

Complete Air
Traffic System
Global Council

CONOPS for Future Skies



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The Complete Air Traffic System (CATS) Global Council

è una coalizione senza precedenti di oltre 80 organizzazioni, che riunisce i tradizionali stakeholder dell'aviazione, tra cui fornitori di servizi di navigazione aerea (ANSP), compagnie aeree, aeroporti e produttori aerospaziali, insieme a pionieri di soluzioni avanzate per lo spazio aereo, fornitori di mobilità di nuova generazione e innovatori tecnologici.



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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



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Creators of the CATS Global Council



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Perché questa coalizione senza precedenti?

Stiamo affrontando una nuova era per l'aviazione e lo spazio; l'incremento di attività, la velocità del cambiamento e il tasso di innovazione saranno più rapidi negli anni che precedono il **2045** rispetto agli ultimi decenni.



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LA SFIDA

Sono necessari nuovi modi di pensare, nuovi concetti operativi e una maggiore integrazione/collaborazione per accogliere **in sicurezza** tutti gli utenti dello **spazio aereo atmosferico e oltre**, senza congestioni o ritardi.



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[https://www.youtube.com/watch?v= 3SV9P0peRA](https://www.youtube.com/watch?v=3SV9P0peRA)



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2045 Vision Statement:

Creare uno spazio aereo globale sicuro, equo, intelligente e interoperabile, sfruttando design, tecnologie e servizi rivoluzionari per alimentare la mobilità e la prosperità globale.



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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



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2045 Vision Building Blocks

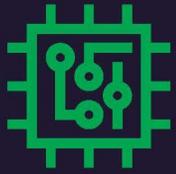
Services and Service Delivery

Success factors

- Full integration, harmonisation and interoperability is possible due to safe, competitive and evolving services that are not restricted to any one aircraft type, nor constrained by traditional geographical boundaries.
- Service providers enable skies that are safer, cleaner and quieter while still servicing a busier, more diverse airspace and stakeholder base.
- Dynamic, flexible services are critical to system resilience and scalability.
- Air Traffic Service Providers (ATSP) – incl. UTM – have carved out new revenue streams and generated value off the back of advancements in technology, digital and data.
- Personnel have a clear, legitimate role that adds value to the system and its users, versus a forced or inflexible role that threatens safety culture, efficiency and productivity.



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2045 Vision Building Blocks

Technology and Digitisation

Success factors

- A system-wide upgrade of both technological and digital capabilities facilitates interoperability, scalability and resilience.
- Automation and digitisation are critical for the growth of aviation and adjacent transport sectors such as commercial space travel.
- Safety is continuously improved due to the implementation of this technology and a more sensitive, anticipative, harmonised and intelligent approach.
- New business and operating models, growth opportunities and value creation are generated by a fully automated, scalable and digitised airspace system.
- Digitisation of all information and communication is vital to the aviation and ATM communities becoming a secure, intelligent global data network.
- An improved, seamless passenger experience is better enabled by automation and digitisation, from reduced capacity and congestion issues in airports to personalised interfaces at different touchpoints of their journey.
- Public understanding, acceptance and comfort with automation are needed for the adoption of automated and digital technology and software. Demonstrating the benefits is critical.



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Safety and Regulation

Success factors

- A holistic and harmonised approach to safety is critical for a fully integrated aviation system.
- Processes are simpler, clearer and universal to aid with equitable access for all users and to fuel the continued growth of the industry.
- Innovation is enabled by performance-based, risk-based and adaptable safety standards, specifications and regulatory frameworks, not stifled or slowed by prescriptive requirements.
- Transparency around risk and accountability is essential to uphold the industry's safety record.
- The highest level of safety is maintained for all airspace users and aviation remains the safest form of transport.



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Environmental Sustainability and Social Impact

Success factors

- Political sponsorship and partnership are critical to achieving environmental goals at scale. We share the same pressures and ambitions as governments and states and so it's a perfect opportunity to tackle these together.
- We need to cater for public sensitivity towards air travel and air mobility to prevent it from developing into negative sentiment. We need to actively work with communities to identify the barriers and develop win-win solutions, so that the public embrace the progress and advancement aviation is making towards global mobility in efficient and sustainable ways.
- This is bigger than carbon emissions. We need a holistic approach to sustainability considering impact at multiple levels and across the entire value chain of the economies and companies we serve.
- There needs to be a significant commitment to, as well as an investment in, R&D alternatives to fossil fuels and production at scale to meet aviation's energy needs.



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Airspace Design and Classification

Success factors

- Removing traditional airspace segregation and physical geographical borders from airspace design and classification will enable system-wide accessibility.
- Safely and fairly maximising all airspace will ensure demand does not exceed system capacity. With greater capacity, global airspace is a more valuable, productive and resilient resource and a key driver of growth for the aviation industry and beyond.
- Environmental sustainability and societal impact must be incorporated into the design and architecture of global airspace.
- Exceptions made for the benefit of communities or for advanced tech players need to be case-by-case and continuously reviewable.
- Advanced technology, capabilities and protocols are critical to the safe, efficient and secure management of urban and stratospheric airspace.



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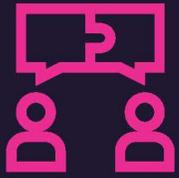
Data and Security

Success factors

- Data capabilities and systems need to be adopted by all users in order to achieve interoperability and a harmonised airspace.
- Thought leadership and intelligence across the sector must stay ahead of cyber threats to maintain the safety, security and integrity of the aviation system, while policy and regulation remain solid foundations.
- The threat of cybercrime and cyber-related risks must be taken seriously. Carelessness could cost the whole system. Investment in technology, protocols, policies and personnel is critical.
- Evolution in technology, digitisation and data go hand-in-hand. A data-powered network and cloud-based services are only possible if technological and digital advancements happen in parallel.
- Cross-domain and cross-sector collaboration is key to ensure aviation can integrate with IoT and other web-connected infrastructure, especially in cities and in and around airports.



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People, Organisation and Talent

Success factors

- Human intervention and coordination is the exception, not the norm. Automation will support a high level of safety, security, capacity, and scalability, while extending the capabilities of people. Establishing new, desirable and legitimate roles for personnel that complements an automated, intelligent, data-powered system is key to the evolution of the aviation sector and its talent.
- The globalisation of aviation's approach to talent, skills and learning and development will aid with the accessibility and interoperability of the system as a whole.
- Digitisation and virtualisation will hugely impact organisations and their talent. Such shifts will result in greater adaptability and scalability across the airspace system and community.
- The innovation and growth of the sector will be critical to making it an attractive career prospect for younger, sought-after talent.



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“ 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



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Grazie per l'attenzione!

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