

Delivering Intelligent Mobility in the Aviation Sector: Gaps and Barriers –



Airbus S.A.S - Visualizing the Value Chain

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Aviation and ...connected things



On the ground:

-it could be mounted *displays, mobile or wearable devices* combined with sensors... to either *help passengers navigate* their surroundings, identify themselves at check-in, lounge or boarding areas or track objects such as baggage and cargo



In the air:

-it could be *intelligent aircraft cabins* that have *sensors built in to seats* that could monitor passengers' *tiredness, temperature or hydration levels* to automatically change the cabin environment or alert crew to take a specific action.

Aviation surroundings will be soon orchestrated by myriad **automated processes**.



Aviation and its Environmental Impact

- aviation may grow only within the environmental limits, facing several challenges which are growing rapidly
- Need to explore how the implementation of novel technologies may facilitate **improved operational procedures** to reduce **noise and emissions** impact
- Investments in innovative projects are fundamental for the efficiency of the UK (Single) Sky.
- Tackling limits to growth in the air and on the ground is a very demanding task while considering the balance of a sustainable future (development).

Aviation IT solutions

- operational excellence
- seamless IT integration
- an improved customer experience



Growing Concerns

- The growing concern: **environmental challenges are not well captured in existing Aviation Strategies**
 - The Policy on *Aviation and Airports* (2016), sets clearly the prerequisite to look at the impact of air travel on **climate change, local air quality** and also on **noise** levels for people living near airports.
 - Research focus on aviation related **environment and energy** topics
 - Need for increased dialogue with communities around airports & passenger to contribute to the **CDM- collaborative decision making process**





Gaps and Barriers

Gaps: lack of integration...aviation projects on environment are not integrated with transport projects

Impact:

Local: noise & emissions...NOx , PM, UFP

Global: CO2

Barriers: *communication, understanding the needs from other transport sector:*

Need to

- deliver **an integrated, seamless & sustainable transport**
- provide technical advice and will *validate barriers, solutions and new communications tools.*

Exploring the Research Needs

- *Policy makers and researchers need a complete picture of what **research and innovation** is being conducted, to identify how the (UK) aviation goals are being met*
- **Need to:**
 - Explore the requirements related to **Noise Policy** and **barriers to implementation** : *noise & health, LUP approach and compensation schemes*
 - Examine the challenges policy makers (national) will face, to implement the **global market based measures instruments** [*ICAO_CORSLA; solutions for domestic aviation included*]
 - Explore the existing **gaps** in **Airport Local Air Quality** research and their links to health impact



Moving forward...IoT & Big Data

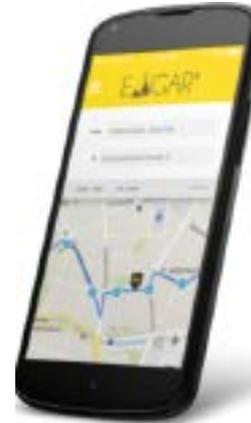
- Indicate **research priorities** associated to Aviation Strategy-environment, designing a SRIA (Strategic Research and Innovation Agenda) at UK level
- Examine existing gaps & barriers related to **metrics, success measures** and *delivery programme*
- Engage more often with different stakeholders and create a **knowledge hub/network**, which may work as a source-based tool
- Indicate the main challenges going further:
 - capturing health impacts related to Noise & Local Air Quality**Explore the role of disruptive technologies** in the future development of the aviation sector !



Aviation needs to be part of an integrated, seamless transport system

MaaS

- Big Data for transport, including aviation
- Advanced Energy solutions
- IoT Global City Demonstrator



IM in aviation will reduce congestion and diminish the environmental impact!

Greater transparency creates opportunities



- By illustrating the consequences of *changes to technology* (mobile data) and/or operational procedures, local communities can:
 - Understand the implications for them
 - Form an opinion
 - Participate in decision-making
 - Builds trust and potentially tolerance

- IoT to help communication airport-residents

IM & Future Challenges



- Community engagement in environmental management needs to be part of wider dialogue over the **social acceptance of air transport**
- Engagement techniques are intensive and thus expensive – are there more efficient means of achieving similar outcomes?
- To what extent does community engagement need to be tailored to local circumstances?
- Will a more consistent airport community approach lead to greater credibility?
- How can airport activity be linked to wider quality of life considerations

Gap: societal needs vs research responses.

How can IM help with behavioural change, considering societal acceptance of rapidly developed technologies?

Thank You!

