised airspace

M44 Harmonised upper airspace

M47 Airspace design supports dynamic airspace and user integration of all users

M48 Airspace design supported by common rules

M69 Harmonised control traffic regions and terminal areas

2035

M5 UAS deconfliction strategy & cooperative avoidance provision

M7 Integrated and harmonised high altitude

M8 Integrated and harmonised AAM

M41 Simplified airspace design

GOAL DESCRIPTION

3 year workplan

- The Technical Committee has reviewed all the proposed milestones and actions and identified immediate priorities.
- The outcome of this work has been used as a framework for the draft 2023-2025 workplan
- Workplan separates activities into 8 work areas based on similarity of task
- Work will be undertaken in a variety of forums
 - Newly formed expert groups reporting to the Technical Committee
 - Existing ICAO panels or other existing industry forums
 - CANSO workgroups
- Experts are being enlisted to support the work areas.



41st Session of the ICAO Assembly

The working paper from CANSO, ACI, IATA, IBAC, ICCAIA and IFALPA (WP356) entitled: “Industry Roadmap for future skies” was well received and the actions proposed in our paper were accepted ensuring ICAO attention on the key items essential to the achievement of the CATS Global Council vision.

In particular, the Assembly requested ICAO to consider the development and prioritisation of the activities identified as part of the Industry Roadmap for Future Skies in ICAO's work programme for the triennium 2023-2025.



CATS Event with NASA and FAA “Collaborating on our Future Skies”

The event “Collaborating on our Future Skies”, kindly hosted by NASA at their HQ in California attracted many leaders from Silicon Valley tech companies. The event provided a platform to discuss the CATS, FAA and NASA visions and to consider how the industry can work together to create an exciting future for air mobility.

We received positive feedback on the CATS vision and organisations from unmanned and manned aviation urged us to move forward with pace.



Consolidated Work Areas

WA1: A New CONOPS for Global Airspace Management

WA2: A Traffic Management (TM) integration roadmap in Low-Level and High Airspace & Pathway to Advanced Air Mobility (AAM)

WA3: Optimised and simplified airspace

WA4: Innovation and Digitalisation

WA5: Global safety and security

WA6: Achieving reduced climate impact

WA7: Thriving aviation community

WA8: New ANS financing mechanisms

How are we going to work together?

Overarching Principles

- Demonstrate active leadership
- Commit to achieving our collective mission
- Spearhead industry transformation
- Endorse action and commit resource
- Cultivate a collaborative culture
- Be accountable for the end result
- Never compromise the safety our industry is founded on
- We will work together in close collaboration with ICAO and all key organizations
- We will not duplicate existing activities



Difference between CATS and CANSO

- The CATS GC is not a CANSO body. CANSO is the convener and Chair.
- CANSO has endorsed the vision, as have many of our members, customers and stakeholders
- Having endorsed the vision, the work of CANSO must be aligned with it



Future of the CATS Global Council

- Will remain operating serving as custodians of the vision
- Will drive accountability for progress on the roadmap
- Will develop measures to assess performance
- Will advocate where and when necessary to remove barriers
- Will monitor keep an eye on global changes to make sure that the vision and roadmap remain fit for purpose
- Will continue to promote its vision and encourage engagement



AIRSPACE
WORLD 2023

CATS Members

1. A4E
2. ACI
3. AeroConnect
4. Airbus
5. AirEuropa
6. Airports Authority of India
7. Airservices Australia
8. Airway New Zealand
9. Altitude Angel
10. ANRA Technologies
11. ASTRA UTM
12. ATNS
13. Bluenest
14. Boeing
15. CAAS
16. CANSO
17. Cirium
18. Collins Aerospace
19. Commercial Spaceflight Federation (CSF)
20. Cortexia
21. Cranfield University
22. DANS
23. DFS
24. DSN
25. EANA
26. EASA
27. Egis Aviation UK
28. EHA - European Helicopter Association
29. Ehang, Spain
30. Emirates Airline
31. EUROCONTROL
32. European Defence Agency (EDA)
33. European Satellite Services Provider (ESSP)
34. Eve Air Mobility
35. EXPODRONICA
36. FAA
37. FlyingBasket
38. Frequentis AG
39. GAMA
40. Global ATC Alliance / ITF
41. Graham Aerospace International
42. IATA
43. IBAC
44. ICAO
45. IFATCA
46. IFATSEA
47. ITF
48. Indra
49. Joby Aviation
50. Kenya Civil Aviation Authority
51. Leidos
52. Leonardo
53. Lexavia
54. Lilium
55. movingdot
56. MITRE
57. NASA
58. NATO
59. NATS
60. NAV CANADA
61. Northrop Grumman
62. PANS
63. SESAR 3 JU
64. skyguide
65. solace
66. Supernal
67. Thales
68. The Longbow Group
69. Think Research
70. To70
71. UAVIONIX
72. Unify
73. Volocopter
74. WEC
75. Wing

