

CATS GLOBAL COUNCIL ROADMAP

Creating a global airspace that is safe, fair, intelligent and interoperable, leveraging revolutionised design, technology and services to power **sustainable** global mobility and prosperity.



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



GOAL 2

Harmonised Service Delivery

GOAL 3

Integrated Airspace

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 Net Zero Carbon

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

GOAL 12

Data-powered Ecosystem

GOAL 13

Thriving Airspace Management Community

GOAL 14

High Performing Teams

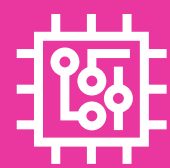
WELCOME

PLEASE SELECT A **GOAL** TO VIEW
THE RELATED SERVICES, MILESTONES AND ACTIONS

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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. This change in paradigm is “serving” existing needs and allowing us to solve an ever-growing and diverse user demand and:

- The overall performance of Trajectory Management is significantly enhanced (Safety, Capacity, Efficiency, Resilience, Cost Effectiveness, Environment, Flexibility, Predictability, Security). For example, through Flight and Flow information supporting all phases of flight.
- A Total performance system is implemented that includes safety, efficiency, resilience, etc.
- The tactical intervention model has evolved into a more strategic trajectory management concept and operations are highly automated, or autonomous and distributed.
- The task between human system partnership is optimised (e.g. automation of some tasks, and new roles to manage the human-system partnership). Safety is demonstrated with predictive de-risking and there is global public acceptance that emergent technology does not negatively impact societies and communities.

PLEASE SELECT **MILESTONES** FOR GOAL 1

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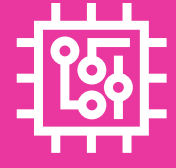
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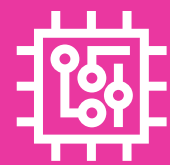
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SERVICES AND SERVICE DELIVERY



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ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

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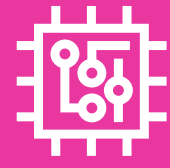
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ACTIONS

Develop a New CONOPS

Develop a new high-level Harmonised Concept of Operations (CONOPS) for all airspace users to drive the next era of air traffic management (capturing this CATS Roadmap), including:

- Higher Airspace Operations and Lower airspace operations
- Advanced Air mobility
- Operational services environment description (OSED)
- Value proposition for the new services

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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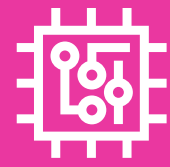
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ACTIONS

Learn from ICAO Vision for 2025

CANSO to investigate which parts of the Global Air Traffic Management Operational Concept (2005), ICAO vision for 2025 and beyond, have not been achieved yet and to extract "lessons learnt" applicable to CATS roadmap.

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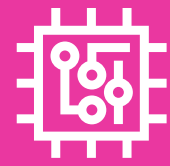
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Integration Roadmap

Create a global ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM (so it is just TM), agreed by all stakeholders, to plot a course toward full convergence.

- Identify common technologies – for example for air-to-air conspicuity and air to ground conspicuity (surveillance)
- Determine what the role is that ATM / UTM will need to play in a fast changing environment where self-separation becomes increasingly possible and where direct and highly secure data communication becomes the common good for the majority of users
- Identification of minimum technical implementations per type of service (UAS logistics, Air Taxi, Recreational...)

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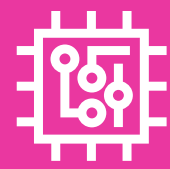
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Vision Alignment

CATS to monitor and promote alignment between CATS vision roadmap and global/regional midterm plans.

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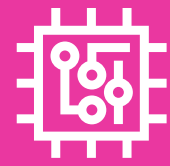
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Conflict Management

Enhanced strategic conflict management systems and capabilities.

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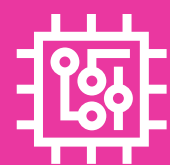
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ACTIONS

Automation Strategy

Develop an implementation strategy for enhanced automation functions that fosters trust and confidence.

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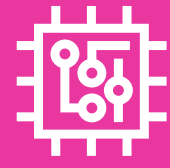
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ACTIONS

New ANS Financing Mechanisms

Develop new business models to address the greater diversity in aircraft operations and supporting services.

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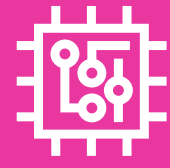
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ACTIONS

Use Cases

Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

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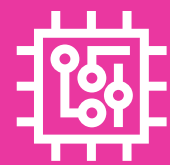
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Minimum ATM Services

Define a set of common ATM services that are required to deliver the minimum performance levels in the most effective way.

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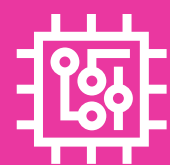
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Gap Analysis

Conduct a gap analysis between current ATM and AIM data and service requirements and future ATM and AIM data and service requirements for the airspace in 2045; capturing best practice where possible.

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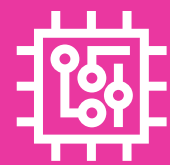
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ACTIONS

Integrate Human Factors Assurance

Integrate Human Factors Assurance into the process of certifying and creating standards for technology innovations.

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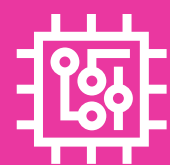
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Human in the Loop Capabilities

Establish and implement a programme of education regarding human in the loop capabilities, also including analysis to evaluate how people can keep the focus on a highly automated environment when they are required to react quickly.

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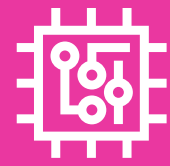
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Redistribution of Tasks

Research is undertaken based on emerging service models and CONOPS to define tasks likely to remain with humans vs those most suited to application of technology.

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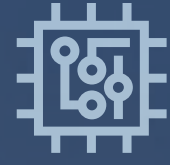


M4 Conceptual Framework for Cross Border Service Delivery and Management of Sovereign Airspace

New framework for cross border service delivery and management of sovereign airspace addressing liability, security, defence, regulatory, political and financial aspects by States.

ACTIONS

TECHNOLOGY AND DIGITISATION



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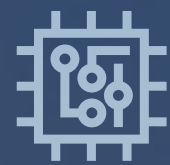
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M4 Conceptual Framework for Cross Border Service Delivery and Management of Sovereign Airspace

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New framework for cross border service delivery and management of sovereign airspace addressing liability, security, defence, regulatory, political and financial aspects by States.

ACTIONS

A6

Conceptual Framework for Decentralised Management Airspace across Borders
Define and promote a new framework that enables the decentralised management of airspace across borders, addressing liability, security, regulatory, political and financial aspects.

M72 Disruption Management

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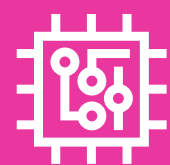
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M9 Technology Roadmap

Global technology roadmap created to support new Global CONOPS – which is user driven and provides for regional differentiation.

ACTIONS

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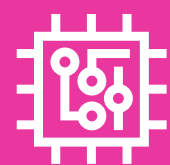
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M9 Technology Roadmap

Global technology roadmap created to support new Global CONOPS – which is user driven and provides for regional differentiation.

A39

ACTIONS

Use Cases

Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

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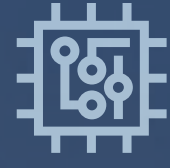
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ACTIONS

M18 Network of Sandboxes

Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ACTIONS

A44

Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.

Regulatory Sandbox
Identify 'sandbox' opportunities to trial / further develop principles of the regulatory framework in collaboration between regulators and industry.

M18 Network of Sandboxes



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ACTIONS

A77

Test Airspace Concept

Test airspace concept and update concept based on results.

M18 Network of Sandboxes

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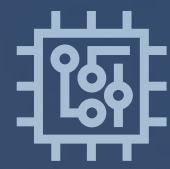
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ACTIONS

New cost-recovery mechanisms have been implemented that adequately and fairly cover the costs associated with the provision of services to an expanded customer base and provide sufficient performance incentives.

M68 New Cost-Recovery Mechanisms

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ACTIONS

A13

New cost-recovery mechanisms have been implemented that adequately and fairly cover the costs associated with the provision of services to an expanded customer base and provide sufficient performance incentives.

New ANS Financing Mechanisms

Develop new business models to address the greater diversity in aircraft operations and supporting services.

M68 New Cost-Recovery Mechanisms

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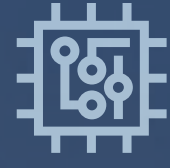
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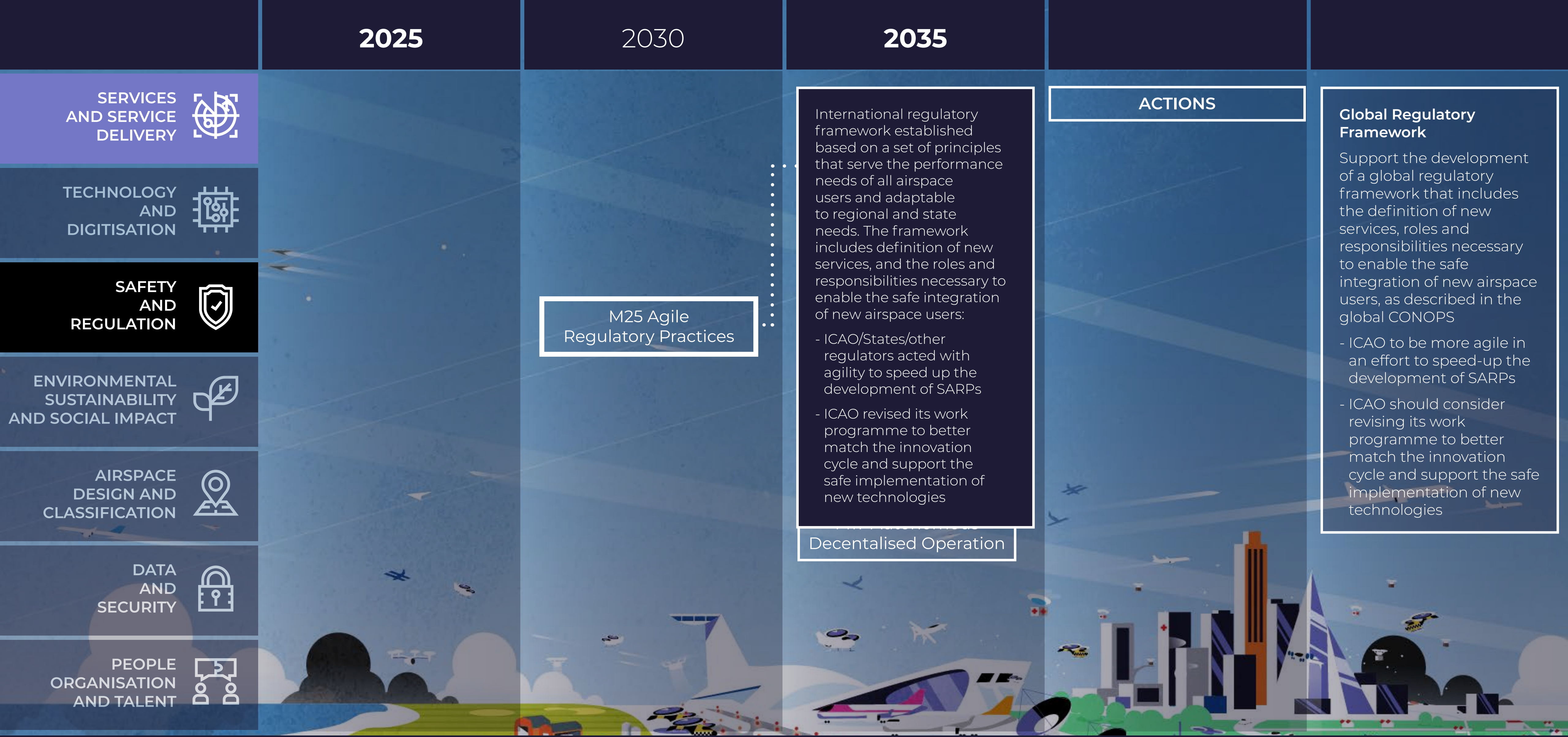
M25 Agile Regulatory Practices

International regulatory framework established based on a set of principles that serve the performance needs of all airspace users and adaptable to regional and state needs. The framework includes definition of new services, and the roles and responsibilities necessary to enable the safe integration of new airspace users:

- ICAO/States/other regulators acted with agility to speed up the development of SARPs
- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

Decentralised Operation

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



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Decentralised Operation

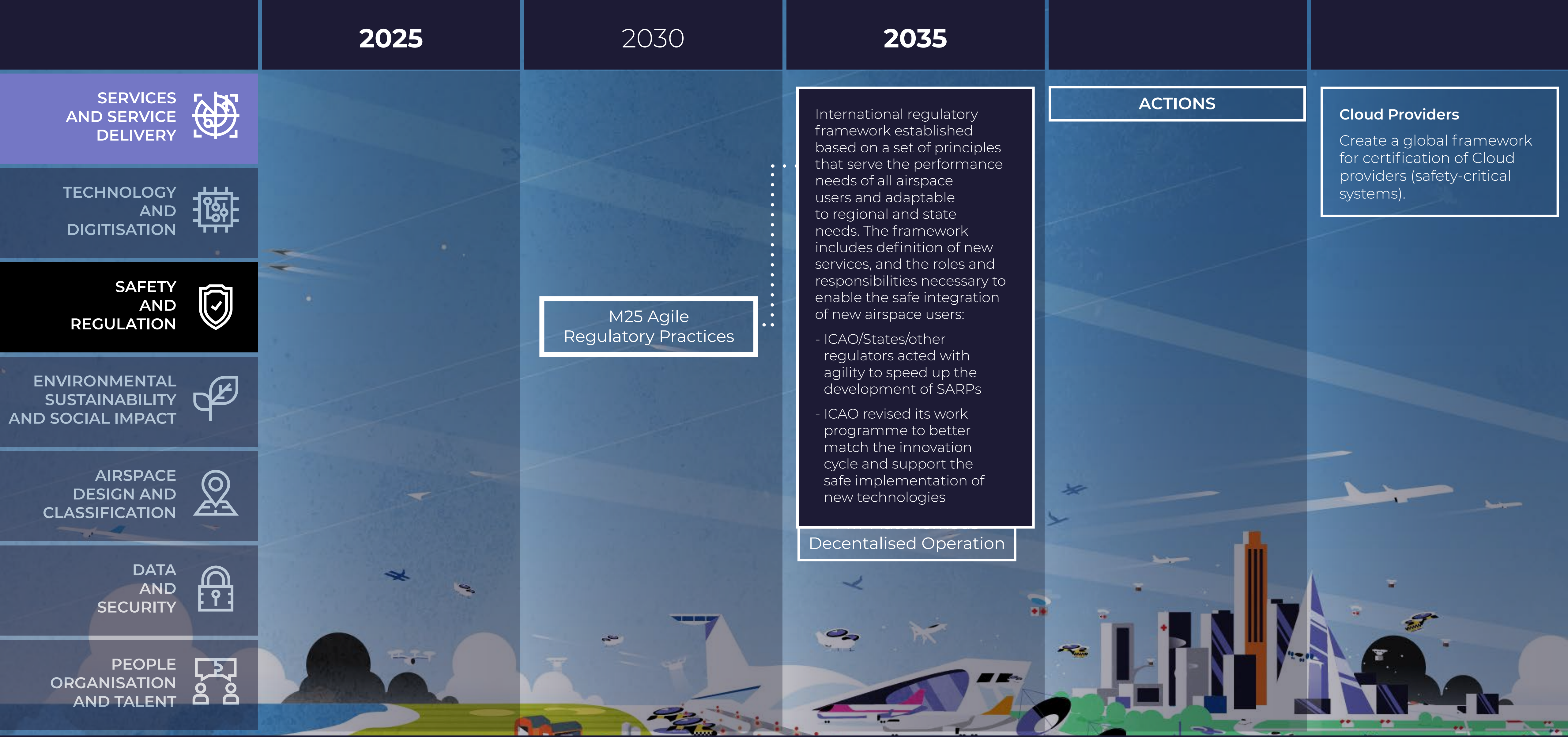
ACTIONS

Global Regulatory Framework

Support the development of a global regulatory framework that includes the definition of new services, roles and responsibilities necessary to enable the safe integration of new airspace users, as described in the global CONOPS

- ICAO to be more agile in an effort to speed-up the development of SARPs
- ICAO should consider revising its work programme to better match the innovation cycle and support the safe implementation of new technologies

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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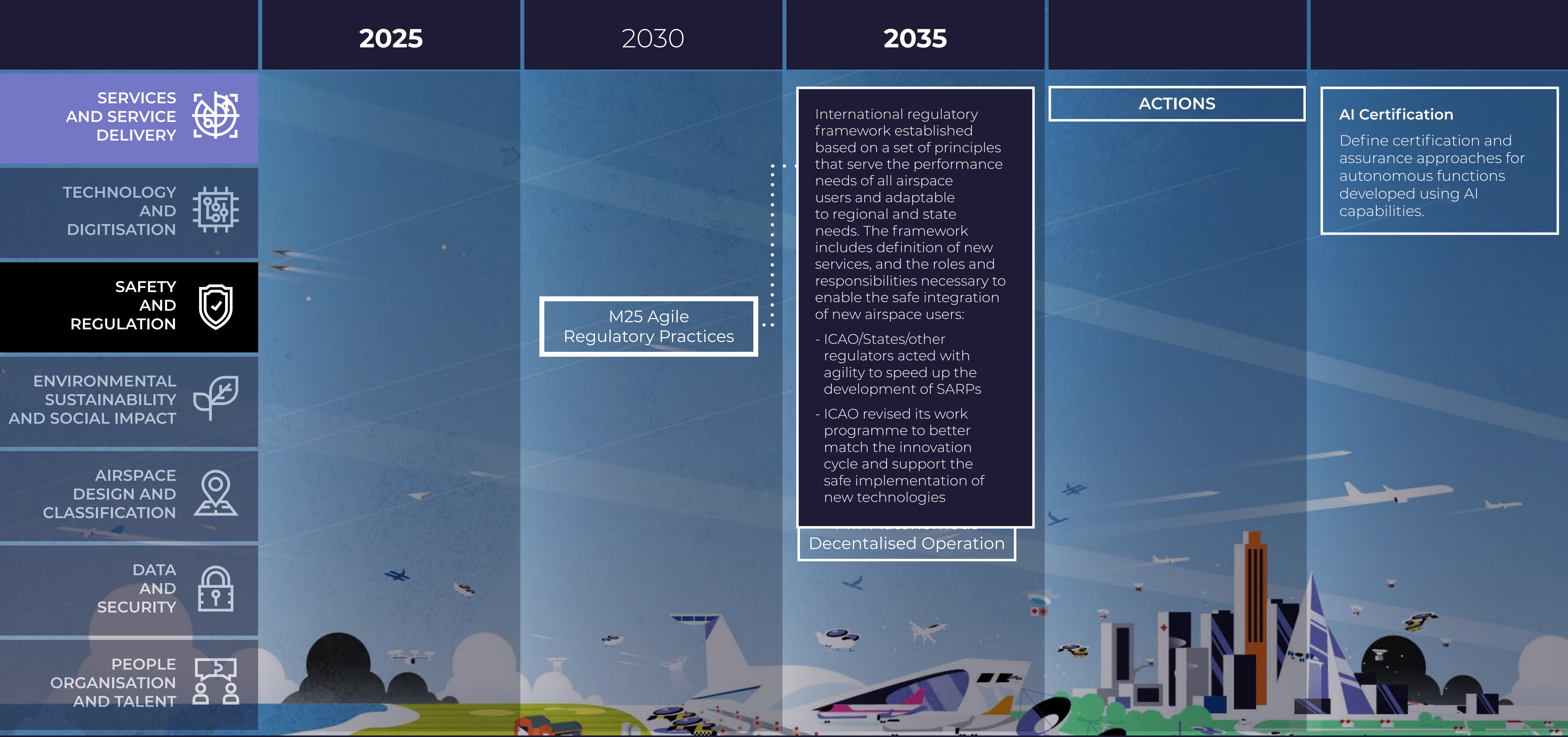
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Decentralised Operation

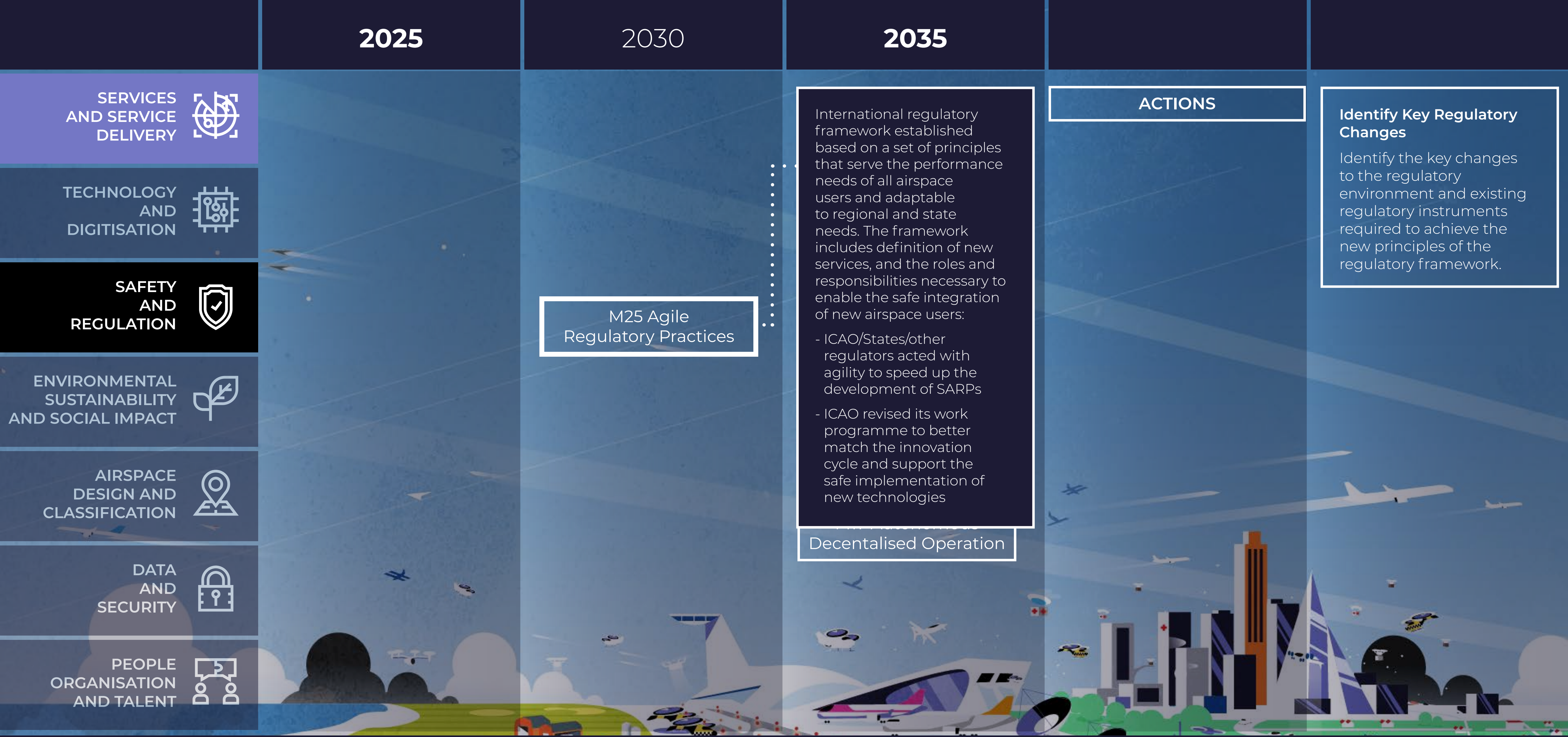
ACTIONS

Cloud Providers
 Create a global framework for certification of Cloud providers (safety-critical systems).

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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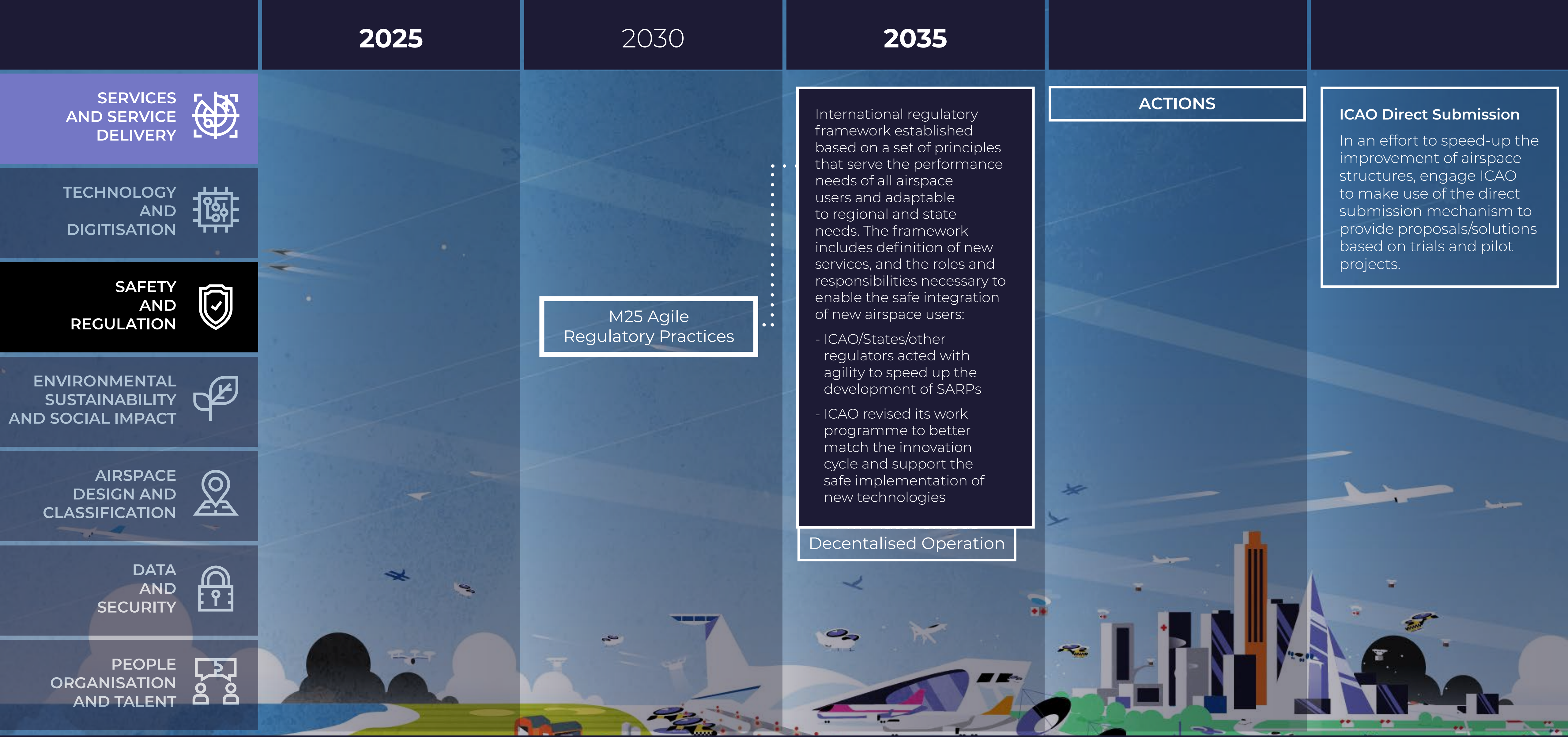
- ICAO/States/other regulators acted with agility to speed up the development of SARPs
- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

Decentralised Operation

ACTIONS

Identify Key Regulatory Changes
 Identify the key changes to the regulatory environment and existing regulatory instruments required to achieve the new principles of the regulatory framework.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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- ICAO/States/other regulators acted with agility to speed up the development of SARPs
- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

Decentralised Operation

ACTIONS

ICAO Direct Submission
 In an effort to speed-up the improvement of airspace structures, engage ICAO to make use of the direct submission mechanism to provide proposals/solutions based on trials and pilot projects.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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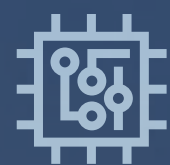
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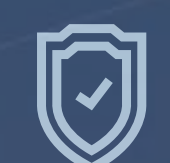
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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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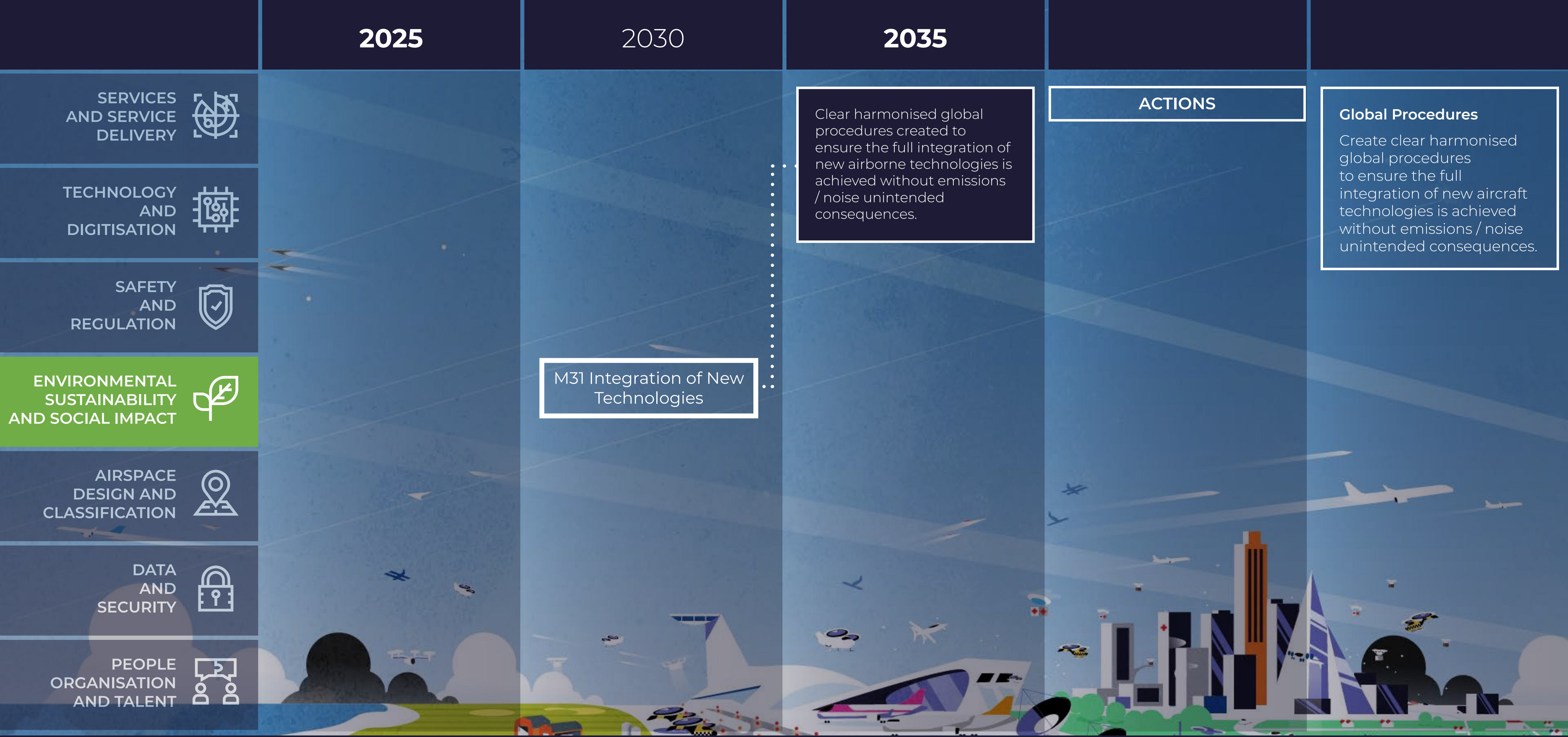
ACTIONS

Clear harmonised global procedures created to ensure the full integration of new airborne technologies is achieved without emissions / noise unintended consequences.

M31 Integration of New Technologies



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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M31 Integration of New Technologies

Clear harmonised global procedures created to ensure the full integration of new airborne technologies is achieved without emissions / noise unintended consequences.

ACTIONS

Global Procedures
Create clear harmonised global procedures to ensure the full integration of new aircraft technologies is achieved without emissions / noise unintended consequences.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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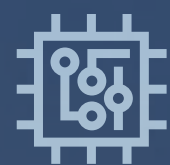
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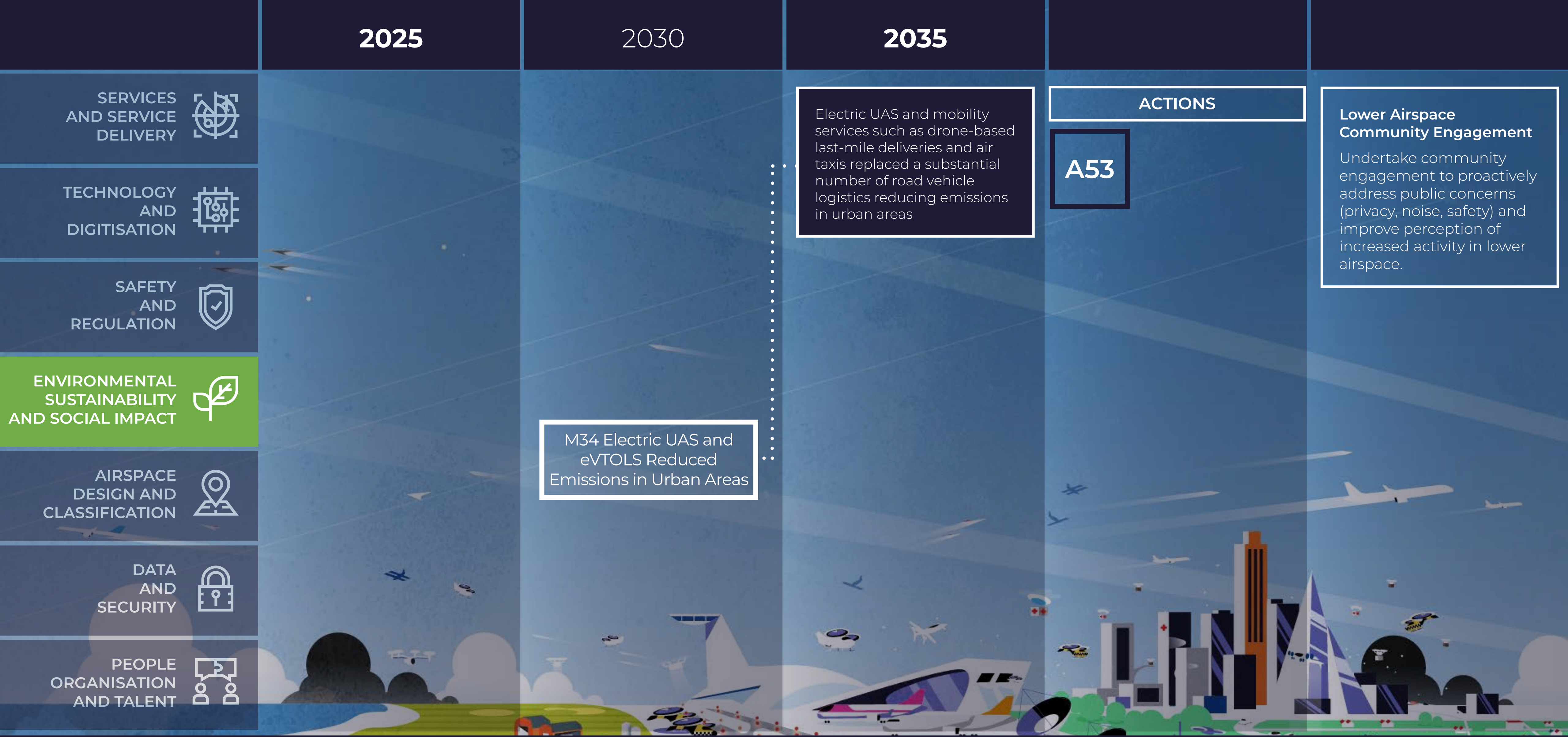


ACTIONS

Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas.

M34 Electric UAS and eVTOLS Reduced Emissions in Urban Areas

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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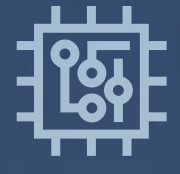
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas

ACTIONS

A53

Lower Airspace Community Engagement
Undertake community engagement to proactively address public concerns (privacy, noise, safety) and improve perception of increased activity in lower airspace.

M34 Electric UAS and eVTOLS Reduced Emissions in Urban Areas

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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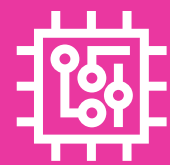
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

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M34 Electric UAS and eVTOLS Reduced Emissions in Urban Areas

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY 

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ACTIONS

Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas

Implement an Enhanced Disruption Management Plan

Develop and implement an enhanced disruption management plan to respond to all type of disruptive events in real time (e.g. weather, volcanic ashes, GNSS disruptions, etc).

M34 Electric UAS and eVTOLS Reduced Emissions in Urban Areas

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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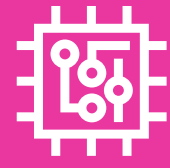
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Autonomous services progressively expanded beyond human operators (e.g. pilots) and support a machine-to-machine interface with no human interaction (e.g. in lower altitude UAS operations) supported by increased data sharing.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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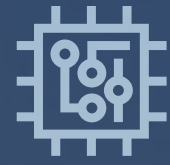
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ACTIONS

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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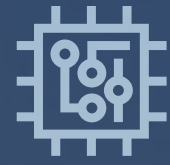
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AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Automated Data Exchange

Enhance approach/ departure and enroute procedures through automated data exchange (e.g. Optimum Top of Descent, Target Time Over).

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.

Timely Sharing of Data

Support and promote the digital and timely sharing of data related to wake turbulence and aircraft performance characteristics for all existing and new aircraft types to enable proper sequencing, separation and deconfliction by ATM/UTM automation systems.

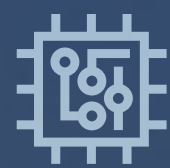


PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

SERVICES
AND SERVICE
DELIVERY



TECHNOLOGY
AND
DIGITISATION



SAFETY
AND
REGULATION



ENVIRONMENTAL
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DESIGN AND
CLASSIFICATION



DATA
AND
SECURITY



PEOPLE
ORGANISATION
AND TALENT



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.
- Decoupled/outsourced from underlying physical hardware enabling services to be seamlessly delivered from - different geographical locations.
- Ensure fairness amongst the different stakeholders.
- Increasingly managed regionally and collaboratively (e.g. ATFM) by data service providers.

PLEASE SELECT **MILESTONES** FOR GOAL 2

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SERVICES
AND SERVICE
DELIVERY



TECHNOLOGY
AND
DIGITISATION



SAFETY
AND
REGULATION



ENVIRONMENTAL
SUSTAINABILITY
AND SOCIAL IMPACT



AIRSPACE
DESIGN AND
CLASSIFICATION



DATA
AND
SECURITY



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ORGANISATION
AND TALENT



PLEASE SELECT MILESTONE TO SEE **DETAILS**

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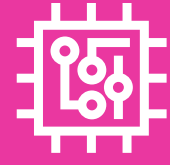
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SERVICES AND SERVICE DELIVERY



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ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M72 Disruption Management

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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PEOPLE ORGANISATION AND TALENT



ACTIONS

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- Value proposition for the new services
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Develop a New CONOPS

Develop a new high-level Harmonised Concept of Operations (CONOPS) for all airspace users to drive the next era of air traffic management (capturing this CATS Roadmap), including:

- Higher Airspace Operations and Lower airspace operations Advanced Air mobility
- Operational services environment description (OSED)
- Value proposition for the new services

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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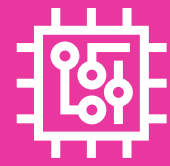
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ACTIONS

Learn from ICAO Vision for 2025

CANSO to investigate which parts of the Global Air Traffic Management Operational Concept (2005), ICAO vision for 2025 and beyond, have not been achieved yet and to extract "lessons learnt" applicable to CATS roadmap.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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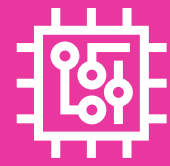
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ACTIONS

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Integration Roadmap

Create a global ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM (so it is just TM), agreed by all stakeholders, to plot a course toward full convergence.

- Identify common technologies – for example for air-to-air conspicuity and air to ground conspicuity (surveillance)
- Determine what the role is that ATM / UTM will need to play in a fast changing environment where self-separation becomes increasingly possible and where direct and highly secure data communication becomes the common good for the majority of users
- Identification of minimum technical implementations per type of service (UAS logistics, Air Taxi, Recreational...)

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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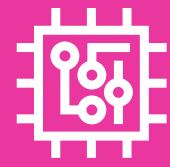
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ACTIONS

Vision Alignment

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

CATS to monitor and promote alignment between CATS vision roadmap and global/ regional midterm plans.

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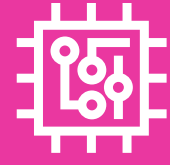
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ACTIONS

Conflict Management

Enhanced strategic conflict management systems and capabilities.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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ACTIONS

Automation Strategy

Develop an implementation strategy for enhanced automation functions that fosters trust and confidence.

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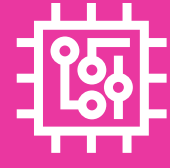
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ACTIONS

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New ANS Financing Mechanisms

Develop new business models to address the greater diversity in aircraft operations and supporting services.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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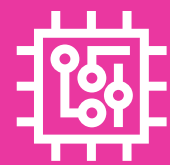
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ACTIONS

Use Cases

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Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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Minimum ATM Services

Define a set of common ATM services that are required to deliver the minimum performance levels in the most effective way.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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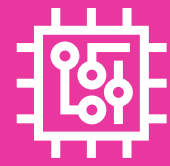
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ACTIONS

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- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Gap Analysis

Conduct a gap analysis between current ATM and AIM data and service requirements and future ATM and AIM data and service requirements for the airspace in 2045; capturing best practice where possible.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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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



ACTIONS

Integrate Human Factors Assurance

Integrate Human Factors Assurance into the process of certifying and creating standards for technology innovations.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Human in the Loop Capabilities

Establish and implement a programme of education regarding human in the loop capabilities, also including analysis to evaluate how people can keep the focus on a highly automated environment when they are required to react quickly.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Redistribution of Tasks

Research is undertaken based on emerging service models and CONOPS to define tasks likely to remain with humans vs those most suited to application of technology.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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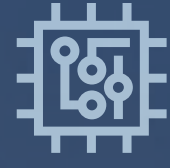
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SERVICES AND SERVICE DELIVERY



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DATA AND SECURITY

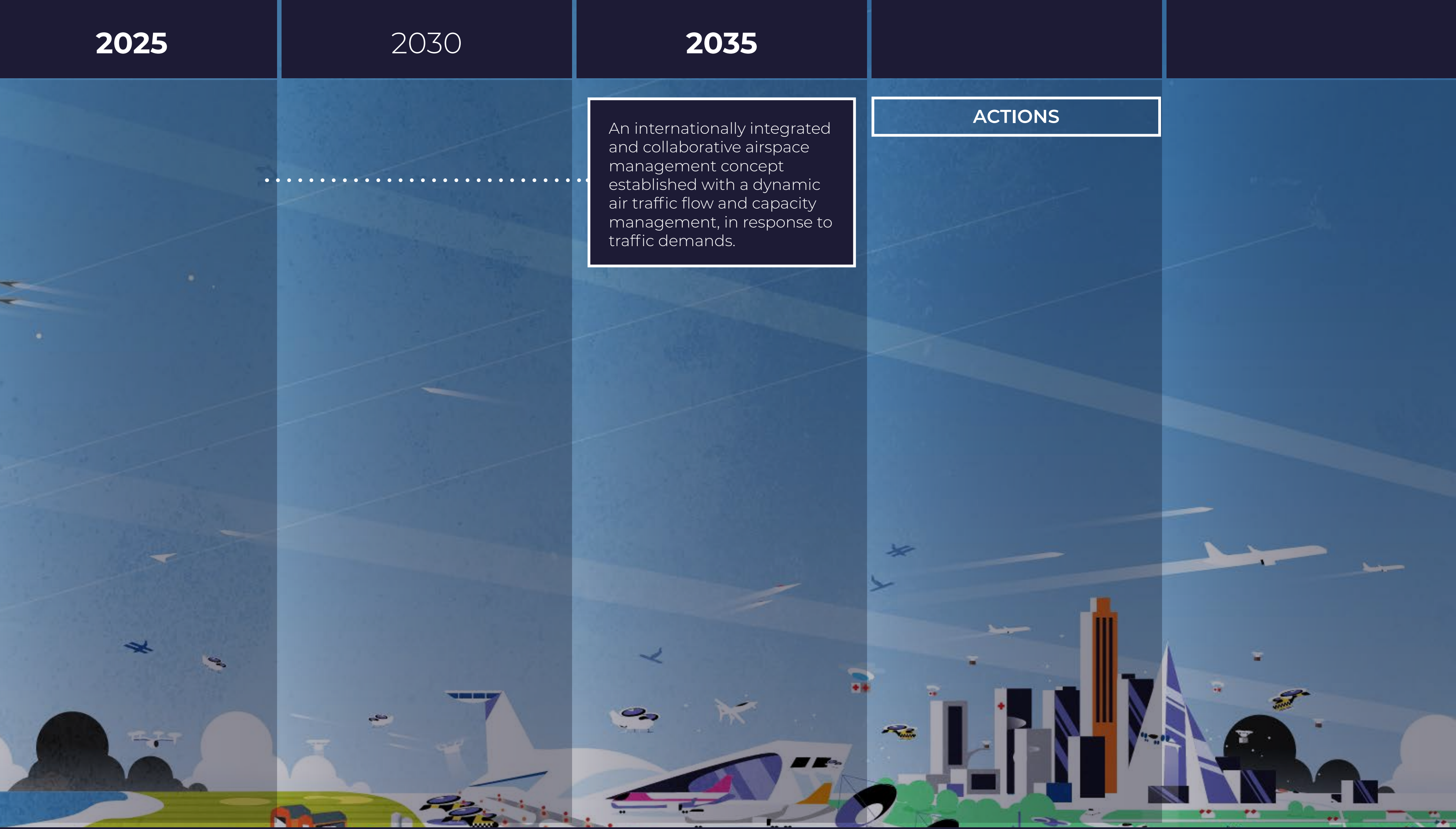


PEOPLE ORGANISATION AND TALENT



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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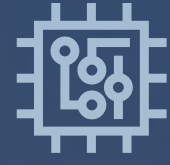
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SERVICES AND SERVICE DELIVERY



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AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.

Collaborative Airspace Management Concept

Develop an internationally integrated and collaborative airspace management concept.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

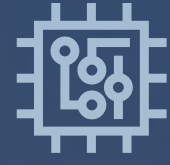
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

New framework for cross border service delivery and management of sovereign airspace addressing liability, security, defence, regulatory, political and financial aspects by States.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

New framework for cross border service delivery and management of sovereign airspace addressing liability, security, defence, regulatory, political and financial aspects by States.

Conceptual Framework for Decentralised Management Airspace across Borders

Define and promote a new framework that enables the decentralised management of airspace across borders, addressing liability, security, regulatory, political and financial aspects.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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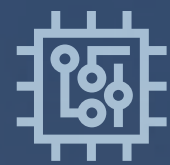
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PEOPLE ORGANISATION AND TALENT



Cyber security and cyber resilience are system-wide priorities, with global quality standards that every user must comply to.

- The global, interoperable framework allows for trusted ground-air, air-air and ground-ground exchanges for digital identity and user authentication. Strict privacy policies introduced that respect sovereignty and protect user privacy
- States, regulators and organisations continue to collaborate on all matters relating to cyber security and cyber resilience to protect our global skies
- IT Security Management Systems implemented by all aviation stakeholders and an exchange of possible threads being detected in the aviation network shared among all users immediately

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

2025

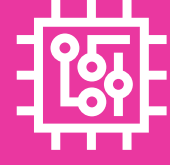
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Interoperability and use of common standards is ensured - enabling regularised cross border service delivery arrangements and more flexible business continuity planning.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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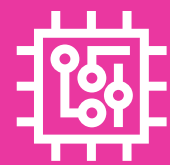
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Interoperability and use of common standards is ensured - enabling regularised cross border service delivery arrangements and more flexible business continuity planning.

Support Adoption of Open Architecture

Promote and support transition to open architecture through the adoption of SOA, including regulatory aspects and oversight.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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Performance based CNS allows use of all paths that meet the required performance and provide maximum resiliency.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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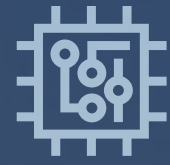
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

International regulatory framework established based on a set of principles that serve the performance needs of all airspace users and adaptable to regional and state needs. The framework includes definition of new services, and the roles and responsibilities necessary to enable the safe integration of new airspace users:

- ICAO/States/other regulators acted with agility to speed up the development of SARPs
- ...
- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

M50 Digitally Connected Aviation

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

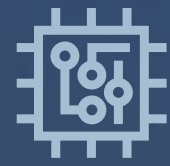
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

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- ICAO/States/other regulators acted with agility to speed up the development of SARPs
- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

M50 Digitally Connected Aviation

Global Regulatory Framework

Support the development of a global regulatory framework that includes the definition of new services, roles and responsibilities necessary to enable the safe integration of new airspace users, as described in the global CONOPS.

- ICAO to be more agile in an effort to speed-up the development of SARPs
- ICAO should consider revising its work programme to better match the innovation cycle and support the safe implementation of new technologies

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

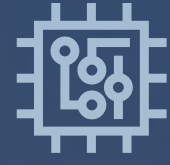
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Cloud Providers

Create a global framework for certification of Cloud providers (safety-critical systems).

International regulatory framework established based on a set of principles that serve the performance needs of all airspace users and adaptable to regional and state needs. The framework includes definition of new services, and the roles and responsibilities necessary to enable the safe integration of new airspace users:

- ICAO/States/other regulators acted with agility to speed up the development of SARPs
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M50 Digitally Connected Aviation

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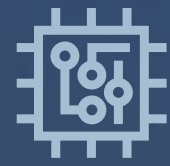
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

AI Certification

Define certification and assurance approaches for autonomous functions developed using AI capabilities.

International regulatory framework established based on a set of principles that serve the performance needs of all airspace users and adaptable to regional and state needs. The framework includes definition of new services, and the roles and responsibilities necessary to enable the safe integration of new airspace users:

- ICAO/States/other regulators acted with agility to speed up the development of SARPs
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- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

M50 Digitally Connected Aviation

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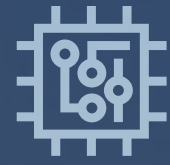
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ACTIONS

Identify Key Regulatory Changes

Identify the key changes to the regulatory environment and existing regulatory instruments required to achieve the new principles of the regulatory framework.

International regulatory framework established based on a set of principles that serve the performance needs of all airspace users and adaptable to regional and state needs. The framework includes definition of new services, and the roles and responsibilities necessary to enable the safe integration of new airspace users:

- ICAO/States/other regulators acted with agility to speed up the development of SARPs
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- ICAO revised its work programme to better match the innovation cycle and support the safe implementation of new technologies

M50 Digitally Connected Aviation

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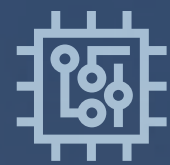
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SERVICES AND SERVICE DELIVERY



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ACTIONS

ICAO Direct Submission

In an effort to speed-up the improvement of airspace structures, engage ICAO to make use of the direct submission mechanism to provide proposals/solutions based on trials and pilot projects.

International regulatory framework established based on a set of principles that serve the performance needs of all airspace users and adaptable to regional and state needs. The framework includes definition of new services, and the roles and responsibilities necessary to enable the safe integration of new airspace users:

- ICAO/States/other regulators acted with agility to speed up the development of SARPs
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M50 Digitally Connected Aviation

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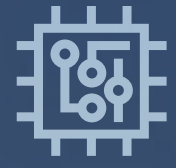
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SERVICES
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AND TALENT



Controller training improved and changes in licencing provide added flexibility in the deployment of resources that enhances scalability.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

2025

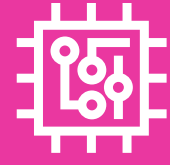
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SERVICES AND SERVICE DELIVERY



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ACTIONS

An enhanced disruption management plan is implemented to respond to all type of disruptive events in real time (e.g. weather, volcanic ashes, GNSS disruptions, etc).



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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PEOPLE ORGANISATION AND TALENT



ACTIONS

An enhanced disruption management plan is implemented to respond to all type of disruptive events in real time (e.g. weather, volcanic ashes, GNSS disruptions, etc).

Implement an Enhanced Disruption Management Plan

Develop and implement an enhanced disruption management plan to respond to all type of disruptive events in real time (e.g. weather, volcanic ashes, GNSS disruptions, etc).



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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ACTIONS

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ACTIONS

Automated Data Exchange

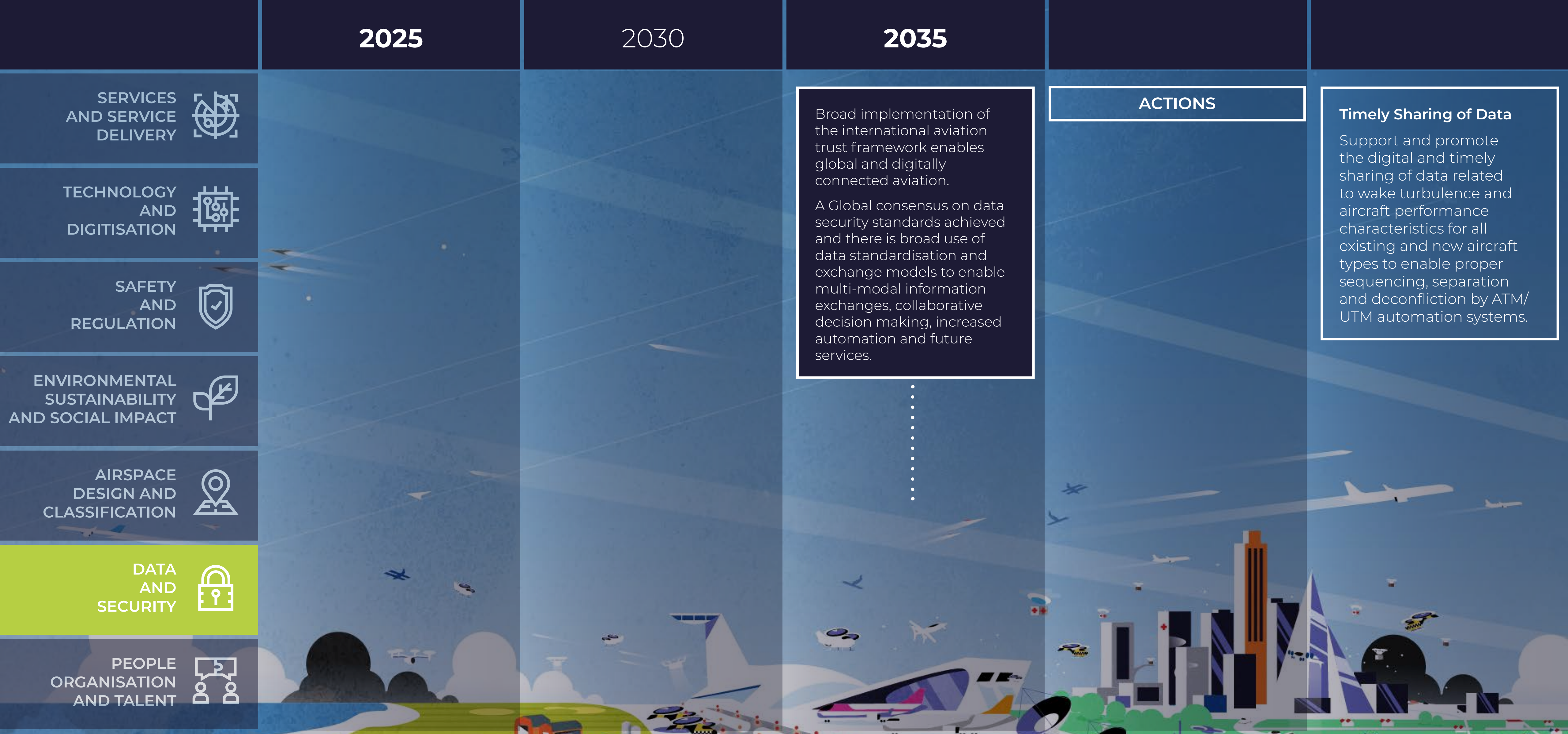
Enhance approach/ departure and enroute procedures through automated data exchange (e.g. Optimum Top of Descent, Target Time Over).

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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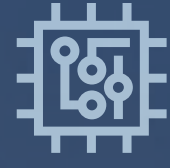
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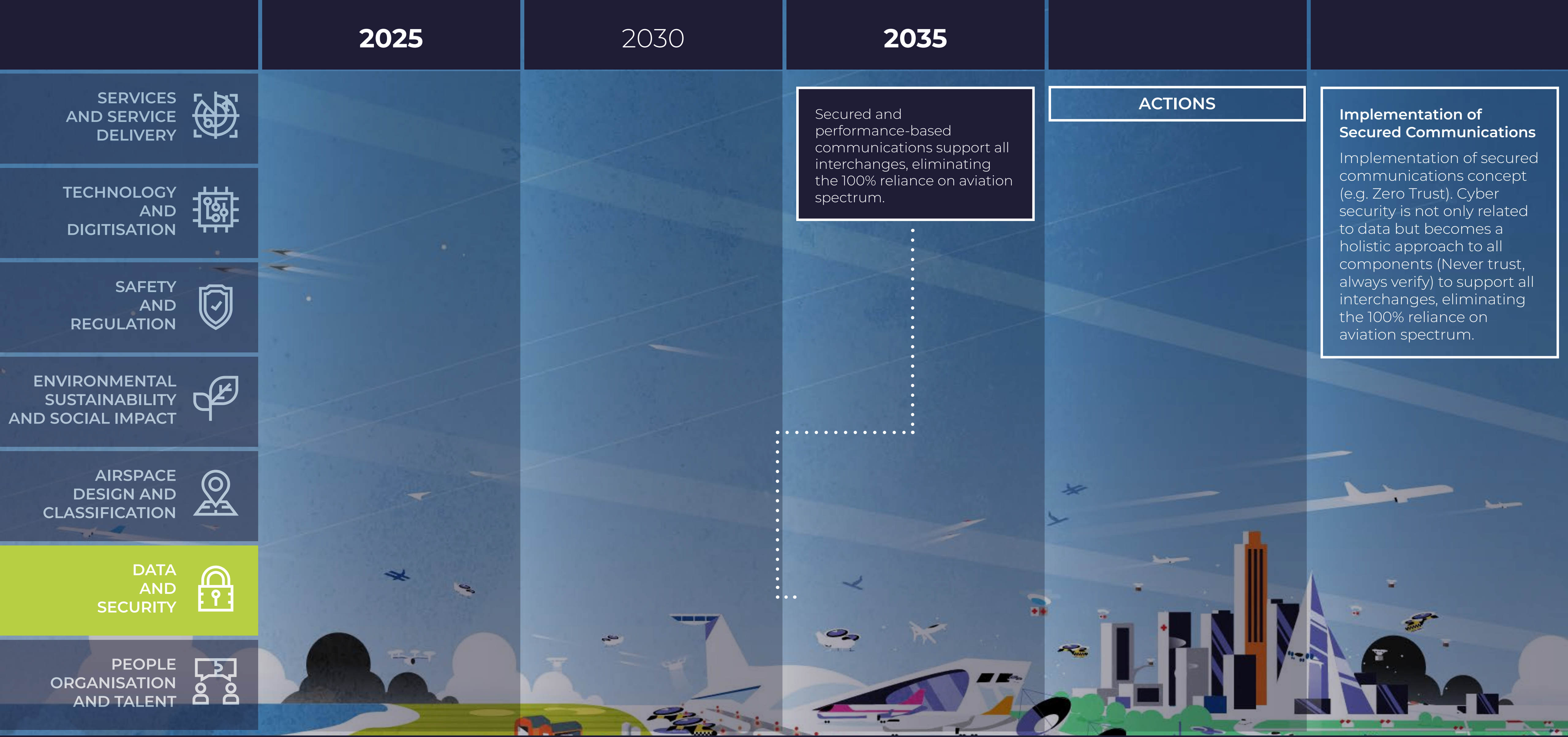


ACTIONS

Secured and performance-based communications support all interchanges, eliminating the 100% reliance on aviation spectrum.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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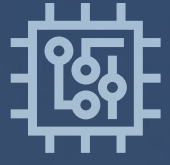
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Secured and performance-based communications support all interchanges, eliminating the 100% reliance on aviation spectrum.

Implementation of Secured Communications

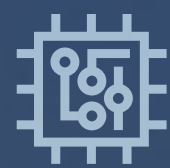
Implementation of secured communications concept (e.g. Zero Trust). Cyber security is not only related to data but becomes a holistic approach to all components (Never trust, always verify) to support all interchanges, eliminating the 100% reliance on aviation spectrum.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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REGULATION



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GOAL 3 Integrated Airspace

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

States retain legal security administrative and judicial powers within their national airspace in an environment in which service has evolved to be operationally flexible, dynamic and seamlessly cross border.

Seamless and comprehensive airspace has been established through civil, military, and service provider agreements, i.e. Flexible Use of Airspace (FUA); Space-destined traffic, supersonic aircraft and ultra-long-haul flights are supported by airspace that enables the provision of service without conflicting and disrupting the daily operations of all other airborne vehicles.

PLEASE SELECT **MILESTONES** FOR GOAL 3

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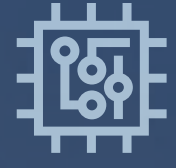
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SERVICES
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PLEASE SELECT MILESTONE TO SEE **DETAILS**

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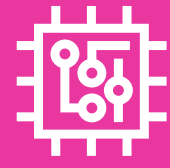
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SERVICES AND SERVICE DELIVERY



M1 New CONOPS

TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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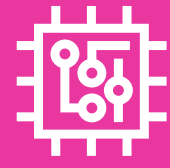
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SERVICES AND SERVICE DELIVERY



M1 New CONOPS

TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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PEOPLE ORGANISATION AND TALENT



ACTIONS

A1

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Develop a New CONOPS

Develop a new high-level Harmonised Concept of Operations (CONOPS) for all airspace users to drive the next era of air traffic management (capturing this CATS Roadmap), including:

- Higher Airspace Operations and Lower airspace operations Advanced Air mobility
- Operational services environment description (OSED)
- Value proposition for the new services

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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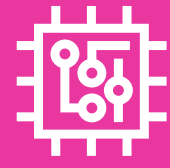
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SERVICES AND SERVICE DELIVERY



M1 New CONOPS

TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A2

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Learn from ICAO Vision for 2025

CANSO to investigate which parts of the Global Air Traffic Management Operational Concept (2005), ICAO vision for 2025 and beyond, have not been achieved yet and to extract "lessons learnt" applicable to CATS roadmap.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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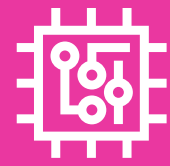
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SERVICES AND SERVICE DELIVERY



M1 New CONOPS

TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A3

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Integration Roadmap

Create a global ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM (so it is just TM), agreed by all stakeholders, to plot a course toward full convergence.

- Identify common technologies – for example for air-to-air conspicuity and air to ground conspicuity (surveillance)
- Determine what the role is that ATM / UTM will need to play in a fast changing environment where self-separation becomes increasingly possible and where direct and highly secure data communication becomes the common good for the majority of users
- Identification of minimum technical implementations per type of service (UAS logistics, Air Taxi, Recreational...)

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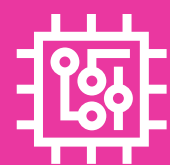
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SERVICES AND SERVICE DELIVERY



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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Vision Alignment

CATS to monitor and promote alignment between CATS vision roadmap and global/regional midterm plans.

A5

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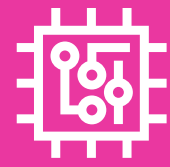
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Conflict Management

Enhanced strategic conflict management systems and capabilities.

A10

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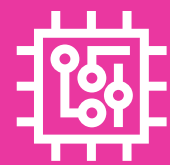
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Automation Strategy

Develop an implementation strategy for enhanced automation functions that fosters trust and confidence.

A11

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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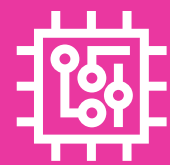
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AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

New ANS Financing Mechanisms

Develop new business models to address the greater diversity in aircraft operations and supporting services.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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A13

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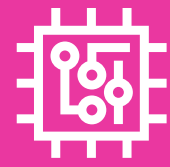
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SERVICES AND SERVICE DELIVERY



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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Use Cases

Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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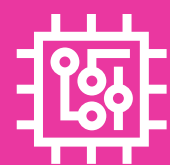
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SERVICES AND SERVICE DELIVERY



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ACTIONS

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Minimum ATM Services

Define a set of common ATM services that are required to deliver the minimum performance levels in the most effective way.

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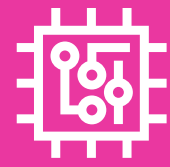
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

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Gap Analysis

Conduct a gap analysis between current ATM and AIM data and service requirements and future ATM and AIM data and service requirements for the airspace in 2045; capturing best practice where possible.

A41

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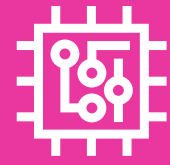
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SERVICES AND SERVICE DELIVERY



M1 New CONOPS

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PEOPLE ORGANISATION AND TALENT



ACTIONS

Integrate Human Factors Assurance

Integrate Human Factors Assurance into the process of certifying and creating standards for technology innovations.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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A97

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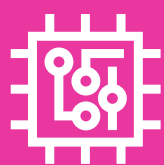
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

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Human in the Loop Capabilities

Establish and implement a programme of education regarding human in the loop capabilities, also including analysis to evaluate how people can keep the focus on a highly automated environment when they are required to react quickly.

A99

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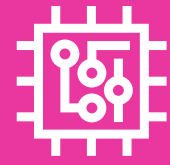
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ACTIONS

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- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Redistribution of Tasks

Research is undertaken based on emerging service models and CONOPS to define tasks likely to remain with humans vs those most suited to application of technology.

A100

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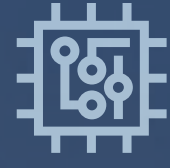
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PEOPLE ORGANISATION AND TALENT



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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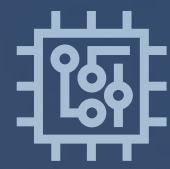
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A27

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.

Collaborative Airspace Management Concept

Develop an internationally integrated and collaborative airspace management concept.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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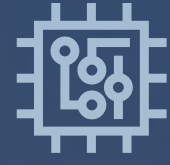
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SERVICES
AND SERVICE
DELIVERY



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AND
DIGITISATION



SAFETY
AND
REGULATION



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DATA
AND
SECURITY



PEOPLE
ORGANISATION
AND TALENT



ACTIONS

New framework for cross border service delivery and management of sovereign airspace addressing liability, security, defence, regulatory, political and financial aspects by States.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY 

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PEOPLE ORGANISATION AND TALENT 

ACTIONS

A6

New framework for cross border service delivery and management of sovereign airspace addressing liability, security, defence, regulatory, political and financial aspects by States.

Conceptual Framework for Decentralised Management Airspace Across Borders

Define and promote a new framework that enables the decentralised management of airspace across borders, addressing liability, security, regulatory, political and financial aspects.



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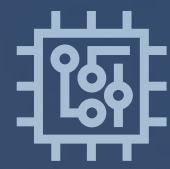
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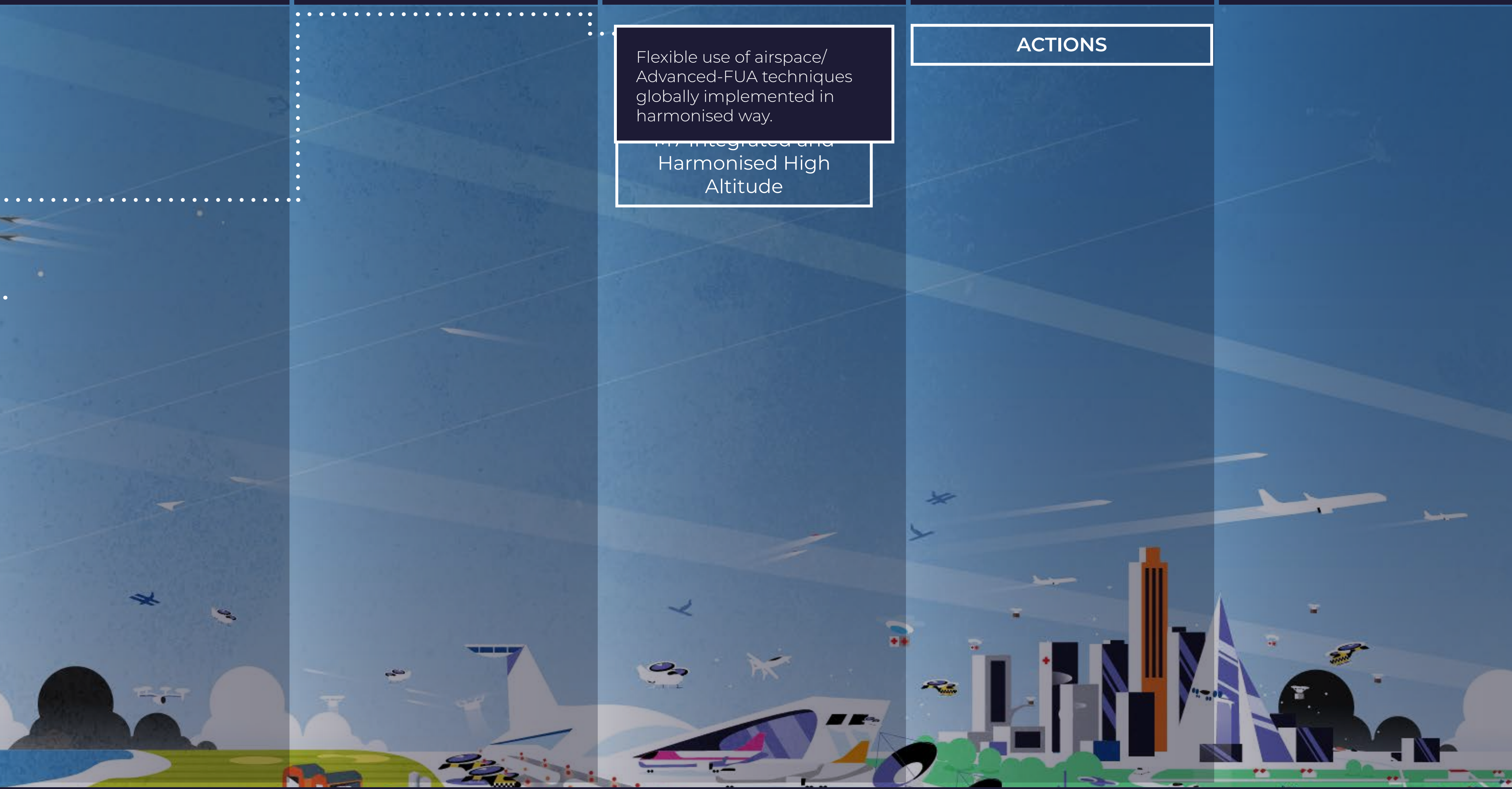
PEOPLE ORGANISATION AND TALENT



ACTIONS

Flexible use of airspace/
Advanced-FUA techniques
globally implemented in
harmonised way.

Harmonised High
Altitude



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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PEOPLE ORGANISATION AND TALENT



ACTIONS

A67

Flexible use of airspace/
Advanced-FUA techniques
globally implemented in
harmonised way.

Harmonised High
Altitude

FUA Application

Negotiations with military
airspace users ensure
application of FUA in
all regions, reducing
inefficiencies.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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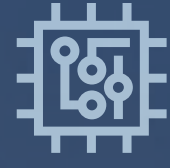
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PEOPLE ORGANISATION AND TALENT



ACTIONS

Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.

Harmonised AAM

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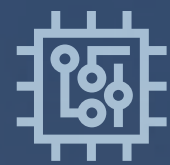
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A44

Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.

Harmonised AAM

Regulatory Sandbox

Identify 'sandbox' opportunities to trial / further develop principles of the regulatory framework in collaboration between regulators and industry.

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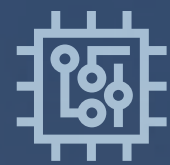
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A77

Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.

Harmonised AAM

Test Airspace Concept
Test airspace concept and update concept based on results.

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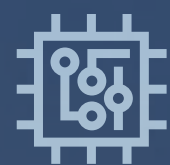
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PEOPLE ORGANISATION AND TALENT



ACTIONS

UAM operations increased in a growing number of cities with some operations from airports.

M7 Integrated and Harmonised High Altitude

M8 Integrated and Harmonised AAM



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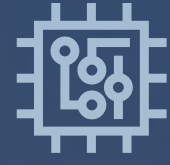
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A8

UAM operations increased in a growing number of cities with some operations from airports.

M7 Integrated and Harmonised High Altitude

M8 Integrated and Harmonised AAM

Modelling and Simulation

Establish a network/ ecosystem of aviation modelling and simulation tools and sandboxes to test, trial, and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress, including business model analysis and simulation of business cases. Definition of establishment of minimum requirements or certifications for establishing the sandbox or test environment.

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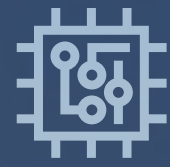
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

A87

UAM operations increased in a growing number of cities with some operations from airports.

M7 Integrated and Harmonised High Altitude

M8 Integrated and Harmonised AAM

Diverse Use-Cases

Multiple, diverse use-cases should be identified and analysed involving all-known new entrants (e.g., Supersonics, UAM, RPAS, and Commercial Space Vehicles). Analyses of these should result in a list of aeronautical information requirements needed to safety integrate these into existing and future aviation systems.

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ACTIONS

Flexible Use of Airspace (FUA) and automated FUA processes implemented that improve automated data exchanges and collaboration between civil and military stakeholders.

M8 Integrated and Harmonised AAM



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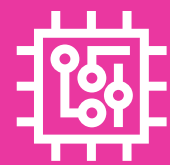
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A67

Flexible Use of Airspace (FUA) and automated FUA processes implemented that improve automated data exchanges and collaboration between civil and military stakeholders.

M8 Integrated and Harmonised AAM

FUA Application

Negotiations with military airspace users ensure application of FUA in all regions, reducing inefficiencies.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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New data requirements for integration of new entrants are defined. For example, data associated with eVTOL pads may need to be collected and published in an AIP.

M8 Integrated and Harmonised AAM



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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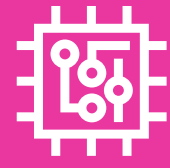
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PEOPLE ORGANISATION AND TALENT



ACTIONS

Interoperability and use of common standards is ensured - enabling regularised cross border service delivery arrangements and more flexible business continuity planning.

M8 Integrated and Harmonised AAM



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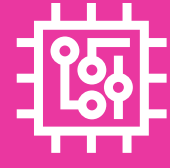
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A20

Interoperability and use of common standards is ensured - enabling regularised cross border service delivery arrangements and more flexible business continuity planning.

M8 Integrated and Harmonised AAM

Support Adoption of Open Architecture

Promote and support transition to open architecture through the adoption of SOA, including regulatory aspects and oversight.

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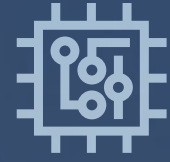
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PEOPLE ORGANISATION AND TALENT



New approach to surveillance services introduced based on performance requirements for surveillance to aid Detect and Avoid (DAA), which might be different than those for separation services (lower power transponders, diverging technologies etc).



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

2025

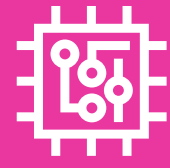
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Airspace managed through integrated and collaborative information systems providing a common situational awareness.

Harmonised High Altitude



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

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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



ACTIONS

A76

Airspace managed through integrated and collaborative information systems providing a common situational awareness.

Harmonised High Altitude

Dynamic Airspace Procedures

Design operational procedures for dynamic airspace management.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

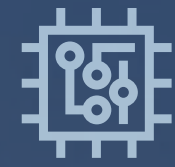
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



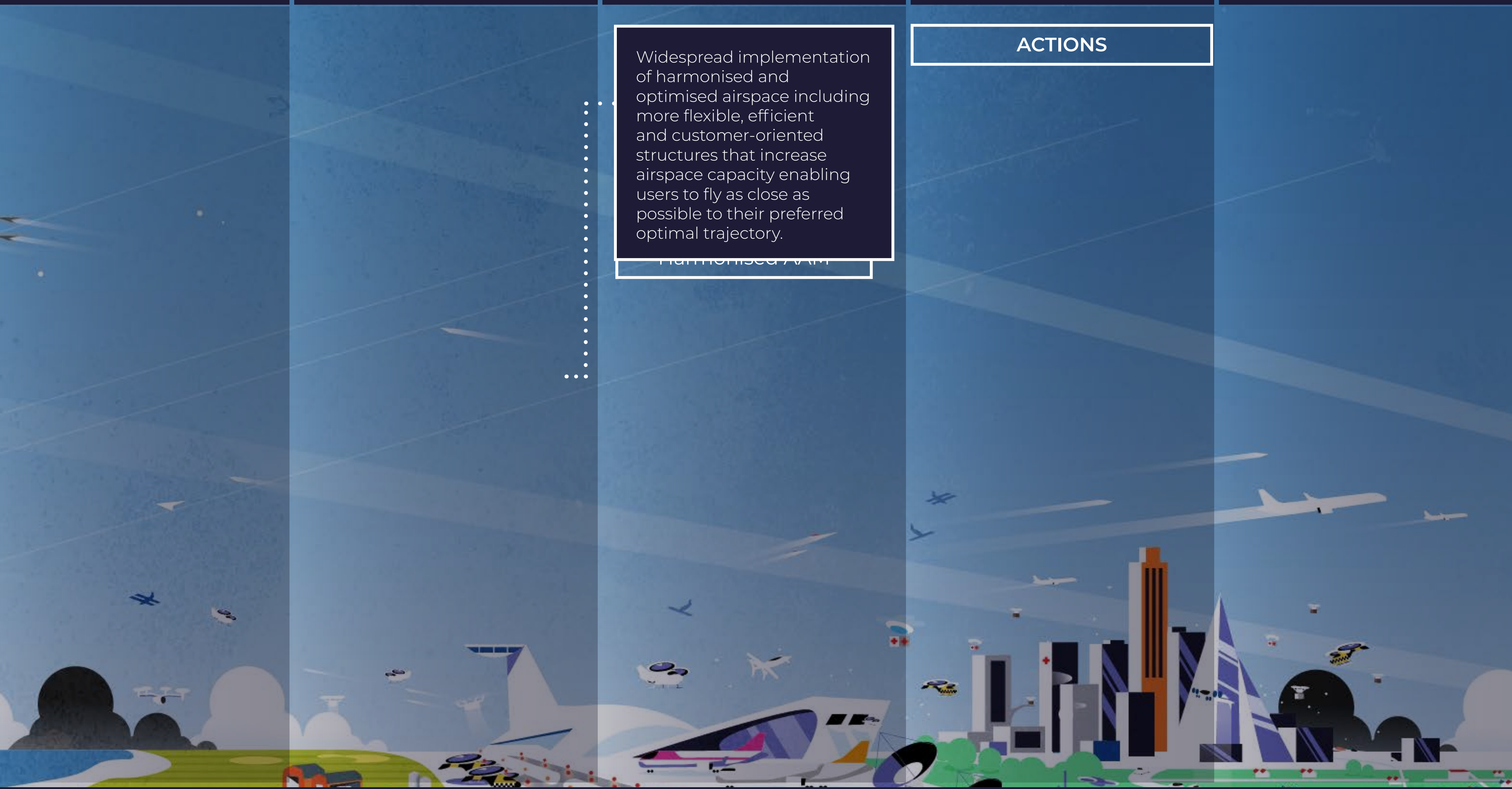
PEOPLE ORGANISATION AND TALENT



ACTIONS

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.

Harmonised ATM



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

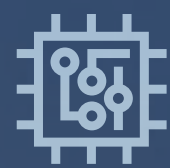
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A72

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.

Review Airspace Classification

Conduct a review of airspace classifications.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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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



ACTIONS

A75

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.

Flexible Framework
Develop a framework to support the utilisation for the flexible use of airspace.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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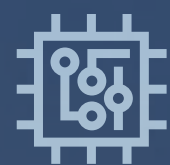
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

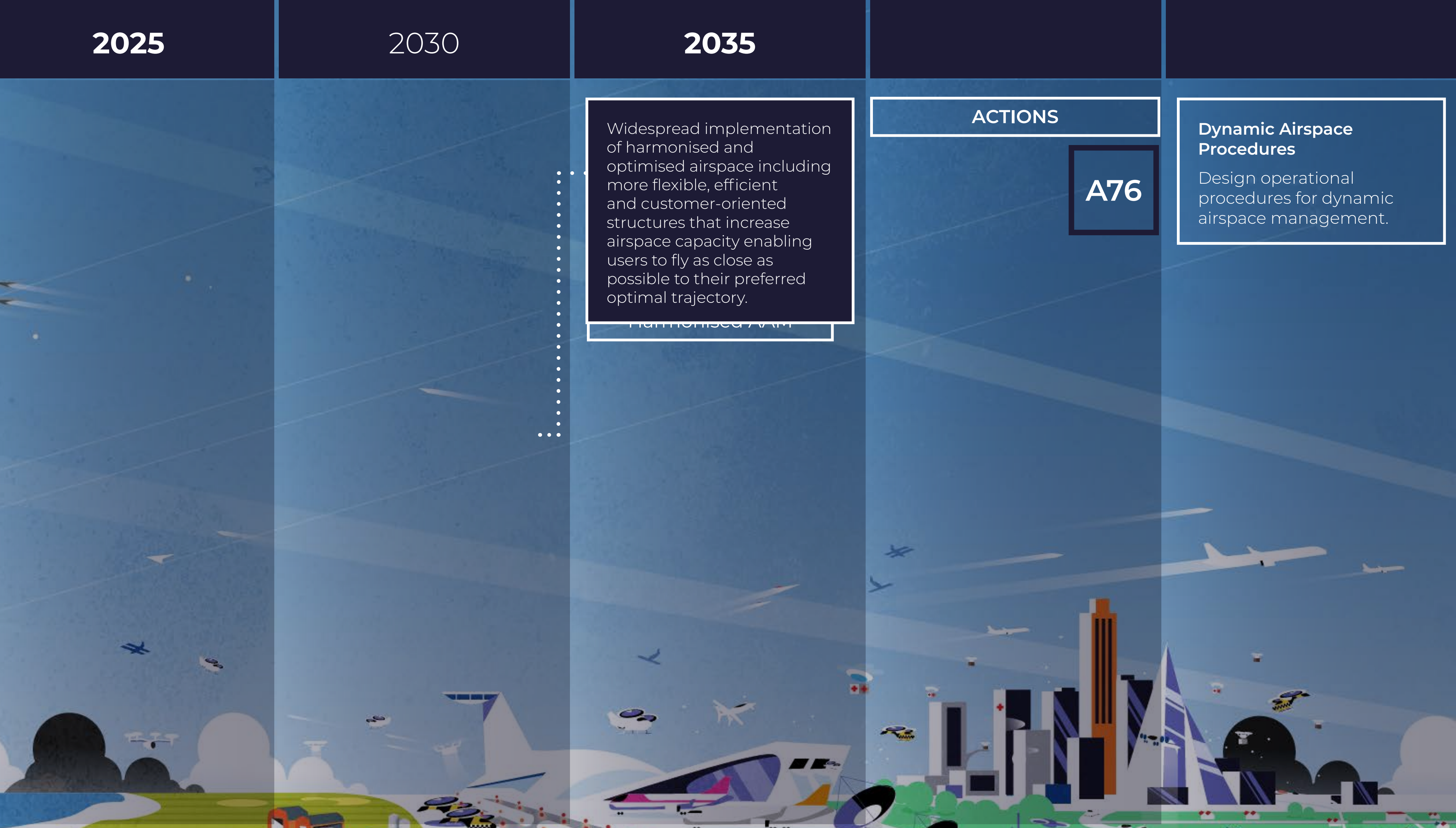
A76

Dynamic Airspace Procedures

Design operational procedures for dynamic airspace management.

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.

Harmonised ATM



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Upper airspace (stratospheric) boundaries defined and globally harmonised.

Harmonised High Altitude



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A73

Upper airspace (stratospheric) boundaries defined and globally harmonised.

Harmonised High Altitude

Space Flight Guidelines

Develop guidelines for the coordination and execution of space destined traffic between all affected (adjacent and non-adjacent) ANSPs.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY

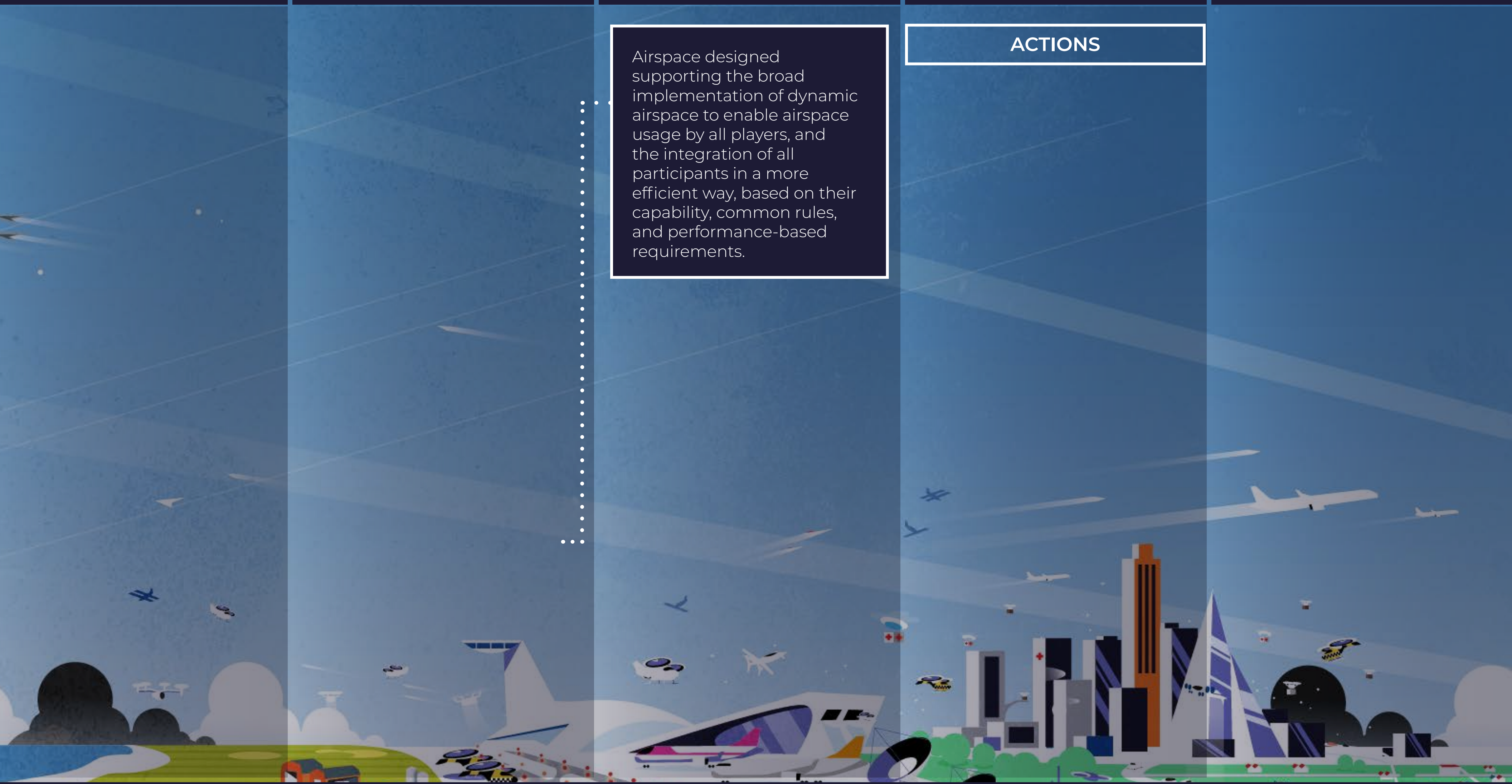


PEOPLE ORGANISATION AND TALENT



ACTIONS

Airspace designed supporting the broad implementation of dynamic airspace to enable airspace usage by all players, and the integration of all participants in a more efficient way, based on their capability, common rules, and performance-based requirements.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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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



ACTIONS

A8

Airspace designed supporting the broad implementation of dynamic airspace to enable airspace usage by all players, and the integration of all participants in a more efficient way, based on their capability, common rules, and performance-based requirements.

Modelling and Simulation

Establish a network/ ecosystem of aviation modelling and simulation tools and sandboxes to test, trial, and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress, including business model analysis and simulation of business cases. Definition of establishment of minimum requirements or certifications for establishing the sandbox or test environment.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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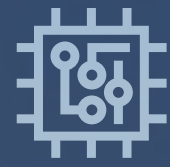
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A87

Airspace designed supporting the broad implementation of dynamic airspace to enable airspace usage by all players, and the integration of all participants in a more efficient way, based on their capability, common rules, and performance-based requirements.

Diverse Use-Cases

Multiple, diverse use-cases should be identified and analysed involving all-known new entrants (e.g., Supersonics, UAM, RPAS, and Commercial Space Vehicles). Analyses of these should result in a list of aeronautical information requirements needed to safety integrate these into existing and future aviation systems.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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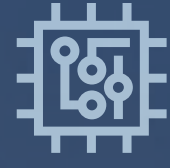
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



Airspace design supported by clear sets of common rules/regulations and performance-based requirements for accessing various airspace operating environments.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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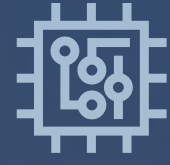
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



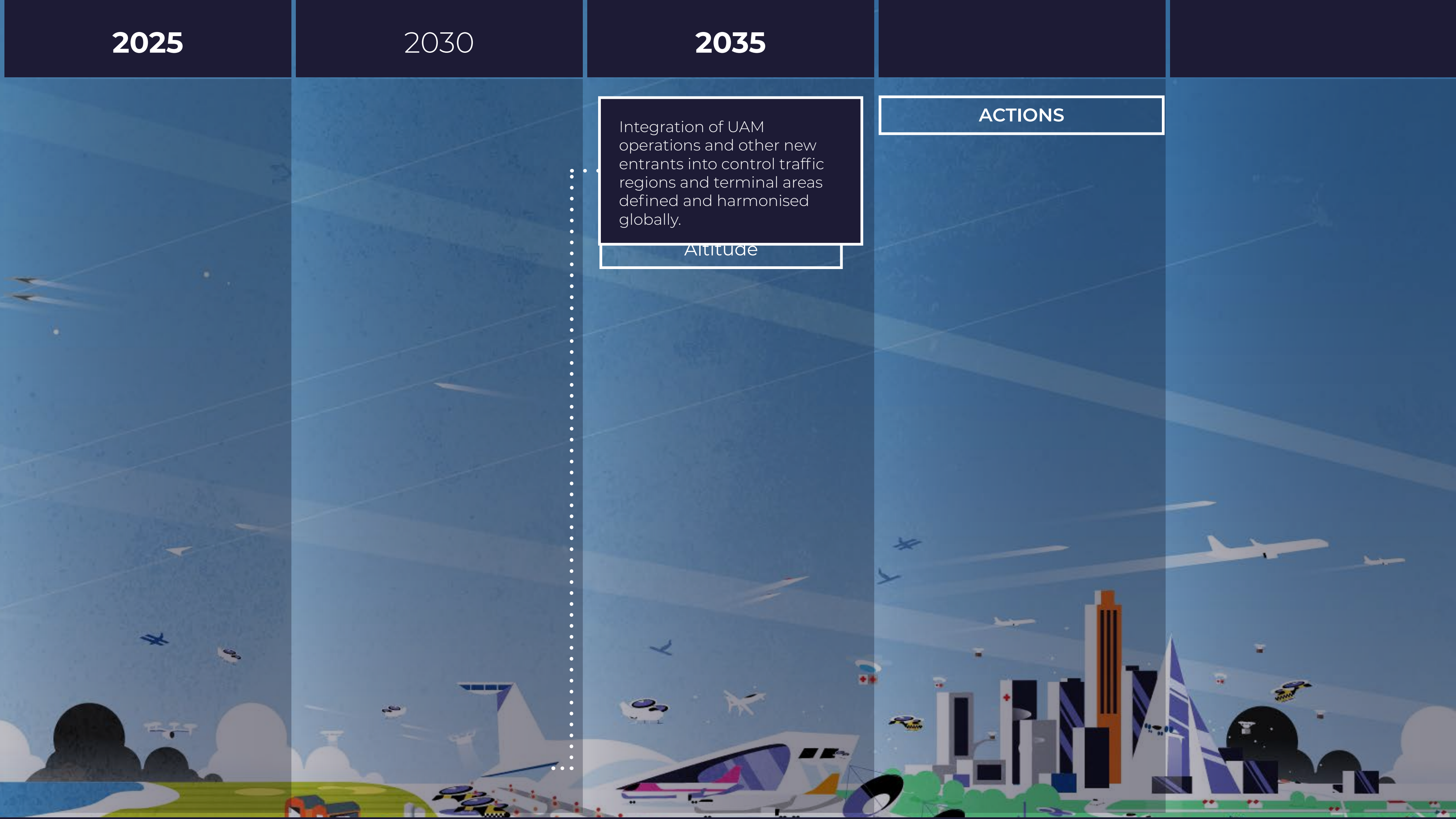
PEOPLE ORGANISATION AND TALENT



ACTIONS

Integration of UAM operations and other new entrants into control traffic regions and terminal areas defined and harmonised globally.

Altitude



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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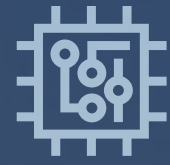
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A8

Integration of UAM operations and other new entrants into control traffic regions and terminal areas defined and harmonised globally.

Altitude

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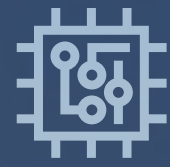
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

A59

Integration of UAM operations and other new entrants into control traffic regions and terminal areas defined and harmonised globally.

Altitude

New Entrants Environmental Assessments

Complete assessment of environmental impacts of new entrants, including noise analysis for future certification, and increase availability and use of tools for environmental impact assessment of their operations.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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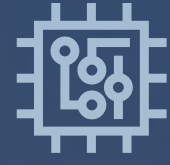
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



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AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Integration of UAM operations and other new entrants into control traffic regions and terminal areas defined and harmonised globally.

Altitude

A77

Test Airspace Concept

Test airspace concept and update concept based on results.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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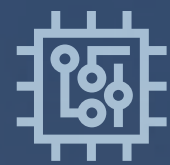
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



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AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Integration of UAM operations and other new entrants into control traffic regions and terminal areas defined and harmonised globally.

Altitude

A87

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Multiple, diverse use-cases should be identified and analysed involving all-known new entrants (e.g., Supersonics, UAM, RPAS, and Commercial Space Vehicles). Analyses of these should result in a list of aeronautical information requirements needed to safety integrate these into existing and future aviation systems.

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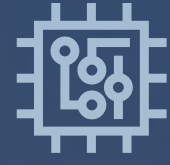
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

On aircraft coordinated deconfliction strategy and sense and avoid technologies have been implemented for lower altitude new entrants/UAS.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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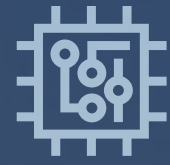
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PEOPLE ORGANISATION AND TALENT



ACTIONS

A78

Define Air Traffic Rules for All Airspace

Define air traffic rules for all airspace participants within a more cooperative, inclusive and proactive framework.

On aircraft coordinated deconfliction strategy and sense and avoid technologies have been implemented for lower altitude new entrants/UAS.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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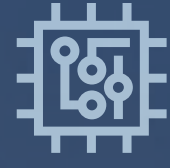
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SERVICES
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ACTIONS

High altitude airspace
fully integrated and
harmonised.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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PEOPLE ORGANISATION AND TALENT



ACTIONS

A78

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High altitude airspace fully integrated and harmonised.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

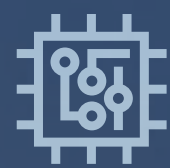
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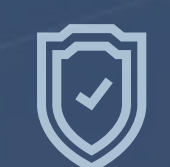
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ACTIONS

Advance Air Mobility (AAM)
airspace fully integrated and
harmonised.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

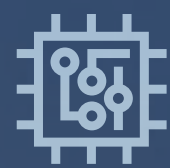
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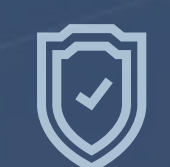
SERVICES AND SERVICE DELIVERY



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AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

A89

Develop a Pathway for Advanced Technology

Develop a pathway for the expanded implementation of advanced technology, leveraging its benefits while ensuring effective management of risks, e.g. contingency issues, staff de-skilling, role of human in the loop, amplification of the combined strengths of humans and technology.

Advance Air Mobility (AAM) airspace fully integrated and harmonised.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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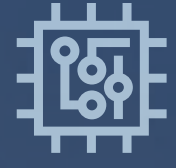
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SERVICES
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ACTIONS

Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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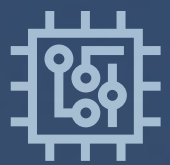
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AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

A72

Review Airspace Classification

Conduct a review of airspace classifications.

Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A75

Flexible Framework

Develop a framework to support the utilisation for the flexible use of airspace.

Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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PEOPLE ORGANISATION AND TALENT 

ACTIONS

A81

New Airspace Designs

Extend global standards for aeronautical information to include minimum digital data set provision requirements needed to enable the transition to new airspace designs and the safe and efficient integration of new entrants.

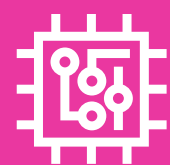
Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

SERVICES
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GOAL 4

Harmonised, Efficient and Flexible Systems

Implementation of harmonised, efficient and flexible systems is based on a technology platform which:

- Is based on latest technology practices and paradigms. The abstraction of services and application from the underlying hardware allows new technology to quickly integrate into the Air Navigation System.
- Allows simplification and modularisation of systems with a multi-cloud platform.
- Enables the standardised use of commercial off-the-shelf (COTS) equipment.
- Allows for the fast integration of new aeronautical systems and technologies with different operating characteristics.
- Enables cyber security and cyber resilience integrated into platform design from the beginning, whilst ensuring inherent resilience against cyber-related threats and vulnerabilities.

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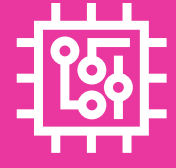
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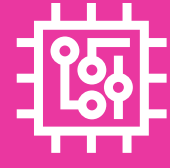
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Global technology roadmap created to support new Global CONOPS – which is user driven and provides for regional differentiation.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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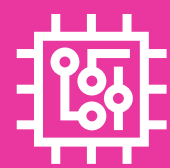
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PEOPLE ORGANISATION AND TALENT



ACTIONS

Global technology roadmap created to support new Global CONOPS – which is user driven and provides for regional differentiation.

Use Cases

Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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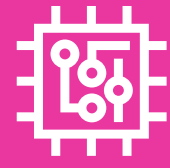
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PEOPLE ORGANISATION AND TALENT

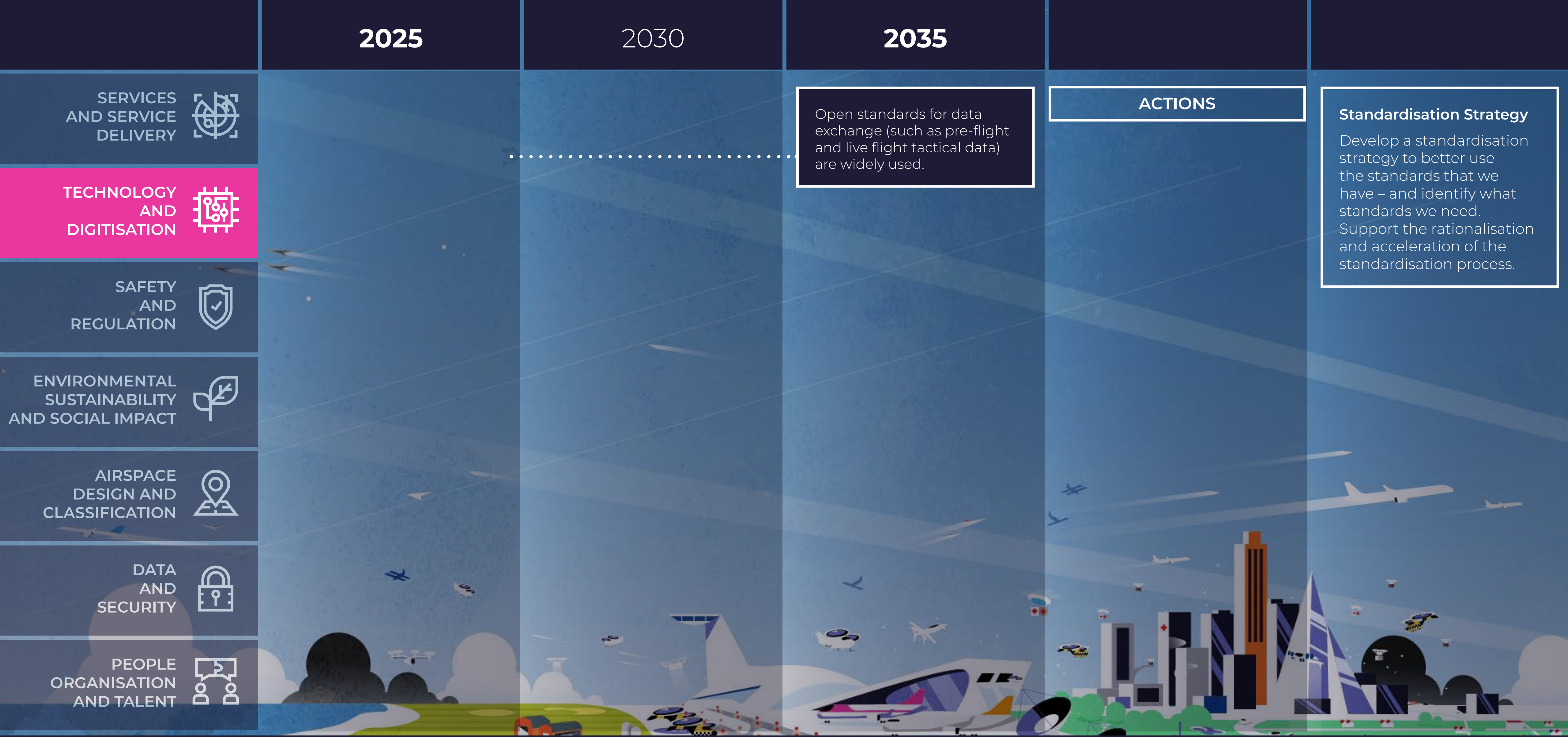


ACTIONS

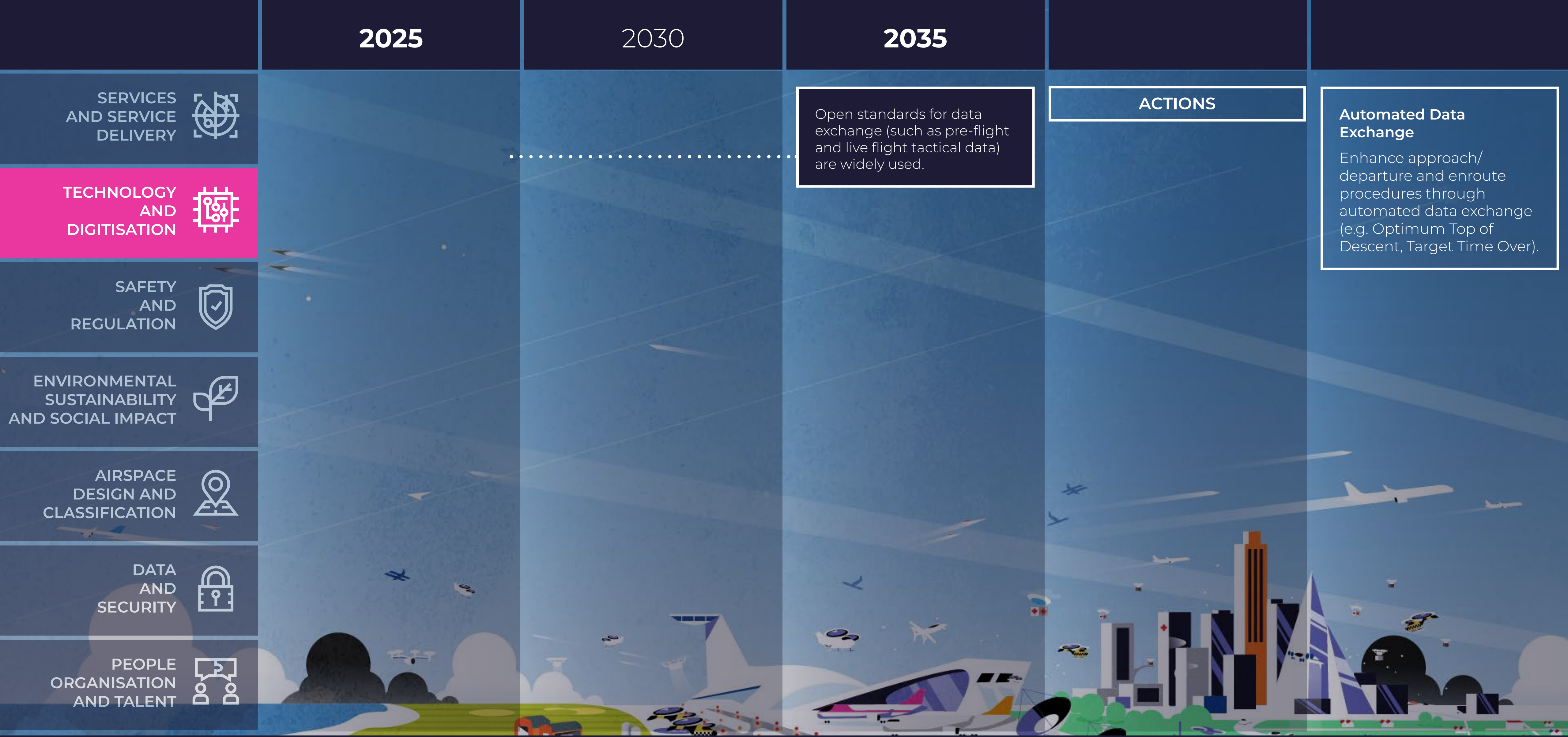
Open standards for data exchange (such as pre-flight and live flight tactical data) are widely used.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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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



Cyber security and cyber resilience are system-wide priorities, with global quality standards that every user must comply to.

- The global, interoperable framework allows for trusted ground-air, air-air and ground-ground exchanges for digital identity and user authentication. Strict privacy policies introduced that respect sovereignty and protect user privacy.
- States, regulators and organisations continue to collaborate on all matters relating to cyber security and cyber resilience to protect our global skies.
- IT Security Management Systems implemented by all aviation stakeholders and an exchange of possible threads being detected in the aviation network shared among all users immediately.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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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

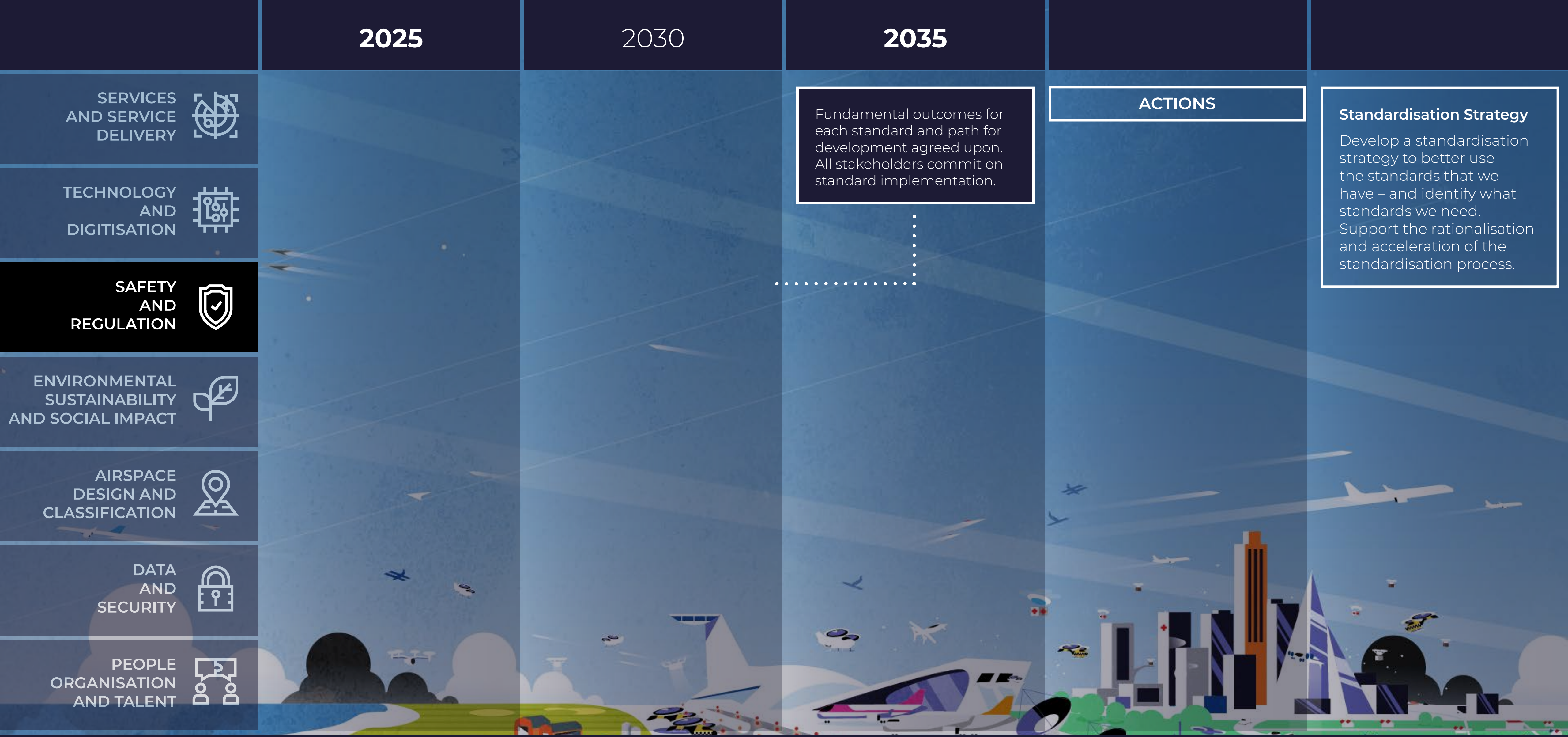


ACTIONS

Fundamental outcomes for each standard and path for development agreed upon. All stakeholders commit on standard implementation.



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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



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PEOPLE ORGANISATION AND TALENT

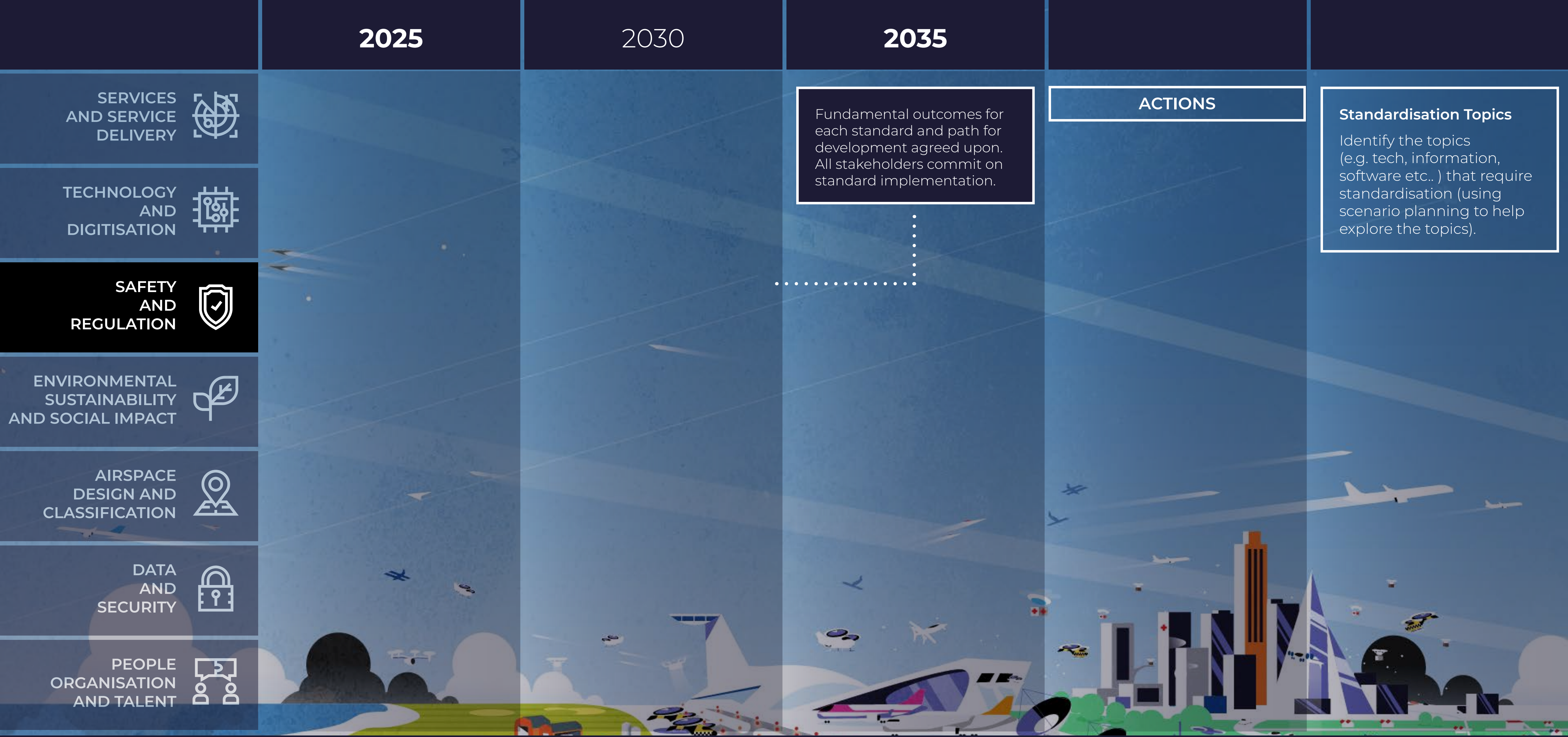


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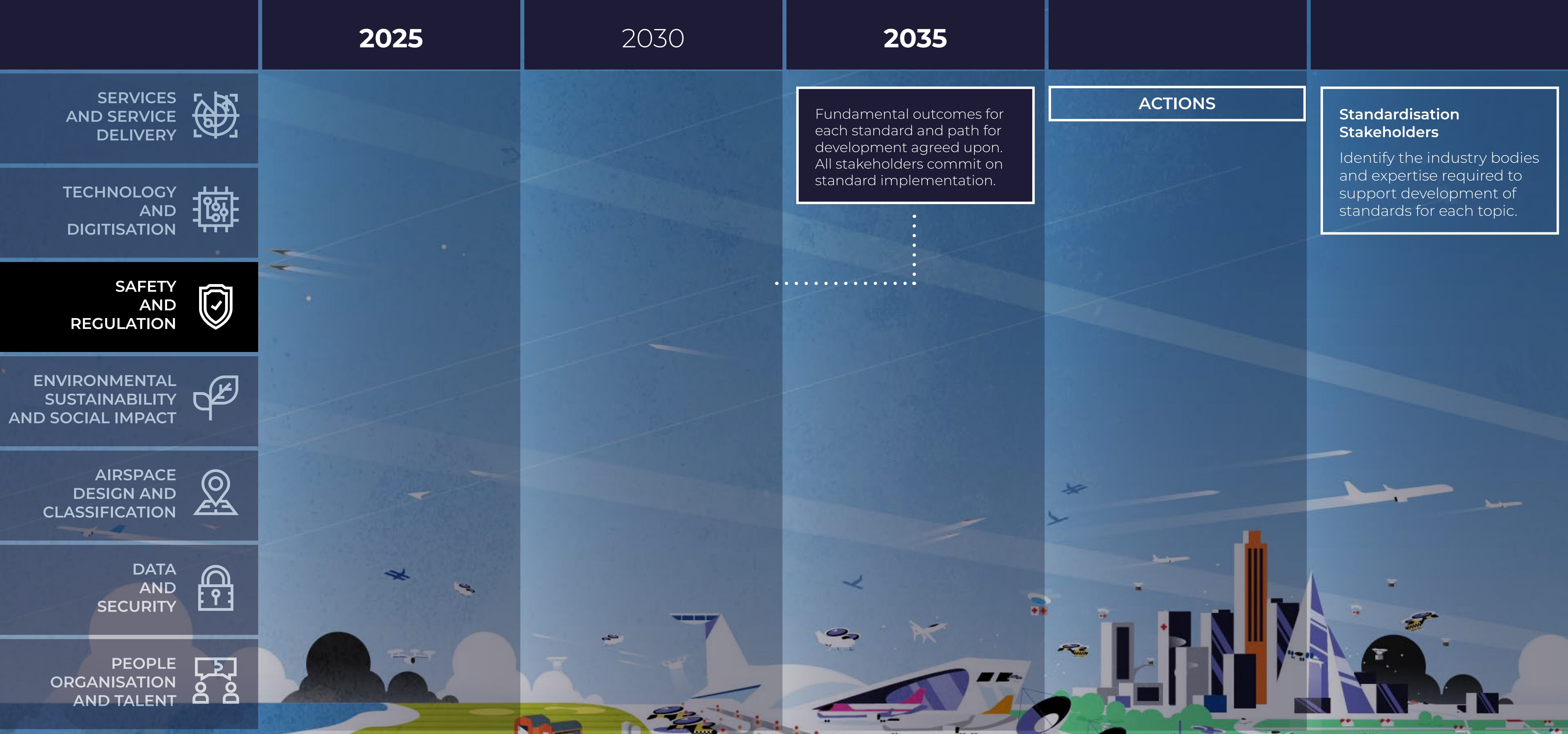
Fundamental outcomes for each standard and path for development agreed upon. All stakeholders commit on standard implementation.

Standardisation Strategy
 Develop a standardisation strategy to better use the standards that we have – and identify what standards we need. Support the rationalisation and acceleration of the standardisation process.

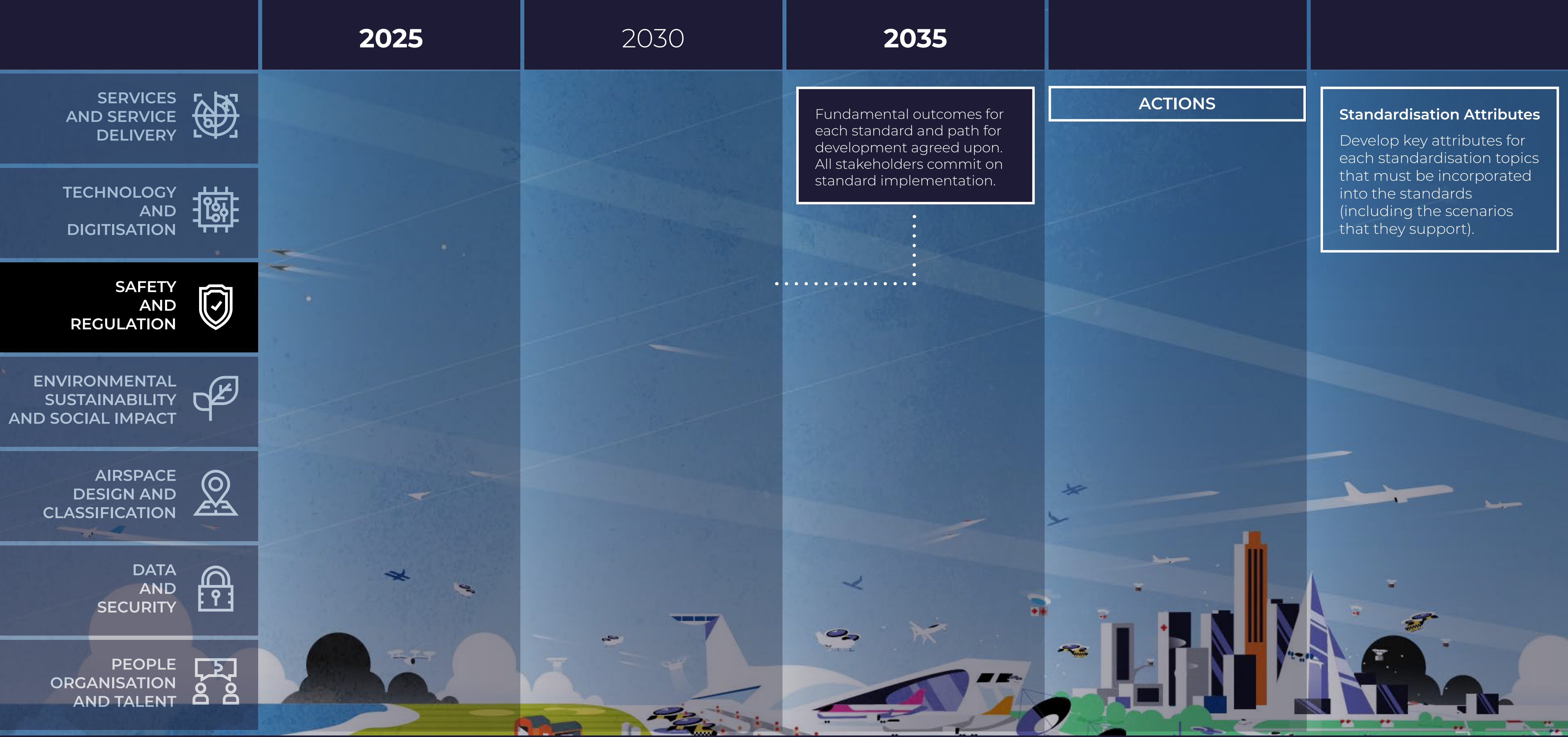
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SERVICES AND SERVICE DELIVERY



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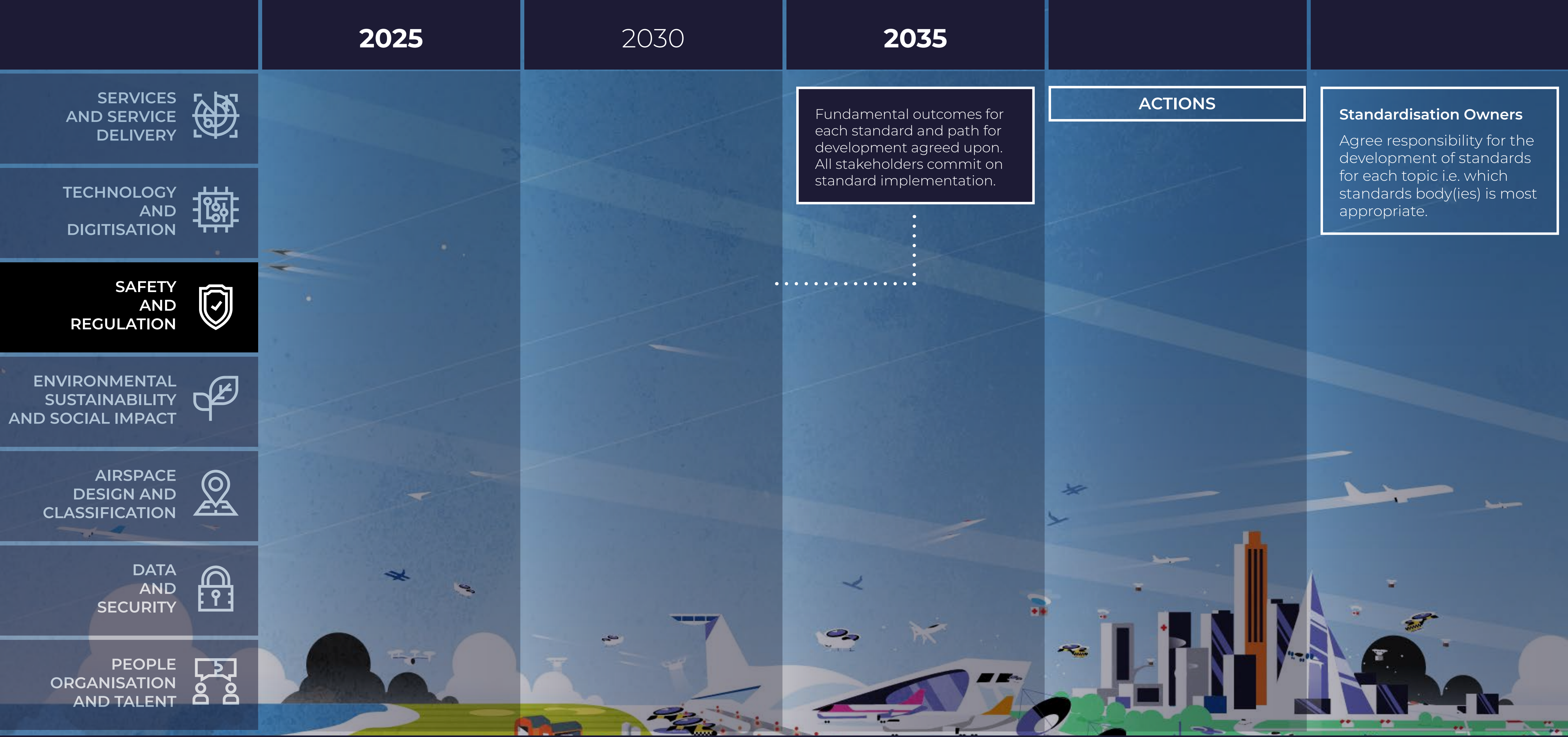
ACTIONS

Fundamental outcomes for each standard and path for development agreed upon. All stakeholders commit on standard implementation.

Standardisation Attributes

Develop key attributes for each standardisation topics that must be incorporated into the standards (including the scenarios that they support).

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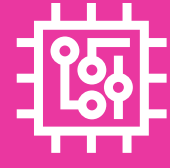
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT

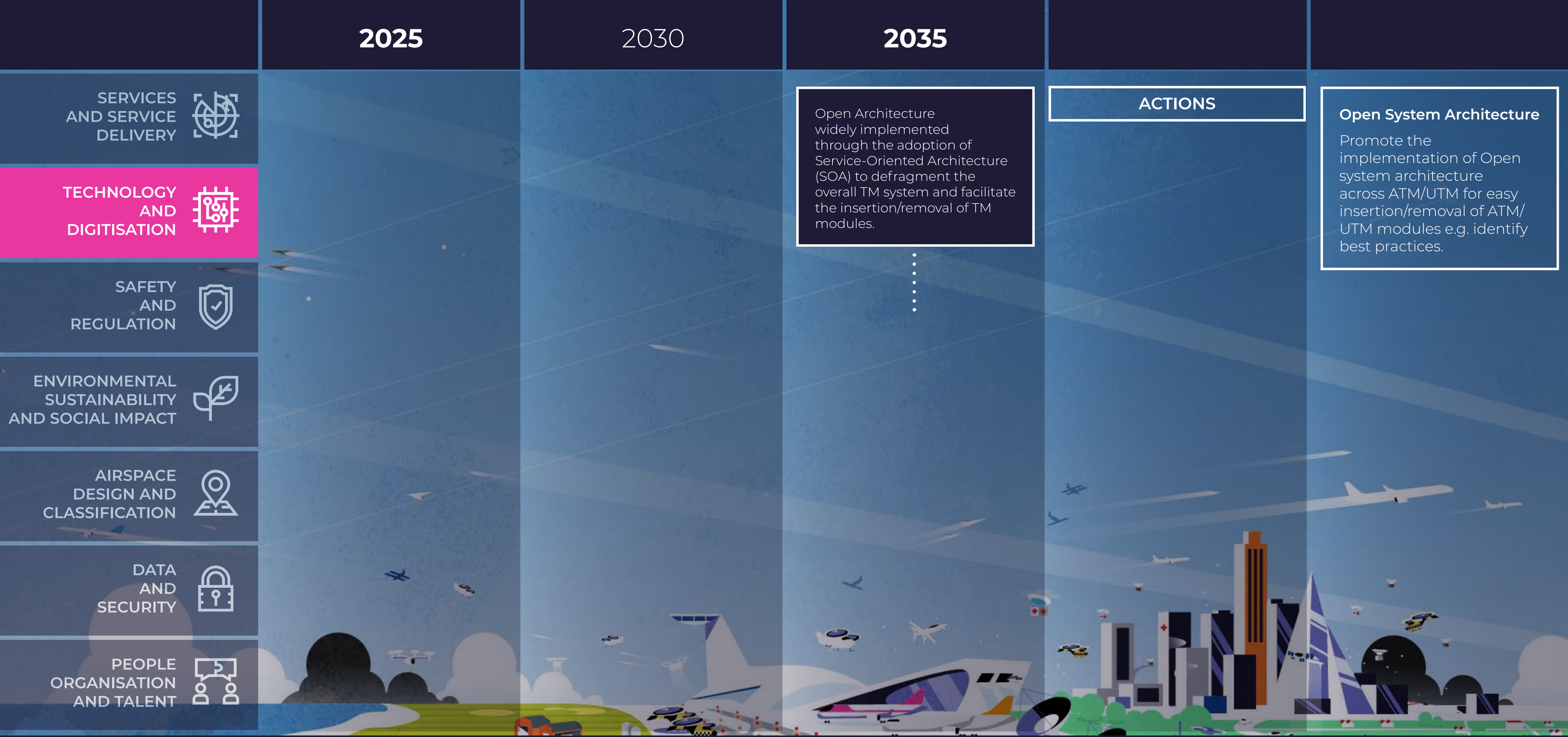


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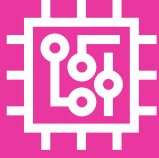





Open Architecture widely implemented through the adoption of Service-Oriented Architecture (SOA) to defragment the overall TM system and facilitate the insertion/removal of TM modules.



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SERVICES AND SERVICE DELIVERY 				
TECHNOLOGY AND DIGITISATION 			<div data-bbox="1692 187 2192 521" style="border: 1px solid white; padding: 5px;"> <p>Open Architecture widely implemented through the adoption of Service-Oriented Architecture (SOA) to defragment the overall TM system and facilitate the insertion/removal of TM modules.</p> </div>	<div data-bbox="2225 187 2772 258" style="border: 1px solid white; padding: 5px;"> <p>ACTIONS</p> </div>
SAFETY AND REGULATION 				<div data-bbox="2805 187 3305 574" style="border: 1px solid white; padding: 5px;"> <p>Support Adoption of Open Architecture</p> <p>Promote and support transition to open architecture through the adoption of SOA, including regulatory aspects and oversight.</p> </div>
ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 				
AIRSPACE DESIGN AND CLASSIFICATION 				
DATA AND SECURITY 				
PEOPLE ORGANISATION AND TALENT 				

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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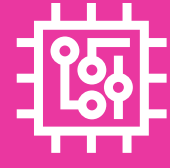
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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



Autonomous services progressively expanded beyond human operators (e.g. pilots) and support a machine-to-machine interface with no human interaction (e.g. in lower altitude UAS operations) supported by increased data sharing.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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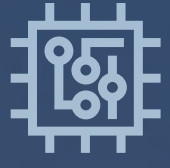
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SERVICES
AND SERVICE
DELIVERY



TECHNOLOGY
AND
DIGITISATION



SAFETY
AND
REGULATION



ENVIRONMENTAL
SUSTAINABILITY
AND SOCIAL IMPACT



AIRSPACE
DESIGN AND
CLASSIFICATION



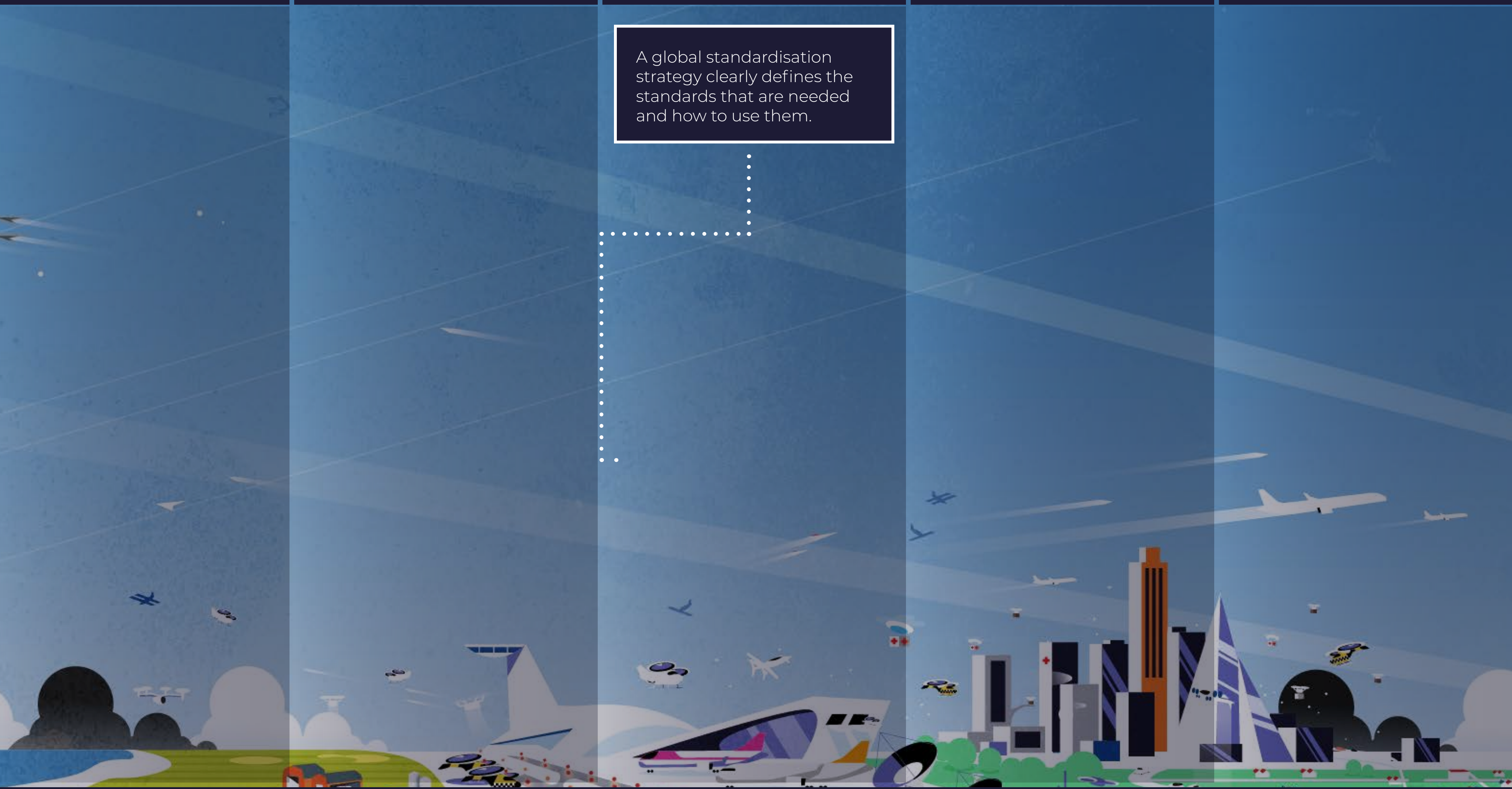
DATA
AND
SECURITY



PEOPLE
ORGANISATION
AND TALENT



A global standardisation strategy clearly defines the standards that are needed and how to use them.

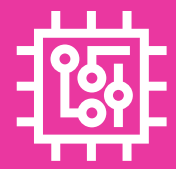


CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

SERVICES
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DELIVERY



TECHNOLOGY
AND
DIGITISATION



SAFETY
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REGULATION



ENVIRONMENTAL
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AND SOCIAL IMPACT



AIRSPACE
DESIGN AND
CLASSIFICATION



DATA
AND
SECURITY



PEOPLE
ORGANISATION
AND TALENT



GOAL 5 Digital Collaboration

An open approach to digital development has been implemented giving people access to the right data to perform their role and increasing collaboration and avoiding duplication, maximising resources — and ultimately increasing their impact — through open standards, open data and open innovation.

PLEASE SELECT **MILESTONES** FOR GOAL 5

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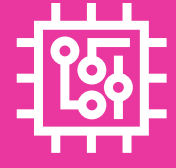
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SERVICES
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PLEASE SELECT MILESTONE TO SEE **DETAILS**

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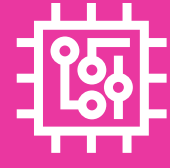
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A culture of innovation has been globally fostered and adopted within the industry, and is supported by adequate changes in the regulatory system, in order to swiftly and safely integrate emerging technology paradigms when they are sufficiently mature and add value or solve business issues.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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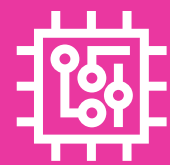
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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



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AIRSPACE DESIGN AND CLASSIFICATION



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ACTIONS

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Coordinated Development

Improved coordination for development and deployment of innovative solutions (at global and regional level).

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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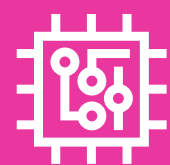
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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



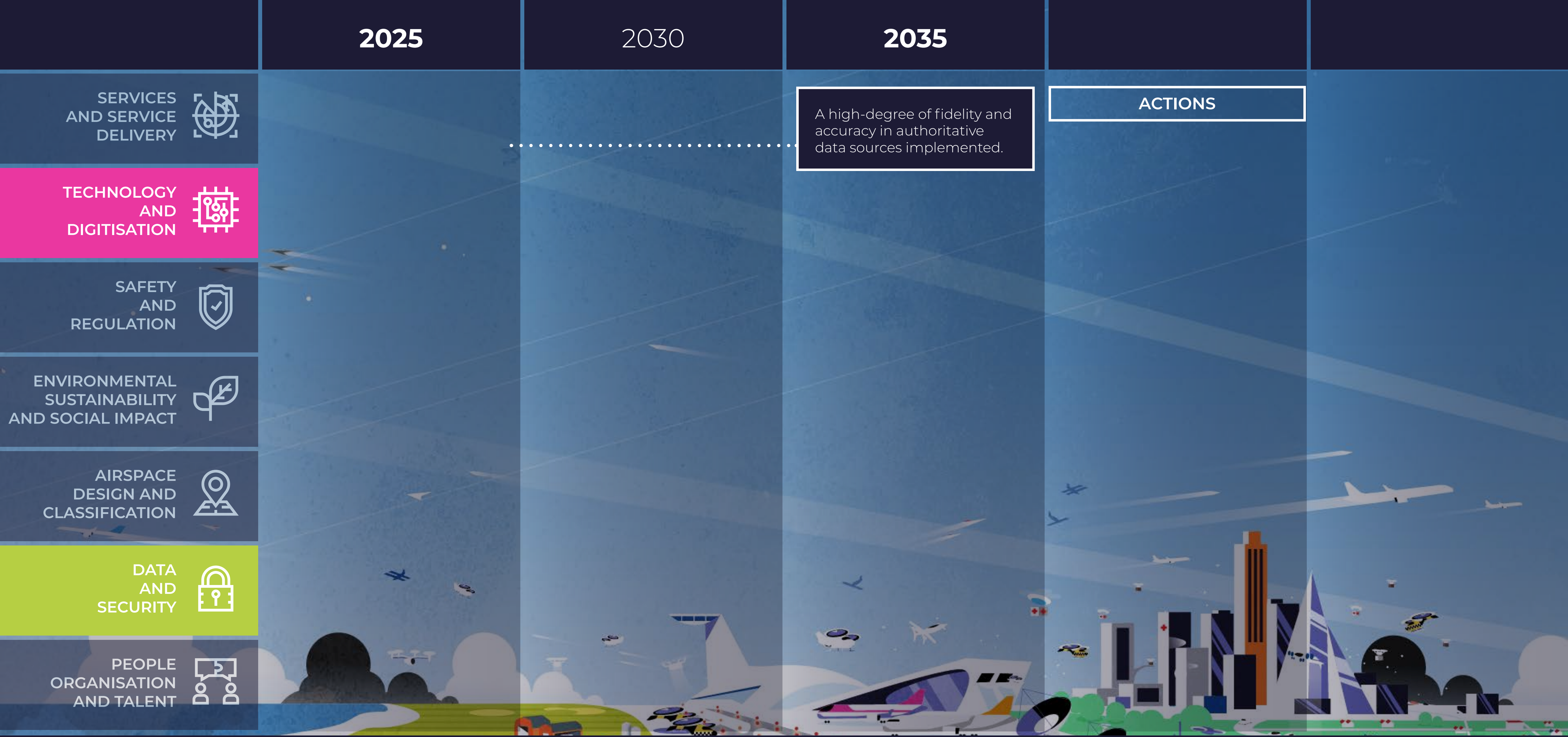
ACTIONS

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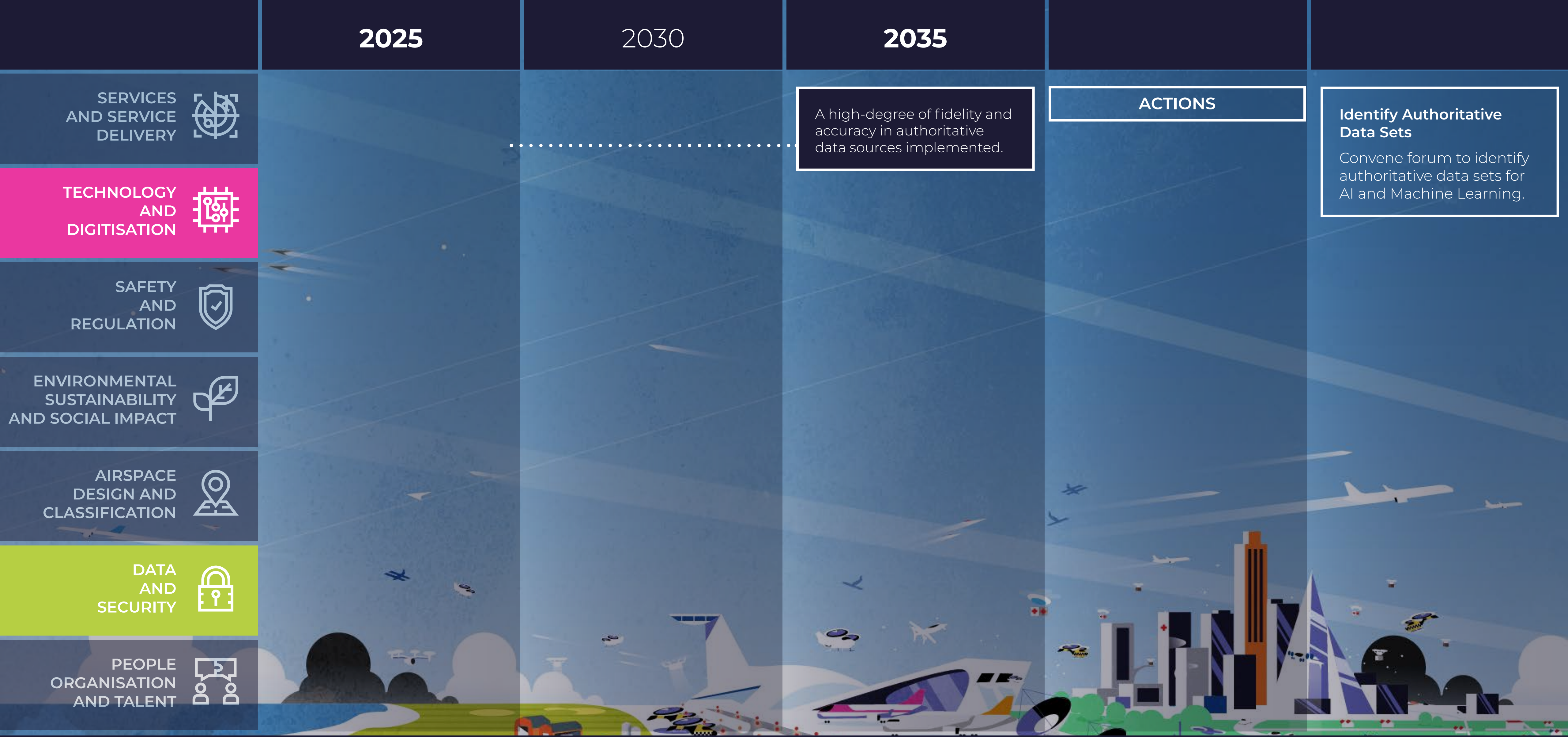
Develop a Pathway for Advanced Technology

Develop a pathway for the expanded implementation of advanced technology, leveraging its benefits while ensuring effective management of risks, e.g. contingency issues, staff de-skilling, role of human in the loop, amplification of the combined strengths of humans and technology.

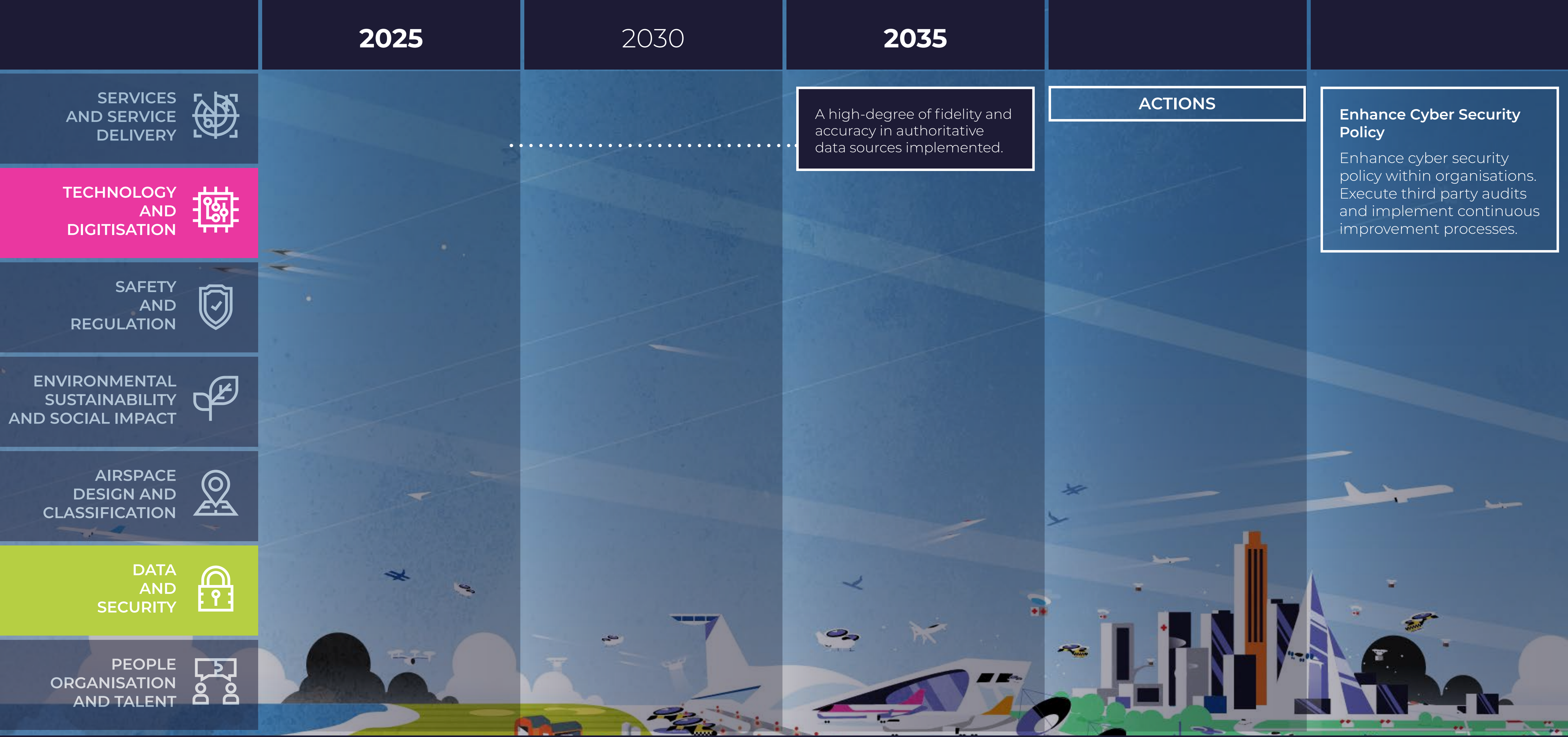
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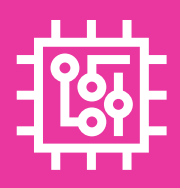
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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



A high-degree of fidelity and accuracy in authoritative data sources implemented.

ACTIONS

Enhance Cyber Security Policy
 Enhance cyber security policy within organisations. Execute third party audits and implement continuous improvement processes.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Open standards for data exchange (such as pre-flight and live flight tactical data) are widely used.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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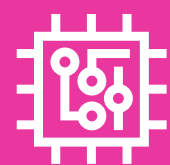
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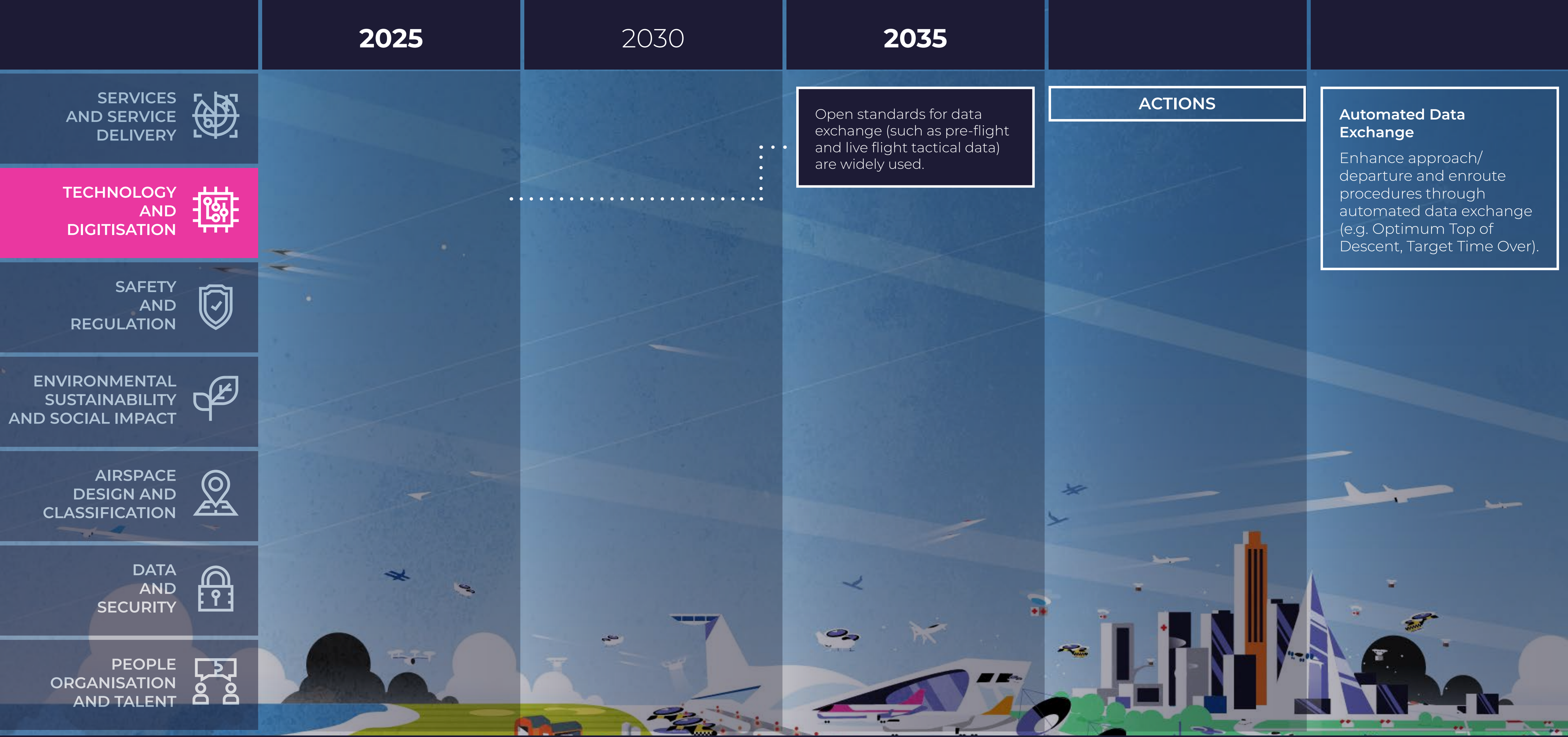


ACTIONS

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Standardisation Strategy
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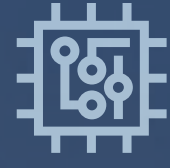
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SERVICES AND SERVICE DELIVERY



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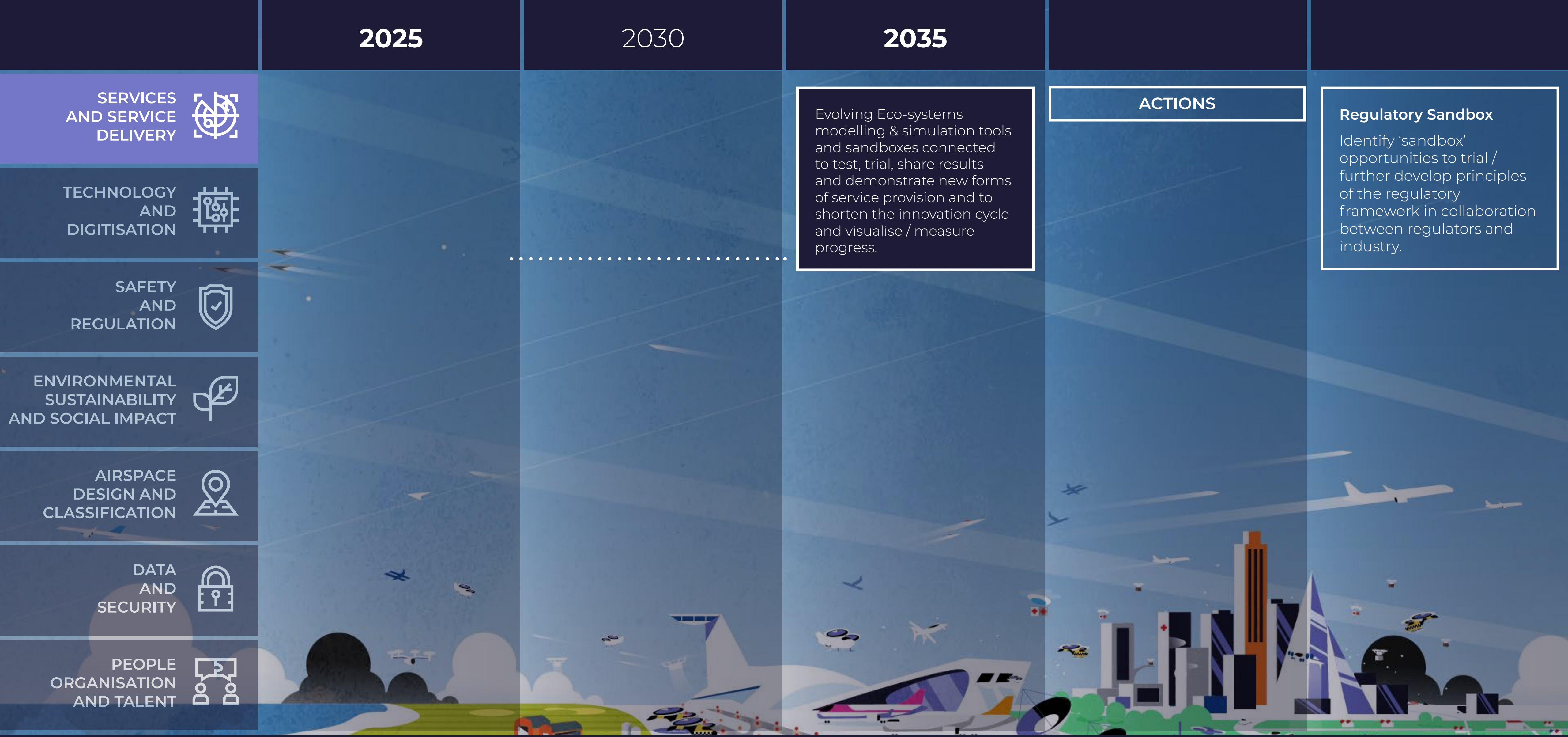


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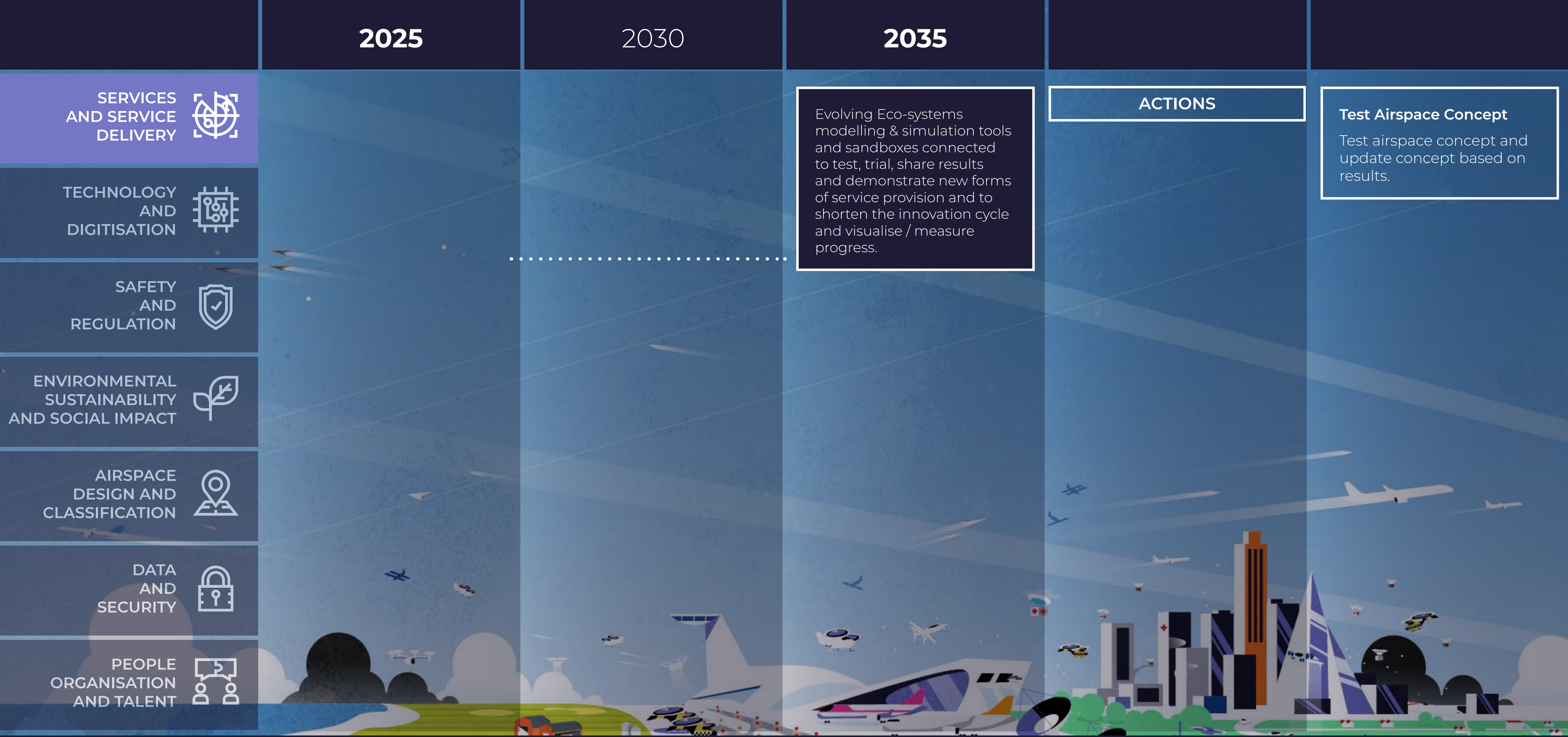
Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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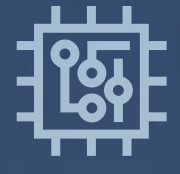
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SERVICES AND SERVICE DELIVERY



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Evolving Eco-systems modelling & simulation tools and sandboxes connected to test, trial, share results and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress.

ACTIONS

Test Airspace Concept
Test airspace concept and update concept based on results.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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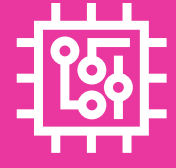
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SERVICES
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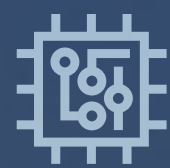
Digital mechanism implemented to rapidly, and securely, certify trusted (data) service providers using harmonised standards and their integrity.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

SERVICES
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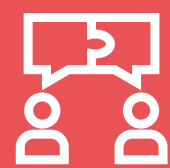
AIRSPACE
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PEOPLE
ORGANISATION
AND TALENT



GOAL 6

Safety and Security by Design

Trajectory Management (TM) services are designed to maximise their contribution to delivering safe operations in the air and on the ground for all airspace users and in all circumstances (e.g. nominal and non-nominal situations). The design of the services is optimised to handle variability within the system and taking into account the complete value chain(s), managing the complexity of multiple stakeholders / contributors to create and maintain a safe aviation ecosystem.

PLEASE SELECT **MILESTONES** FOR GOAL 6

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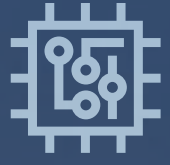
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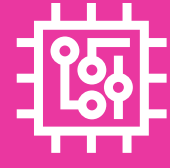
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SERVICES AND SERVICE DELIVERY



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ACTIONS

Open standards for data exchange (such as pre-flight and live flight tactical data) are widely used.



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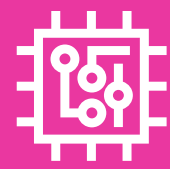
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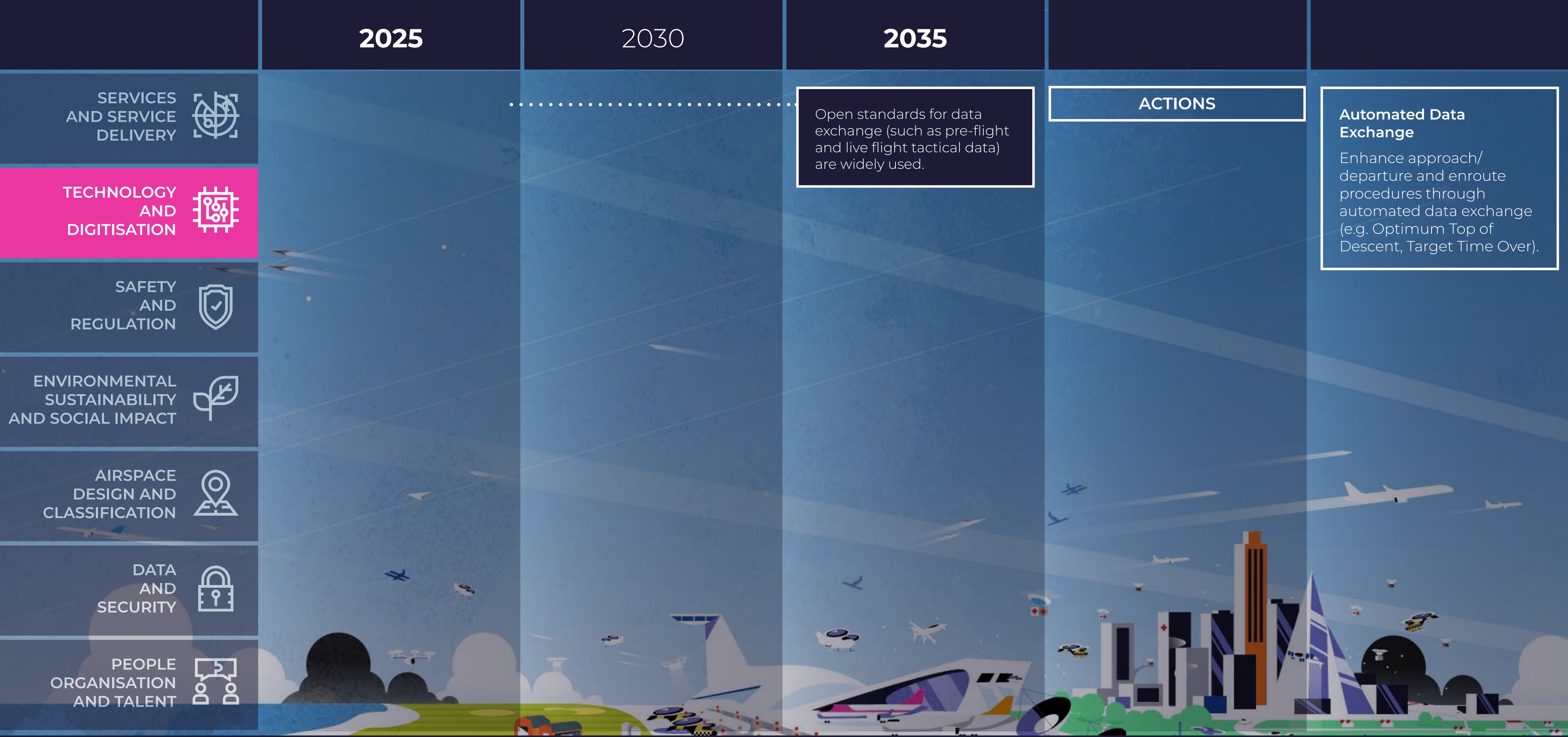
ACTIONS

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Standardisation Strategy

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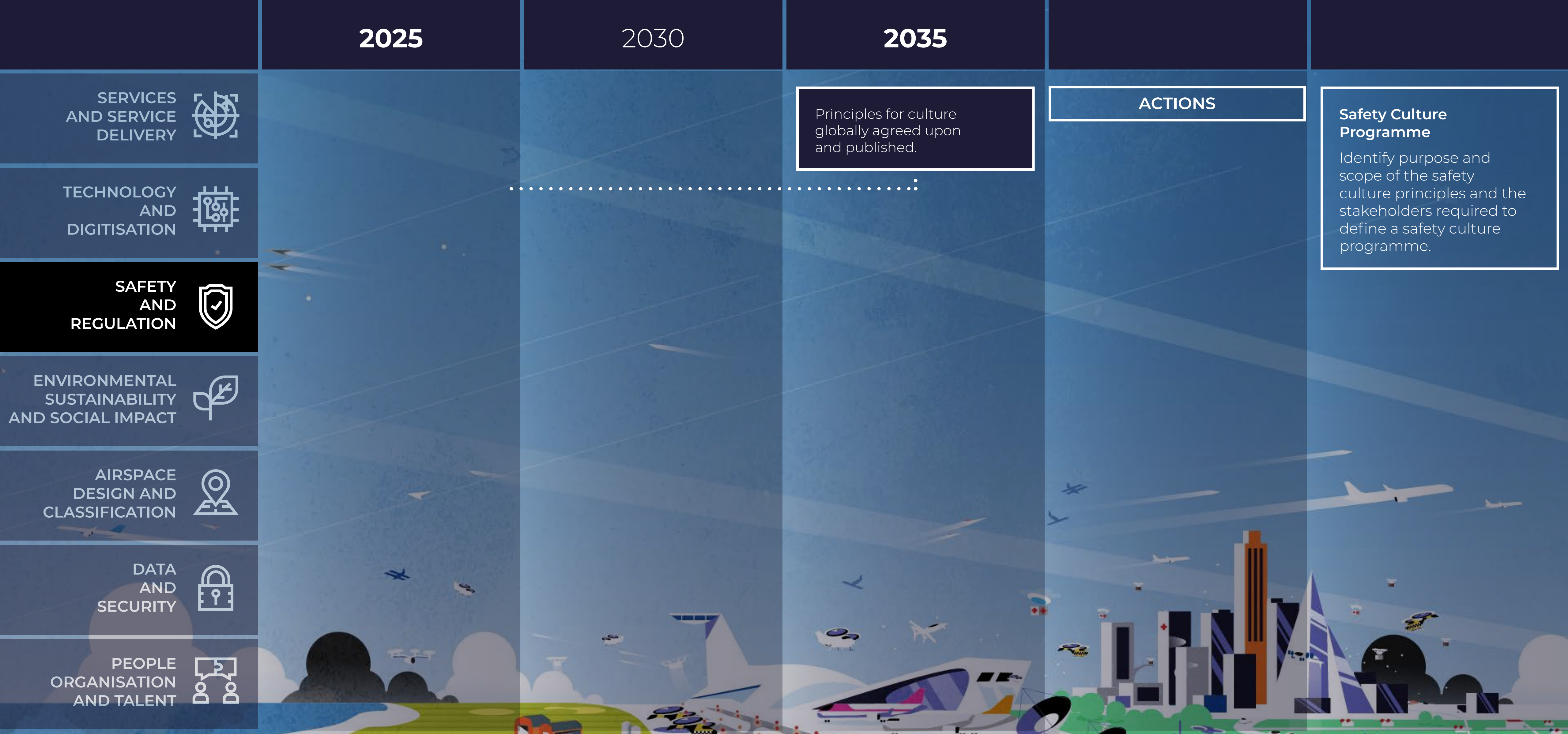
PEOPLE ORGANISATION AND TALENT 

Principles for culture globally agreed upon and published.

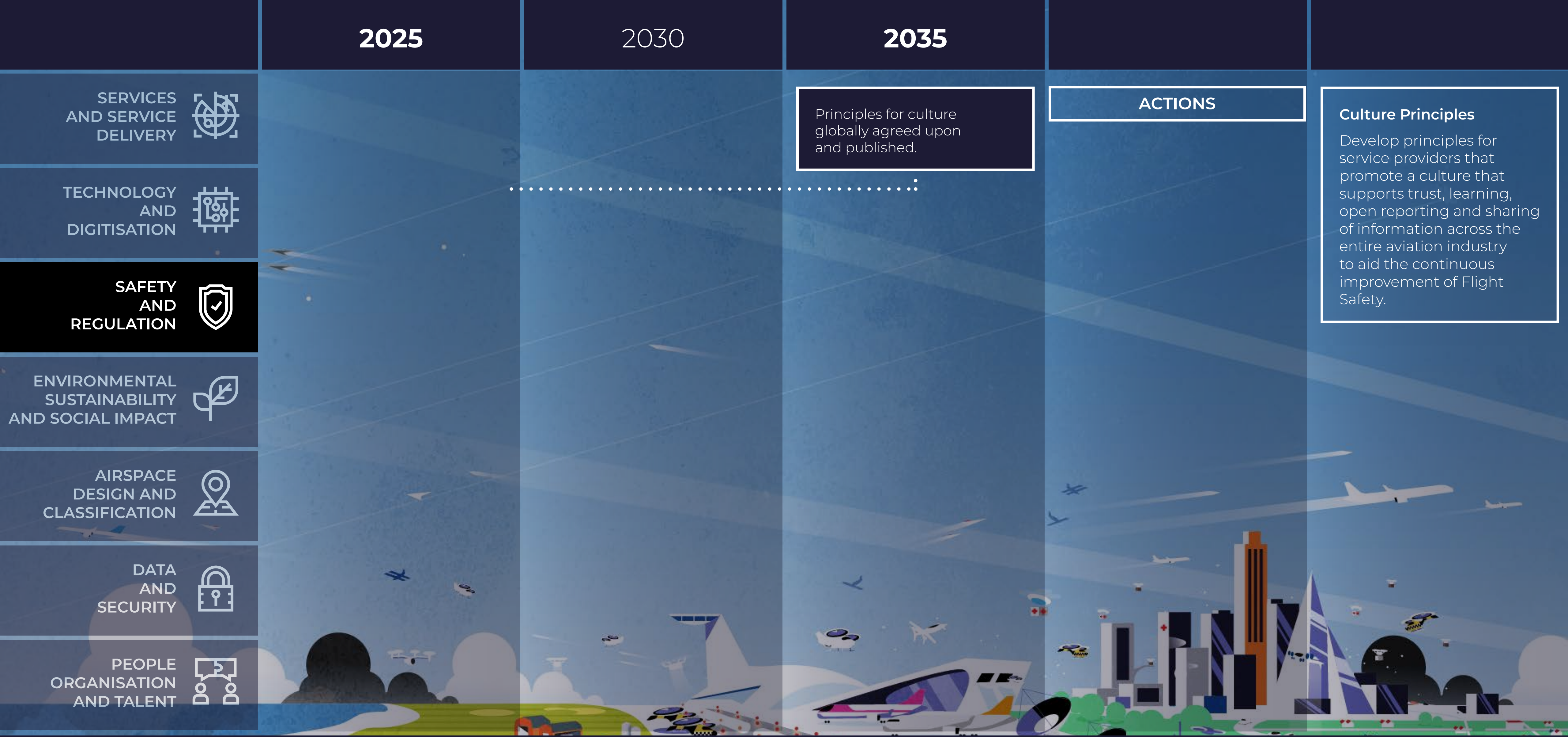
ACTIONS



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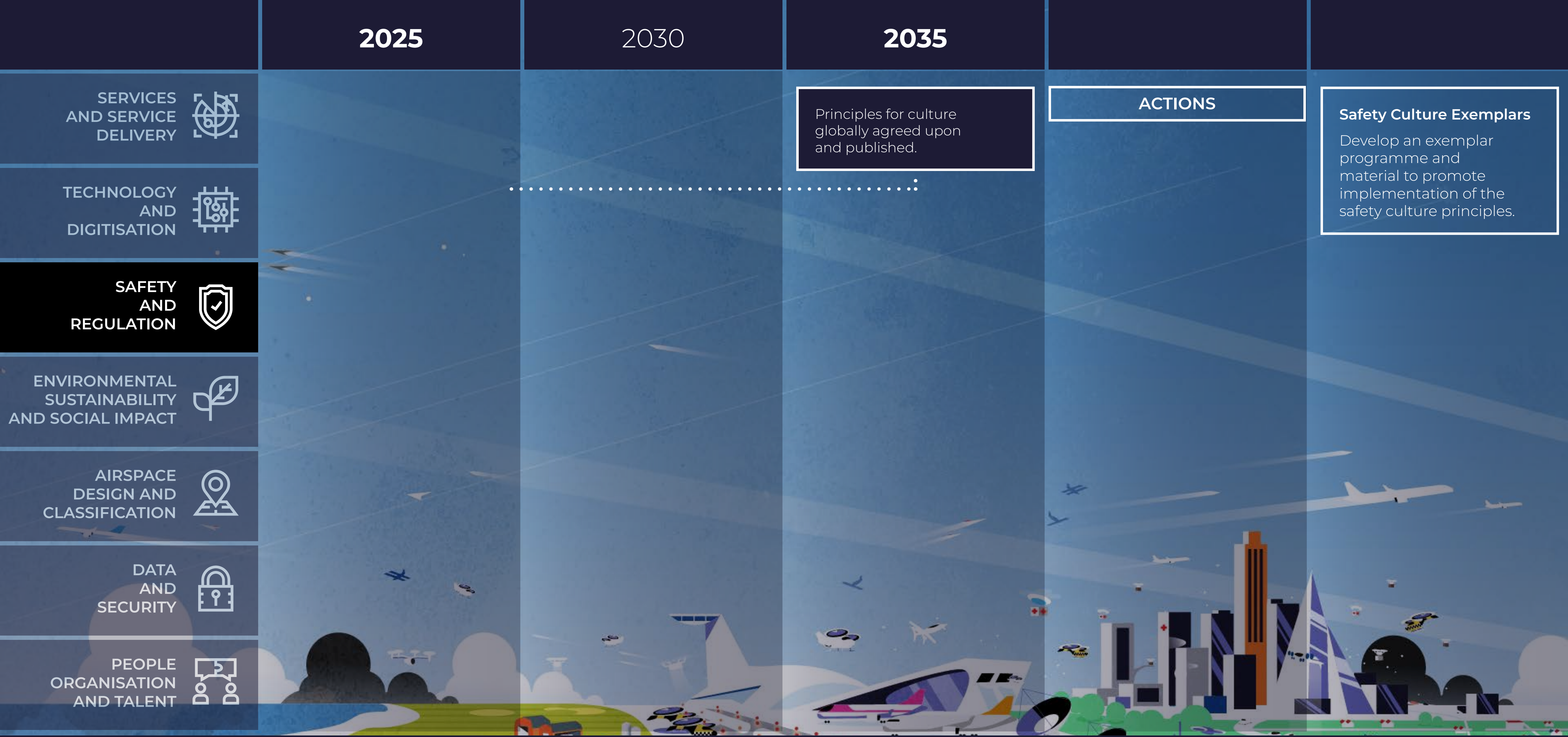
Principles for culture globally agreed upon and published.

ACTIONS

Culture Principles

Develop principles for service providers that promote a culture that supports trust, learning, open reporting and sharing of information across the entire aviation industry to aid the continuous improvement of Flight Safety.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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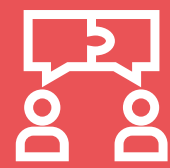
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



Security culture improvements widely implemented to increase security sensitivity among Information Technology (IT) and aviation professionals.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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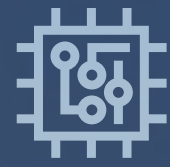
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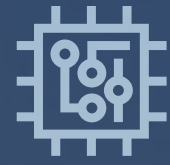
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT

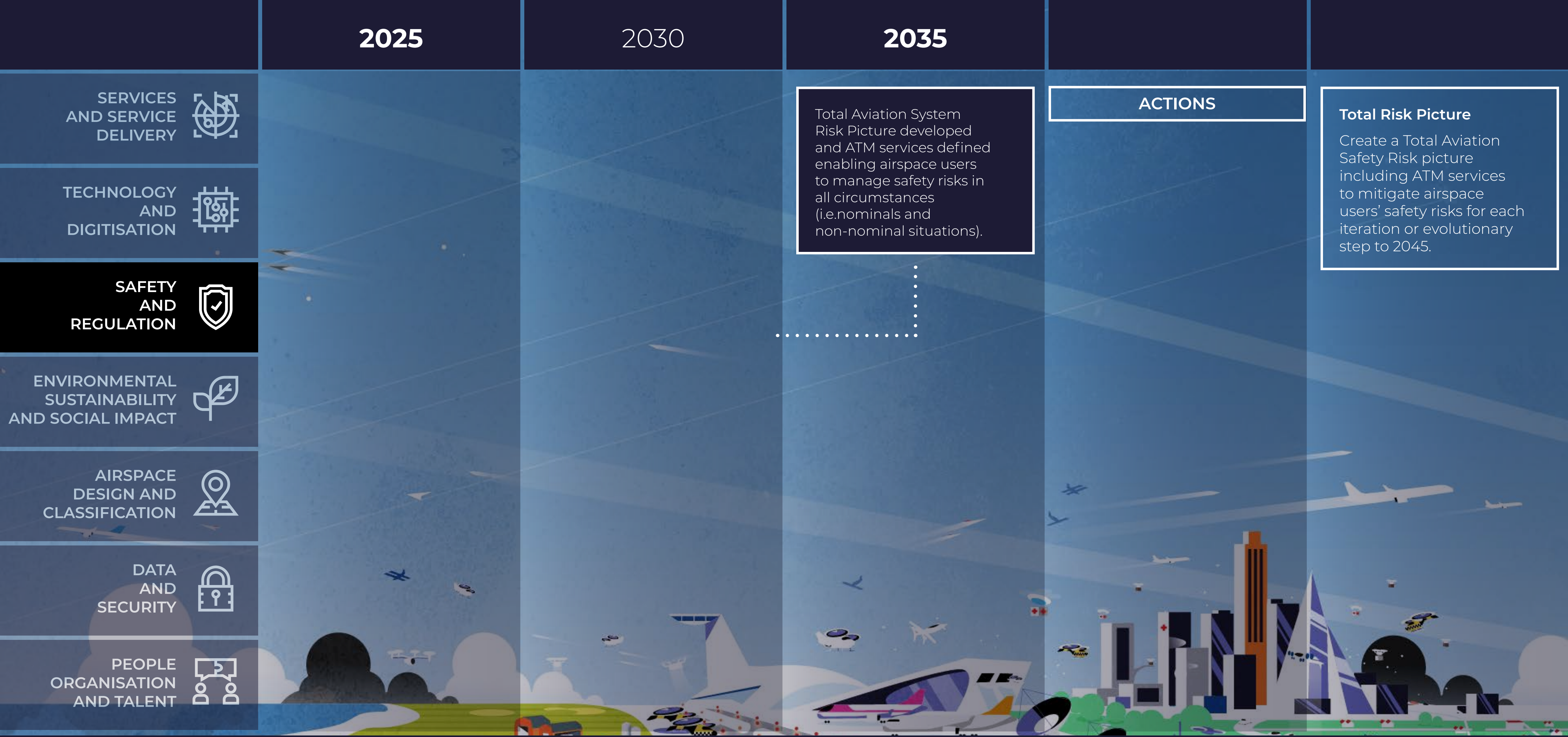


ACTIONS

Total Aviation System Risk Picture developed and ATM services defined enabling airspace users to manage safety risks in all circumstances (i.e.nominals and non-nominal situations).



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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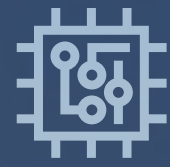
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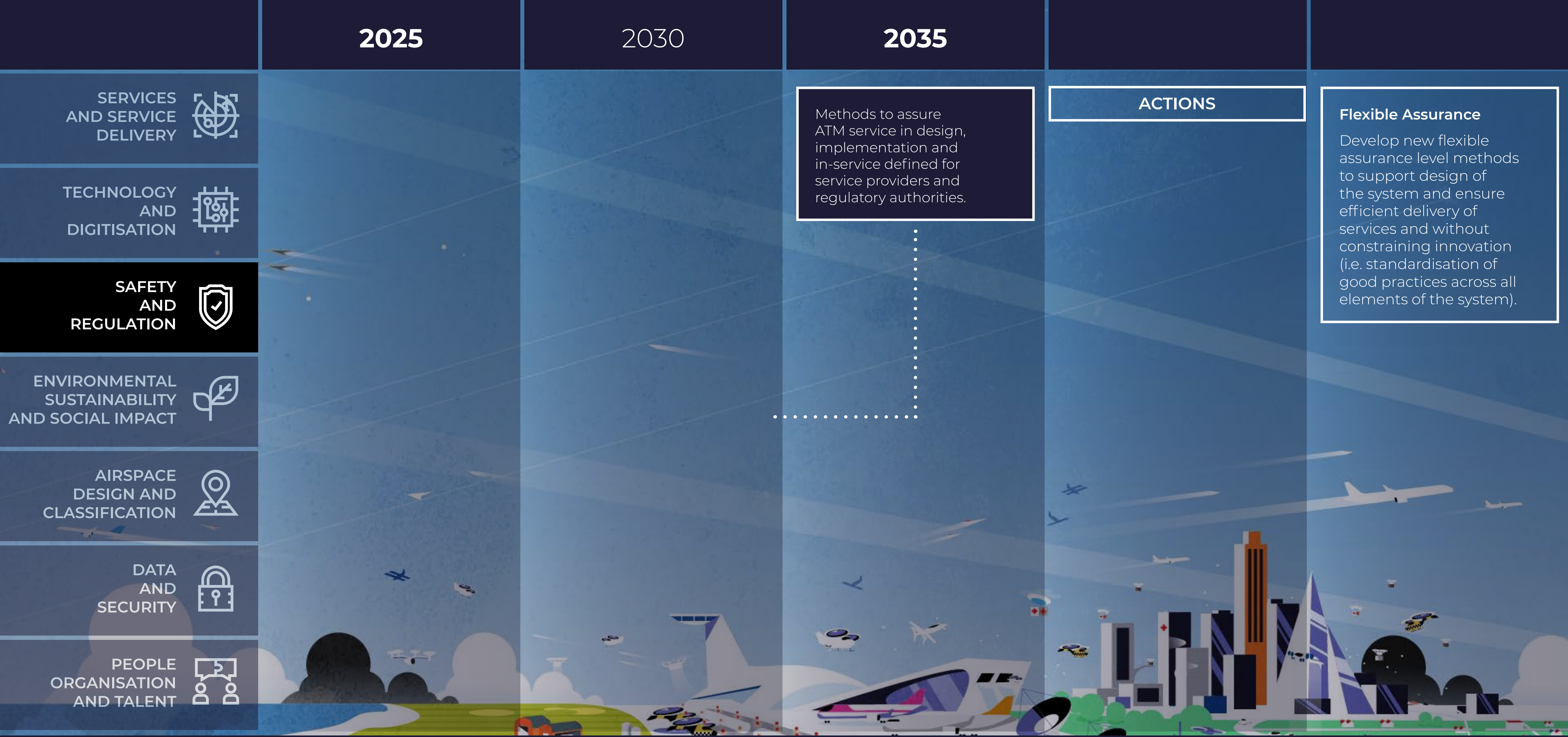


ACTIONS

Methods to assure ATM service in design, implementation and in-service defined for service providers and regulatory authorities.



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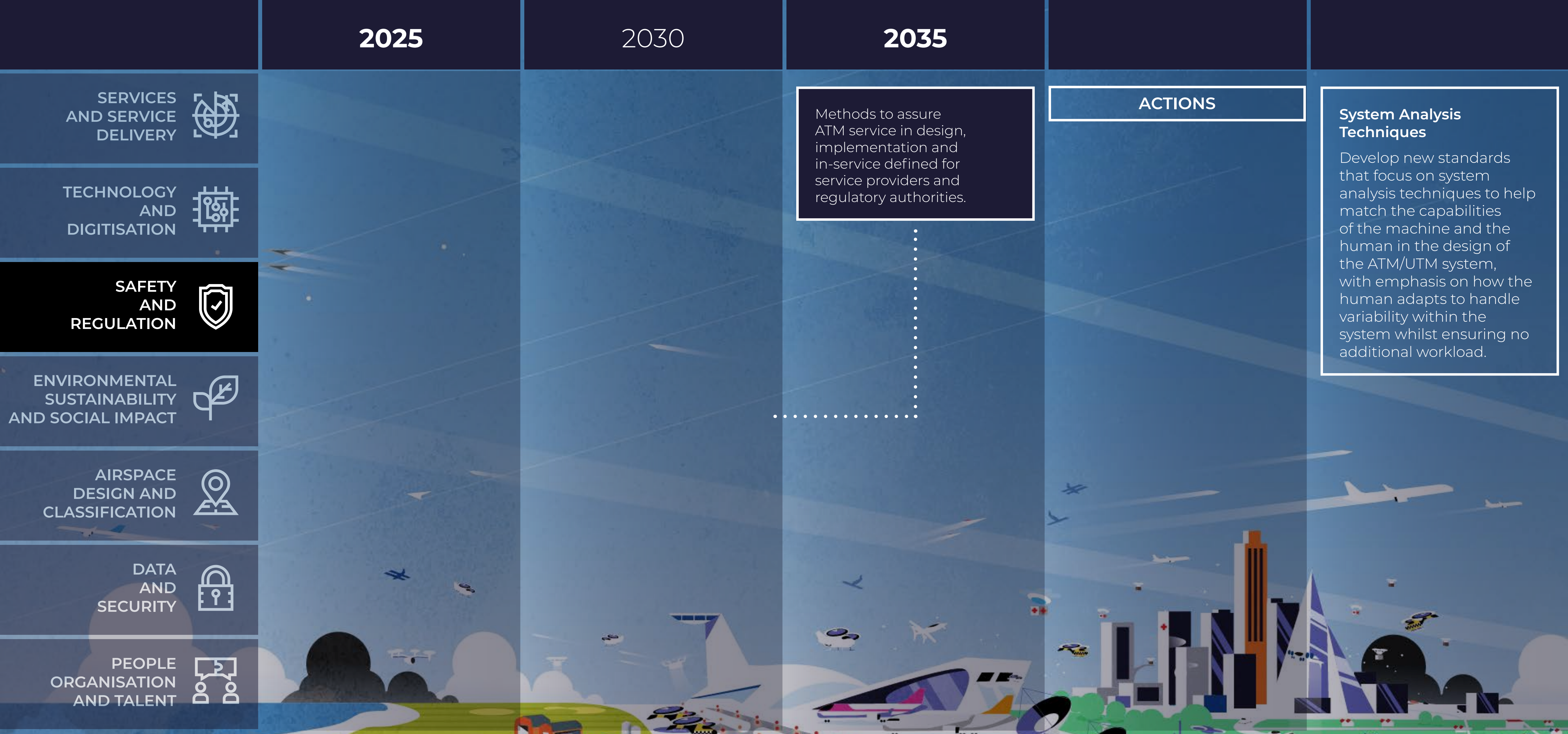


ACTIONS

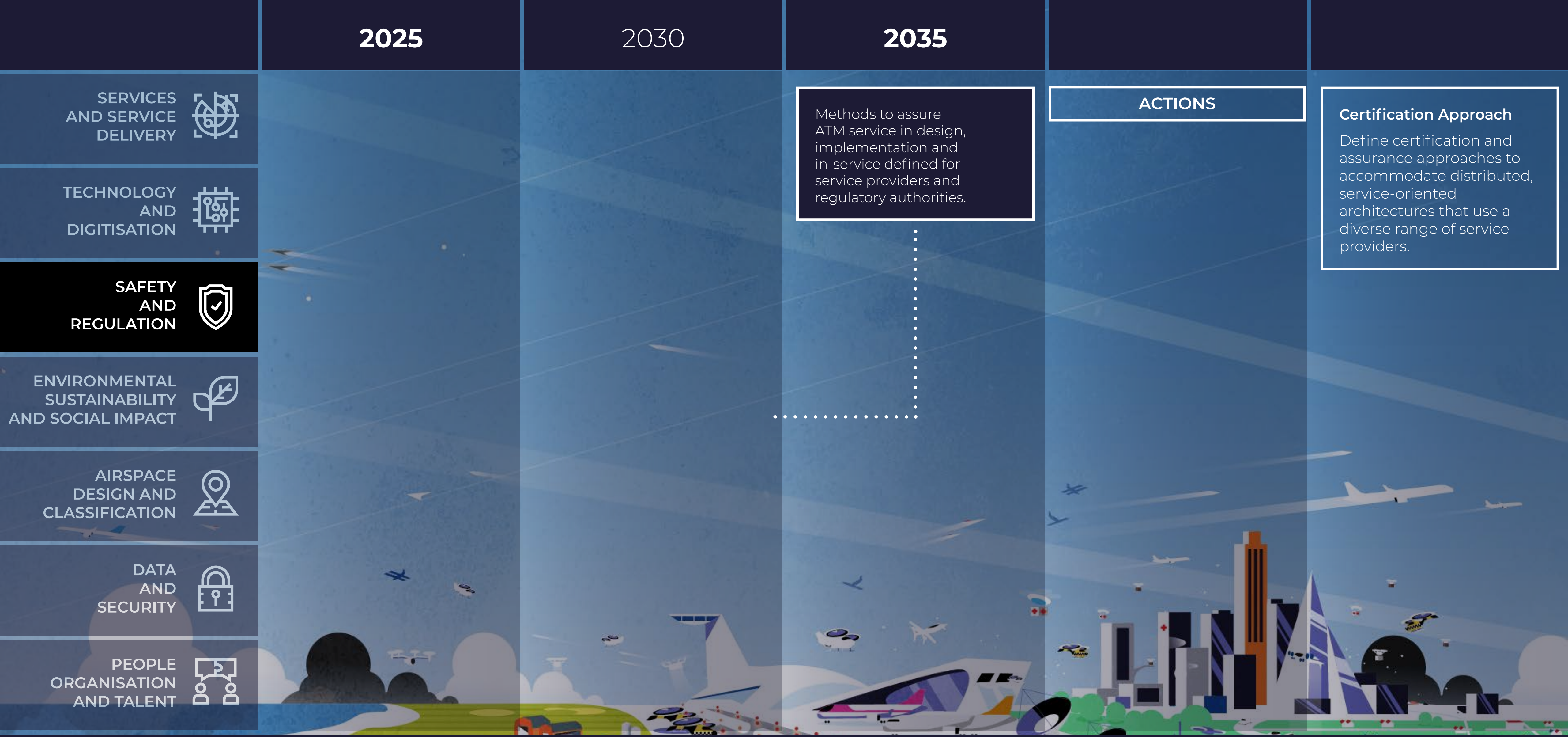
Methods to assure ATM service in design, implementation and in-service defined for service providers and regulatory authorities.

Flexible Assurance
 Develop new flexible assurance level methods to support design of the system and ensure efficient delivery of services and without constraining innovation (i.e. standardisation of good practices across all elements of the system).

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ACTIONS

Methods to assure ATM service in design, implementation and in-service defined for service providers and regulatory authorities.

Certification Approach
 Define certification and assurance approaches to accommodate distributed, service-oriented architectures that use a diverse range of service providers.

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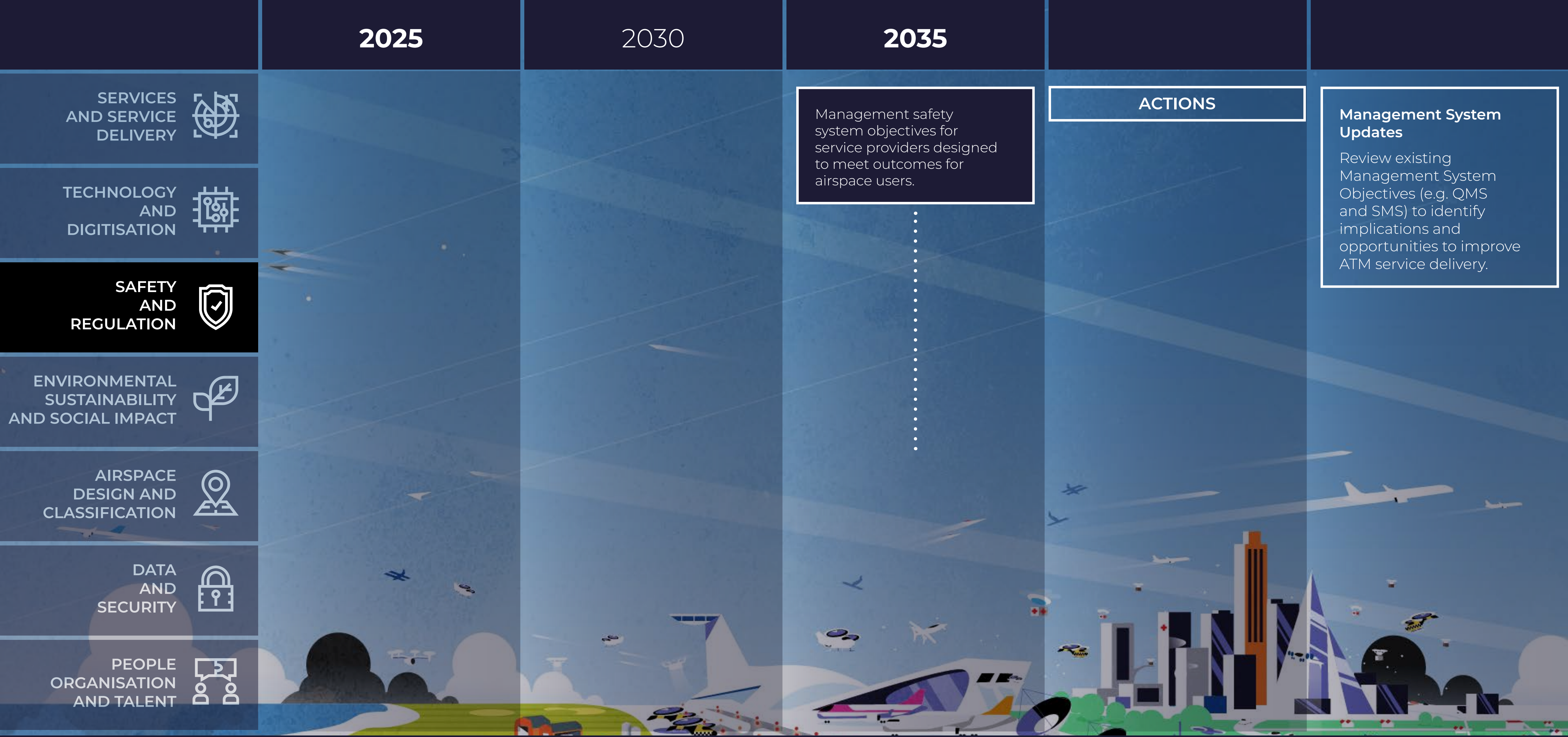


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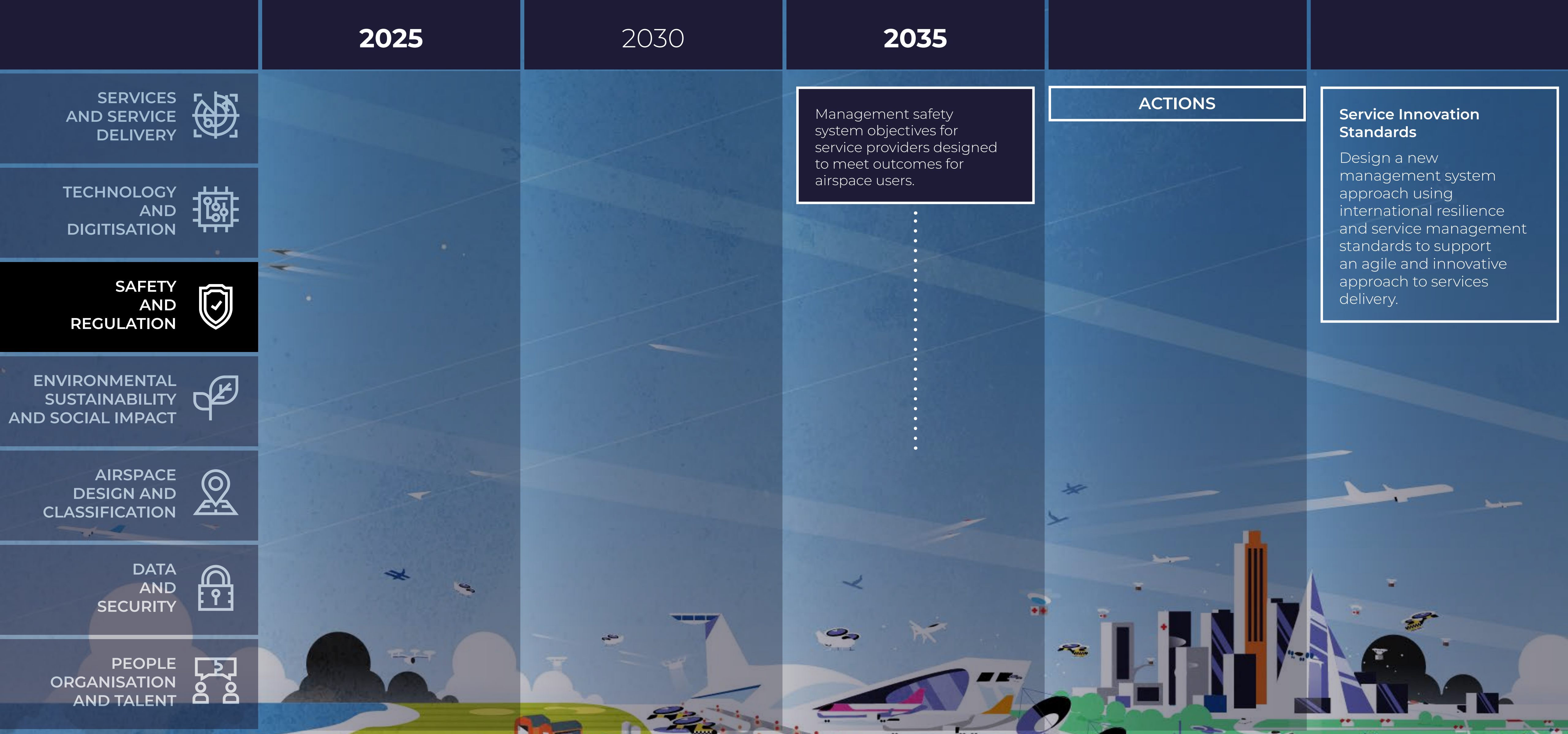
Management safety system objectives for service providers designed to meet outcomes for airspace users.



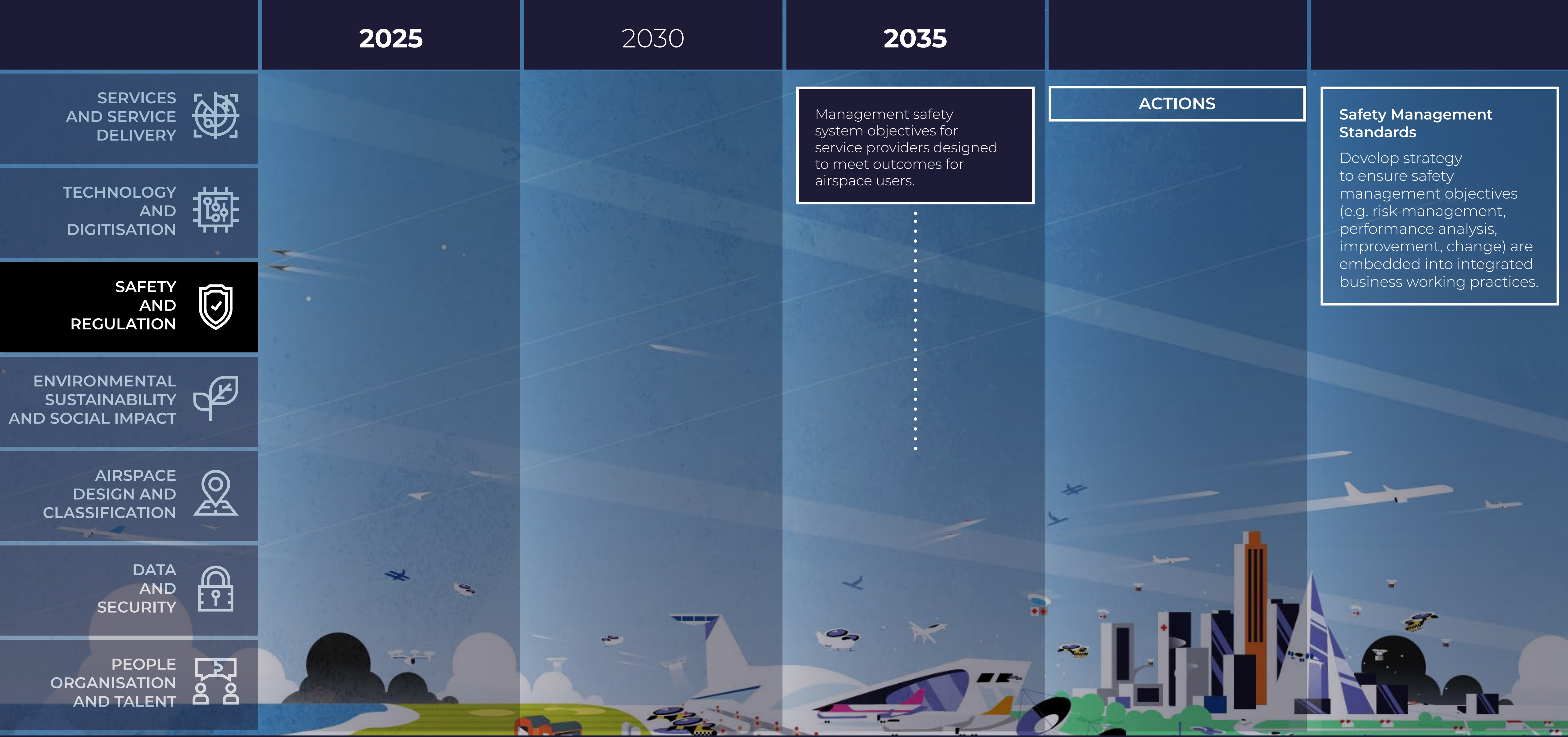
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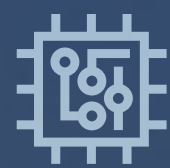


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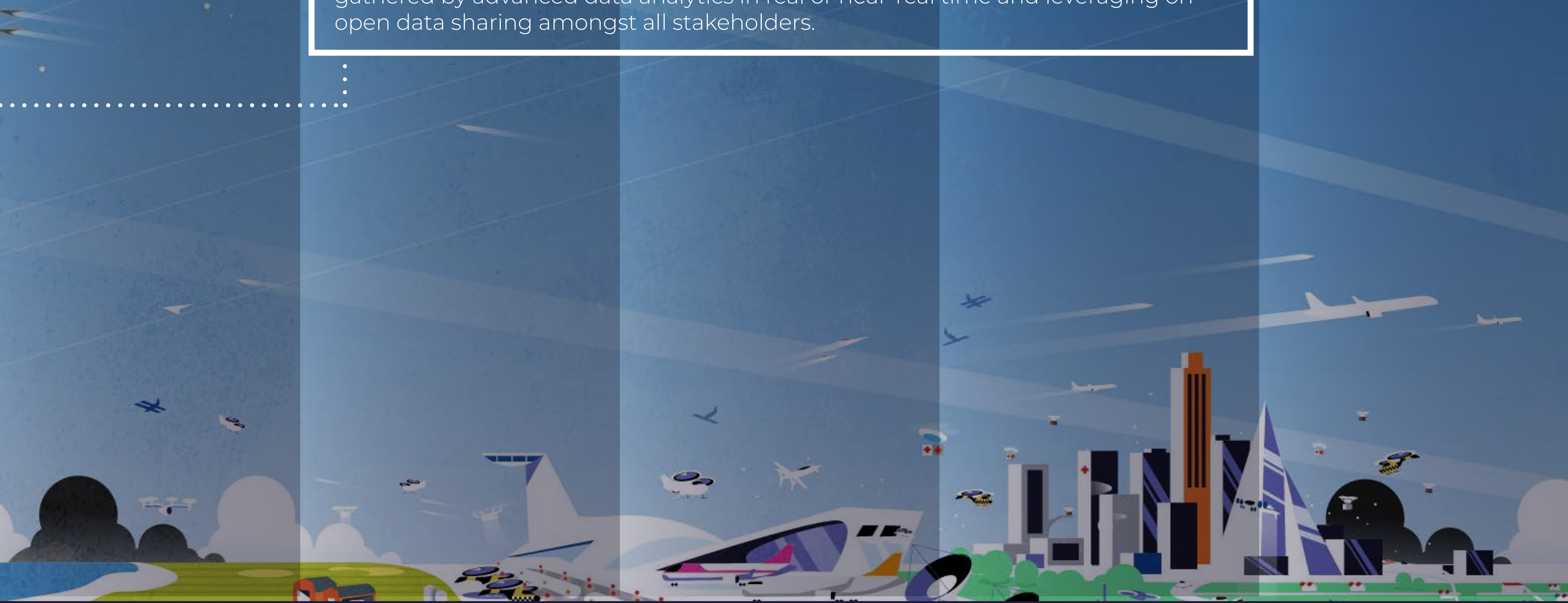
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GOAL 7

Predictive Approach to Risk Management

TM Service performance is based on a predictive approach to risk management, using advanced insight into total system performance (normal and abnormal) gathered by advanced data analytics in real or near-real time and leveraging on open data sharing amongst all stakeholders.



PLEASE SELECT **MILESTONES** FOR GOAL 7

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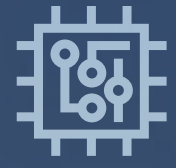
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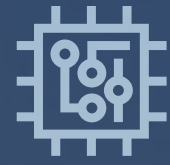
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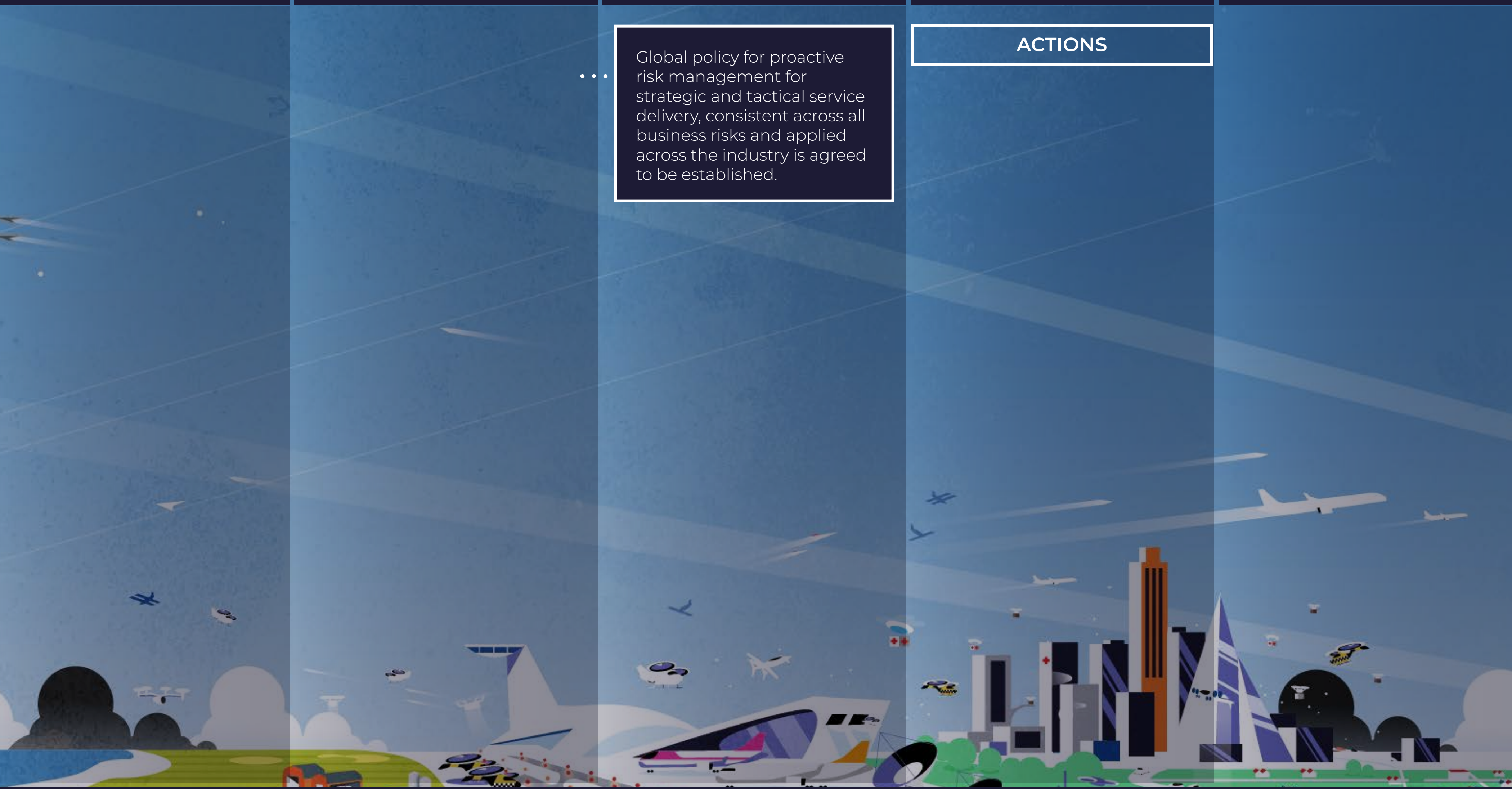


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ACTIONS

Global policy for proactive risk management for strategic and tactical service delivery, consistent across all business risks and applied across the industry is agreed to be established.



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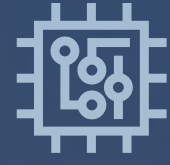
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...
New approach to surveillance services introduced based on performance requirements for surveillance to aid Detect and Avoid (DAA), which might be different than those for separation services (lower power transponders, diverging technologies etc).

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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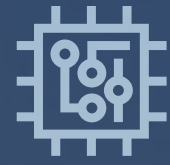
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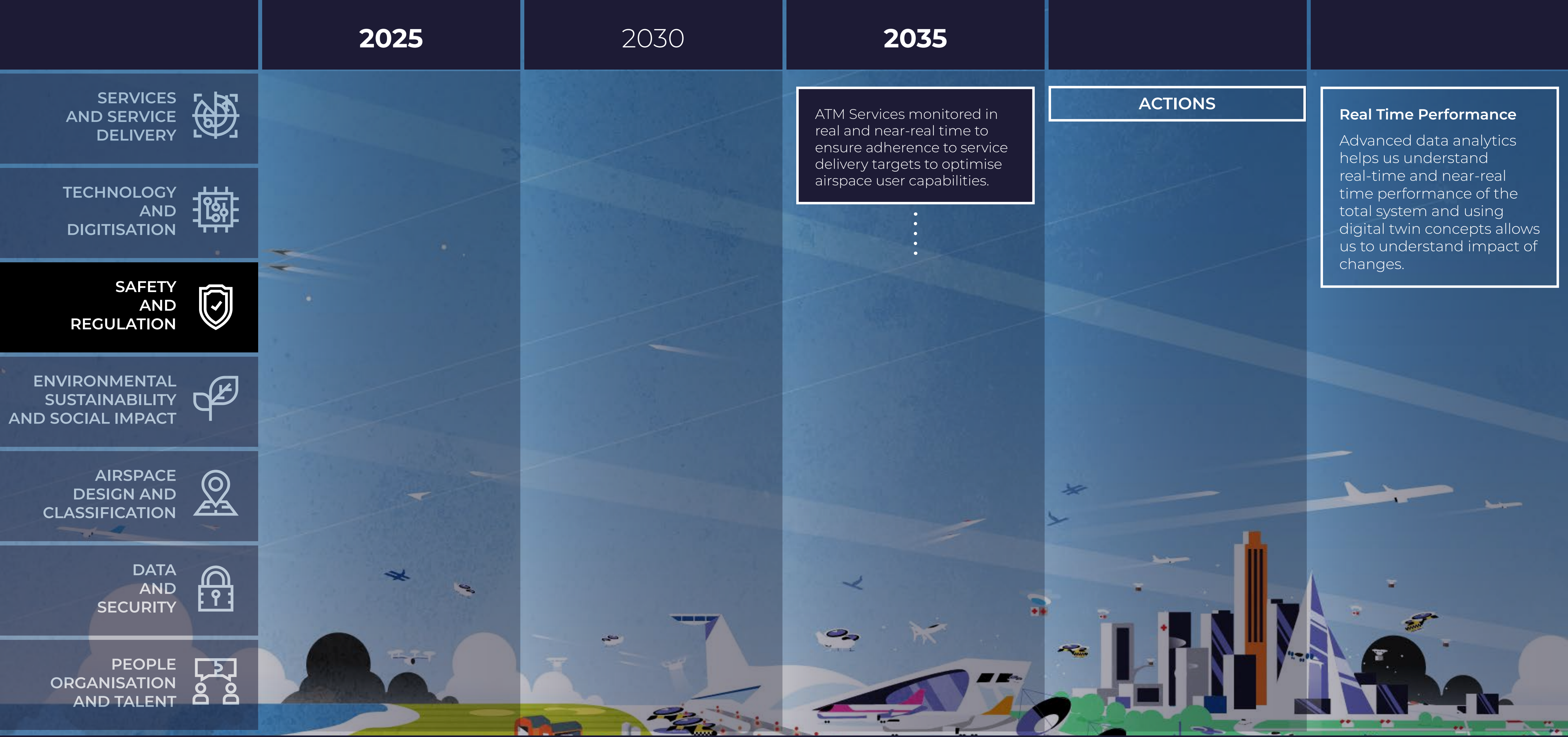


ACTIONS

ATM Services monitored in real and near-real time to ensure adherence to service delivery targets to optimise airspace user capabilities.



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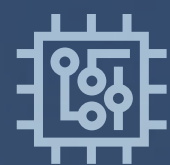


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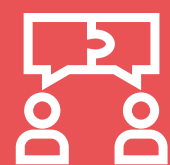
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GOAL 8

Strong Safety and Quality Culture

Culture principles have been embedded which facilitate open reporting and safety learning.

The organisation aspires to have a culture where staff at all levels are empowered, and have the means, to contribute meaningfully to the management of safety within the organisation. A Just Culture is recognised as being critical to achieving this; and helping to effectively managing safety risk and achieving the highest levels of safety performance.

The industry's strong culture of safety has extended to those involved in software and technology design.

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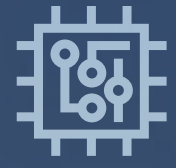
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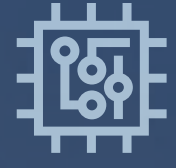
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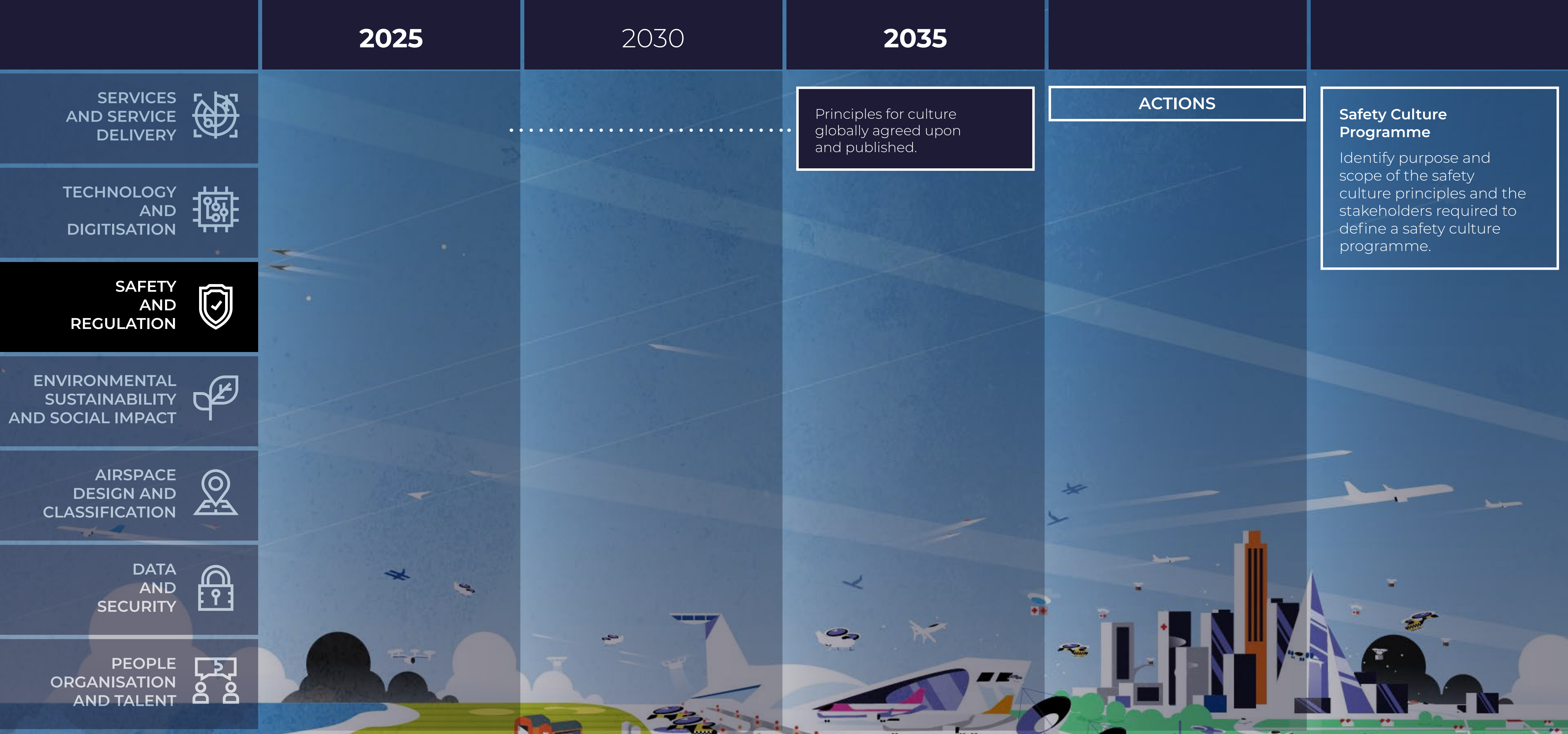


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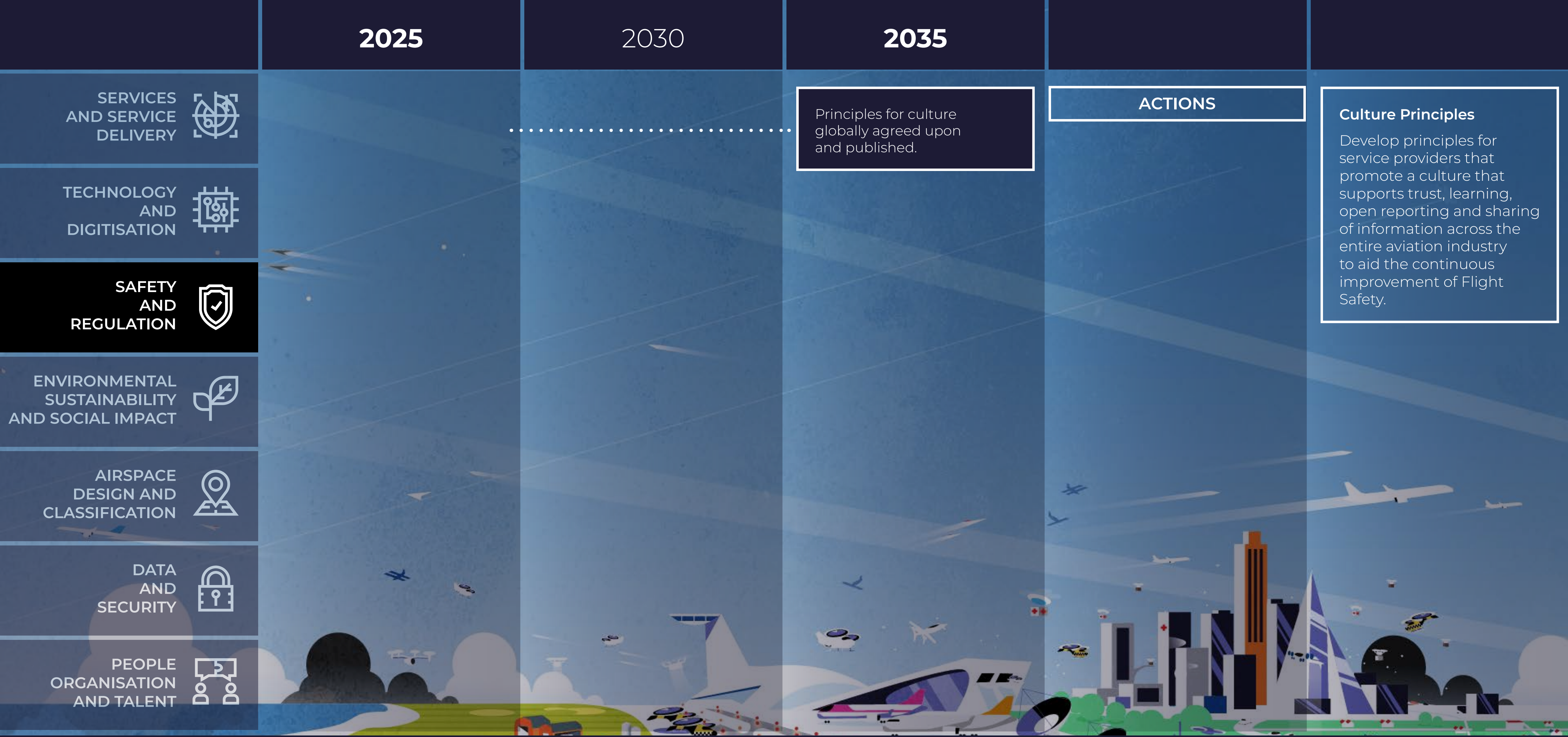
Principles for culture globally agreed upon and published.



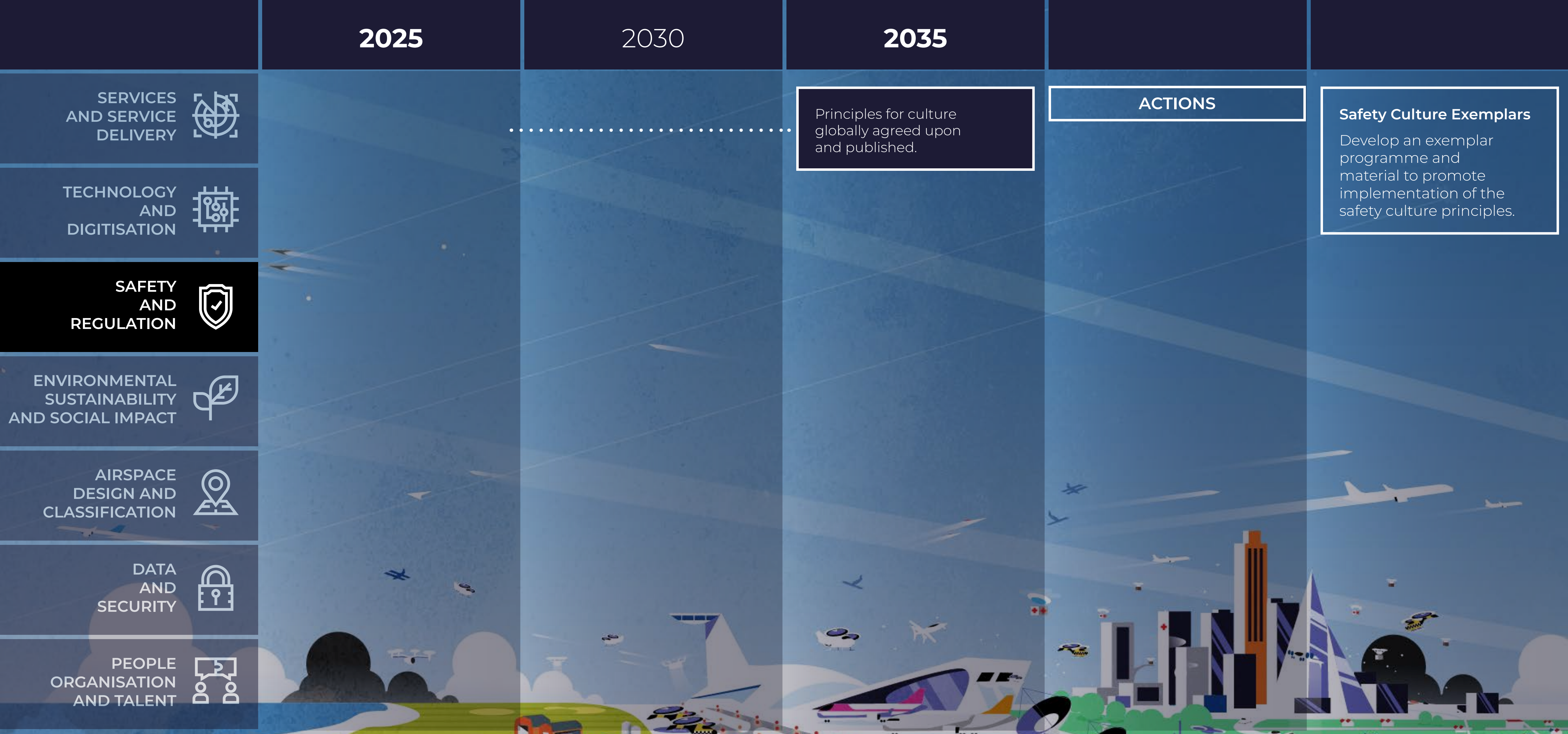
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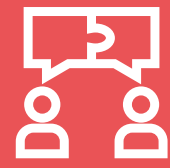
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Security culture improvements widely implemented to increase security sensitivity among Information Technology (IT) and aviation professionals.

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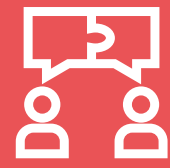
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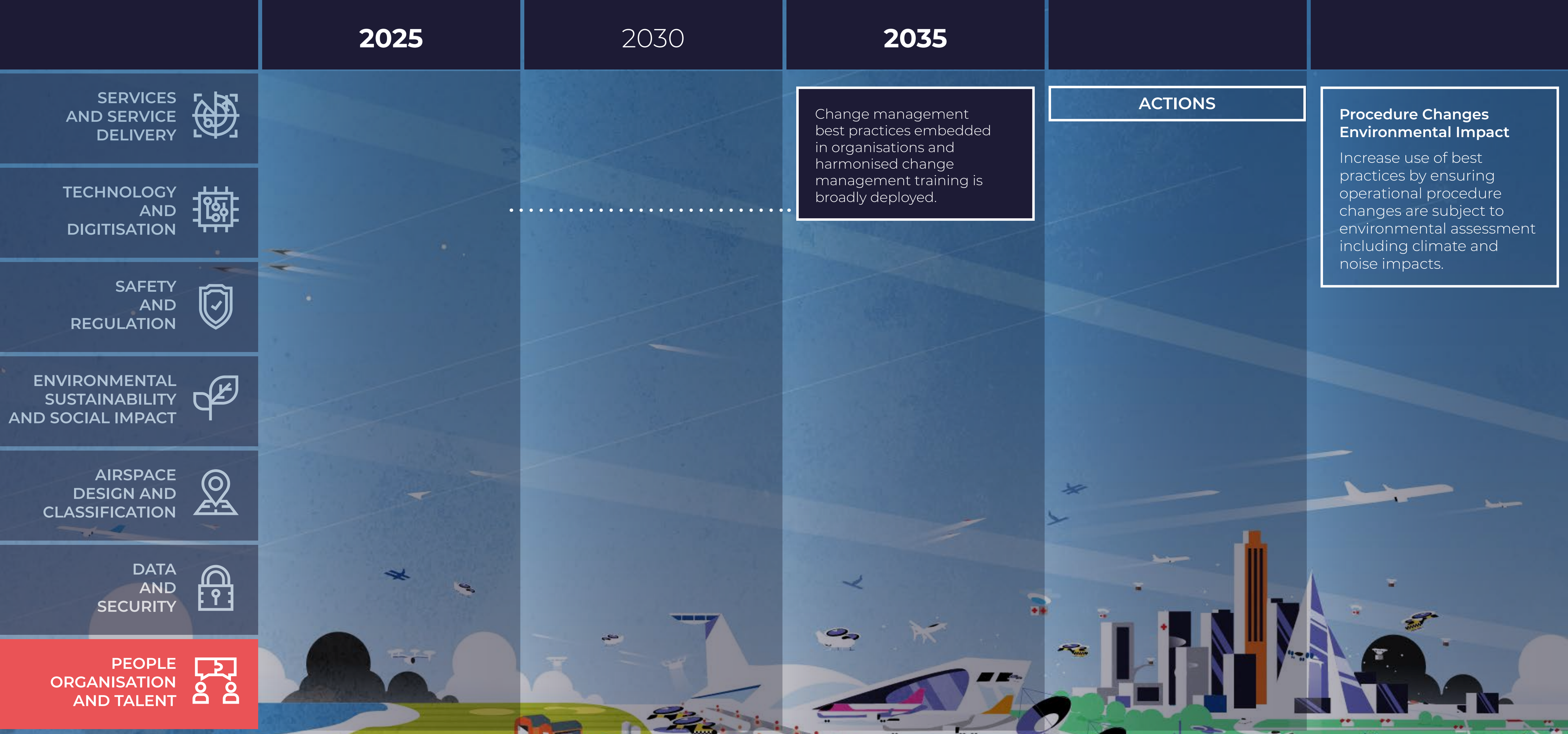


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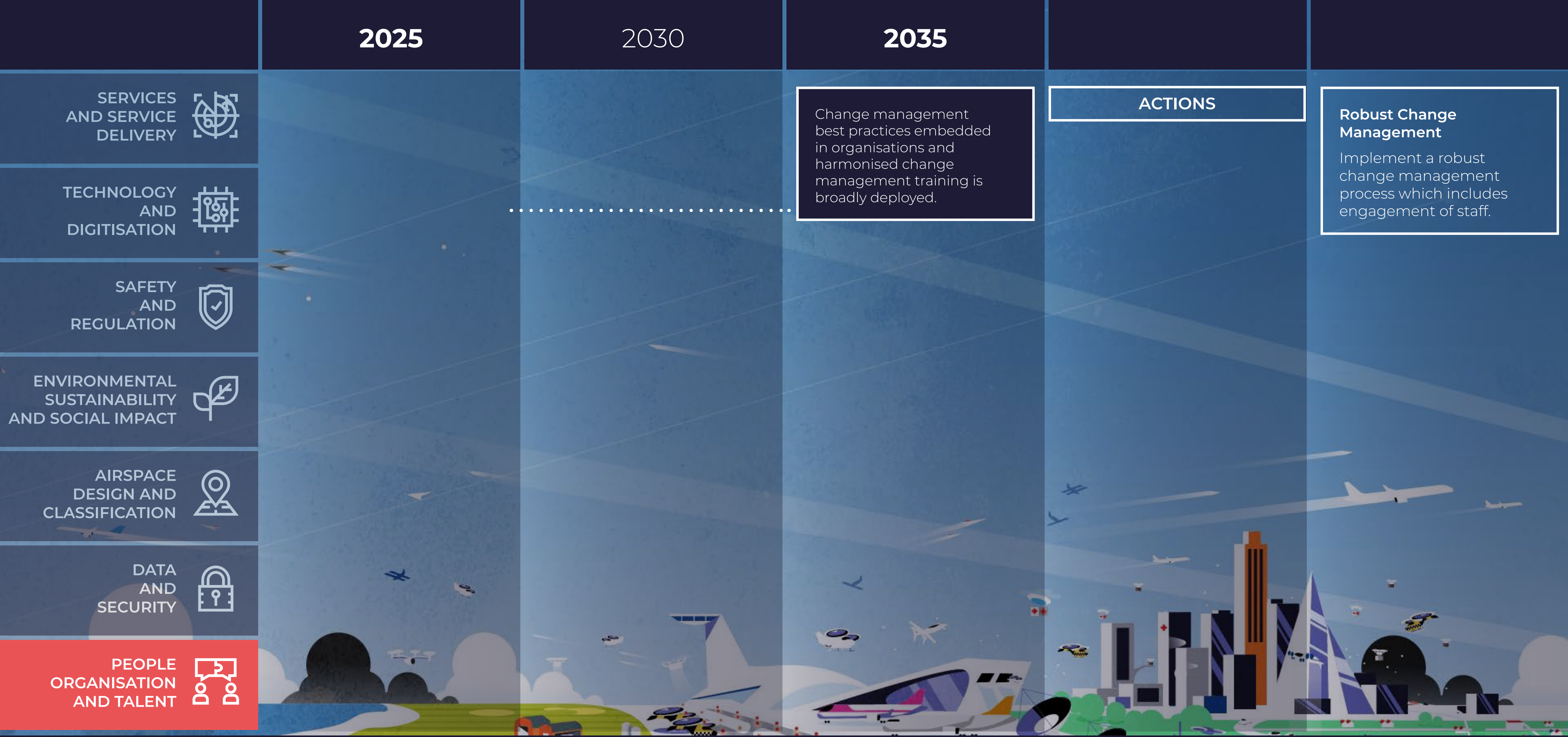
Change management best practices embedded in organisations and harmonised change management training is broadly deployed.










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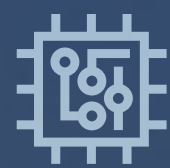
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SERVICES AND SERVICE DELIVERY 			<div data-bbox="1692 187 2192 465" style="border: 1px solid white; padding: 5px;"> Change management best practices embedded in organisations and harmonised change management training is broadly deployed. </div>	<div data-bbox="2225 187 2772 258" style="border: 1px solid white; padding: 5px;"> ACTIONS </div>
TECHNOLOGY AND DIGITISATION 				<div data-bbox="2805 187 3305 465" style="border: 1px solid white; padding: 5px;"> Organisational Agility Identify and implement mechanisms to increase organisational agility within the industry. </div>
SAFETY AND REGULATION 				
ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 				
AIRSPACE DESIGN AND CLASSIFICATION 				
DATA AND SECURITY 				
PEOPLE ORGANISATION AND TALENT 				

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GOAL 9

Towards Reduced Climate Impact

The sky of 2045 is cleaner, quieter and more efficient. Even though our skies are busier than ever before the aviation sector continues to limit its impact on the environment.

The aviation industry is tracking towards net zero through in-sector and out of sector measures, including carbon capture and storage.

PLEASE SELECT **MILESTONES** FOR GOAL 9

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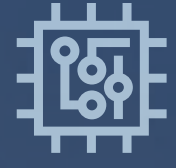
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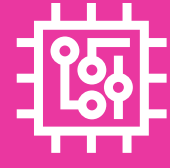
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ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M38 Infrastructure Support for Green Technologies

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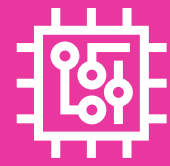
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M38 Infrastructure Support for Green Technologies

Develop a New CONOPS

Develop a new high-level Harmonised Concept of Operations (CONOPS) for all airspace users to drive the next era of air traffic management (capturing this CATS Roadmap), including

- Higher Airspace Operations and Lower airspace operations
- Advanced Air mobility
- Operational services environment description (OSED)
- Value proposition for the new services

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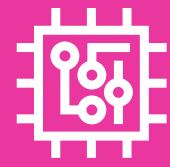
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ACTIONS

Learn from ICAO Vision for 2025

CANSO to investigate which parts of the Global Air Traffic Management Operational Concept (2005), ICAO vision for 2025 and beyond, have not been achieved yet and to extract "lessons learnt" applicable to CATS roadmap.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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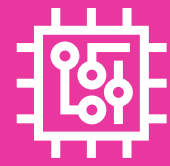
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Integration Roadmap

Create a global ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM (so it is just TM), agreed by all stakeholders, to plot a course toward full convergence.

- Identify common technologies – for example for air-to-air conspicuity and air to ground conspicuity (surveillance)
- Determine what the role is that ATM / UTM will need to play in a fast changing environment where self-separation becomes increasingly possible and where direct and highly secure data communication becomes the common good for the majority of users
- Identification of minimum technical implementations per type of service (UAS logistics, Air Taxi, Recreational...)

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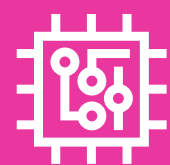
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ACTIONS

Vision Alignment

CATS to monitor and promote alignment between CATS vision roadmap and global/regional midterm plans.

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ACTIONS

Conflict Management

Enhanced strategic conflict management systems and capabilities.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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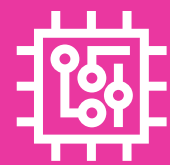
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ACTIONS

Automation Strategy

Develop an implementation strategy for enhanced automation functions that fosters trust and confidence.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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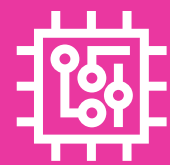
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ACTIONS

New ANS Financing Mechanisms

Develop new business models to address the greater diversity in aircraft operations and supporting services.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M38 Infrastructure Support for Green Technologies

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

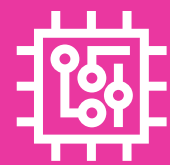
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Use Cases

Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
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- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Gap Analysis

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M38 Infrastructure Support for Green Technologies

Conduct a gap analysis between current ATM and AIM data and service requirements and future ATM and AIM data and service requirements for the airspace in 2045; capturing best practice where possible.

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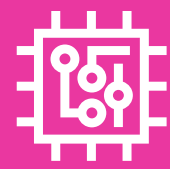
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ACTIONS

Integrate Human Factors Assurance

Integrate Human Factors Assurance into the process of certifying and creating standards for technology innovations.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M38 Infrastructure Support for Green Technologies

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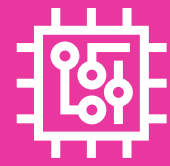
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ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

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- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M38 Infrastructure Support for Green Technologies

Human in the Loop Capabilities

Establish and implement a programme of education regarding human in the loop capabilities, also including analysis to evaluate how people can keep the focus on a highly automated environment when they are required to react quickly.

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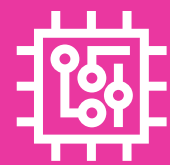
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ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

M38 Infrastructure Support for Green Technologies

Redistribution of Tasks

Research is undertaken based on emerging service models and CONOPS to define tasks likely to remain with humans vs those most suited to application of technology.

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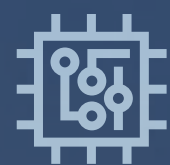
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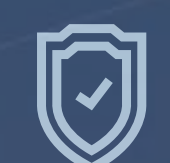
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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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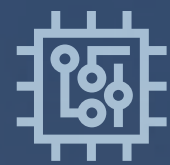
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PEOPLE ORGANISATION AND TALENT



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.

Collaborative Airspace Management Concept

Develop an internationally integrated and collaborative airspace management concept.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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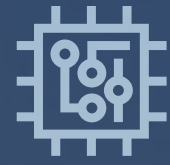
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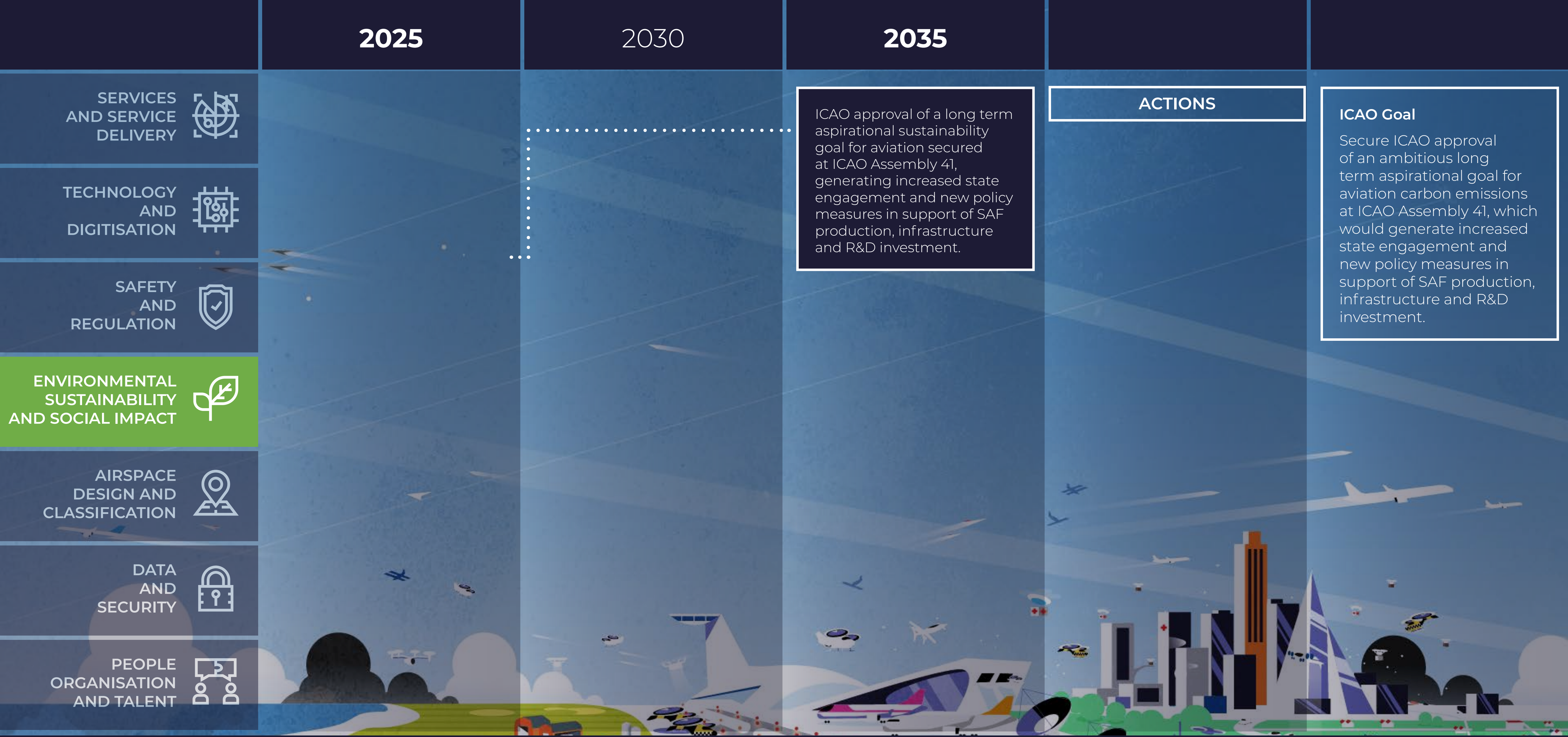


ACTIONS

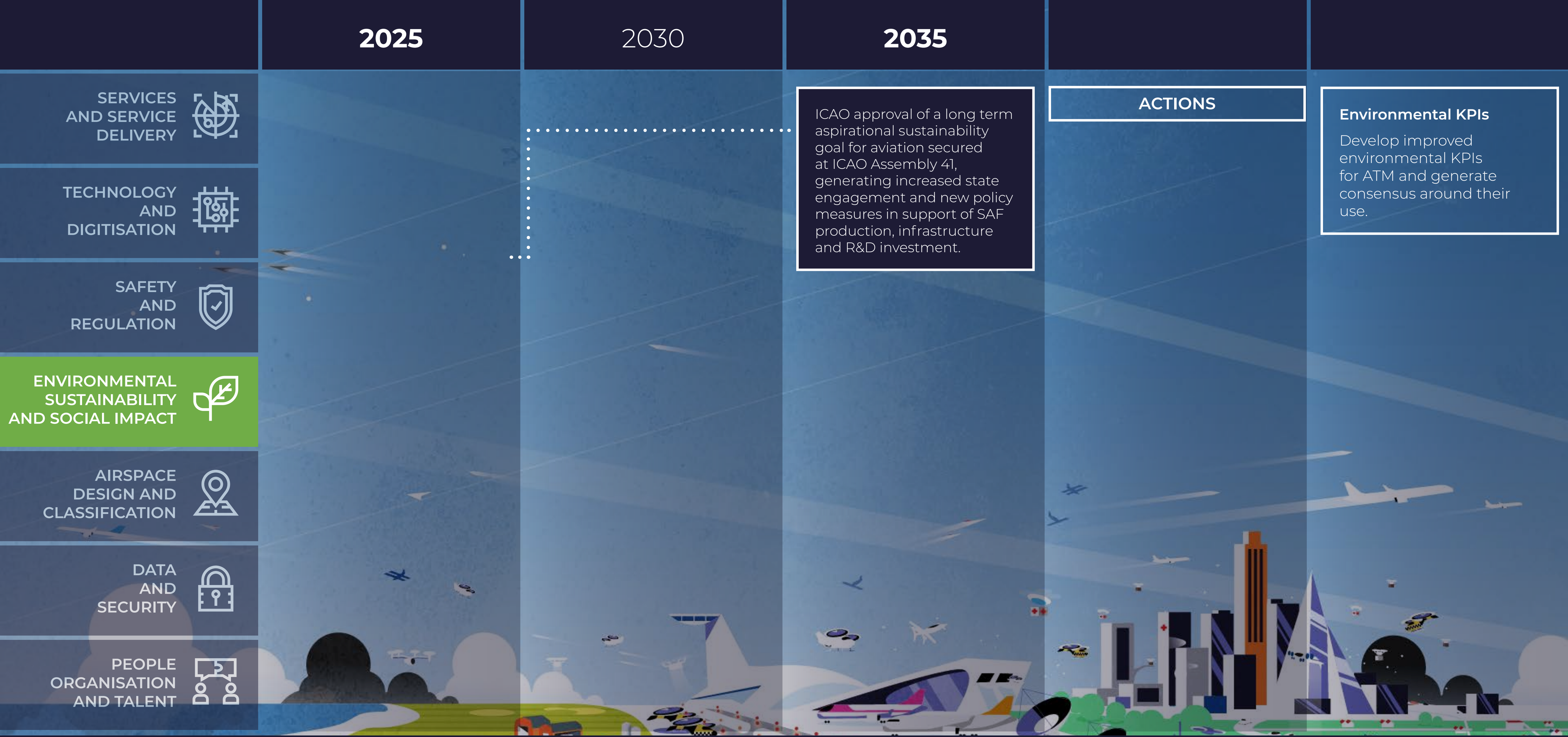
ICAO approval of a long term aspirational sustainability goal for aviation secured at ICAO Assembly 41, generating increased state engagement and new policy measures in support of SAF production, infrastructure and R&D investment.



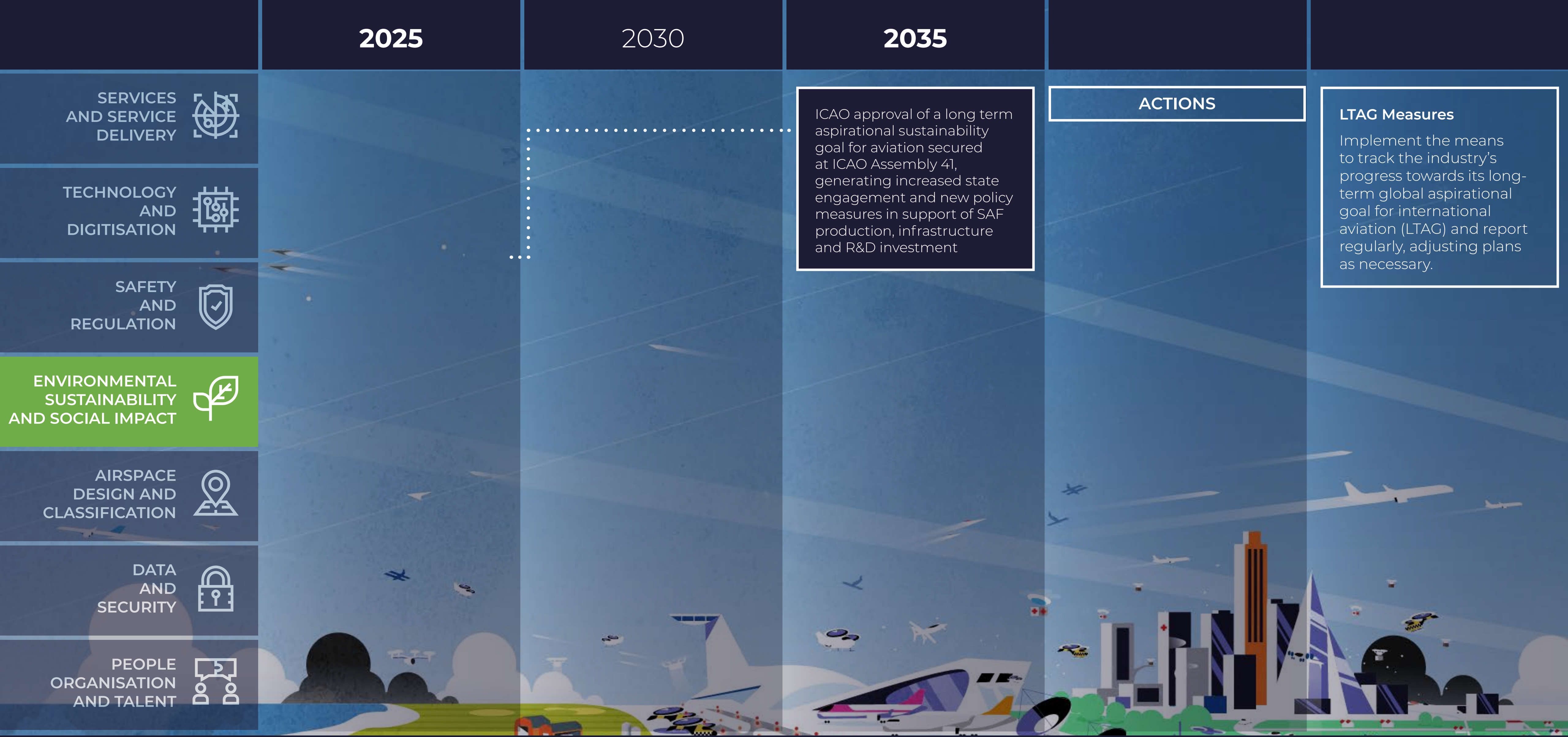
PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



ICAO approval of a long term aspirational sustainability goal for aviation secured at ICAO Assembly 41, generating increased state engagement and new policy measures in support of SAF production, infrastructure and R&D investment

ACTIONS

LTAG Measures
Implement the means to track the industry's progress towards its long-term global aspirational goal for international aviation (LTAG) and report regularly, adjusting plans as necessary.

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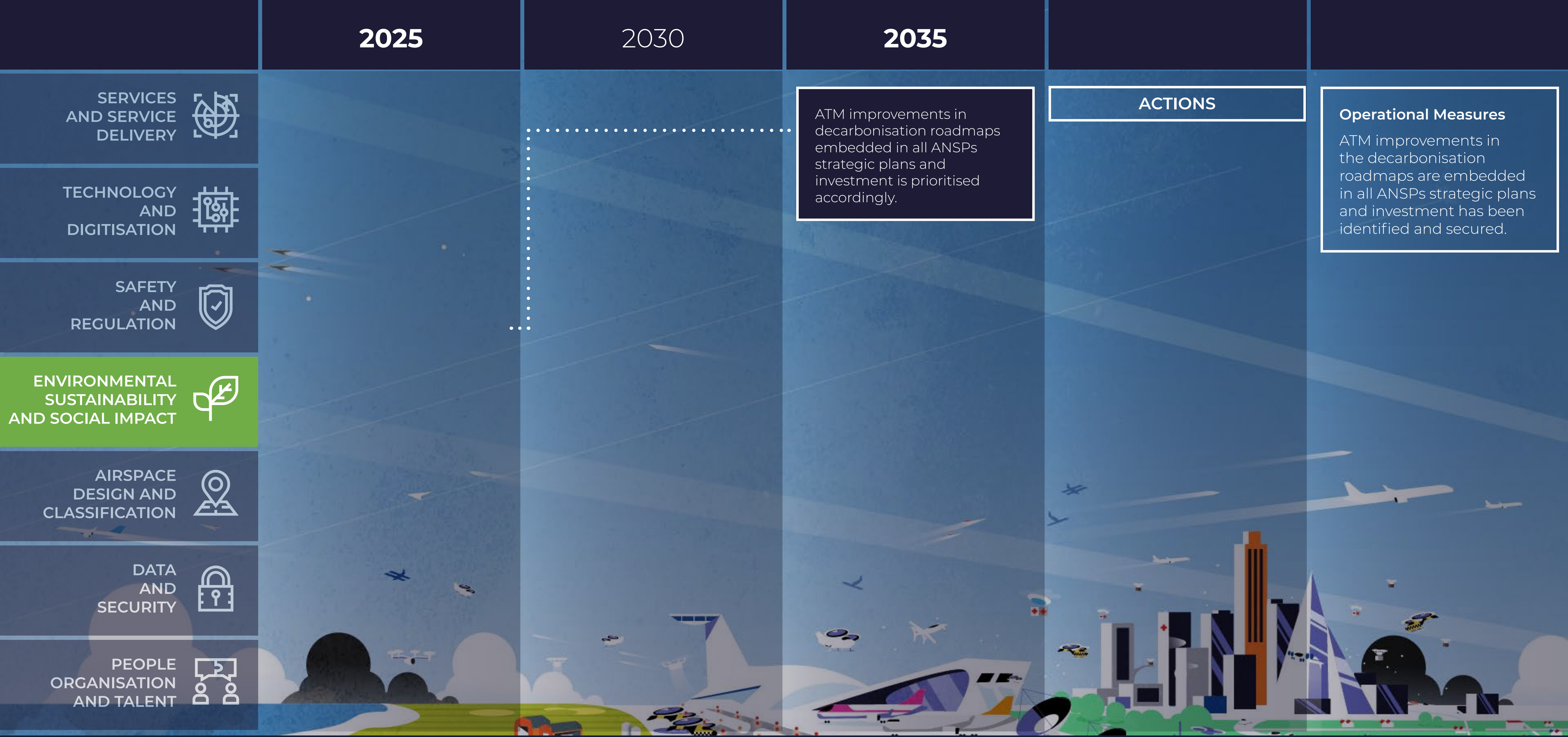


ACTIONS

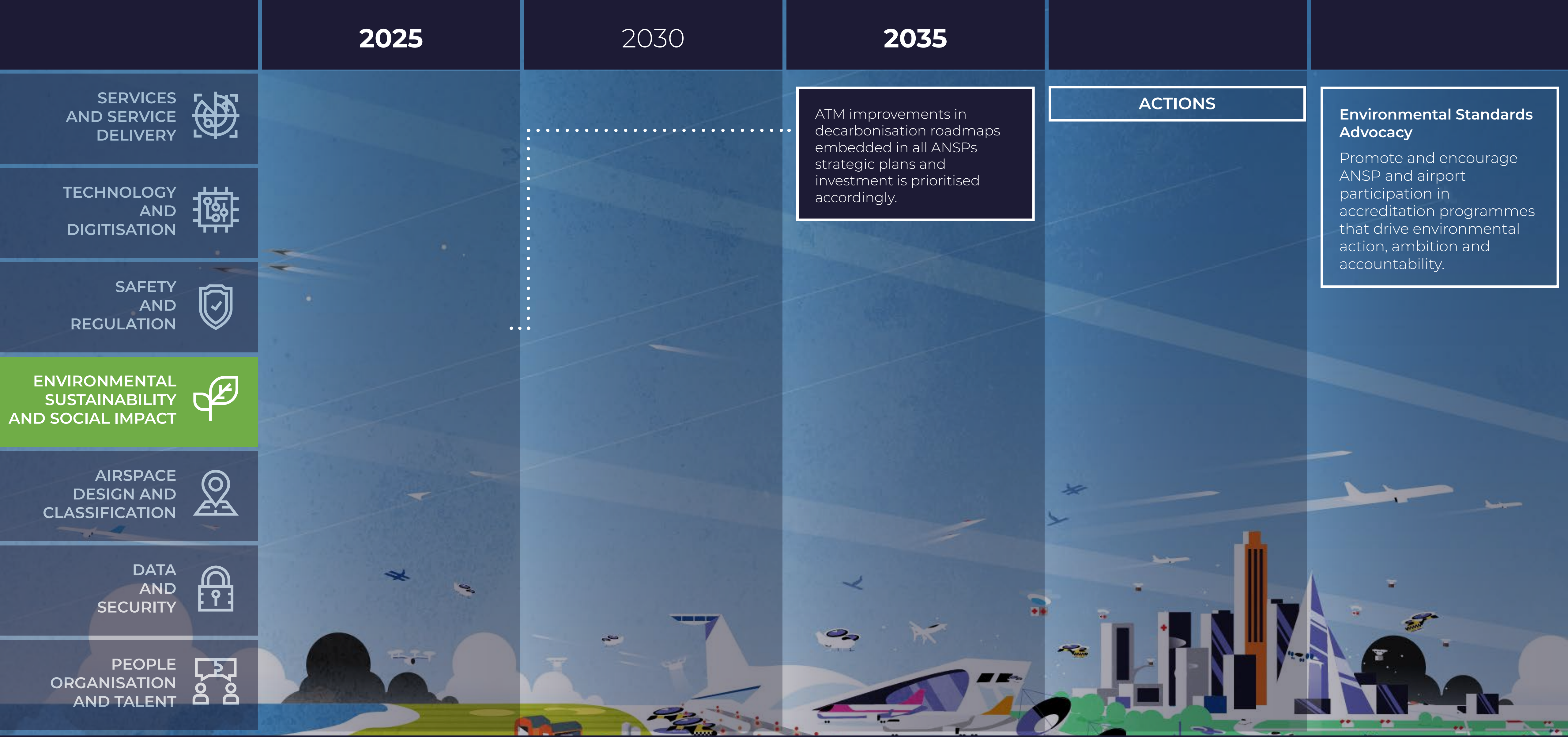
ATM improvements in decarbonisation roadmaps embedded in all ANSPs strategic plans and investment is prioritised accordingly.



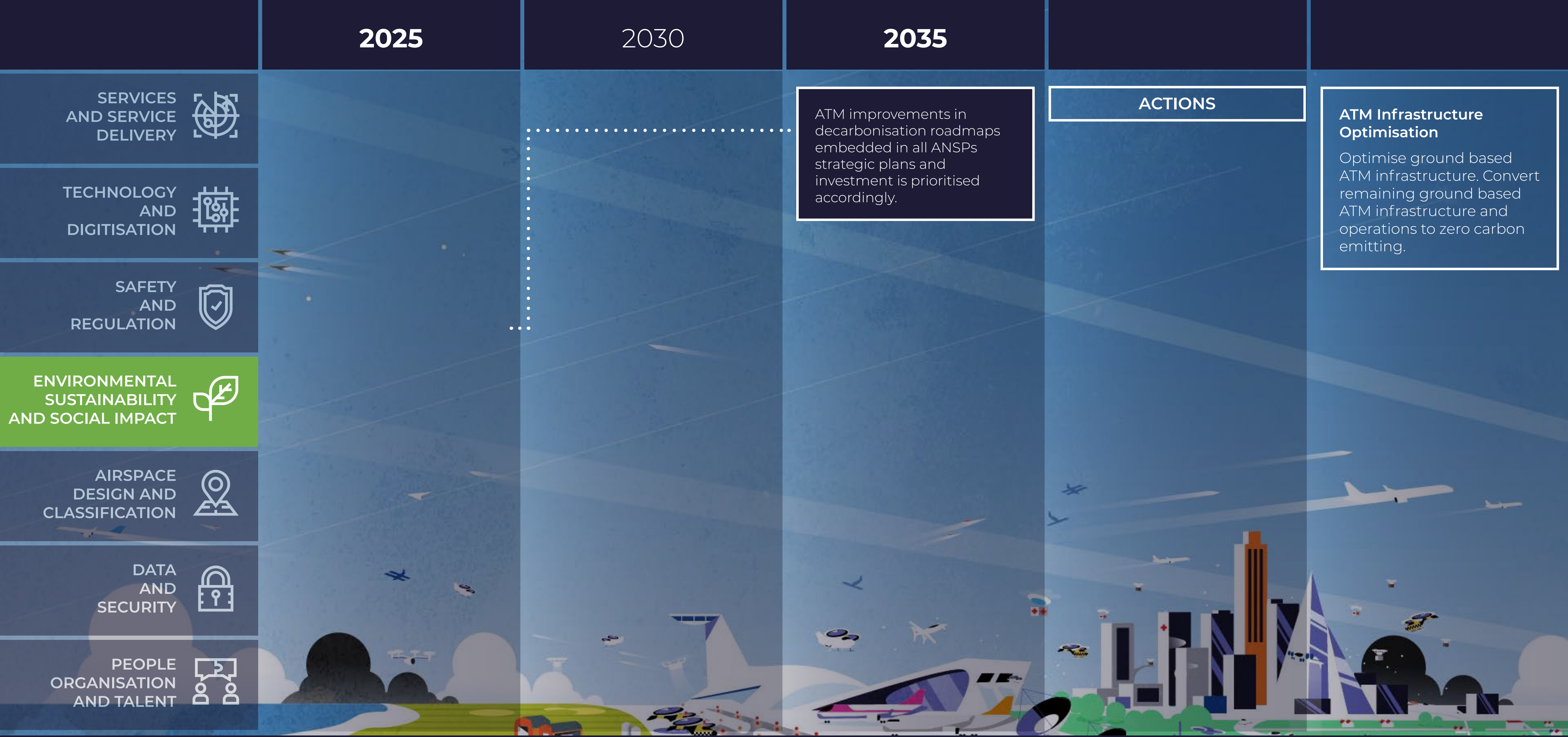
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PEOPLE ORGANISATION AND TALENT



ACTIONS

ATM improvements in decarbonisation roadmaps embedded in all ANSPs strategic plans and investment is prioritised accordingly.

ATM Infrastructure Optimisation
 Optimise ground based ATM infrastructure. Convert remaining ground based ATM infrastructure and operations to zero carbon emitting.

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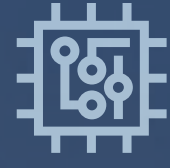
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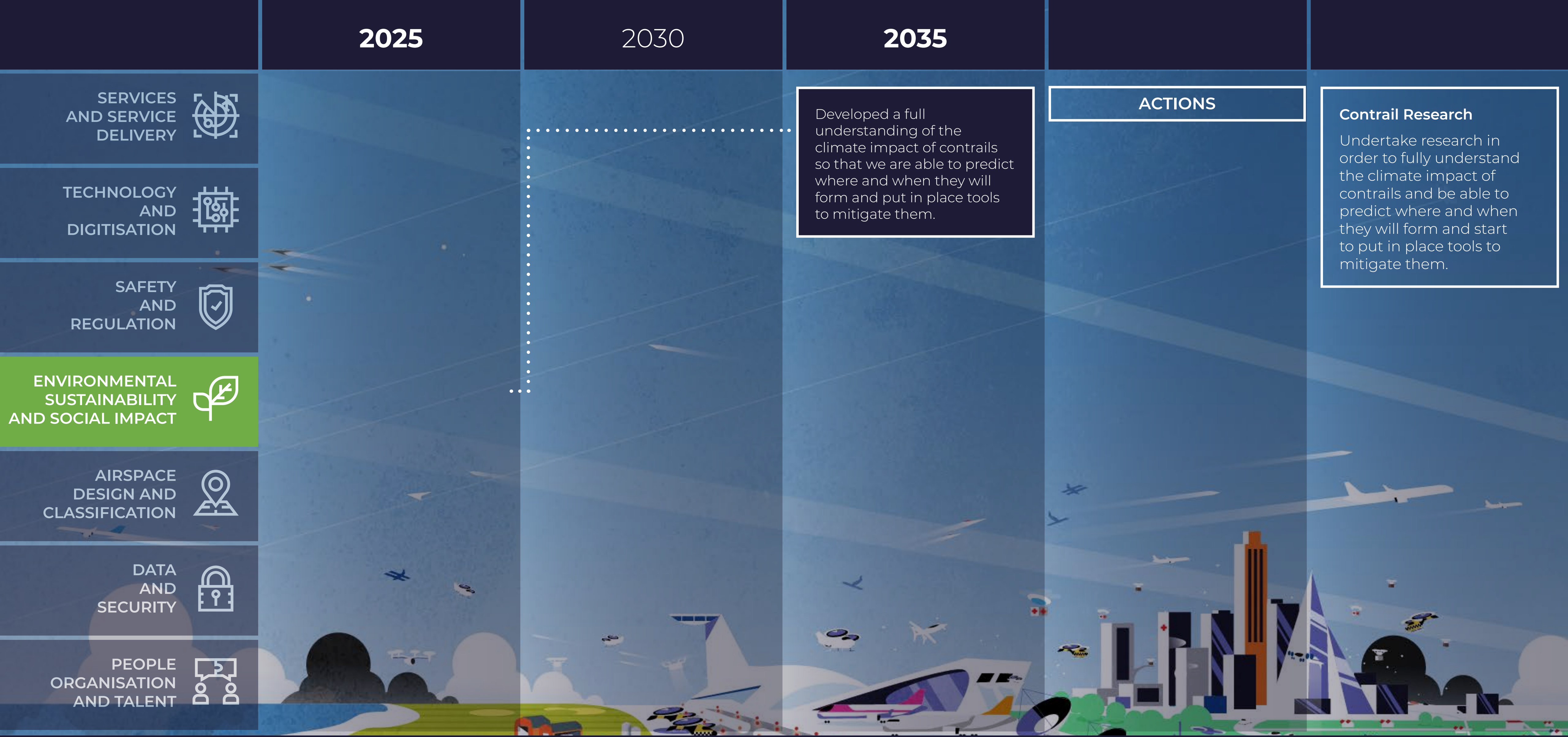


ACTIONS

Developed a full understanding of the climate impact of contrails so that we are able to predict where and when they will form and put in place tools to mitigate them.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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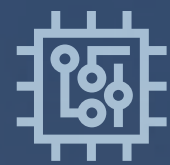
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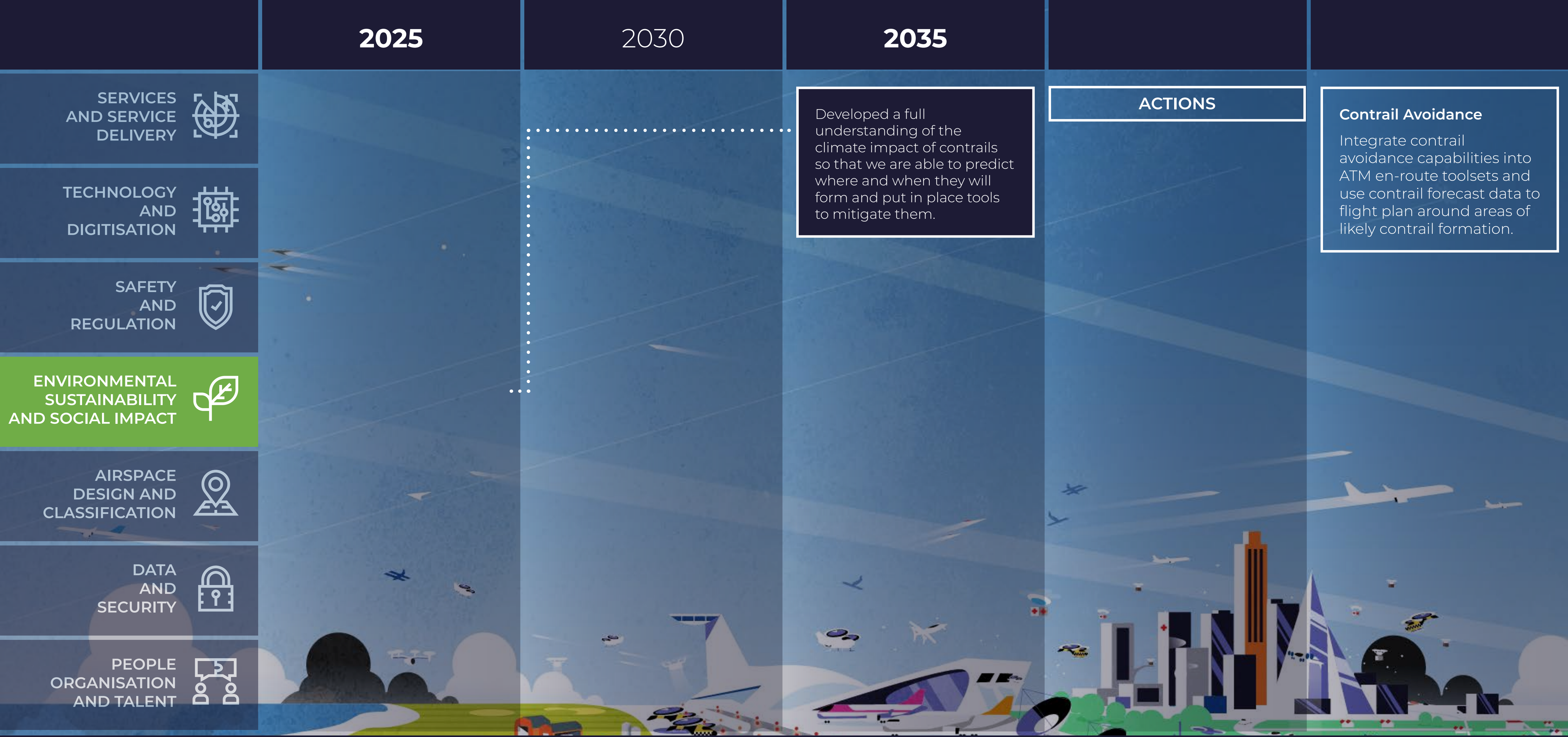


ACTIONS

Developed a full understanding of the climate impact of contrails so that we are able to predict where and when they will form and put in place tools to mitigate them.

Weather Detection
Improve weather detection and forecasting capability to enhance ability to forecast regions of likely persistent contrail formation.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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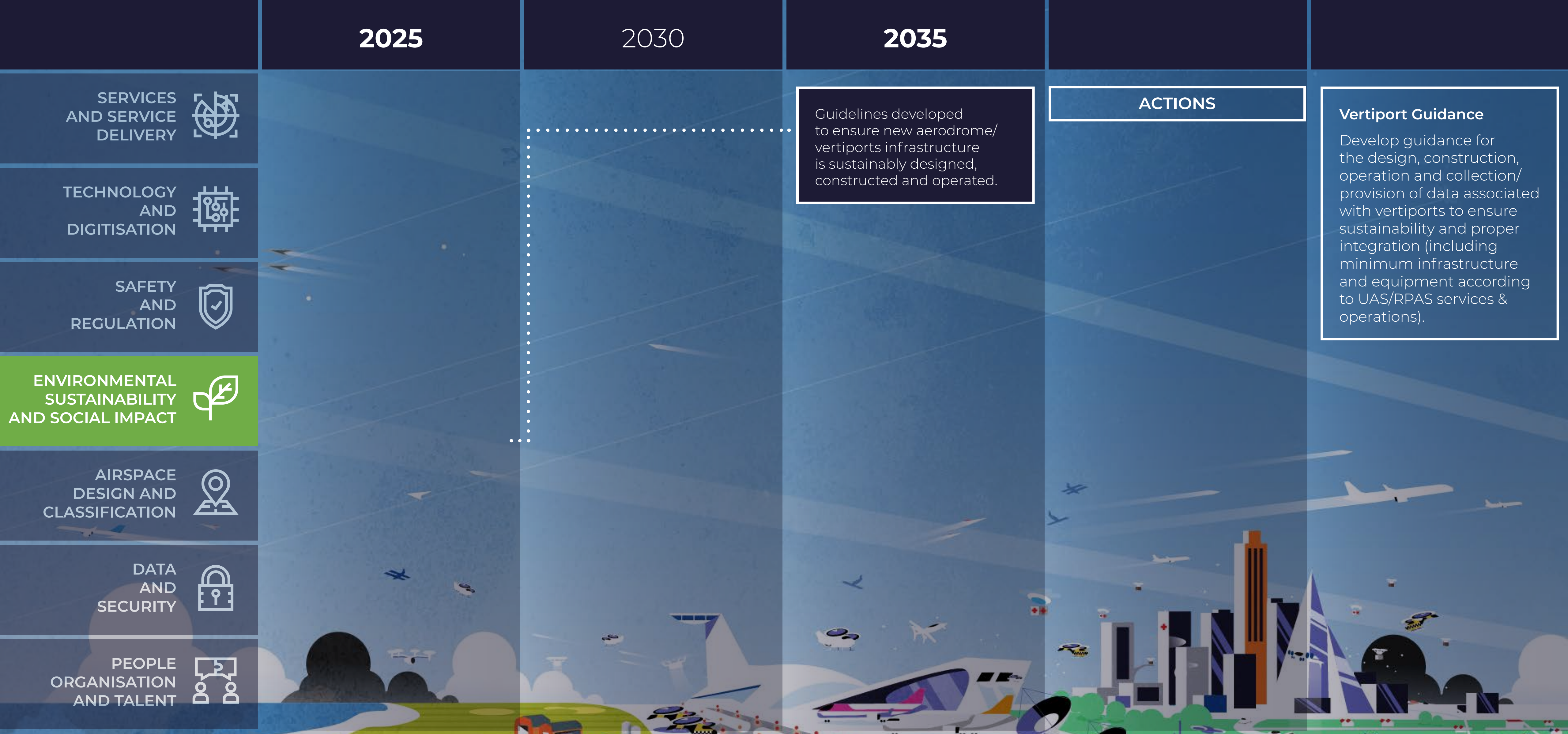


ACTIONS

Guidelines developed to ensure new aerodrome/vertiports infrastructure is sustainably designed, constructed and operated.



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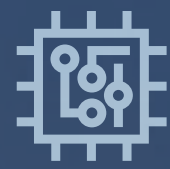
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ACTIONS

Guidelines developed to ensure new aerodrome/vertiports infrastructure is sustainably designed, constructed and operated.

Vertiport Guidance
Develop guidance for the design, construction, operation and collection/provision of data associated with vertiports to ensure sustainability and proper integration (including minimum infrastructure and equipment according to UAS/RPAS services & operations).

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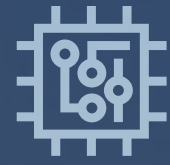
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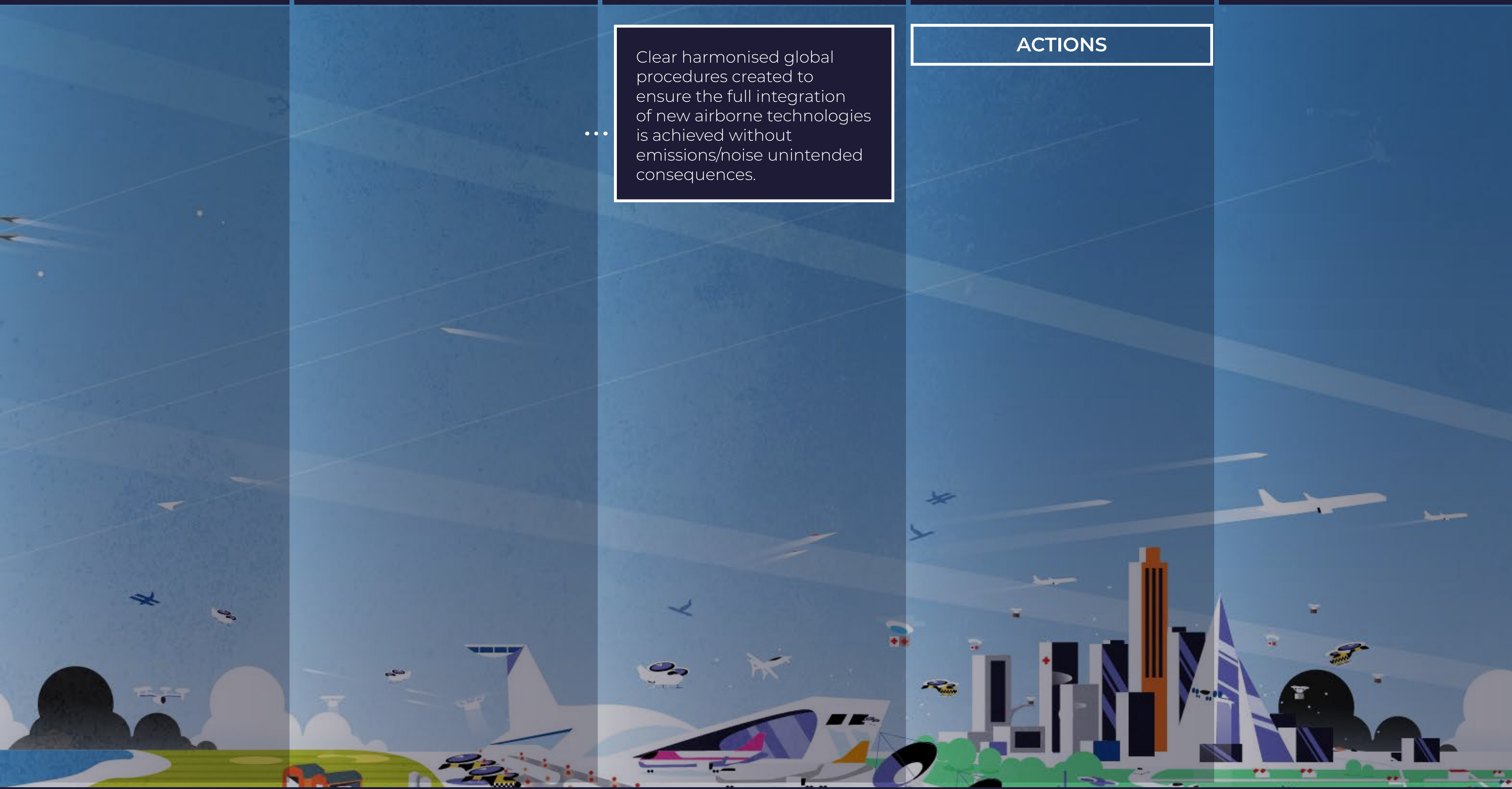


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ACTIONS

Clear harmonised global procedures created to ensure the full integration of new airborne technologies is achieved without emissions/noise unintended consequences.



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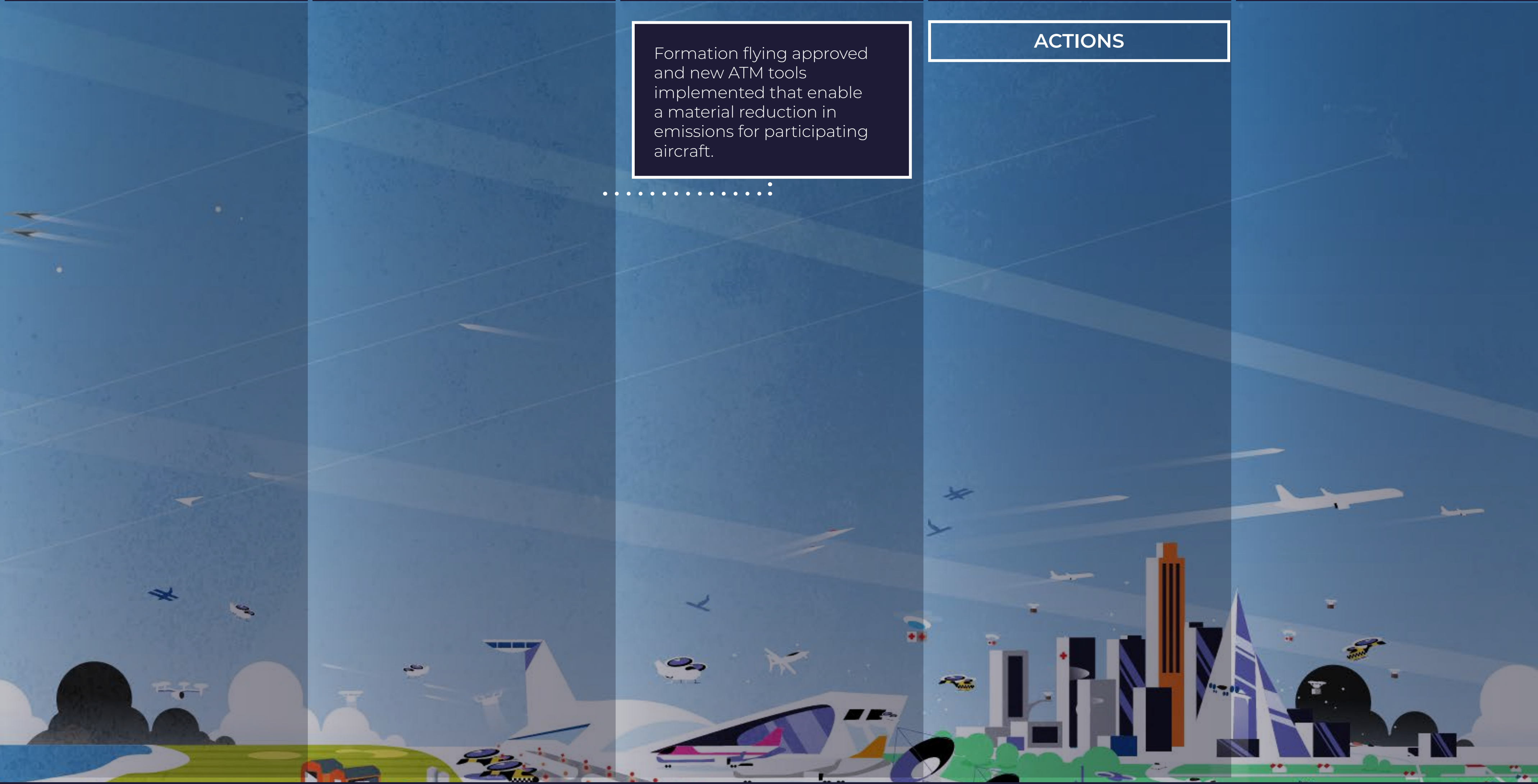


PEOPLE ORGANISATION AND TALENT



ACTIONS

Formation flying approved and new ATM tools implemented that enable a material reduction in emissions for participating aircraft.



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ACTIONS

Formation flying approved and new ATM tools implemented that enable a material reduction in emissions for participating aircraft.

Formation Flying Trials
Continuation of Formation Flying trials enable refinement of operational concept for regulatory approval.

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ACTIONS

Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas.



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PEOPLE ORGANISATION AND TALENT 

Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas.

ACTIONS

Lower Airspace Community Engagement
 Undertake community engagement to proactively address public concerns (privacy, noise, safety) and improve perception of increased activity in lower airspace.

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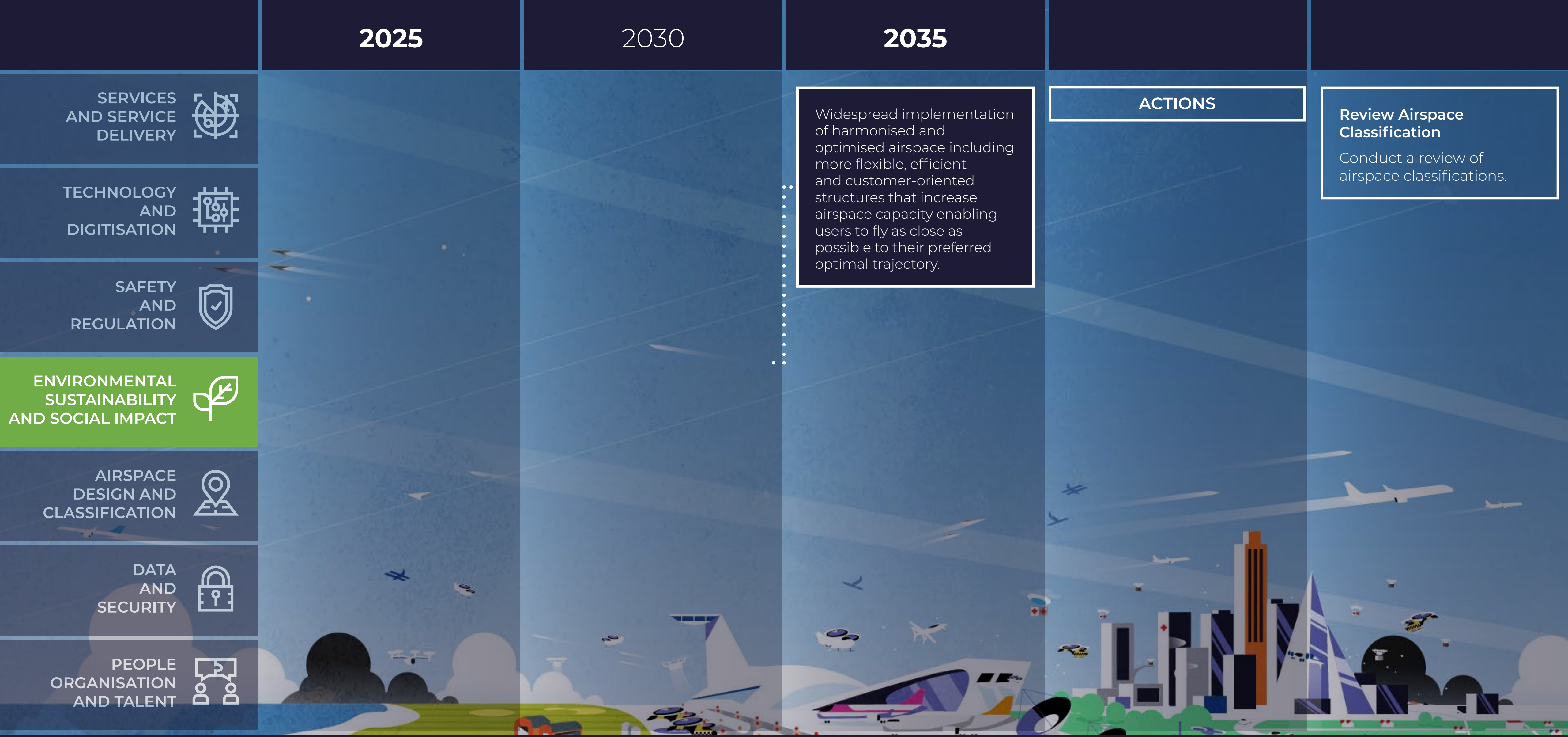


ACTIONS

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.



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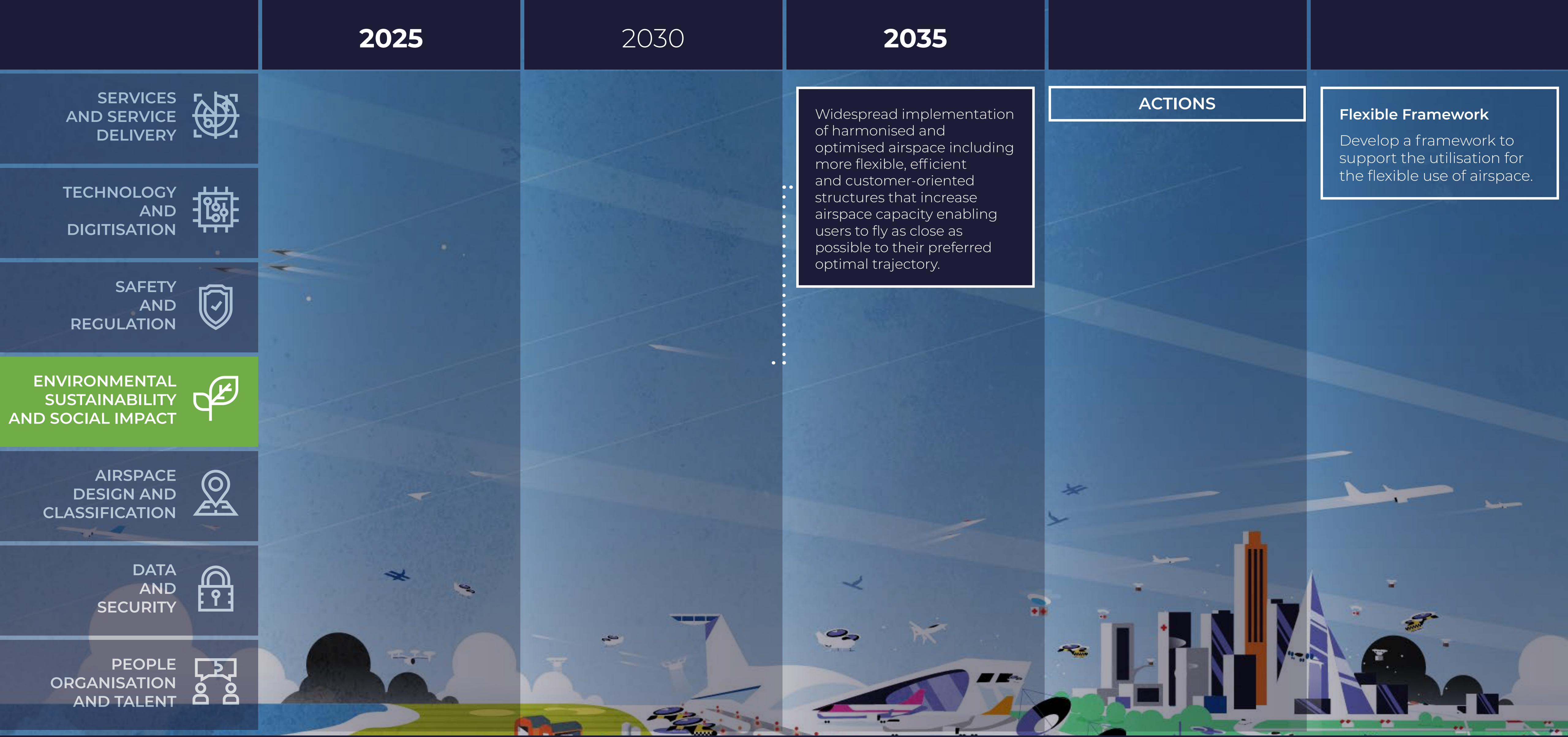


Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.

ACTIONS

Review Airspace Classification
Conduct a review of airspace classifications.

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PEOPLE ORGANISATION AND TALENT 

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.

ACTIONS

Flexible Framework
Develop a framework to support the utilisation for the flexible use of airspace.

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ACTIONS

Dynamic Airspace Procedures

Design operational procedures for dynamic airspace management.

Widespread implementation of harmonised and optimised airspace including more flexible, efficient and customer-oriented structures that increase airspace capacity enabling users to fly as close as possible to their preferred optimal trajectory.



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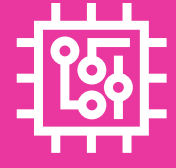
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Significant investment in research and development and production scale up, and increased access to low carbon and zero carbon energy sources.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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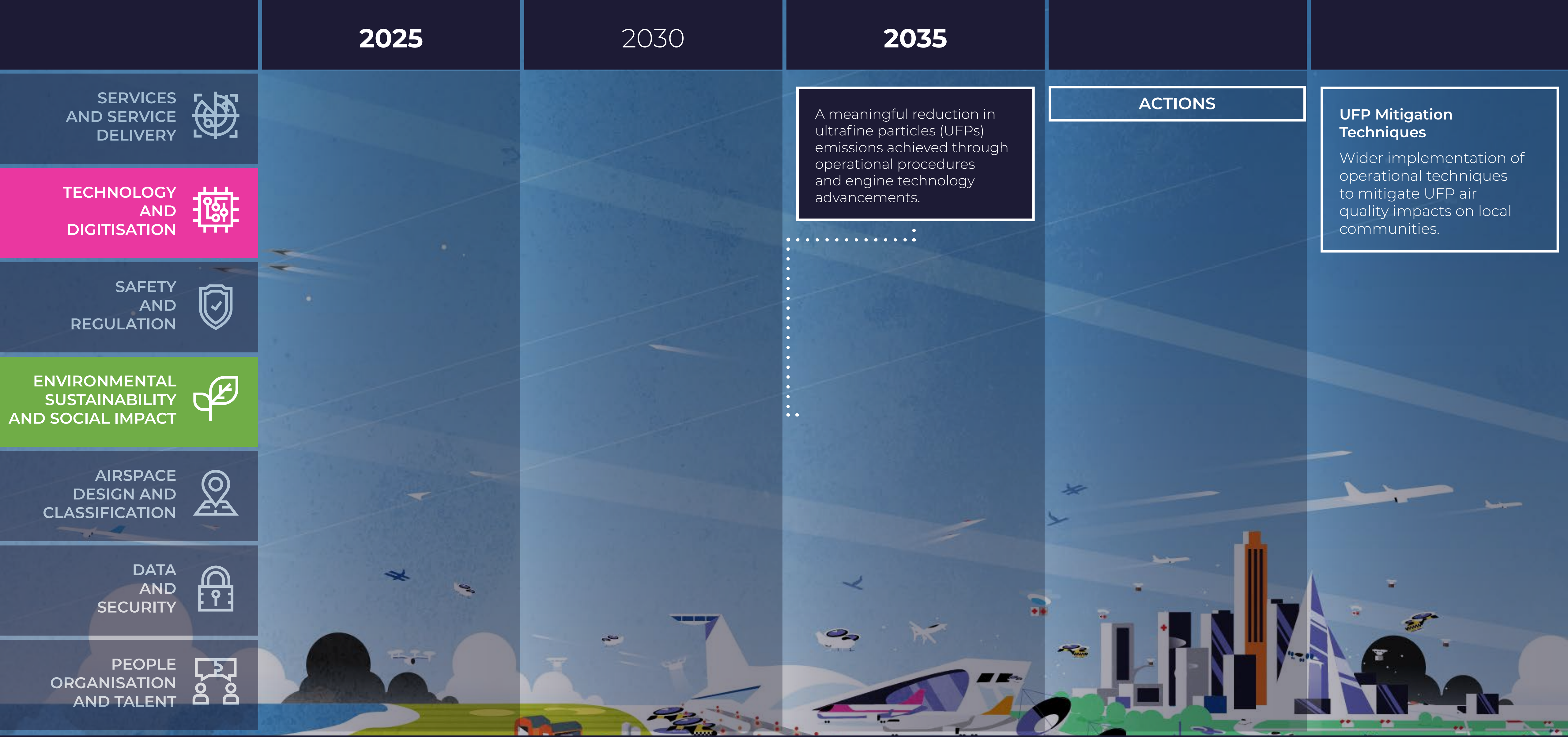


ACTIONS

A meaningful reduction in ultrafine particles (UFPs) emissions achieved through operational procedures and engine technology advancements.



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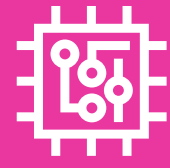
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ACTIONS

A meaningful reduction in ultrafine particles (UFPs) emissions achieved through operational procedures and engine technology advancements.

UFP Mitigation Technologies

Develop new combustion technologies for future engines with new combustion cans to mitigate UFPs.



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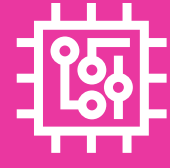
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Infrastructure introduced
that supports sustainable
aviation fuels and electric
powered vehicles and
aircraft.



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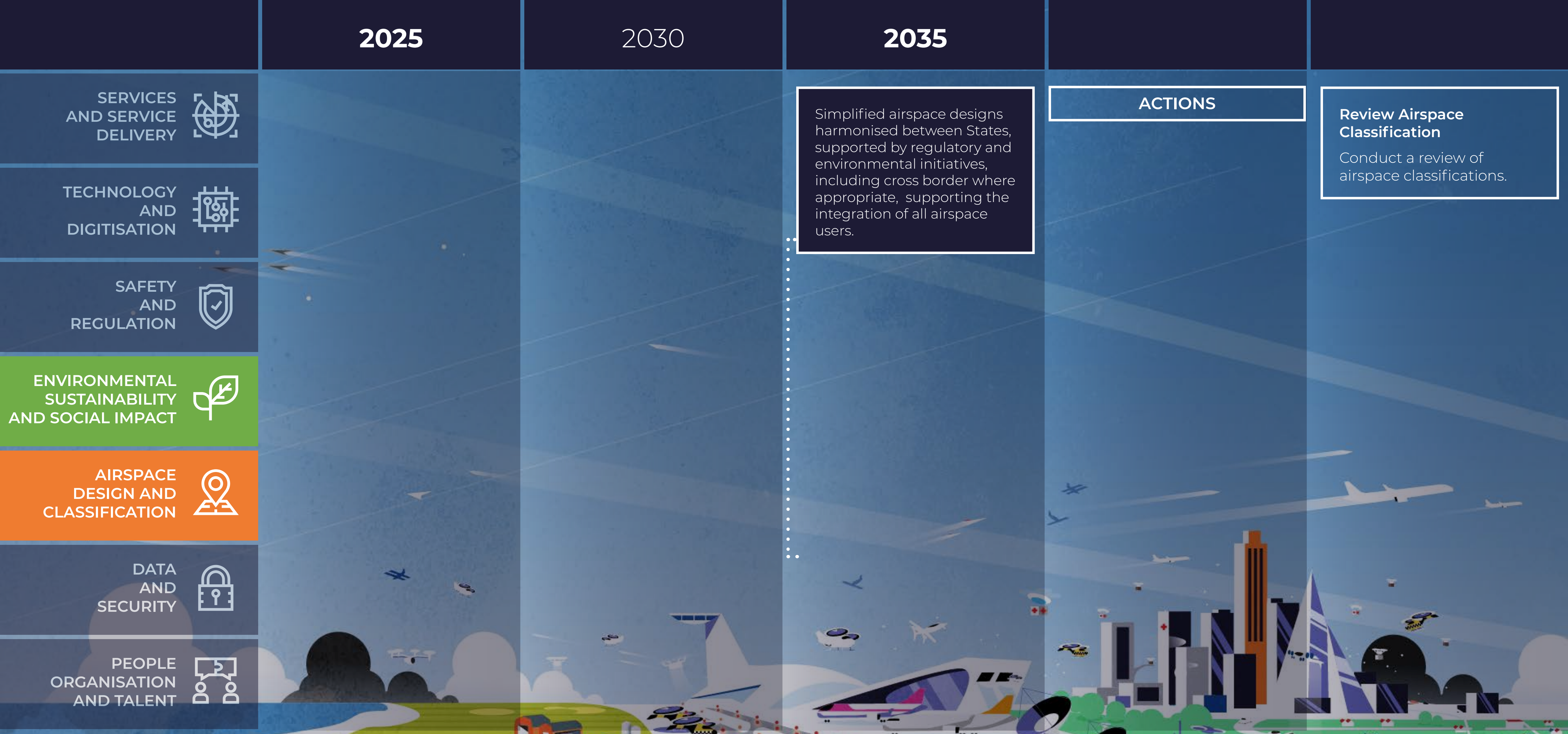


ACTIONS

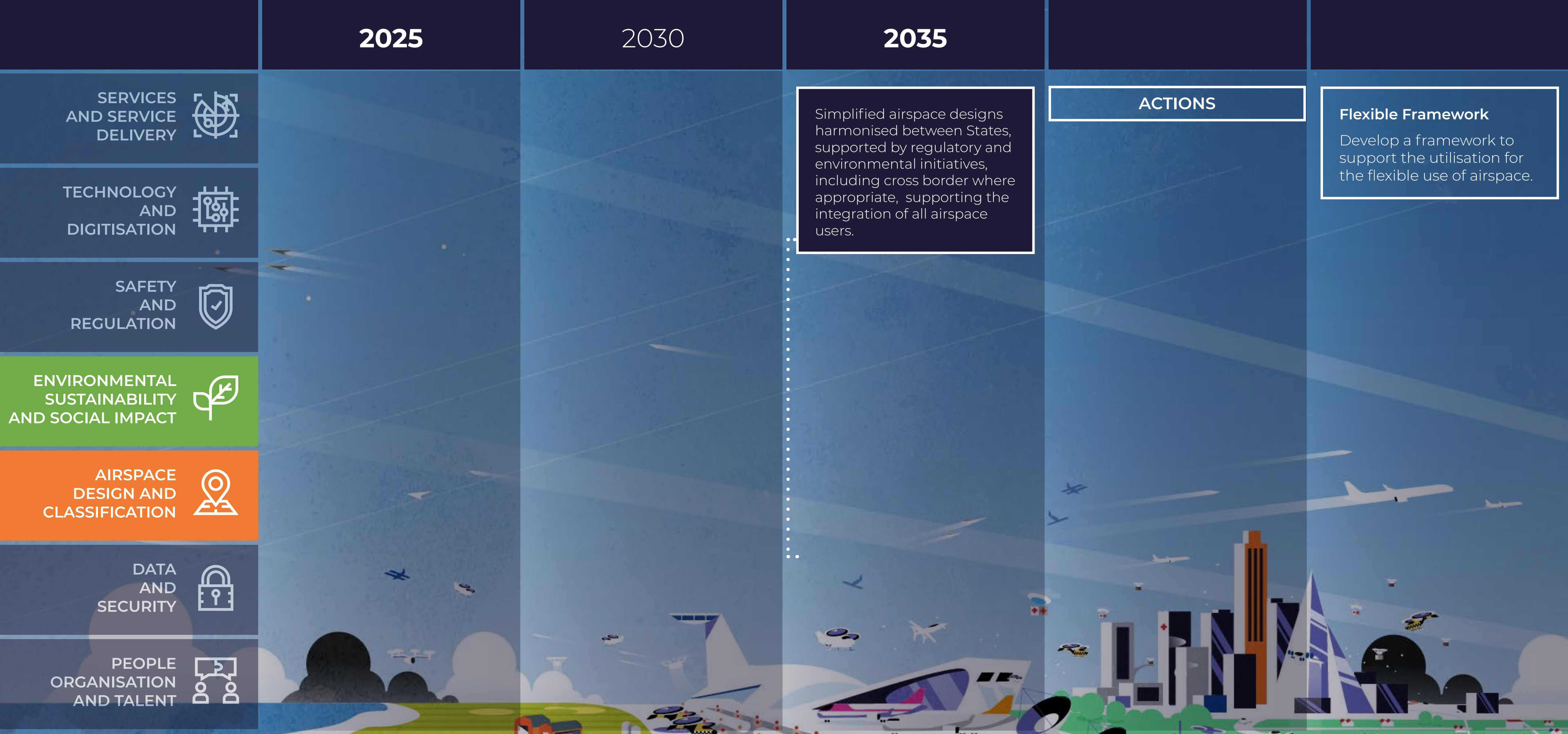
Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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ACTIONS

Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.

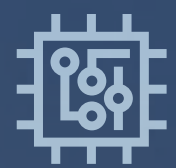
New Airspace Designs
Extend global standards for aeronautical information to include minimum digital data set provision requirements needed to enable the transition to new airspace designs and the safe and efficient integration of new entrants.

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AND
REGULATION



ENVIRONMENTAL
SUSTAINABILITY
AND SOCIAL IMPACT



AIRSPACE
DESIGN AND
CLASSIFICATION



DATA
AND
SECURITY



PEOPLE
ORGANISATION
AND TALENT



GOAL 10

Environmental Sustainability and Social Impact Management are Broadly Integrated into the Air Transport System

Environmental sustainability and the management of social impact are integrated broadly into the air transport system including operations, infrastructure and life-cycle considerations.

The aviation industry is living in harmony with the communities it serves.

PLEASE SELECT **MILESTONES** FOR GOAL 10

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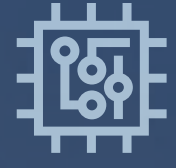
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SERVICES
AND SERVICE
DELIVERY



TECHNOLOGY
AND
DIGITISATION



SAFETY
AND
REGULATION



ENVIRONMENTAL
SUSTAINABILITY
AND SOCIAL IMPACT



AIRSPACE
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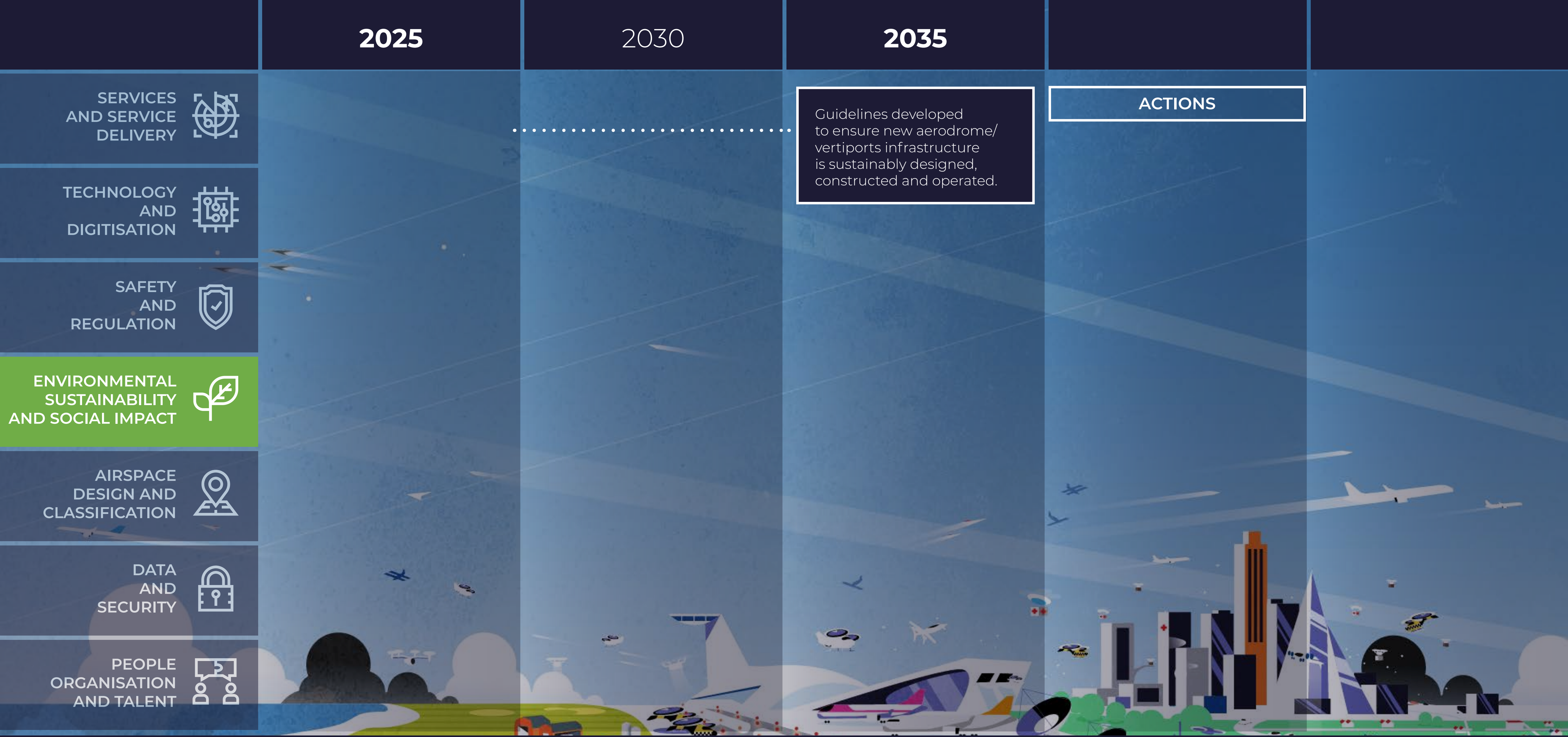
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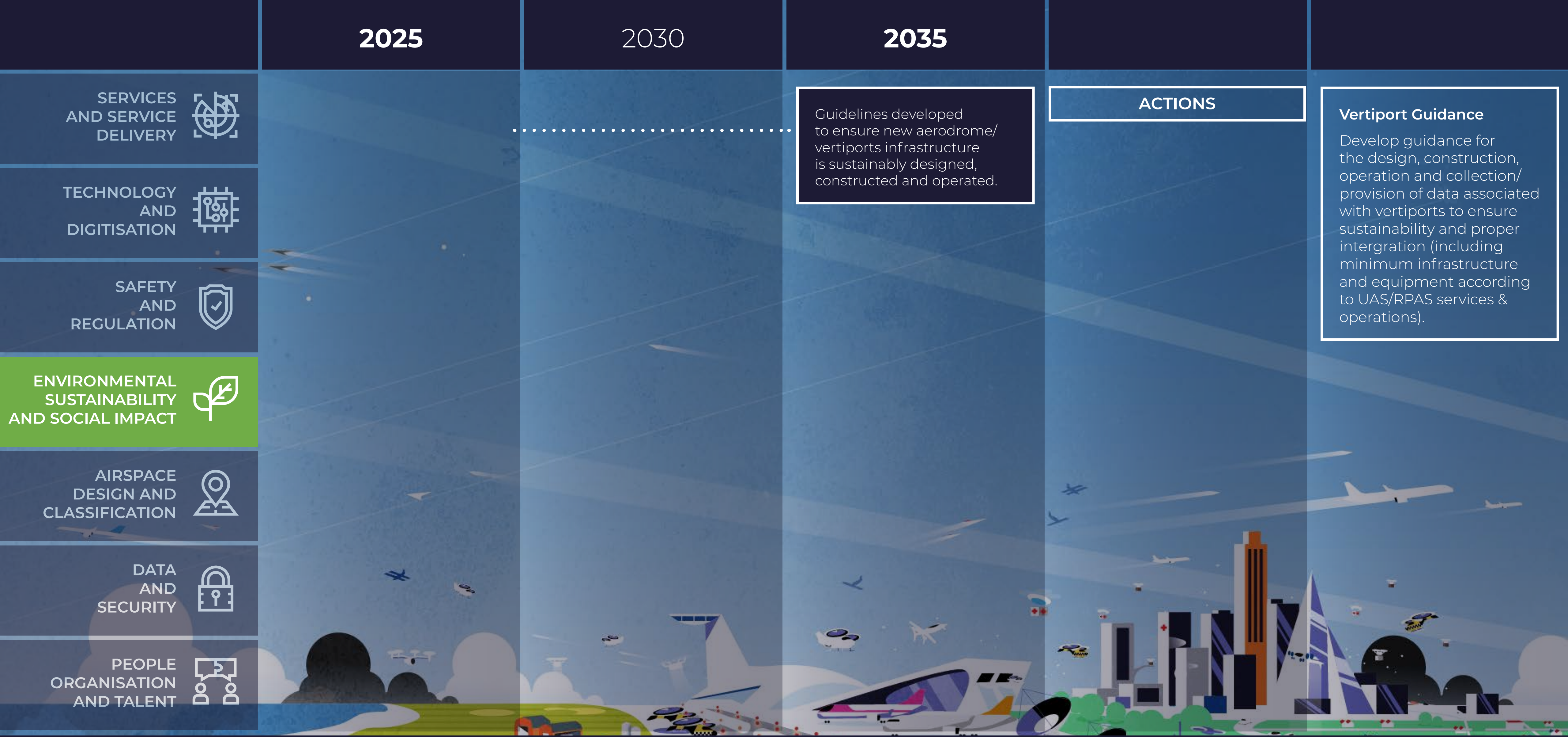
PEOPLE
ORGANISATION
AND TALENT



PLEASE SELECT MILESTONE TO SEE **DETAILS**



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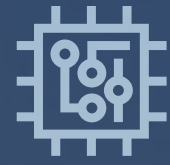
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AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



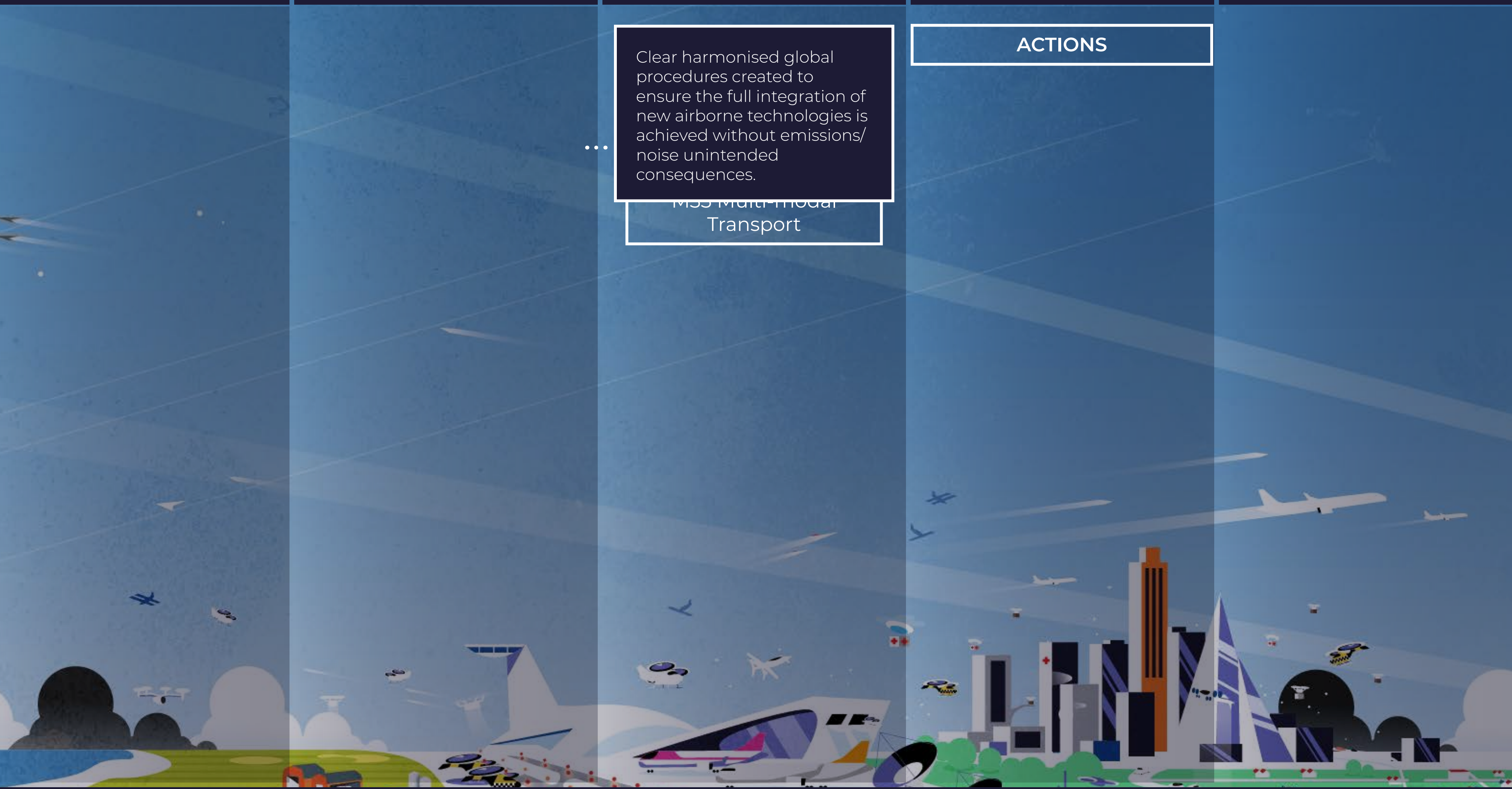
PEOPLE ORGANISATION AND TALENT



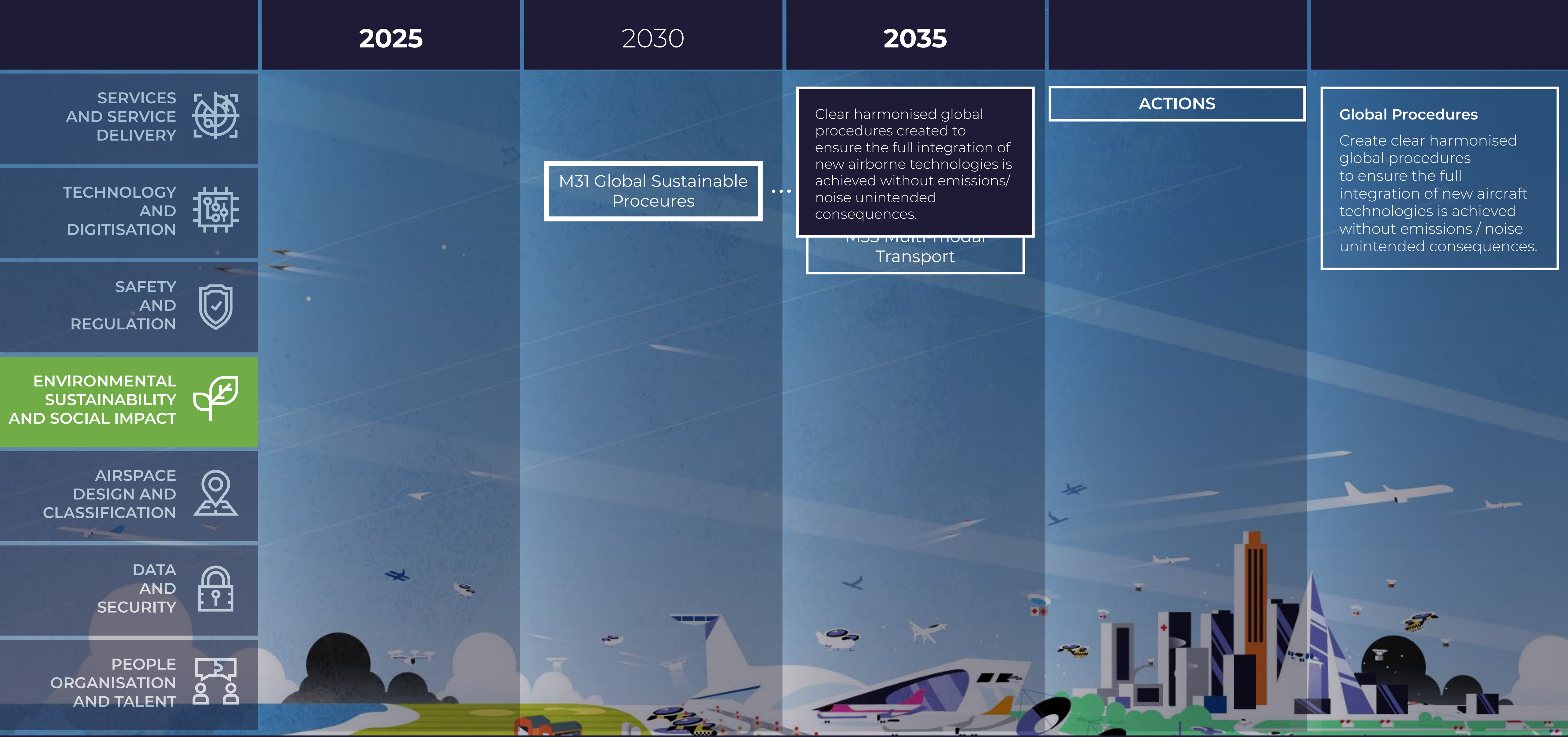
ACTIONS

Clear harmonised global procedures created to ensure the full integration of new airborne technologies is achieved without emissions/ noise unintended consequences.

MSS Multi-Modal Transport



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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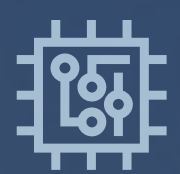
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PEOPLE ORGANISATION AND TALENT



M31 Global Sustainable Proceures

Clear harmonised global procedures created to ensure the full integration of new airborne technologies is achieved without emissions/ noise unintended consequences.

M33 Multi-modal Transport

ACTIONS

Global Procedures
Create clear harmonised global procedures to ensure the full integration of new aircraft technologies is achieved without emissions / noise unintended consequences.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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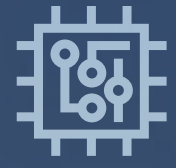
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AND TALENT



The efficiency of
multi-modal transport is a
public policy priority.

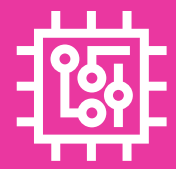


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GOAL 11

Integrated and Connected Multimodal Transportation Network and Infrastructures

Airspace design enables expanded accessibility to airspace for all novel aircraft and transport usage including multi-modal transportation systems (e.g. AAM) and infrastructures (e.g. vertiports) through digitalisation, automation, and the adoption of data services. Multimodal transport interfaces have been widely implemented. Connected architectures enable seamless completion of journeys that transition between types of transport.

PLEASE SELECT **MILESTONES** FOR GOAL 11

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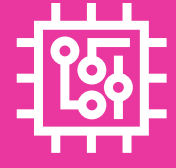
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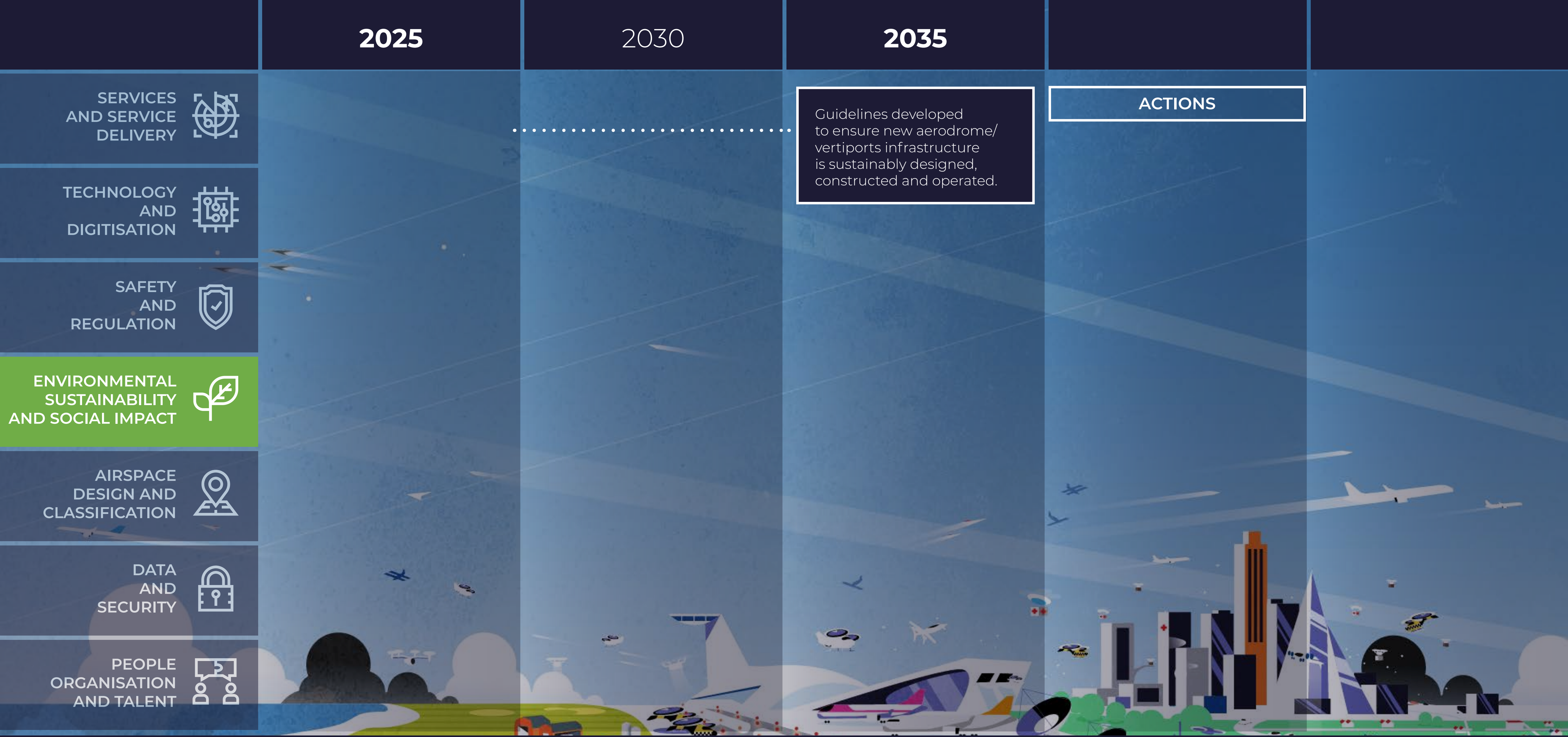
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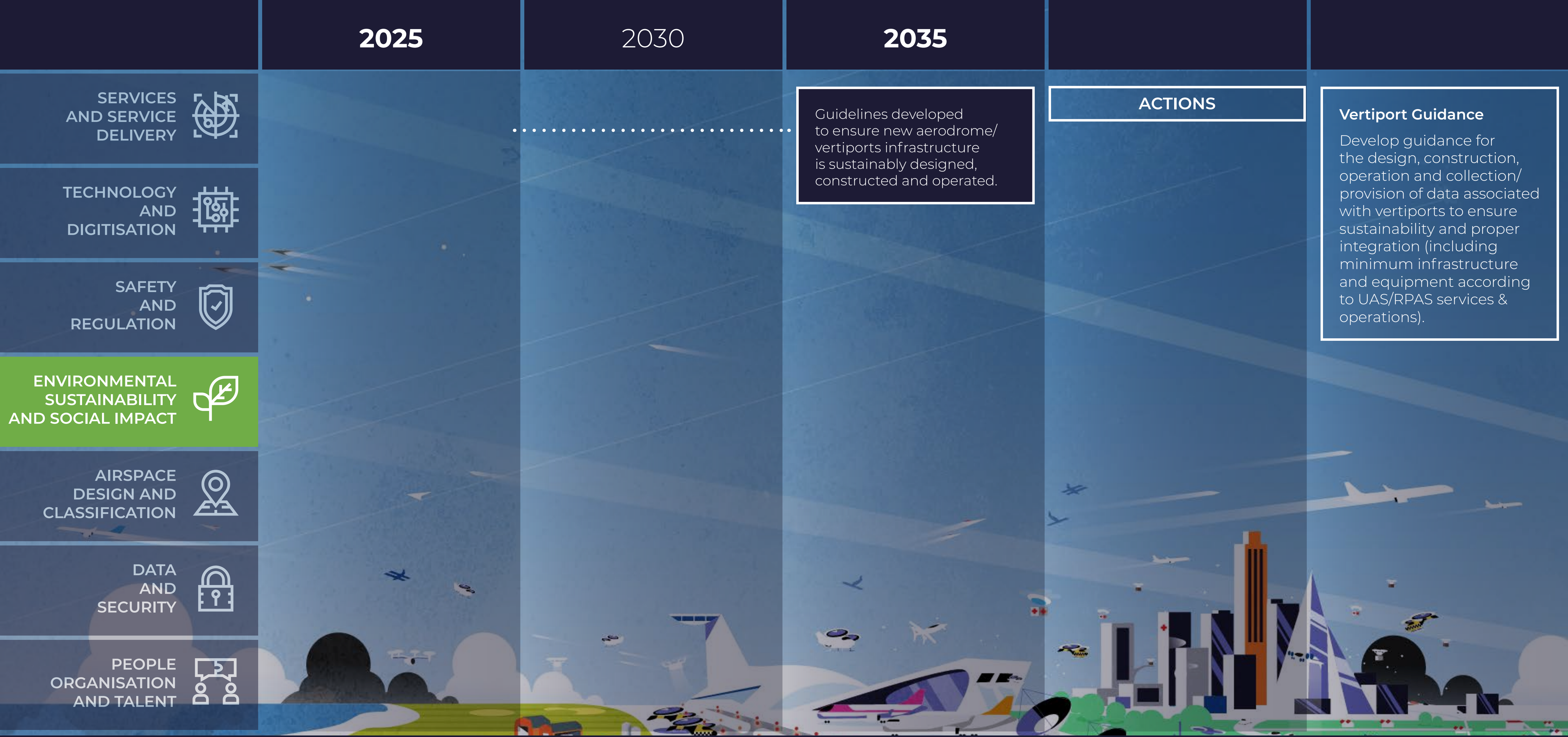
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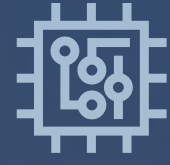
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SERVICES AND SERVICE DELIVERY



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AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

UAM operations increased in a growing number of cities with some operations from airports.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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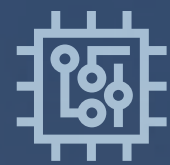
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SERVICES AND SERVICE DELIVERY



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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

UAM operations increased in a growing number of cities with some operations from airports.

Modelling and Simulation
Establish a network/ ecosystem of aviation modelling and simulation tools and sandboxes to test, trial, and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress, including business model analysis and simulation of business cases. Definition of establishment of minimum requirements or certifications for establishing the sandbox or test environment.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ACTIONS

UAM operations increased in a growing number of cities with some operations from airports.

Diverse Use-Cases

Multiple, diverse use-cases should be identified and analysed involving all-known new entrants (e.g., Supersonics, UAM, RPAS, and Commercial Space Vehicles). Analyses of these should result in a list of aeronautical information requirements needed to safety integrate these into existing and future aviation systems.

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New approach to surveillance services introduced based on performance requirements for surveillance to aid Detect and Avoid (DAA), which might be different than those for separation services (lower power transponders, diverging technologies etc).



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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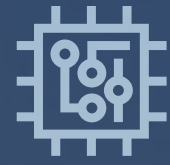
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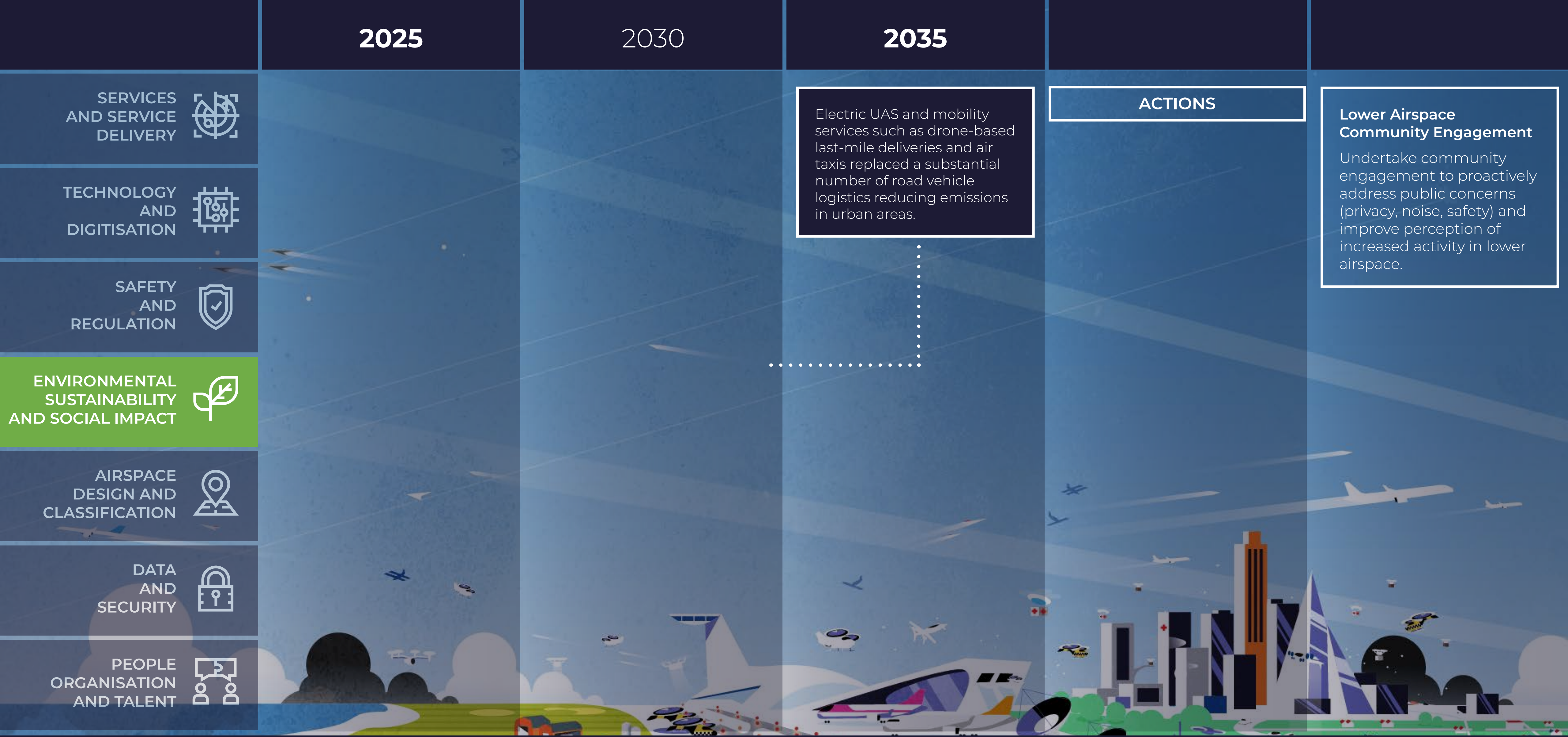


ACTIONS

Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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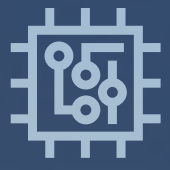
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ACTIONS

Electric UAS and mobility services such as drone-based last-mile deliveries and air taxis replaced a substantial number of road vehicle logistics reducing emissions in urban areas.

Lower Airspace Community Engagement
Undertake community engagement to proactively address public concerns (privacy, noise, safety) and improve perception of increased activity in lower airspace.

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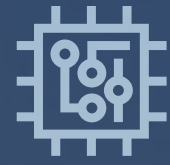
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Airspace designed to support the implementation of network based, on-demand synchronisation of trajectory-based operations.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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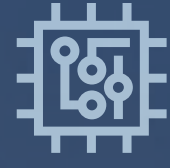
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ACTIONS

Airspace designed supporting the broad implementation of dynamic airspace to enable airspace usage by all players, and the integration of all participants in a more efficient way, based on their capability, common rules, and performance-based requirements.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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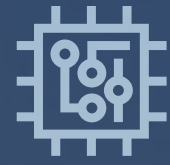
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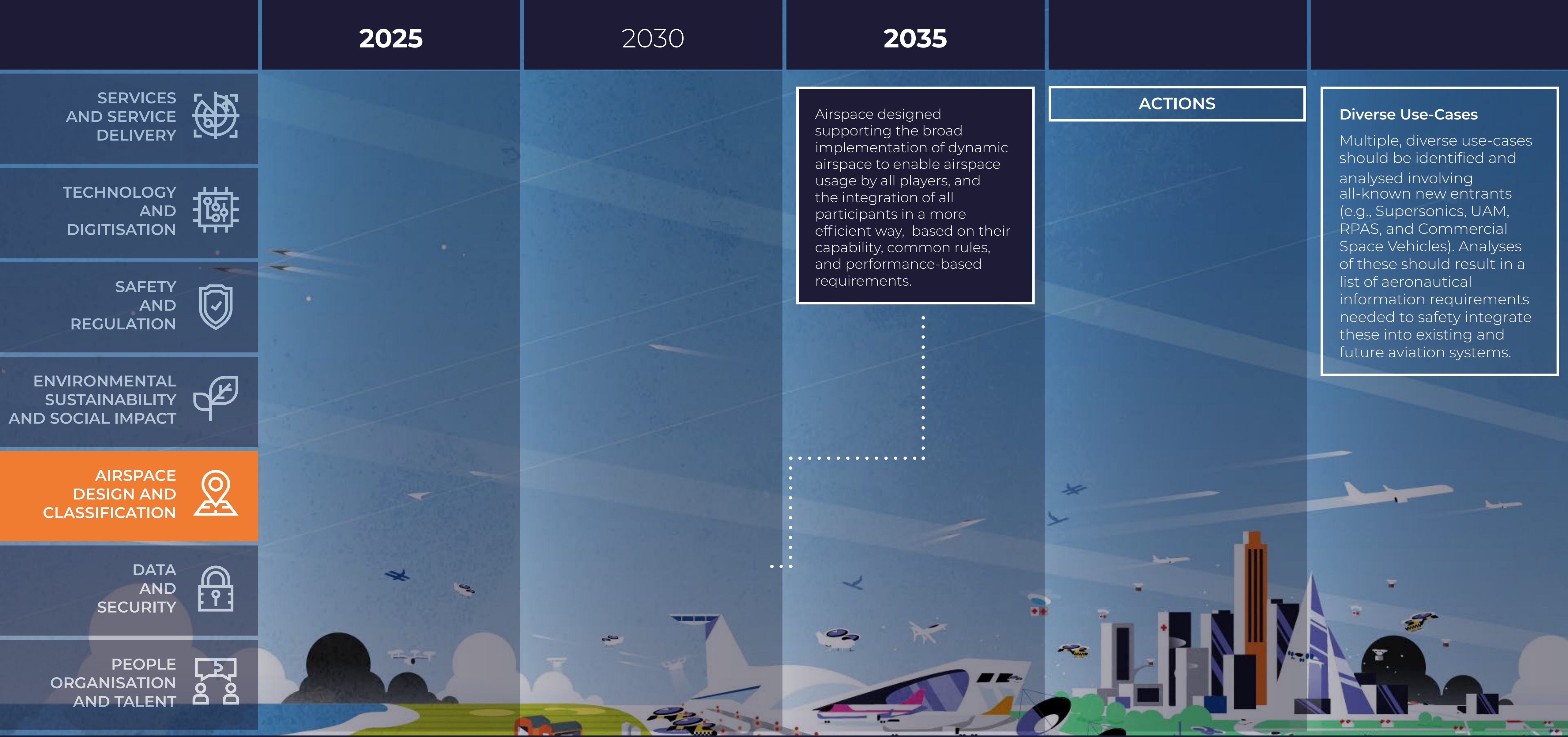
ACTIONS

Airspace designed supporting the broad implementation of dynamic airspace to enable airspace usage by all players, and the integration of all participants in a more efficient way, based on their capability, common rules, and performance-based requirements.

Modelling and Simulation

Establish a network/ ecosystem of aviation modelling and simulation tools and sandboxes to test, trial, and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress, including business model analysis and simulation of business cases. Definition of establishment of minimum requirements or certifications for establishing the sandbox or test environment.

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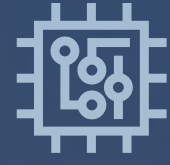
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Airspace design supported by clear sets of common rules/regulations and performance-based requirements for accessing various airspace operating environments.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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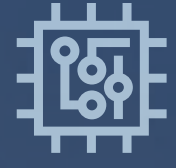
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The efficiency of
multi-modal transport is a
public policy priority.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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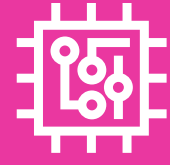
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ACTIONS

Broad implementation of UAM, with new ground infrastructure and integration in the airspace.



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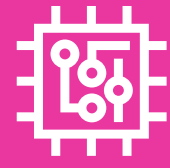
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ACTIONS

Broad implementation of UAM, with new ground infrastructure and integration in the airspace.

Modelling and Simulation

Establish a network/ ecosystem of aviation modelling and simulation tools and sandboxes to test, trial, and demonstrate new forms of service provision and to shorten the innovation cycle and visualise / measure progress, including business model analysis and simulation of business cases. Definition of establishment of minimum requirements or certifications for establishing the sandbox or test environment.



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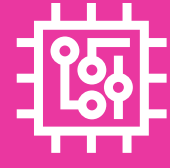
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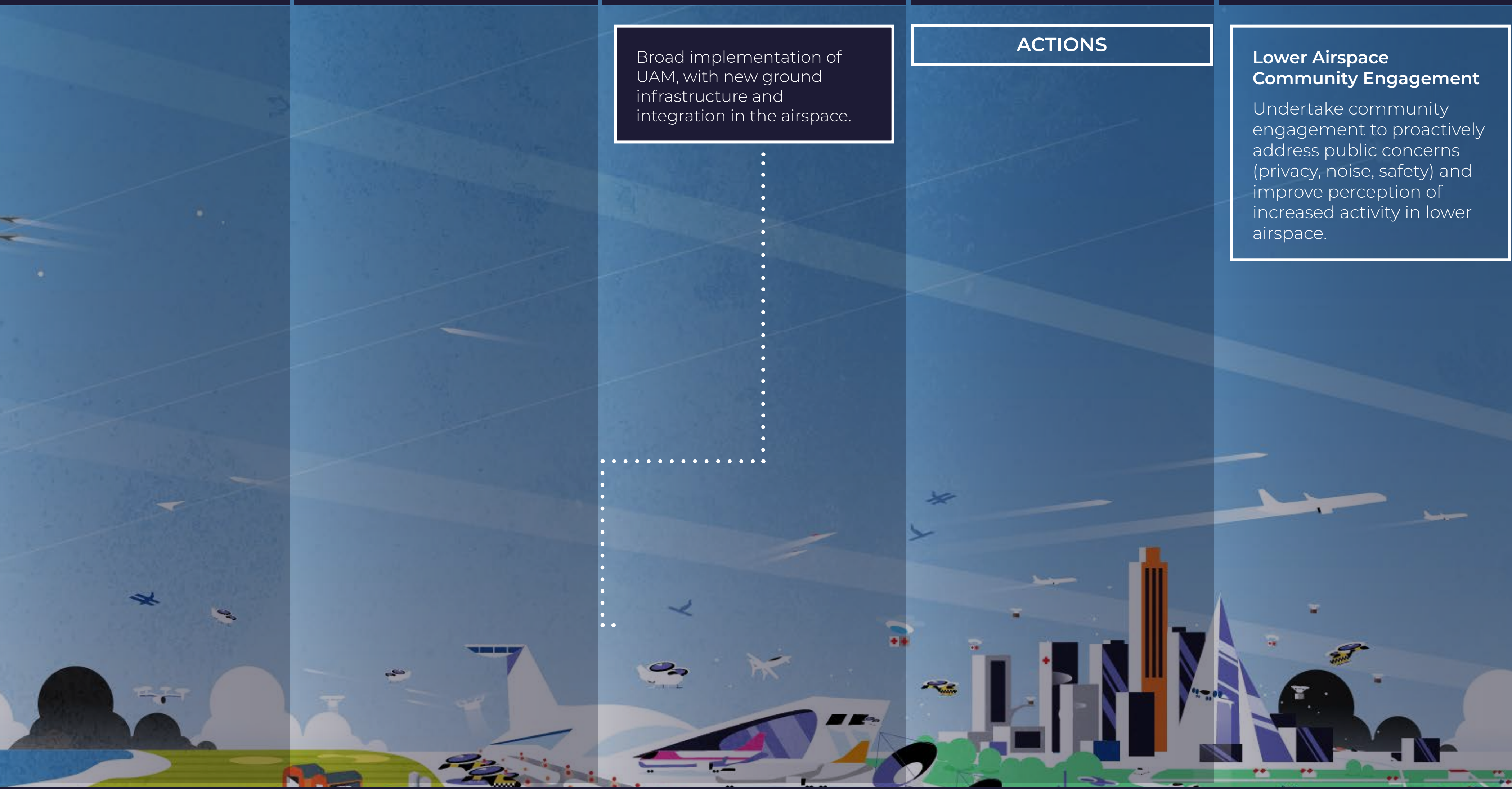


ACTIONS

Broad implementation of UAM, with new ground infrastructure and integration in the airspace.

Lower Airspace Community Engagement

Undertake community engagement to proactively address public concerns (privacy, noise, safety) and improve perception of increased activity in lower airspace.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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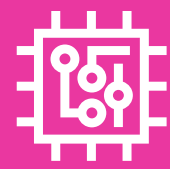
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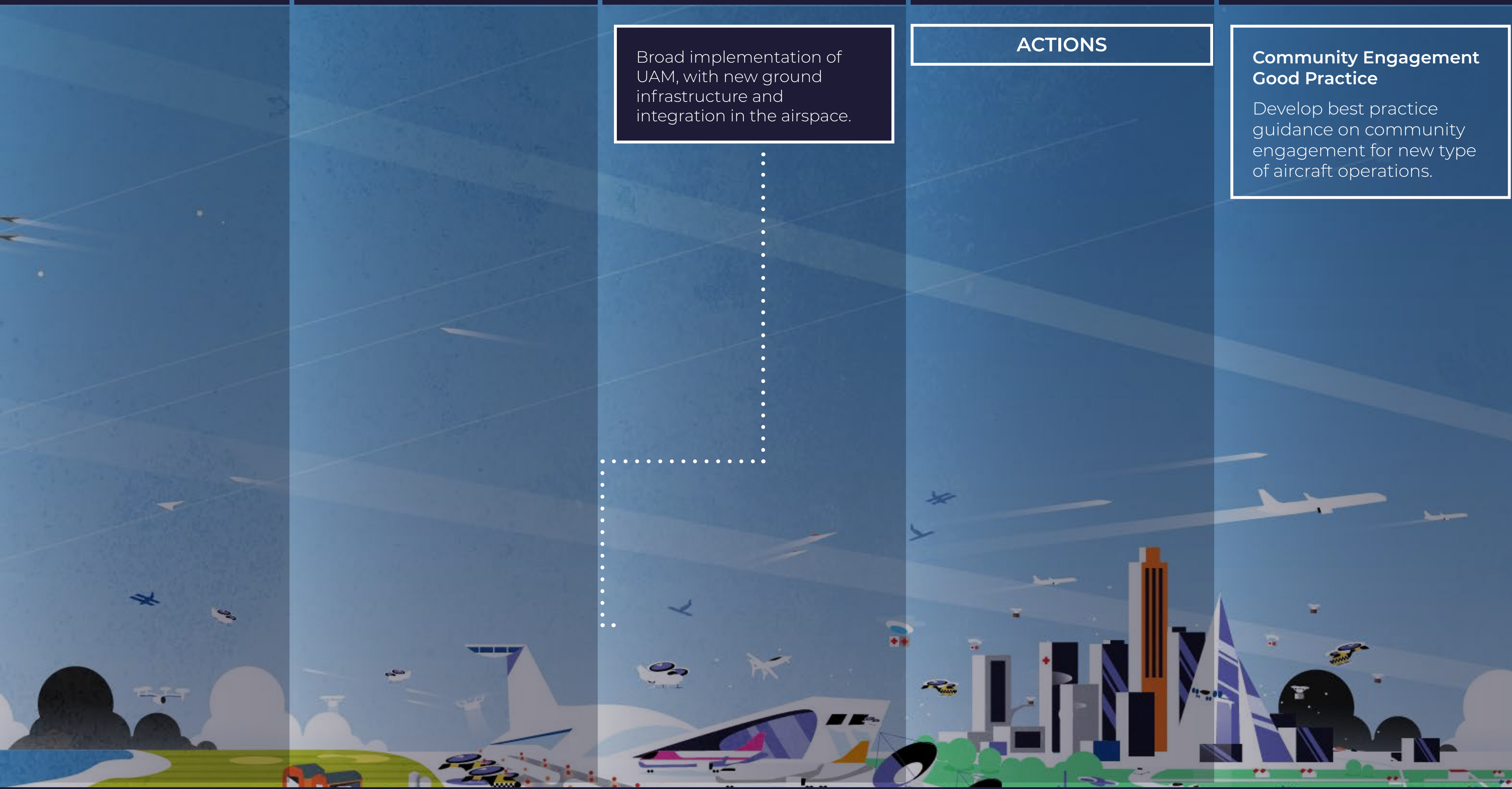


ACTIONS

Broad implementation of UAM, with new ground infrastructure and integration in the airspace.

Community Engagement Good Practice

Develop best practice guidance on community engagement for new type of aircraft operations.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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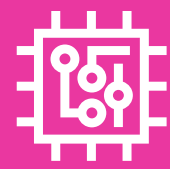
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ACTIONS

Broad implementation of UAM, with new ground infrastructure and integration in the airspace.

**New Entrants
Environmental
Assessments**

Complete assessment of environmental impacts of new entrants, including noise analysis for future certification, and increase availability and use of tools for environmental impact assessment of their operations.



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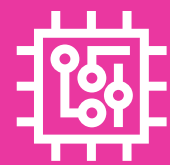
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ACTIONS

Broad implementation of UAM, with new ground infrastructure and integration in the airspace.

UAM Comms Campaign

Roll out a strong communications campaign to proactively address public concerns (privacy, noise, safety) and improve perception of increased activity in lower airspace to generate social licence for UAM and increased UAS/RPAS operations.



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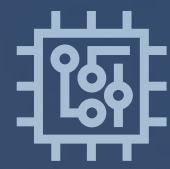
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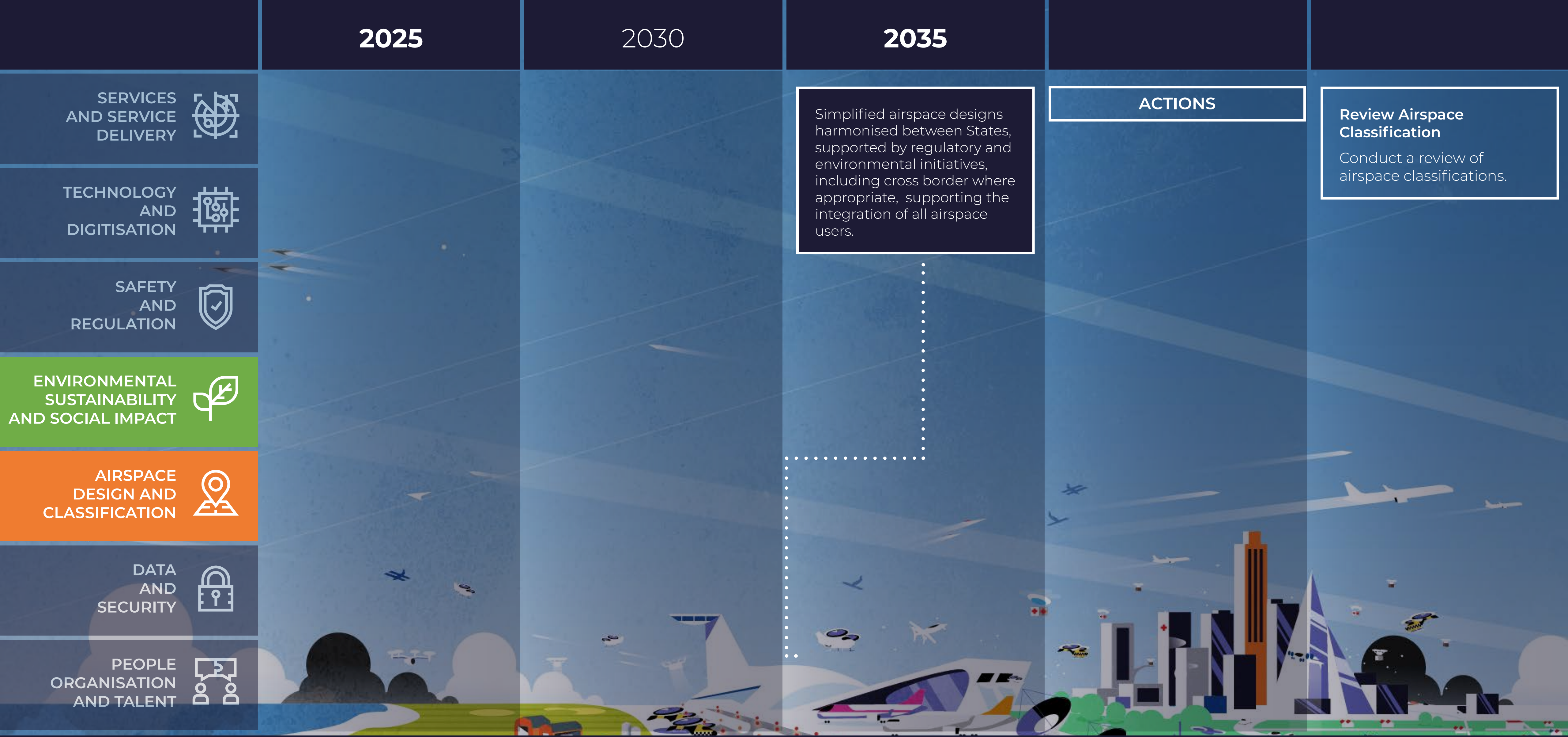


ACTIONS

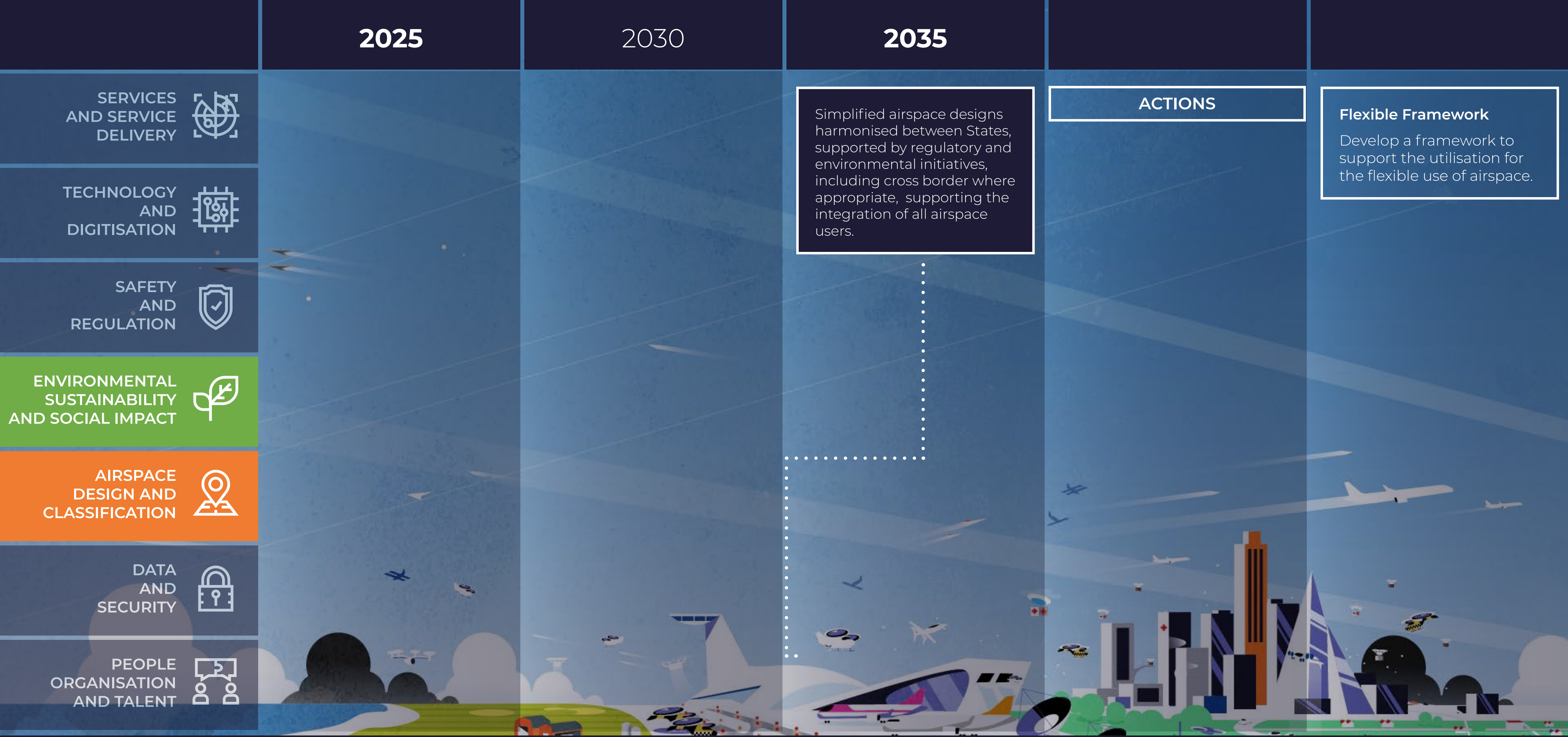
Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.



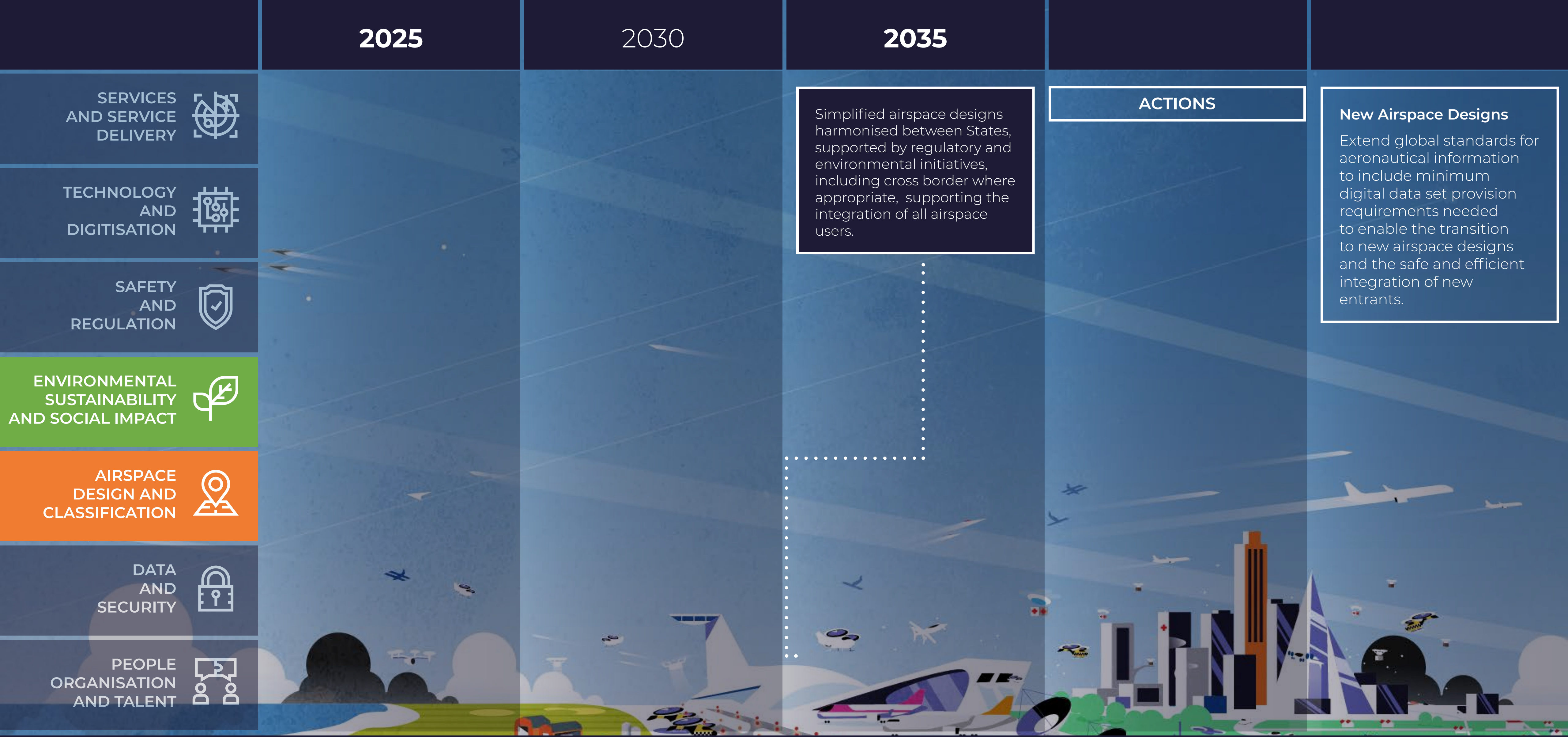
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ACTIONS

Simplified airspace designs harmonised between States, supported by regulatory and environmental initiatives, including cross border where appropriate, supporting the integration of all airspace users.

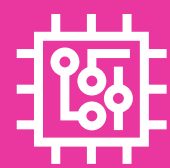
New Airspace Designs
 Extend global standards for aeronautical information to include minimum digital data set provision requirements needed to enable the transition to new airspace designs and the safe and efficient integration of new entrants.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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GOAL 12

Data-Powered Ecosystem

Airspace is supported by an intelligent globally distributed data-powered ecosystem with millions of nodes based in the air and on the ground:

- In this intelligent, globally distributed, data-powered ecosystem, each operator participates in a safe, secure, open, and scalable framework for exchanging interoperable information.
- A globally distributed data network enables secure flows of high-volume information and robust data exchange between trusted users, infrastructure (e.g. vertiports) and air vehicles.
- As aircraft and ground-based capabilities continue to digitise and modernise, the airspace system has grown enabling broader integration, harmonisation and interoperability of all users.
- Open information exchange facilitates operational excellence, decision-making and risk management.
- Aircraft are increasingly becoming web-connected devices and part of the broader Internet of Things (IoT), especially in urban environments with multi-modal transport infrastructure.

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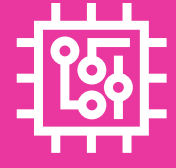
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PLEASE SELECT MILESTONE TO SEE **DETAILS**

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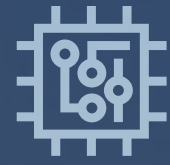
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2035

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



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

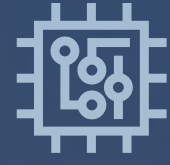
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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



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AIRSPACE DESIGN AND CLASSIFICATION



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PEOPLE ORGANISATION AND TALENT



ACTIONS

An internationally integrated and collaborative airspace management concept established with a dynamic air traffic flow and capacity management, in response to traffic demands.

Collaborative Airspace Management Concept

Develop an internationally integrated and collaborative airspace management concept.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

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SERVICES AND SERVICE DELIVERY 

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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 

AIRSPACE DESIGN AND CLASSIFICATION 

DATA AND SECURITY 

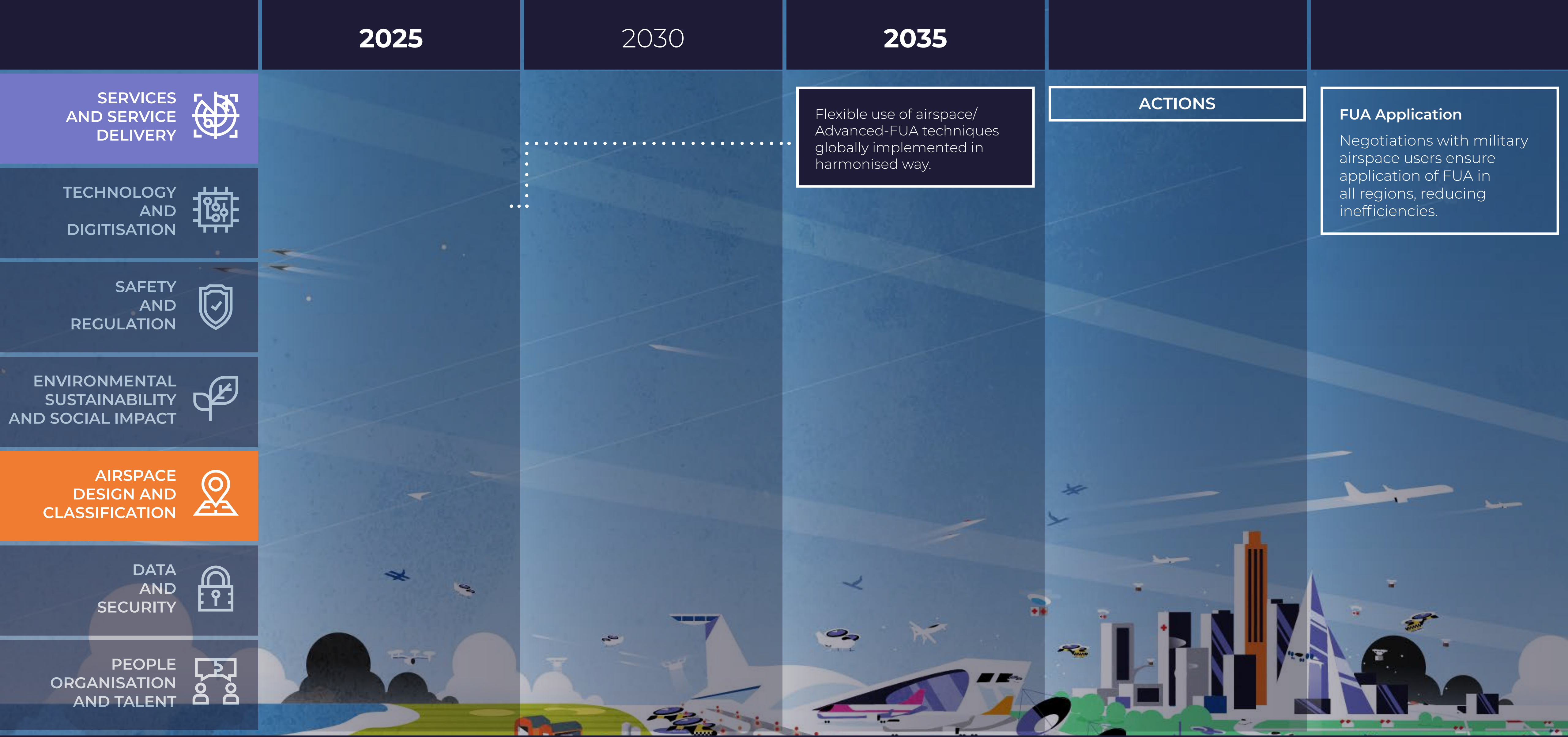
PEOPLE ORGANISATION AND TALENT 

ACTIONS

Flexible use of airspace/
Advanced-FUA techniques
globally implemented in
harmonised way.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



2025

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SERVICES AND SERVICE DELIVERY



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PEOPLE ORGANISATION AND TALENT



ACTIONS

Flexible use of airspace/
Advanced-FUA techniques
globally implemented in
harmonised way.

FUA Application
Negotiations with military
airspace users ensure
application of FUA in
all regions, reducing
inefficiencies.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

An independently validated global electronic conspicuity standards guidance implemented for all participants aimed at air to air and air to ground conspicuity.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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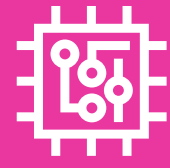
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PEOPLE ORGANISATION AND TALENT



ACTIONS

An independently validated global electronic conspicuity standards guidance implemented for all participants aimed at air to air and air to ground conspicuity.

Global Electronic Conspicuity Standards

Develop an independently validated global electronic conspicuity standards guide.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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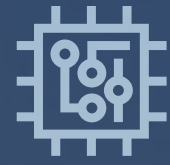
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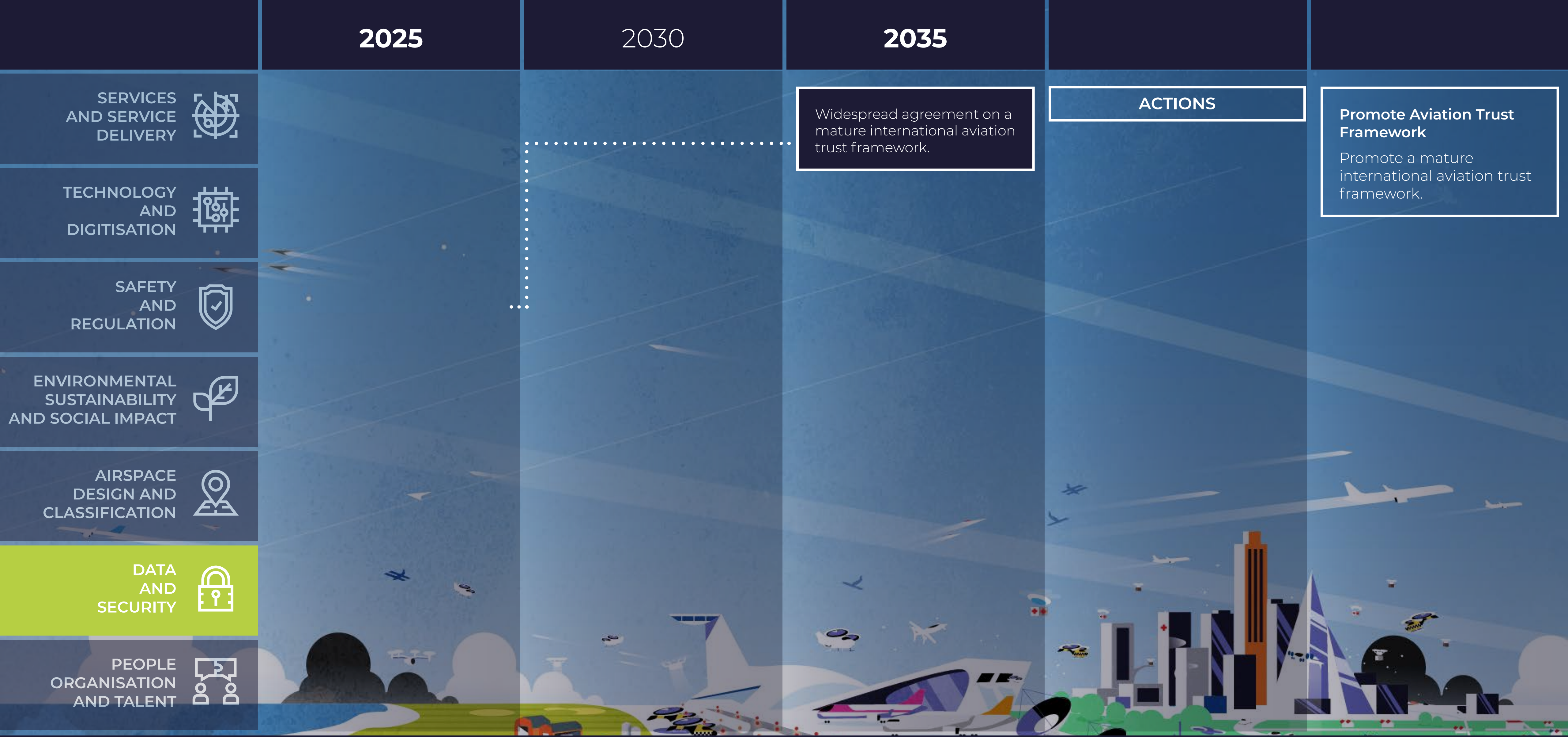


ACTIONS

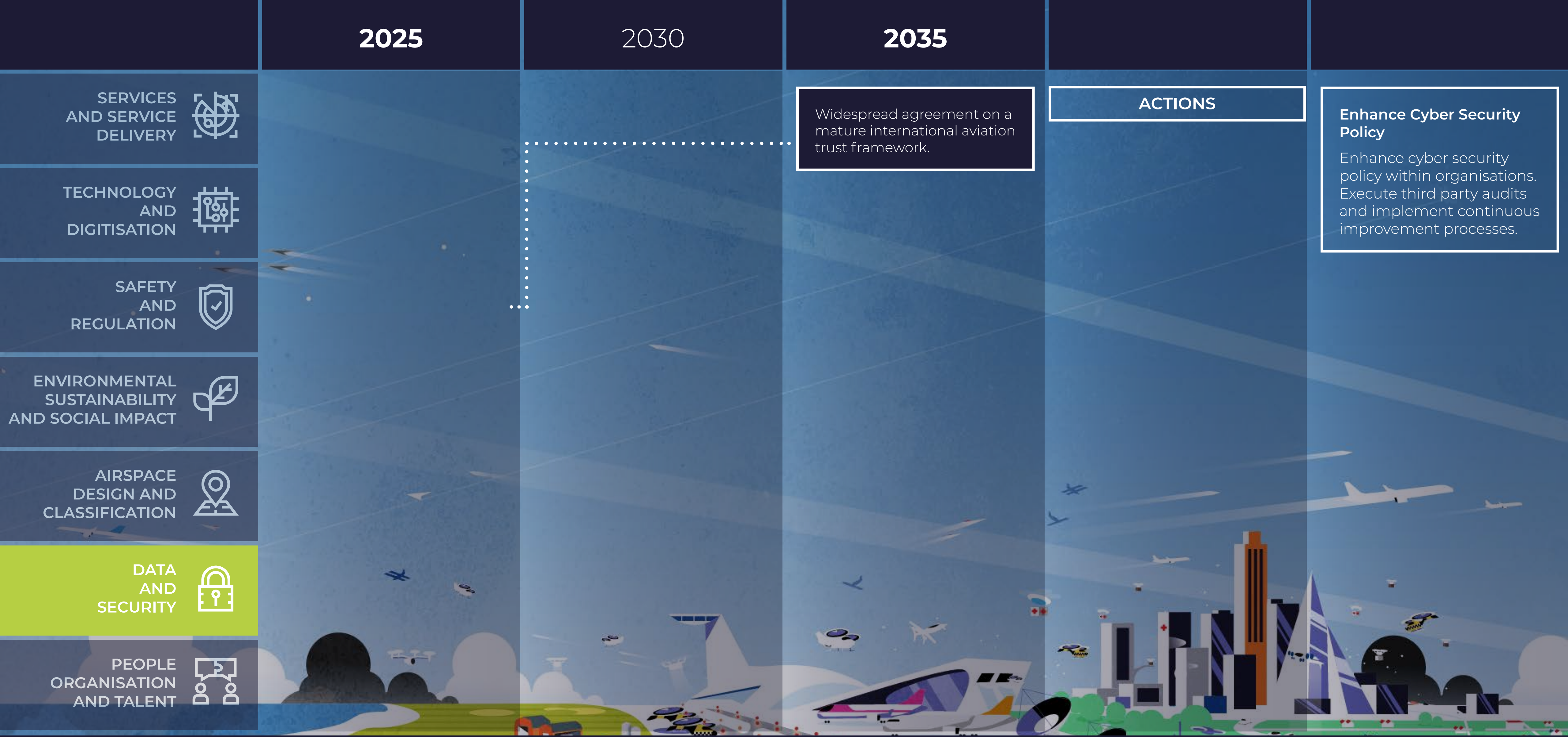
Widespread agreement on a mature international aviation trust framework.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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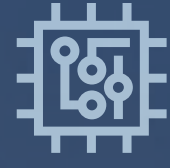
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SERVICES
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DIGITISATION



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AND
REGULATION



ENVIRONMENTAL
SUSTAINABILITY
AND SOCIAL IMPACT



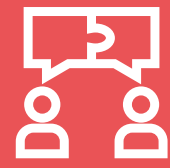
AIRSPACE
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AND TALENT



Security culture improvements widely implemented to increase security sensitivity among Information Technology (IT) and aviation professionals.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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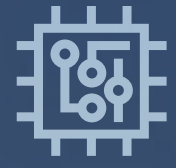
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Global guidance for cybersecurity training programme to increase competencies among all front-line actors.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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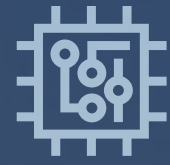
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Cyber security and cyber resilience are system-wide priorities, with global quality standards that every user must comply to.

- The global, interoperable framework allows for trusted ground-air, air-air and ground-ground exchanges for digital identity and user authentication. Strict privacy policies introduced that respect sovereignty and protect user privacy.
- States, regulators and organisations continue to collaborate on all matters relating to cyber security and cyber resilience to protect our global skies.
- IT Security Management Systems implemented by all aviation stakeholders and an exchange of possible threads being detected in the aviation network shared among all users immediately.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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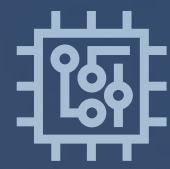
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New data requirements for integration of new entrants are defined. For example, data associated with eVTOL pads may need to be collected and published in an AIP.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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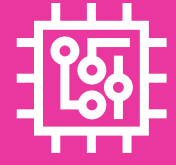
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SECURITY



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AND TALENT



...

Digital mechanism implemented to rapidly, and securely, certify trusted (data) service providers using harmonised standards and their integrity.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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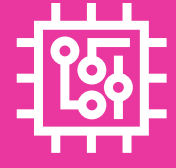
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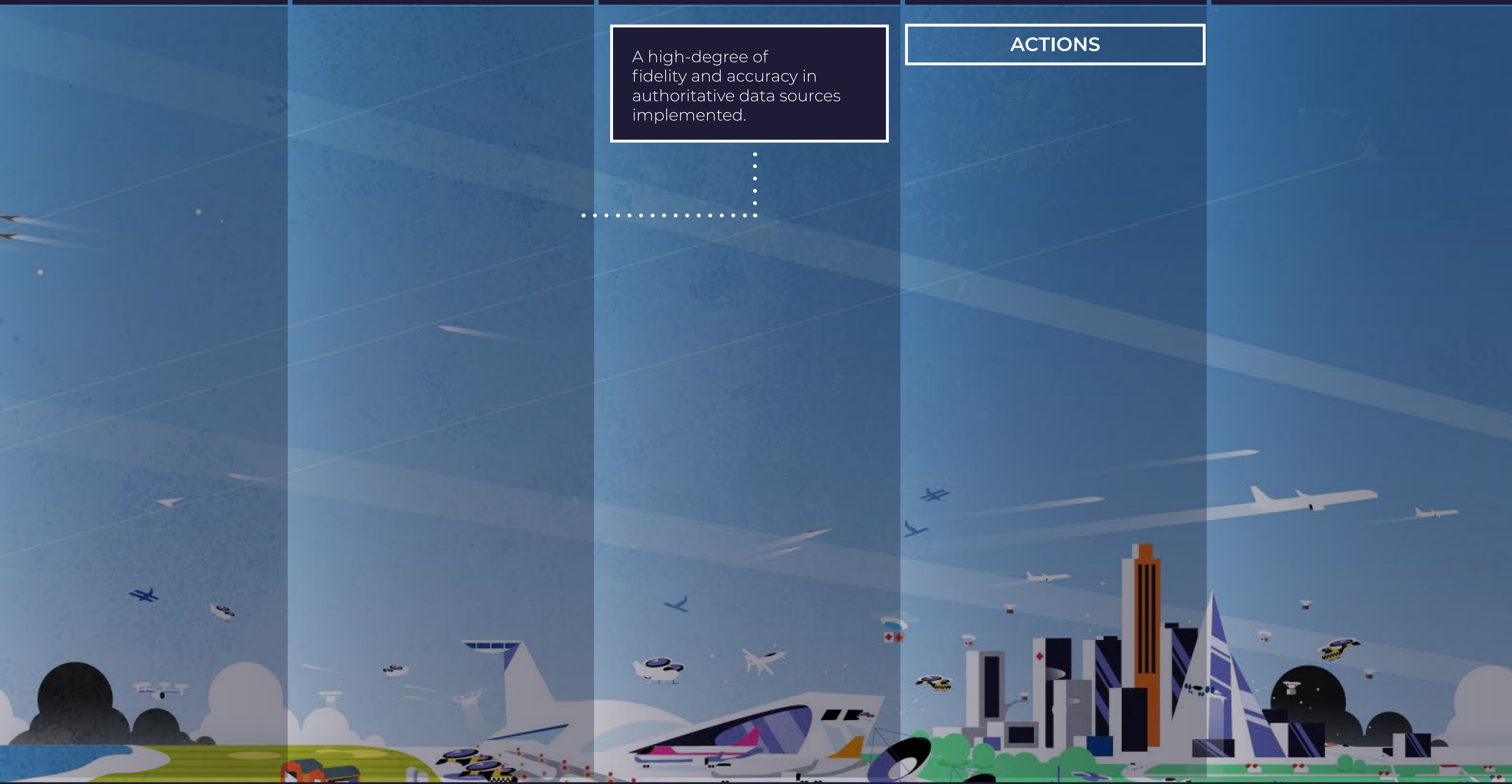


PEOPLE
ORGANISATION
AND TALENT

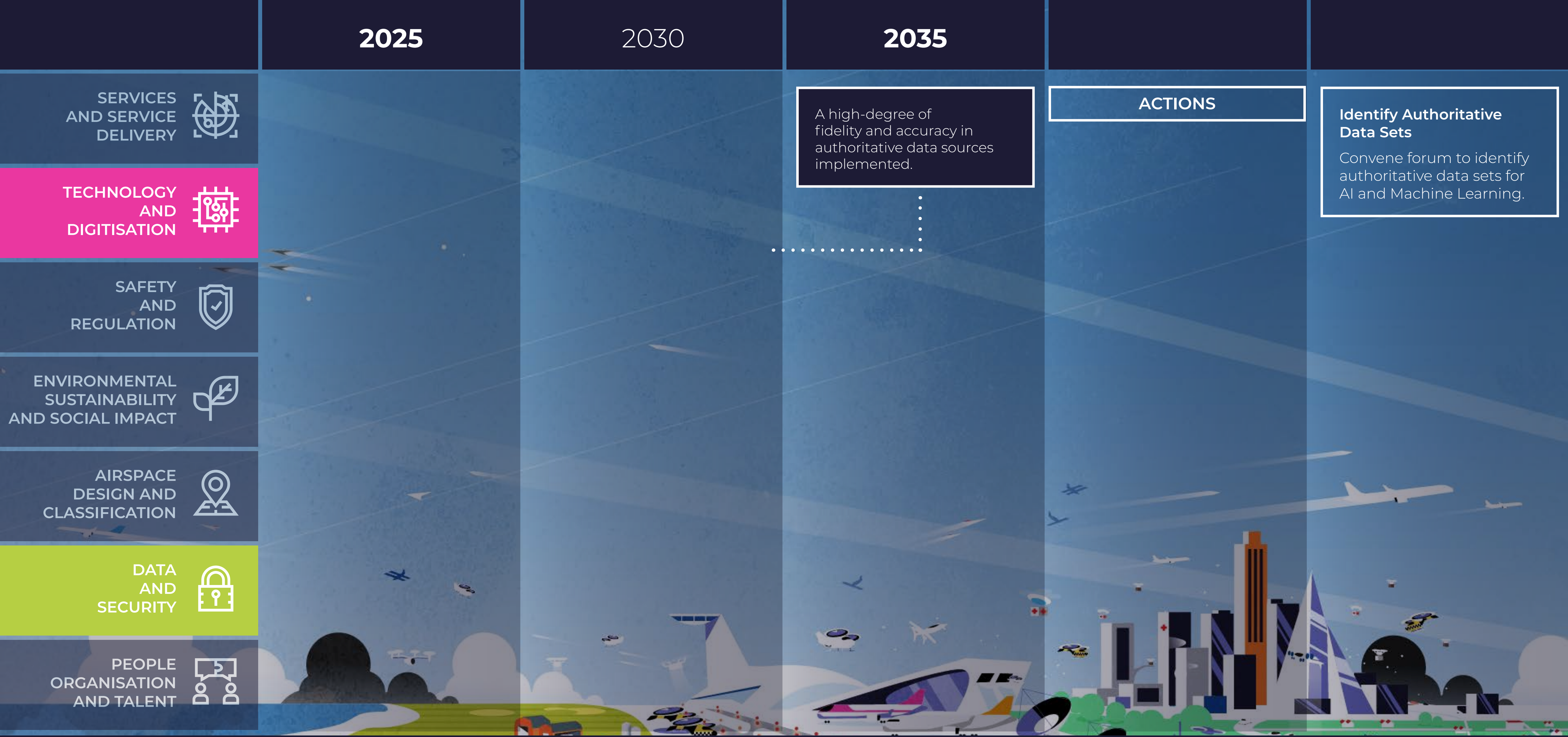


ACTIONS

A high-degree of fidelity and accuracy in authoritative data sources implemented.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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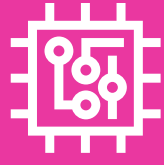
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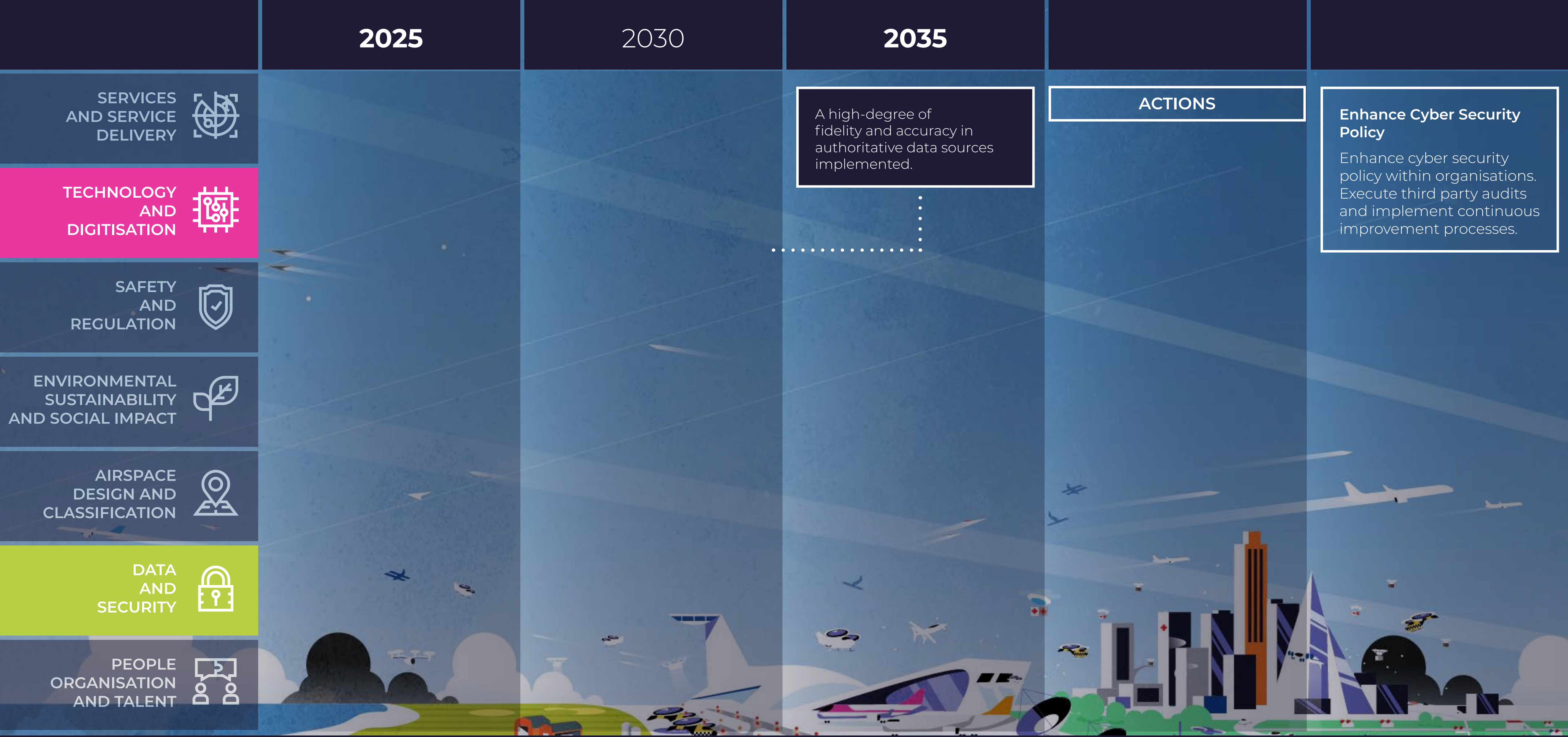


ACTIONS

A high-degree of fidelity and accuracy in authoritative data sources implemented.

Identify Authoritative Data Sets
 Convene forum to identify authoritative data sets for AI and Machine Learning.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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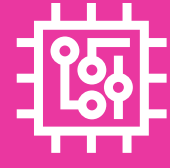
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ACTIONS

Open standards for data exchange (such as pre-flight and live flight tactical data) are widely used.



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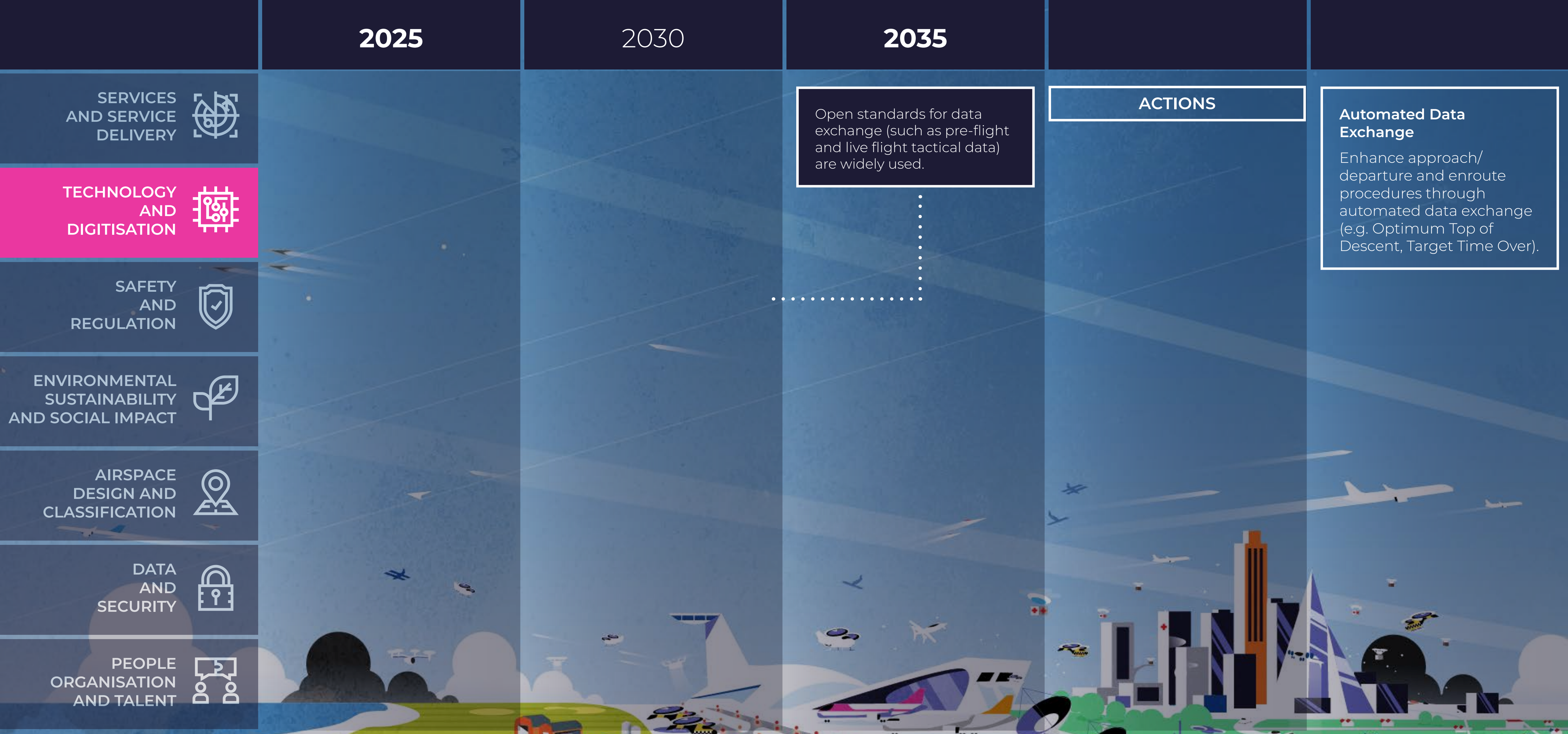
ACTIONS

Open standards for data exchange (such as pre-flight and live flight tactical data) are widely used.

Standardisation Strategy
Develop a standardisation strategy to better use the standards that we have – and identify what standards we need. Support the rationalisation and acceleration of the standardisation process.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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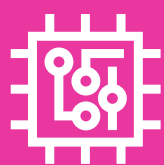
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PEOPLE ORGANISATION AND TALENT



ACTIONS

Open standards for data exchange (such as pre-flight and live flight tactical data) are widely used.

Automated Data Exchange

Enhance approach/ departure and enroute procedures through automated data exchange (e.g. Optimum Top of Descent, Target Time Over).

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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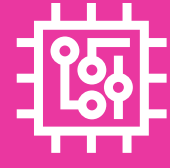
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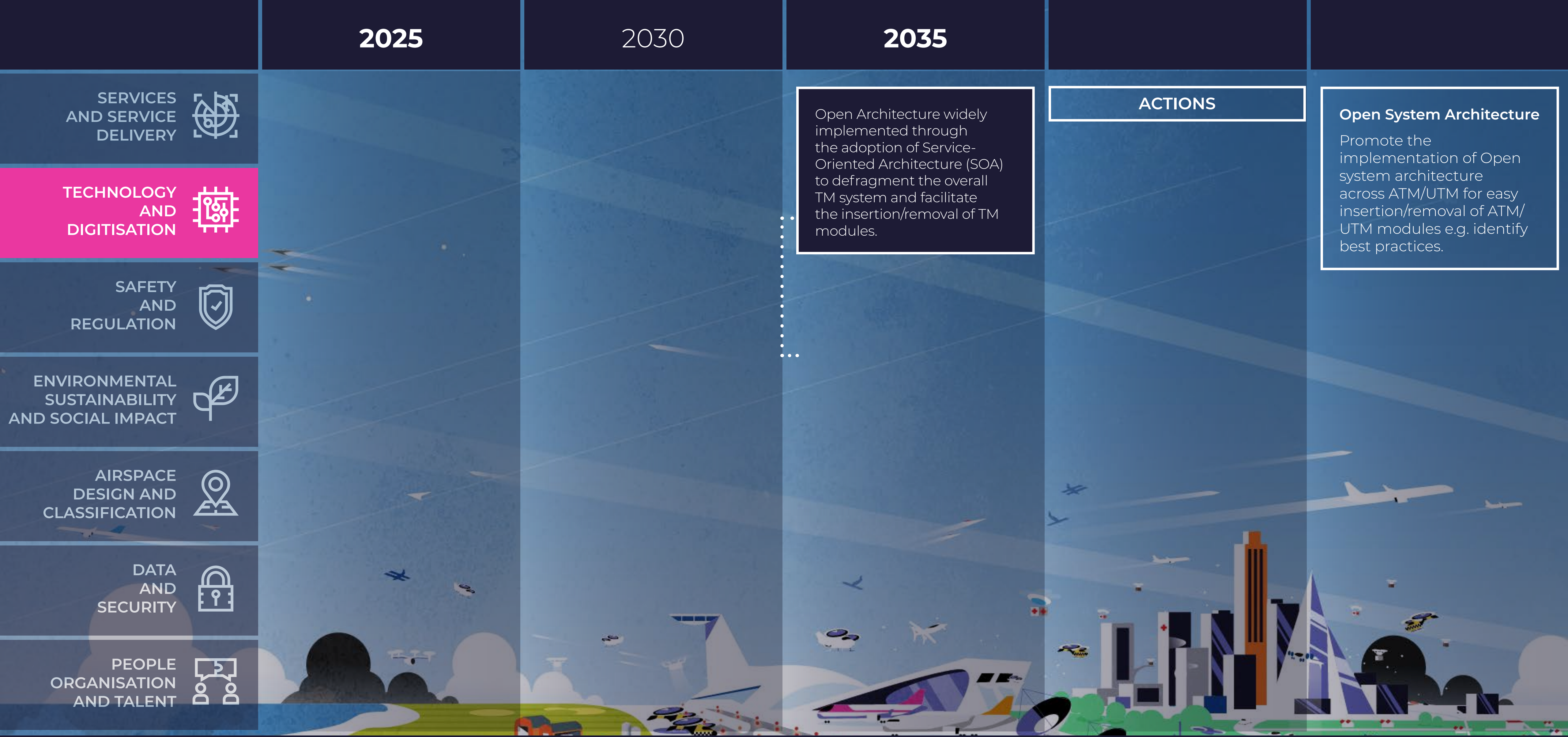
PEOPLE ORGANISATION AND TALENT



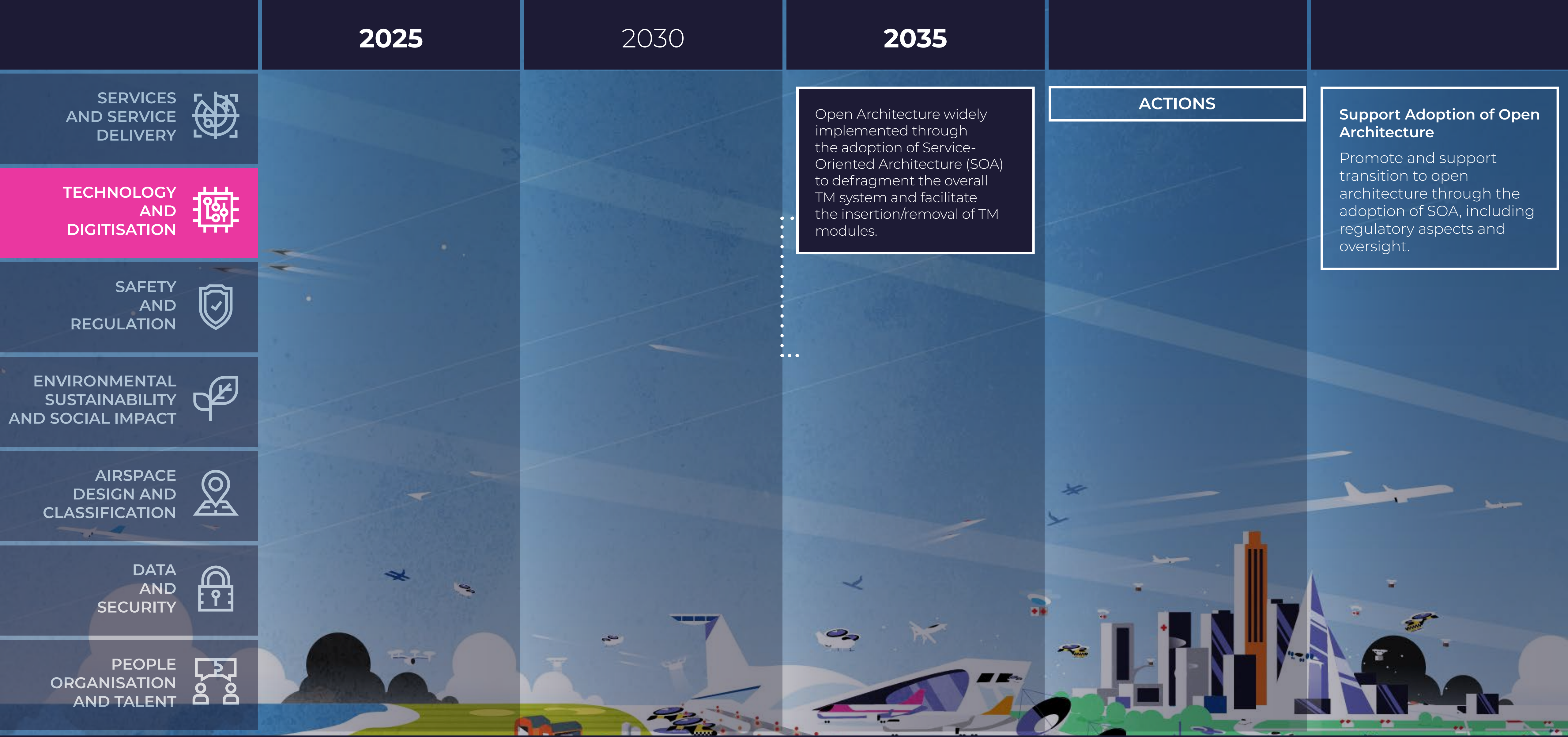
ACTIONS

Open Architecture widely implemented through the adoption of Service-Oriented Architecture (SOA) to defragment the overall TM system and facilitate the insertion/removal of TM modules.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



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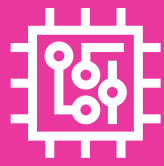
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Open Architecture widely implemented through the adoption of Service-Oriented Architecture (SOA) to defragment the overall TM system and facilitate the insertion/removal of TM modules.

ACTIONS

Support Adoption of Open Architecture
 Promote and support transition to open architecture through the adoption of SOA, including regulatory aspects and oversight.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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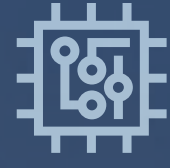
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ACTIONS

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ACTIONS

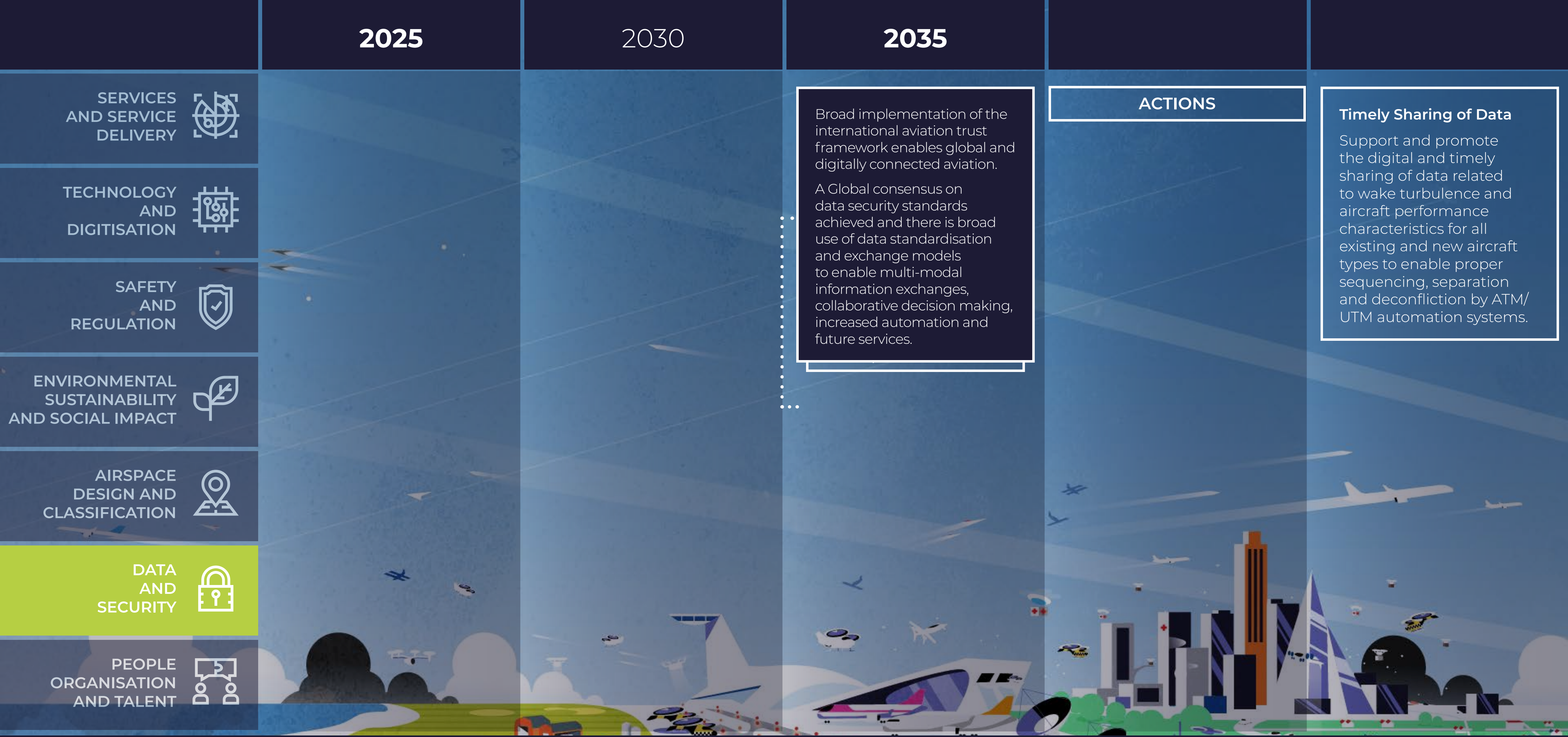
Automated Data Exchange

Enhance approach/ departure and enroute procedures through automated data exchange (e.g. Optimum Top of Descent, Target Time Over).

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.
A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.



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ACTIONS

Broad implementation of the international aviation trust framework enables global and digitally connected aviation.

A Global consensus on data security standards achieved and there is broad use of data standardisation and exchange models to enable multi-modal information exchanges, collaborative decision making, increased automation and future services.

Timely Sharing of Data

Support and promote the digital and timely sharing of data related to wake turbulence and aircraft performance characteristics for all existing and new aircraft types to enable proper sequencing, separation and deconfliction by ATM/UTM automation systems.

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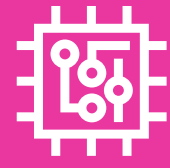
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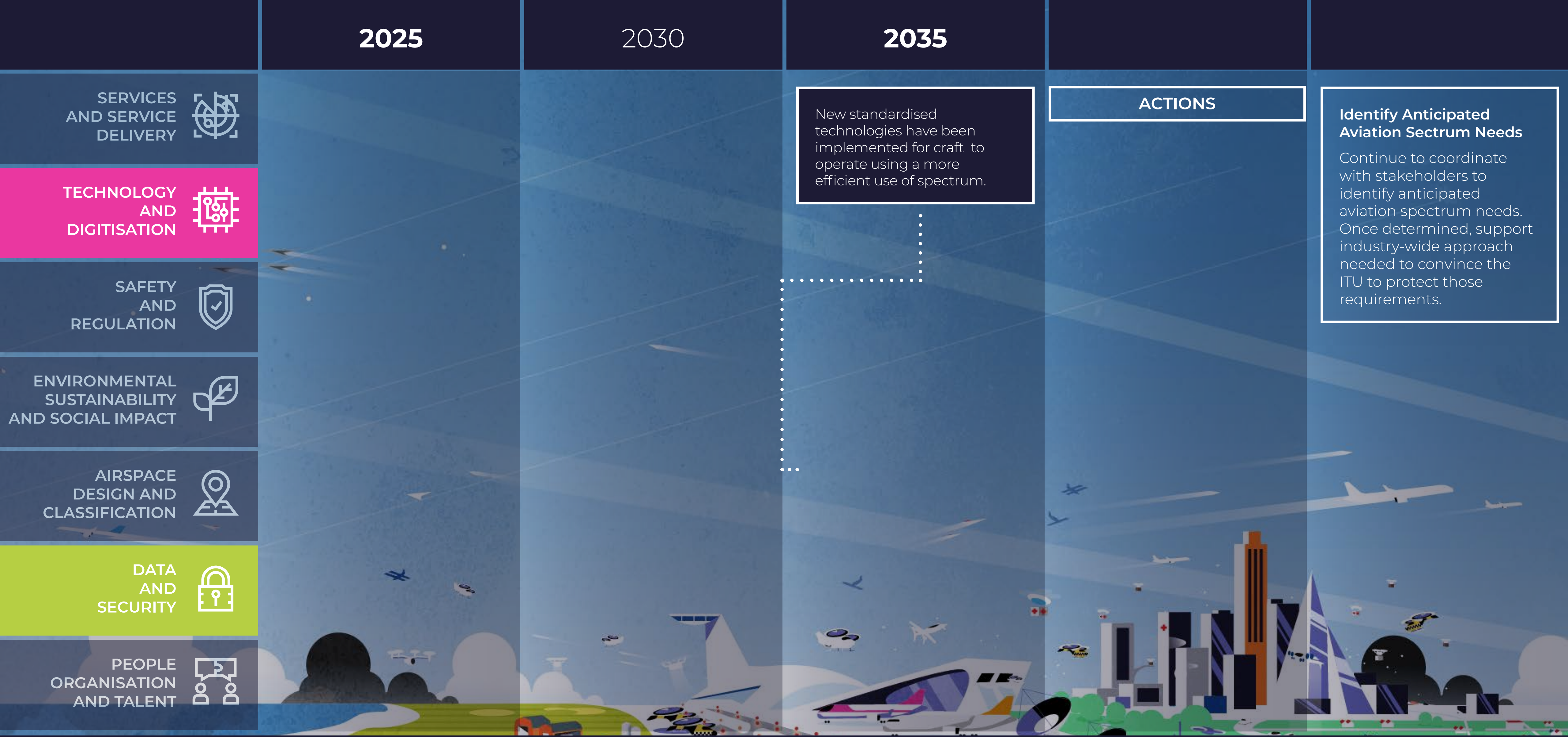


ACTIONS

New standardised technologies have been implemented for craft to operate using a more efficient use of spectrum.



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ACTIONS

New standardised technologies have been implemented for craft to operate using a more efficient use of spectrum.

Identify Anticipated Aviation Spectrum Needs
 Continue to coordinate with stakeholders to identify anticipated aviation spectrum needs. Once determined, support industry-wide approach needed to convince the ITU to protect those requirements.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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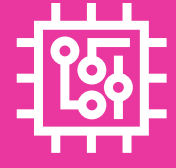
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A global communication network (or combination of...) is implemented and able to cope with the security, latency, bandwidth and number of users expected.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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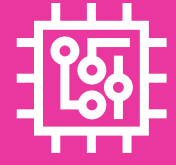
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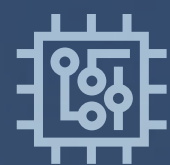
Civil-military interoperability and coordination is ensured through the evolution to a single system with different user levels.

CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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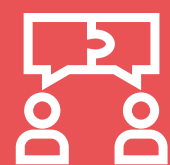
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GOAL 13

Thriving Airspace Management Community

The airspace management community is thriving with a diverse, high-skilled talent base focused on value delivery and attracting talent to collaborate in a hybrid digital and people workplace:

- The skills profile of employees in the sector reflects diverse roles and skills critical to the operation of advanced technologies, complex data-sets and within high-capacity environments.
- Learning and development in the sector are a priority with continuous learning mechanisms and evolved models of competency.
- Diversity and inclusion are integral to our culture and enable increased innovation and agility.

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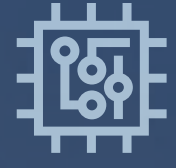
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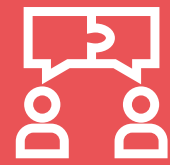
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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

Aviation industry competency model updated using objective data to deliver performance-based training programmes, and provide opportunities for continuous monitoring and evaluation.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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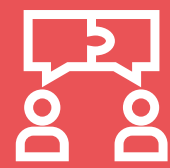
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ACTIONS

A90









Aviation industry competency model updated using objective data to deliver performance-based training programmes, and provide opportunities for continuous monitoring and evaluation.

Future ways of working








Prepare organisations for future ways of working, including cultural transformation by:

- Producing an updated competency model that embodies the knowledge, skills, attitudes and behaviours needed to be successful.
- Promoting an enhanced and proactive industry approach to learning culture
- Identifying measures to increase diversity and inclusion
- Increasing utilisation of new technologies in training programs

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

	2025	2030	2035	
SERVICES AND SERVICE DELIVERY 			<div data-bbox="1692 187 2195 502" data-label="Text"> <p>A holistic review of the skills needed in future aviation systems assess the skills gaps and provides a range of rewarding career paths that are attractive to the next generation of talent.</p> </div>	ACTIONS
TECHNOLOGY AND DIGITISATION 				
SAFETY AND REGULATION 				
ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 				
AIRSPACE DESIGN AND CLASSIFICATION 				
DATA AND SECURITY 				
PEOPLE ORGANISATION AND TALENT 				

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

	2025	2030	2035	
<p>SERVICES AND SERVICE DELIVERY </p>			<p>A holistic review of the skills needed in future aviation systems assess the skills gaps and provides a range of rewarding career paths that are attractive to the next generation of talent.</p>	<p>ACTIONS</p> <p>A88</p>
<p>TECHNOLOGY AND DIGITISATION </p>				<p>Skills Review</p> <p>Undertake a holistic review of the skills needed in future aviation systems and how these could or should come together as roles that offer a range of rewarding career paths that would be attractive to the next generation of talent. Include an assessment of existing skills gaps.</p>
<p>SAFETY AND REGULATION </p>				
<p>ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT </p>				
<p>AIRSPACE DESIGN AND CLASSIFICATION </p>				
<p>DATA AND SECURITY </p>				
<p>PEOPLE ORGANISATION AND TALENT </p>				

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

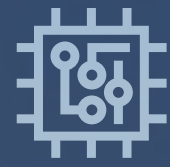
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



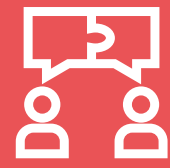
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS








A96

A holistic review of the skills needed in future aviation systems assess the skills gaps and provides a range of rewarding career paths that are attractive to the next generation of talent.

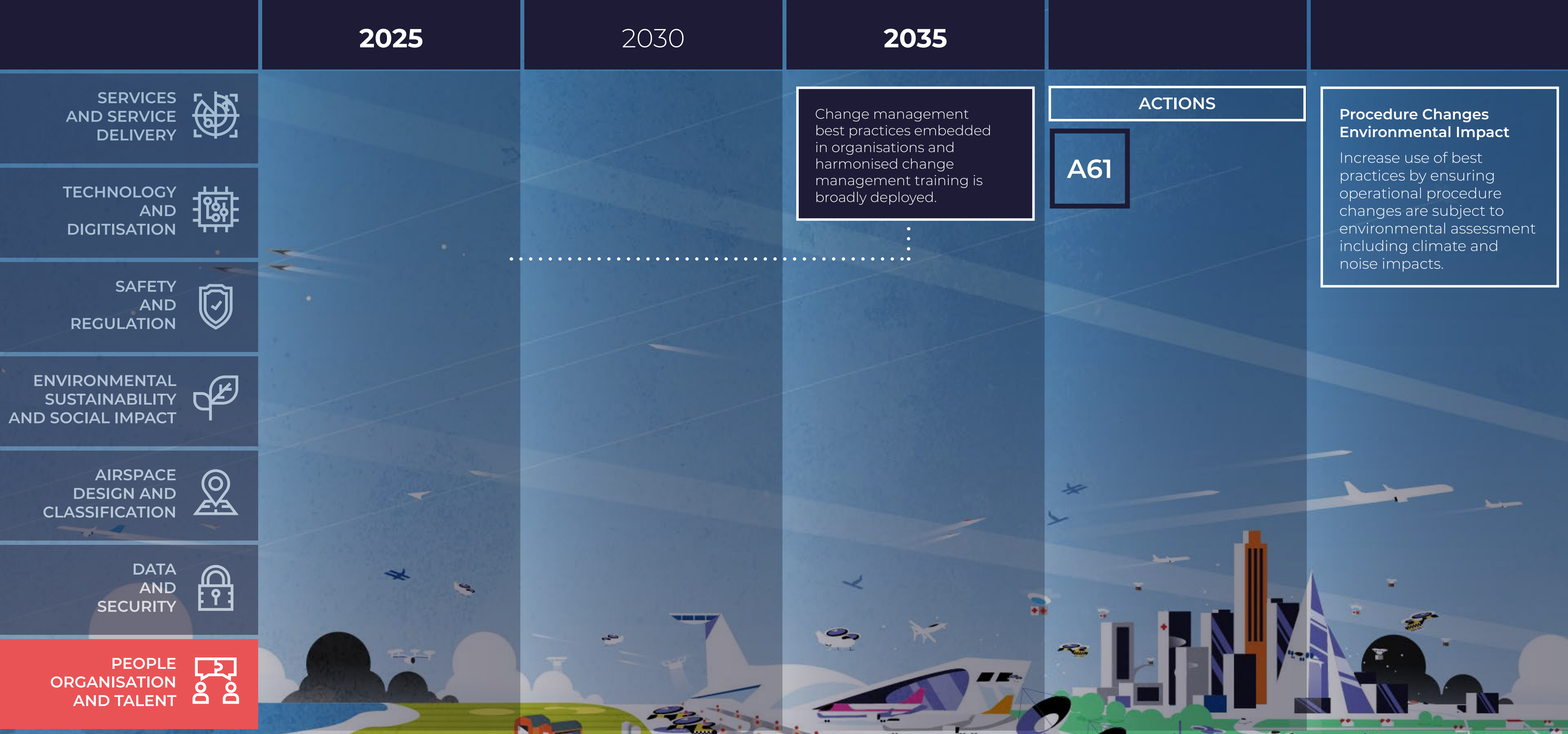
Work as Done vs Work as Imagined

Establish work plan to ensure understanding of the emergent properties of work as done vs work as imagined in the future aviation ecosystem and ensure learnings are integrated into system design.

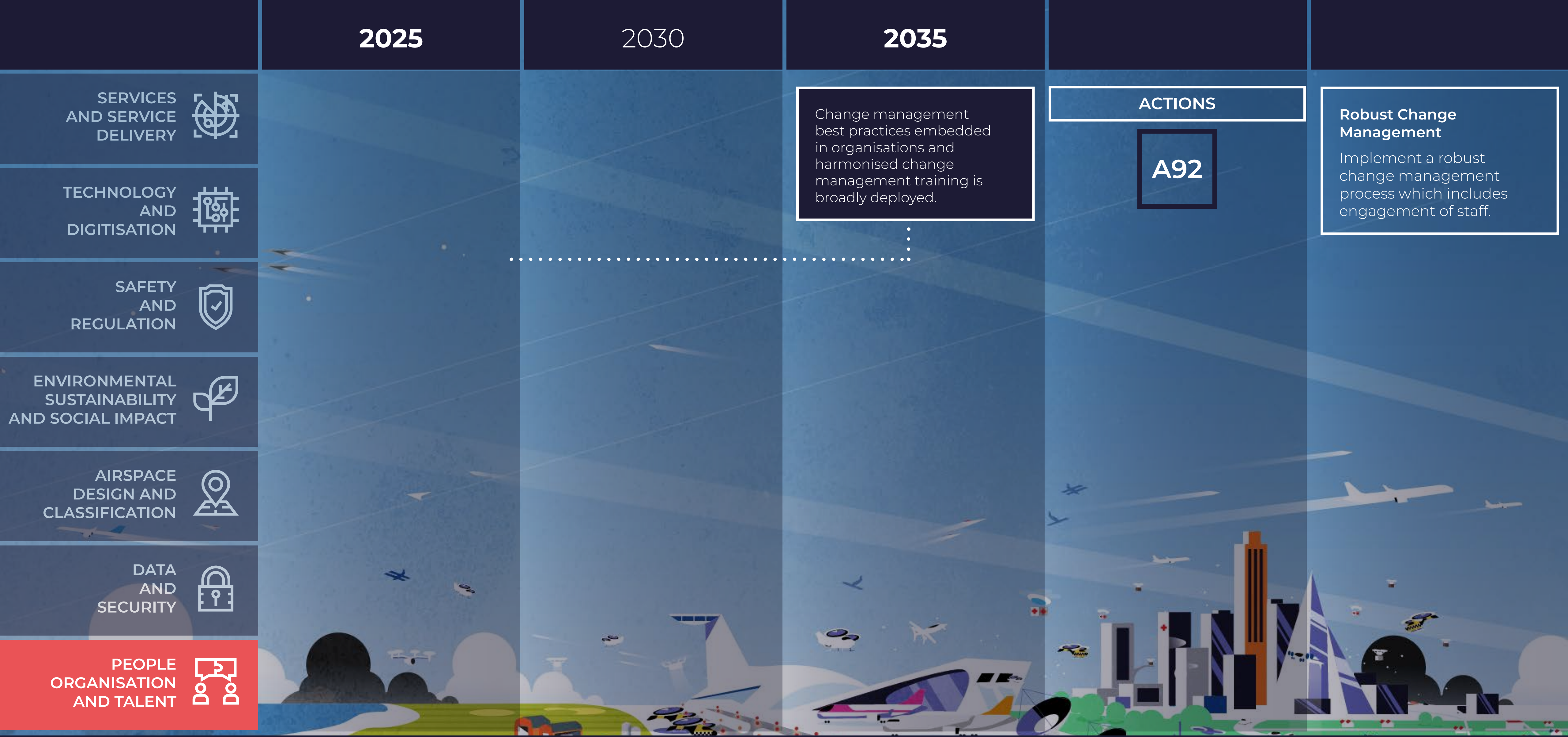
PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

	2025	2030	2035	
SERVICES AND SERVICE DELIVERY 			<div data-bbox="1692 187 2195 469" style="border: 1px solid white; padding: 5px;"> Change management best practices embedded in organisations and harmonised change management training is broadly deployed. </div>	<div data-bbox="2229 187 2772 258" style="border: 1px solid white; padding: 5px; text-align: center;"> ACTIONS </div>
TECHNOLOGY AND DIGITISATION 				
SAFETY AND REGULATION 				
ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 				
AIRSPACE DESIGN AND CLASSIFICATION 				
DATA AND SECURITY 				
PEOPLE ORGANISATION AND TALENT 				

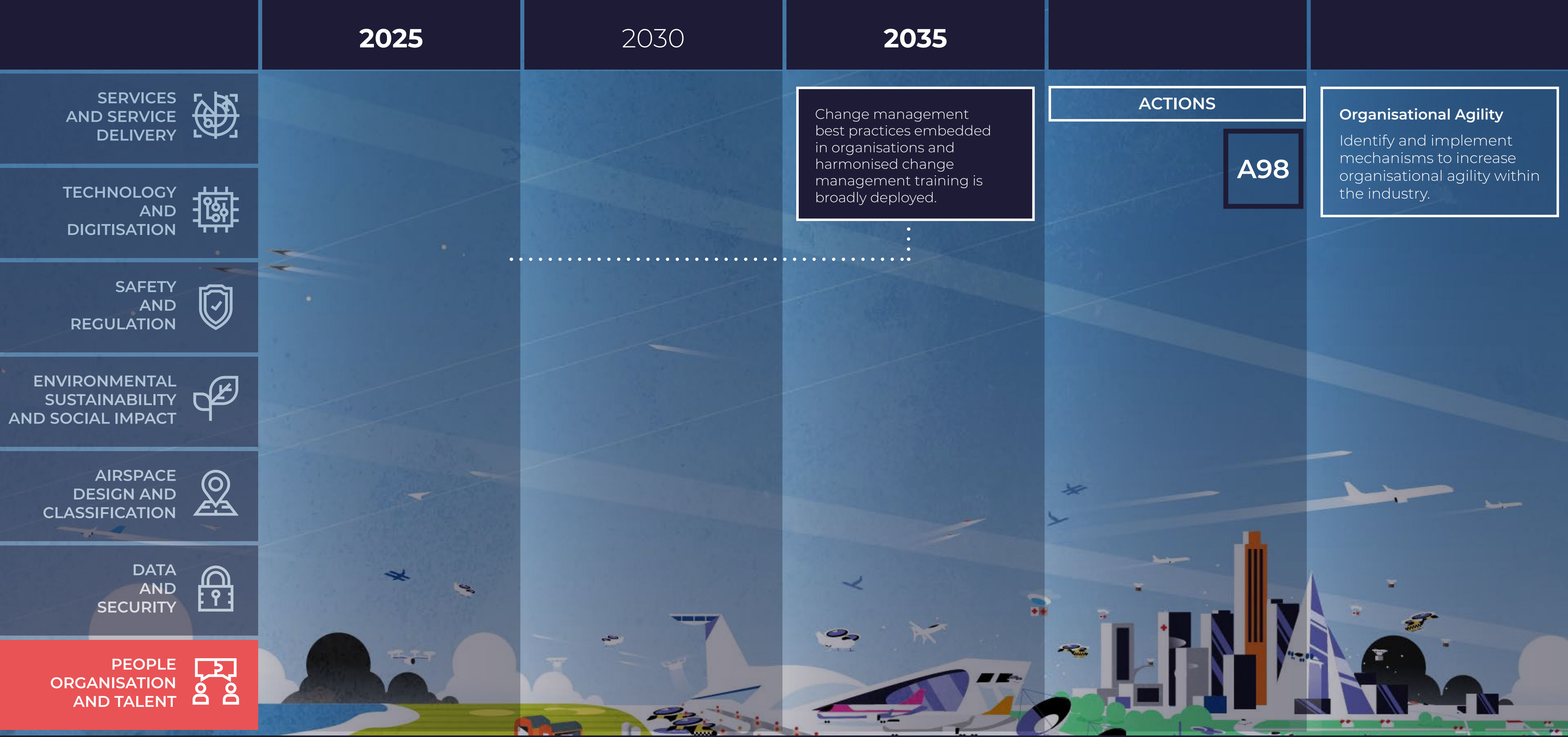
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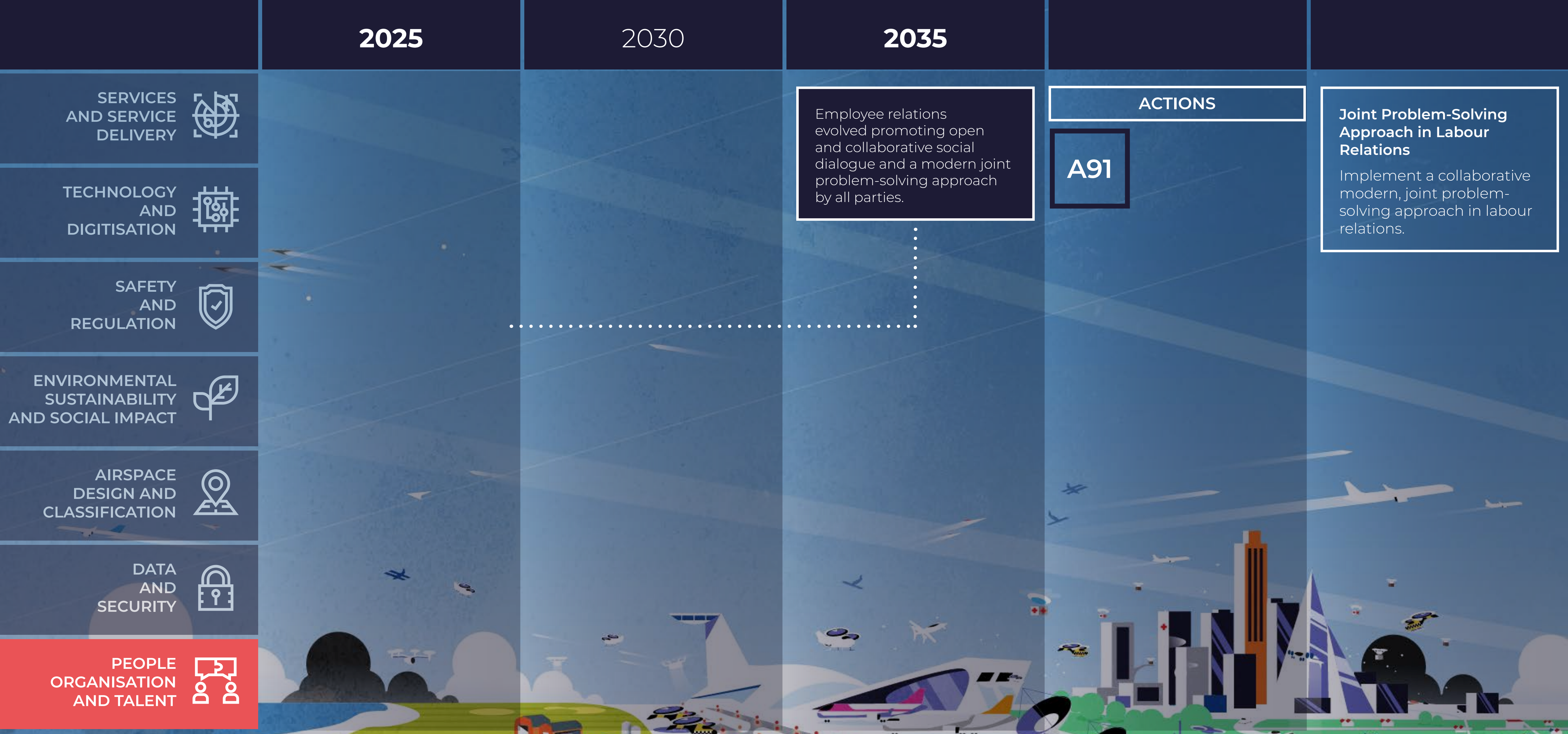
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	2025	2030	2035	
SERVICES AND SERVICE DELIVERY 			<div data-bbox="1692 187 2192 469"> <p>Employee relations evolved promoting open and collaborative social dialogue and a modern joint problem-solving approach by all parties.</p> </div>	<div data-bbox="2225 187 2772 258"> <p>ACTIONS</p> </div>
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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	2025	2030	2035	
SERVICES AND SERVICE DELIVERY 			<div data-bbox="1692 187 2195 502" style="border: 1px solid white; padding: 5px;"> <p>Diversity and Inclusion awareness campaigns ensured that measures are broadly implemented challenging norms in the industry and evolving the industry's workforce.</p> </div>	<div data-bbox="2229 187 2768 258" style="border: 1px solid white; padding: 5px;"> <p>ACTIONS</p> </div>
TECHNOLOGY AND DIGITISATION 				
SAFETY AND REGULATION 				
ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 				
AIRSPACE DESIGN AND CLASSIFICATION 				
DATA AND SECURITY 				
PEOPLE ORGANISATION AND TALENT 				

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

	2025	2030	2035	
<p>SERVICES AND SERVICE DELIVERY </p>			<p>Diversity and Inclusion awareness campaigns ensured that measures are broadly implemented challenging norms in the industry and evolving the industry's workforce.</p>	<p>ACTIONS</p> <p>A93</p>
<p>TECHNOLOGY AND DIGITISATION </p>				<p>Champion STEM Education</p> <p>Create partnerships to champion STEM education, including amongst diverse candidates.</p>
<p>SAFETY AND REGULATION </p>				
<p>ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT </p>				
<p>AIRSPACE DESIGN AND CLASSIFICATION </p>				
<p>DATA AND SECURITY </p>				
<p>PEOPLE ORGANISATION AND TALENT </p>				

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

	2025	2030	2035	
<p>SERVICES AND SERVICE DELIVERY </p>			<p>Diversity and Inclusion awareness campaigns ensured that measures are broadly implemented challenging norms in the industry and evolving the industry's workforce.</p>	<p>ACTIONS</p> <p>A94</p> <p>Enhance Recruitment Efforts</p> <p>Enhance recruitment efforts for systems engineers, data architects, analysts, and AI technicians.</p>
<p>TECHNOLOGY AND DIGITISATION </p>				
<p>SAFETY AND REGULATION </p>				
<p>ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT </p>				
<p>AIRSPACE DESIGN AND CLASSIFICATION </p>				
<p>DATA AND SECURITY </p>				
<p>PEOPLE ORGANISATION AND TALENT </p>				

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



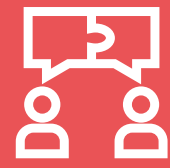
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

An immersive and digital learning experience created where people learn in the flow of work, leading to the flexible provision of training, scaled to the needs of an organisation. Flexible delivery on training using digital learning where appropriate.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



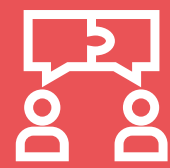
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A93

An immersive and digital learning experience created where people learn in the flow of work, leading to the flexible provision of training, scaled to the needs of an organisation. Flexible delivery on training using digital learning where appropriate.

Champion STEM Education

Create partnerships to champion STEM education, including amongst diverse candidates.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



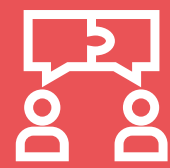
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A95

An immersive and digital learning experience created where people learn in the flow of work, leading to the flexible provision of training, scaled to the needs of an organisation. Flexible delivery on training using digital learning where appropriate.

New Training Approach
Put in place new training approaches to accelerate learning, integrate advanced technologies and enable a continuous learning culture. Integrate the psychology of human performance into training programmes - how people learn, marginal gain theory and scenario-based training.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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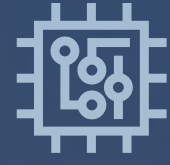
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SERVICES
AND SERVICE
DELIVERY



TECHNOLOGY
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DIGITISATION



SAFETY
AND
REGULATION



ENVIRONMENTAL
SUSTAINABILITY
AND SOCIAL IMPACT



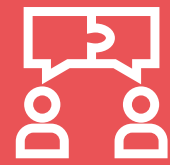
AIRSPACE
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SECURITY



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ORGANISATION
AND TALENT



Controller training improved and changes in licencing provide added flexibility in the deployment of resources that enhances scalability.



CLOSE DETAIL BOX TO ACCESS OTHER **GOALS**

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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



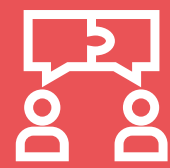
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY

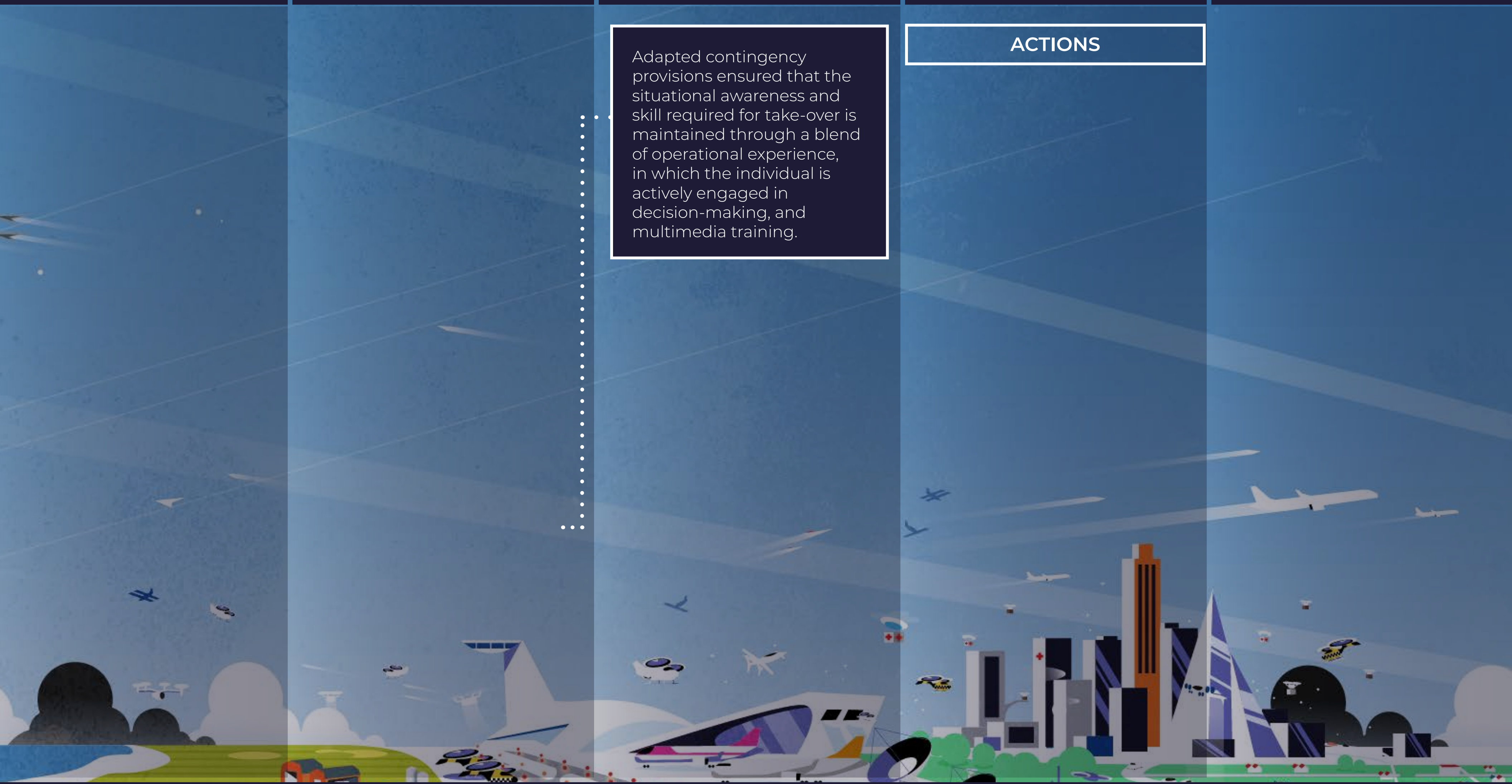


PEOPLE ORGANISATION AND TALENT

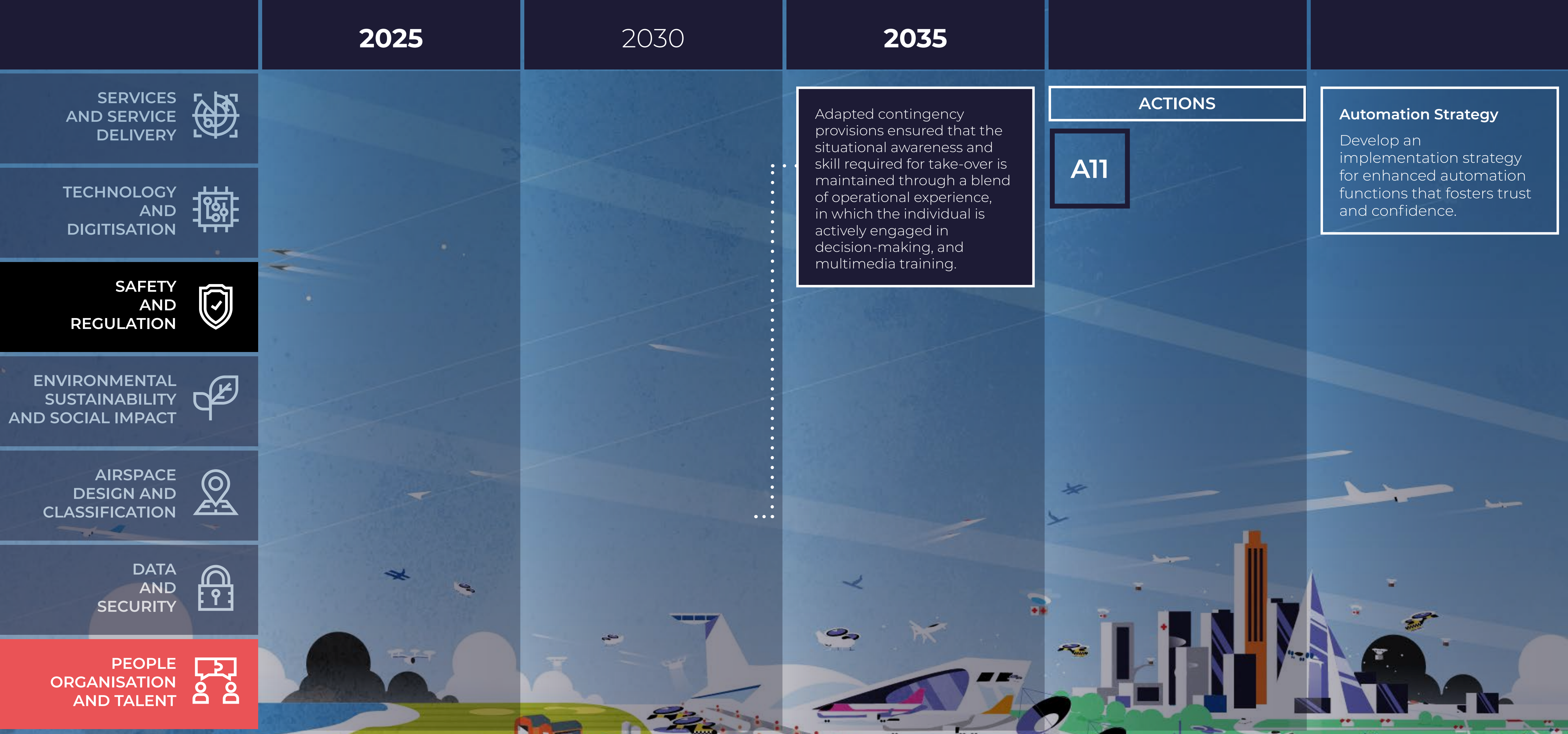


ACTIONS

Adapted contingency provisions ensured that the situational awareness and skill required for take-over is maintained through a blend of operational experience, in which the individual is actively engaged in decision-making, and multimedia training.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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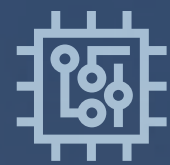
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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



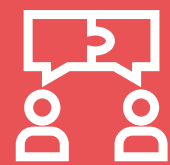
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A82

Adapted contingency provisions ensured that the situational awareness and skill required for take-over is maintained through a blend of operational experience, in which the individual is actively engaged in decision-making, and multimedia training.

Contingency Plans
Put contingency plans in place to withstand extreme attack scenarios and prevent cascading system failures.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY



TECHNOLOGY AND DIGITISATION



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ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



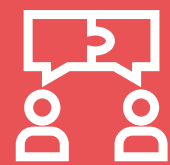
AIRSPACE DESIGN AND CLASSIFICATION



DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT



ACTIONS

A99

Adapted contingency provisions ensured that the situational awareness and skill required for take-over is maintained through a blend of operational experience, in which the individual is actively engaged in decision-making, and multimedia training.

Human in the Loop Capabilities

Establish and implement a programme of education regarding human in the loop capabilities, also including analysis to evaluate how people can keep the focus on a highly automated environment when they are required to react quickly.



PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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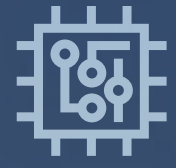
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SERVICES
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AND
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AND TALENT



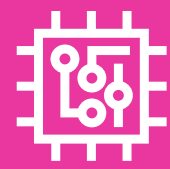
Diversity and Inclusion targets met, generating new opportunities for improved decision making and a broader consideration of business impacts.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

SERVICES
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TECHNOLOGY
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ENVIRONMENTAL
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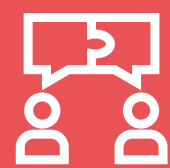
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ORGANISATION
AND TALENT



GOAL 14 High Performing Teams

The adoption of technology continues to amplify the combined strengths of humans and machines. People and technology interact seamlessly together as high performing teams.

PLEASE SELECT **MILESTONES** FOR GOAL 14

2025

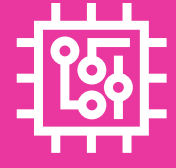
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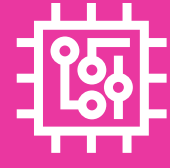
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SERVICES AND SERVICE DELIVERY



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ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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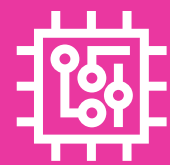
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SERVICES AND SERVICE DELIVERY



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ACTIONS

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- Value proposition for the new services
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Develop a New CONOPS

Develop a new high-level Harmonised Concept of Operations (CONOPS) for all airspace users to drive the next era of air traffic management (capturing this CATS Roadmap), including

- Higher Airspace Operations and Lower airspace operations
- Advanced Air mobility
- Operational services environment description (OSED)
- Value proposition for the new services

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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SERVICES AND SERVICE DELIVERY 

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ACTIONS

Learn from ICAO Vision for 2025

CANSO to investigate which parts of the Global Air Traffic Management Operational Concept (2005), ICAO vision for 2025 and beyond, have not been achieved yet and to extract “lessons learnt” applicable to CATS roadmap.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

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ACTIONS

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- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Integration Roadmap

Create a global ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM (so it is just TM), agreed by all stakeholders, to plot a course toward full convergence.

- Identify common technologies – for example for air-to-air conspicuity and air to ground conspicuity (surveillance)
- Determine what the role is that ATM / UTM will need to play in a fast changing environment where self-separation becomes increasingly possible and where direct and highly secure data communication becomes the common good for the majority of users
- Identification of minimum technical implementations per type of service (UAS logistics, Air Taxi, Recreational...)

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ACTIONS

Vision Alignment

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

CATS to monitor and promote alignment between CATS vision roadmap and global/ regional midterm plans.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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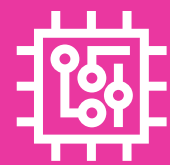
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SERVICES AND SERVICE DELIVERY



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ACTIONS

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Conflict Management
Enhanced strategic conflict management systems and capabilities.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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ACTIONS

Automation Strategy

Develop an implementation strategy for enhanced automation functions that fosters trust and confidence.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

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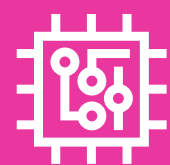
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SERVICES AND SERVICE DELIVERY



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SAFETY AND REGULATION



ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT



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PEOPLE ORGANISATION AND TALENT



ACTIONS

New ANS Financing Mechanisms

Develop new business models to address the greater diversity in aircraft operations and supporting services.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

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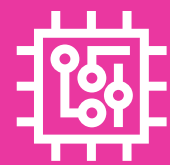
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PEOPLE ORGANISATION AND TALENT



ACTIONS

Use Cases

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Define a set of airspace scenarios and for each scenario describe the level of performance (minimum level) required for each airspace user and supporting service providers.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

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PEOPLE ORGANISATION AND TALENT



ACTIONS

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

Gap Analysis

Conduct a gap analysis between current ATM and AIM data and service requirements and future ATM and AIM data and service requirements for the airspace in 2045; capturing best practice where possible.

PLEASE SELECT BOX NUMBER TO SEE **ACTIONS**

2025

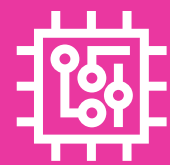
2030

2035

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



ACTIONS

Integrate Human Factors Assurance

Integrate Human Factors Assurance into the process of certifying and creating standards for technology innovations.

Innovative new high-level Harmonised Concept of Operations (CONOPS) designed for the next era of traffic management, supported by:

- Operational services environment description (OSED)
- Value proposition for the new services
- ATM-UTM integration roadmap, including a CONOPS for mixed mode ATM and UTM so it is just TM, agreed by all stakeholders, to plot a course toward full convergence

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Human in the Loop Capabilities

Establish and implement a programme of education regarding human in the loop capabilities, also including analysis to evaluate how people can keep the focus on a highly automated environment when they are required to react quickly.

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2025

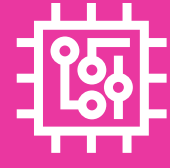
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Redistribution of Tasks

Research is undertaken based on emerging service models and CONOPS to define tasks likely to remain with humans vs those most suited to application of technology.

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2025

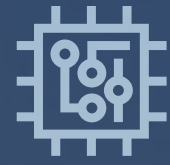
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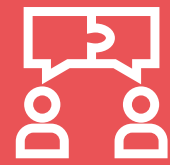
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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT

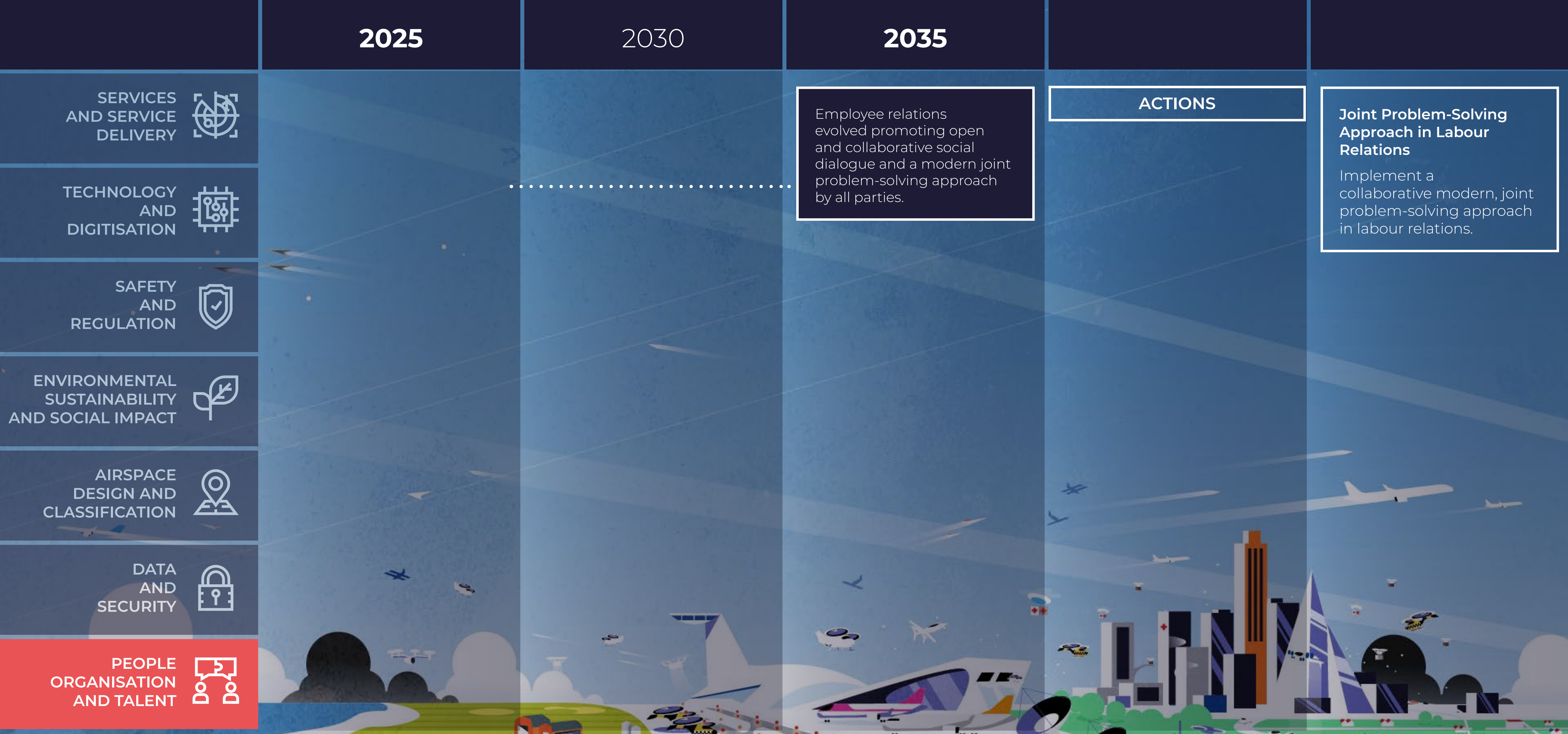


ACTIONS

Employee relations evolved promoting open and collaborative social dialogue and a modern joint problem-solving approach by all parties.



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2025

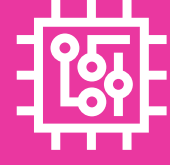
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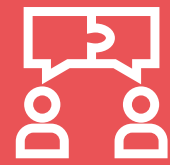
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DATA AND SECURITY



PEOPLE ORGANISATION AND TALENT

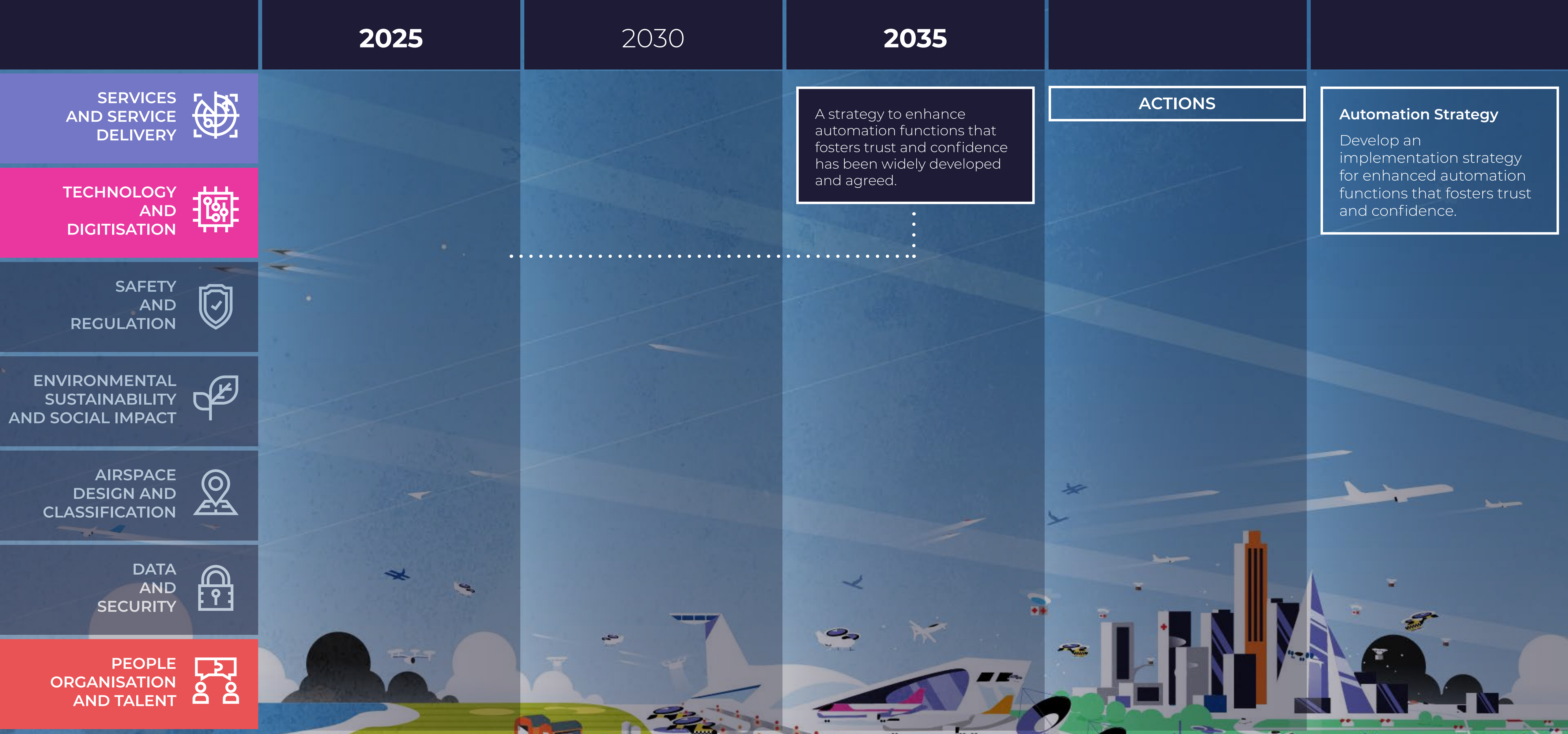


ACTIONS

A strategy to enhance automation functions that fosters trust and confidence has been widely developed and agreed.



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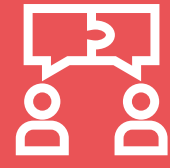
AIRSPACE DESIGN AND CLASSIFICATION



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ACTIONS

Adapted contingency provisions ensured that the situational awareness and skill required for take-over is maintained through a blend of operational experience, in which the individual is actively engaged in decision-making, and multimedia training.



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	2025	2030	2035	
SERVICES AND SERVICE DELIVERY 			<div data-bbox="1692 187 2192 645" style="border: 1px solid white; padding: 5px;"> <p>Adapted contingency provisions ensured that the situational awareness and skill required for take-over is maintained through a blend of operational experience, in which the individual is actively engaged in decision-making, and multimedia training.</p> </div>	<div data-bbox="2225 187 2772 258" style="border: 1px solid white; padding: 5px;"> <p>ACTIONS</p> </div>
TECHNOLOGY AND DIGITISATION 				<div data-bbox="2805 187 3305 497" style="border: 1px solid white; padding: 5px;"> <p>Contingency Plans</p> <p>Put contingency plans in place to withstand extreme attack scenarios and prevent cascading system failures.</p> </div>
SAFETY AND REGULATION 				
ENVIRONMENTAL SUSTAINABILITY AND SOCIAL IMPACT 				
AIRSPACE DESIGN AND CLASSIFICATION 				
DATA AND SECURITY 				
PEOPLE ORGANISATION AND TALENT 				

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