Stratospheric Operations: The European perspective

Robin Garrity
ATM Expert, Airports and Airspace User Operations
SESAR Joint Undertaking
Drone Enable #3
Montreal, 14th November 2019
What’s the problem?

- New stakeholders / operators
- New vehicle types
- Hugely varied vehicle performance
- Unknown network impact
- Unknown performance requirements
- New services
- New airspace division/classification/concept?
- New flight rules?
- New separation-provision concepts and criteria?
- High degrees of digitalization and automation
Lessons 1 (U-Space)

• A set of *new services* relying on a high level of *digitalisation and automation* of functions and specific procedures designed to support safe, efficient and secure access to airspace for *large numbers of drones*.

• An *enabling framework to facilitate any kind of routine mission*, from the inspection of infrastructure or delivery of goods to more complex future applications such as *urban air mobility*.

• Concept is similar to the CTMS Conops:
  • Collaborative
  • Competitive
  • Service-based
Lessons 2 (RPAS)

- Allowing RPAS to fly safely among manned aircraft will not be achieved in a ‘Big Bang’
- An iterative approach is being adopted:
  - Accommodation
  - Integration

- In order to truly ‘integrate’ we need a step-wise approach, understanding and addressing the needs of many new vehicle types with potentially very different needs
- This will require ‘accommodating’ new users until the whole ATM system is ready to evolve as one environment
- CTMS will need to work smoothly with the existing ATM environment
Airspace in Europe

ACCs in Europe.
European airspace architecture

- Moving from highly-fragmented to seamless and resilient operations
- Moving from ACC-centric services and infrastructure to a service-based architecture
SESAR Activities

• Airspace Architecture Study Transition Plan published – the foundation for future SESAR research
• U-space research continues – but we are a long way from a finalised concept, never mind implementation
• New Exploratory Research Call now being evaluated, including a project to define a new Conops for ‘Higher Airspace Operations’ in Europe
Conclusions

- Stratospheric operations are *here, and demand is growing*
- The variety of new users is staggering, which introduces *significant challenges*
- *Detailed research and development is needed* to devise solutions, including into innovative proposals like the CTMS Conops
- Introducing such new operators and stakeholders mirrors the U-space (UTM) revolution, and lessons can be learned and applied from that experience, but *U-space (UTM) is still in development* and the concept needs *substantial evaluation* for applicability in the Stratospheric context
- All *current and new operators and stakeholders need early involvement*, in particular those new to aviation and existing service providers, in order to achieve a consensual solution
- An *iterative approach*, as adopted for RPAS integration, allows for accommodating new users while work continues on defining the model for full integration
- Europe requires *global regulatory provisions* to enable development of a *pan-European approach* to managing stratospheric operations
Thank you very much for your attention!

For more information: https://sesarju.eu/