Advisory Council for Aviation Research and Innovation in Europe

The ACARE SRIA Update

Dataset2050 workshop, 20-September-2017
ACARE timeline

A comprehensive response to Vision 2020

Maintaining global leadership & serving society’s needs

Flightpath 2050

SRIA- 2012

15 years of successful Innovation

Advisory Council for Aviation Research and Innovation in Europe
New topics have come up, e.g.

- dynamic developments in the field of IT e.g. big data, automation, digitilisation, industry 4.0
- new manufacturing processes vital for manufacturing industry
- new system concepts, e.g. more electrical flying
- broader scope and accelerated market takeup of RPAS / UAS
- repercussions of MH370 / MH 17 / 4U 9525
- increased focus on security
Boundary conditions have changed since the SRIA was published in 2011, e.g.

- competitiveness of European air transport stakeholders (airlines and airports) is even more at risk
- effects of financial crisis are still felt in many parts of Europe
- a new European parliament and commission set new priorities, e.g. the energy union or the Strategic Transport Research and Innovation agenda
- sufficient availability of alternative fuels and its implications seems questionable
- ‘new‘ environmental issues gain importance, e.g. particulate matter
- international battle for talents is getting more intense
- the use and availability of online education programs is increasing
And the research baseline had changed…..

- **Results of FP7, Clean Sky and SESAR** delivering new technologies, common concepts and opportunities.
- **Results of CSAs** triggering changes in some challenges.

Update was performed to ensure that the SRIA

- remains **THE state-of-the-art strategy and reference document** for European aviation with the aligned position of the whole aviation sector on research and innovation needs,
- provides valid **input to next FP or national research programs**
- remains a valid source for position papers and/ or consultations
- contains valid **recommendations endorsed by GA**
ACARE SRIA Update

Dates:

• Launch: October 2015 @ Aerodays in London
• Publication Volume 1: 21-June-2017 @Le Bourget
• Publication Volume 2: 30-September 2017

For ACARE WG1 addressing the mobility challenge the update meant

• 8 full WG1 meetings
• 3 extra workshops
• … and lots of extra hours in the offices…. 

A special thanks to Innaxis for hosting the web-based workspace !!
Scope:

SRIA Volume 1:
- 2nd edition with updated content and improved readability

SRIA Volume 2:
- Updated content
- Restructured in line with new Volume 1 action orientation
- Improved accessibility to content and information
- Electronic version only
ACARE SRIA Update - Approach

Identification of 'trigger factors' (i.e. factors that have changed since 2012)

Implications for Volume 1, restructure to more action orientation

Implications for Volume 2, consolidate, restructure to action areas
Top 5 trigger factors for mobility challenge

- Competitiveness of European air transport stakeholders (airlines and airports) is even more at risk
- Decision at COP 21 to de-carbonize transport
- IT – new opportunities and threats
- New mobility system concepts, stakeholders, business models and vehicles
- Progress towards the integrated transportation system is slower than hoped for
### Volume 1 Action Areas by challenge

<table>
<thead>
<tr>
<th>Mobility</th>
<th>Competiveness</th>
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<tbody>
<tr>
<td>Understand customer, market and societal expectations and opportunities</td>
<td>Increase competitiveness in product industrialization</td>
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<tr>
<td>Design and implement an integrated, intermodal transport system</td>
<td>Develop high value manufacturing technologies</td>
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<tr>
<td>Develop capabilities to evaluate mobility concepts, infrastructure and performance</td>
<td>Embed design for excellence in the product lifecycle</td>
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<tr>
<td>Provide travel management tools for informed mobility choices</td>
<td>Secure continued and focused investment</td>
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<td>Deliver mobility intelligence: journey information, data and communication</td>
<td>Exploit the potential of operations and maintenance, repair and overhaul (MRO)</td>
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<tr>
<td>Provide tools for system and journey resilience, for disruption avoidance and management</td>
<td>Develop innovative and optimized testing</td>
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<tr>
<td>Evolve airports to become integrated, efficient and sustainable air transport interface nodes</td>
<td>Establish new business and enterprise models and initiatives</td>
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<tr>
<td>Design and implement an integrated information, communication, navigation and surveillance platform</td>
<td>Lead the development of standards</td>
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<tr>
<td>Develop future air traffic management concepts and services for airspace users</td>
<td>Streamline certification</td>
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<tr>
<td>Address cross-cutting issues: system intelligence, human factors and automation support, autonomy and resilience</td>
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<tr>
<td>Environment &amp; Energy</td>
<td>Safety &amp; Security</td>
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<tr>
<td>Develop air vehicles of the future: evolutionary steps</td>
<td>Collaborate for safety</td>
</tr>
<tr>
<td>Develop air vehicles of the future: revolutionary steps</td>
<td>Optimise human and organisational factors for safety</td>
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<tr>
<td>Increase resource use, efficiency and recycling</td>
<td>Build and exploit safety intelligence</td>
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<tr>
<td>Improve the environmental performance of air operations and traffic management</td>
<td>Ensure operational safety</td>
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<tr>
<td>Improve the airport environment</td>
<td>Design, manufacture and certify for safety</td>
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<tr>
<td>Understand aviation's climate impact</td>
<td>Collaborate for security</td>
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<tr>
<td>Provide the necessary quantity of affordable alternative energy sources</td>
<td>Engage aviation personnel and society for security</td>
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<tr>
<td>Adapt to Climate Change</td>
<td>Build and exploit security intelligence</td>
</tr>
<tr>
<td>Develop incentives and regulations</td>
<td>Ensure operational security</td>
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<tr>
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<td>Design, manufacture and certify for security</td>
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The following topics of the mobility challenge have gained relevance and are better reflected in the updated SRIA:

1. Air transport ground infrastructure
2. Competitiveness of European air transport stakeholders in a global context
3. Effect of increased volatility in mobility flows
4. Disruption forecast & handling (e.g. by predictive analysis)
5. Data science applications, AI, machine learning, computing infrastructure and cyber security
6. Integration of autonomous vehicles or RPAS
Link to SRIA Volume 1:


Volume 2 coming soon ....
The number of R&I needs was reduced from 446 to 284... 😊
Thank you!!

ACARE – ADDRESSING NEW HORIZONS IN AVIATION

ACARE – Advisory Council for Aviation Research and Innovation in Europe

www.acare4europe.org
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SRIA update 2017

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20/09/17
Strategic Research and Innovation Agenda (SRIA)

Road map for aviation research, development & innovation

Content aligned to five goals of Flightpath 2050:

- Meeting Societal and Market Needs
- Maintaining and Extending Industrial Leadership
- Protecting the Environment and the Energy Supply
- Ensuring Safety and Security
- Prioritising Research, Testing Capabilities & Education

Update published in 2017
To achieve the Flightpath 2050 goals, Europe must:

- Lead the development of an integrated resilient European air transport system
- Maintain global leadership
- Establish efficient and effective policy and regulatory frameworks
- Provide incentives and long-term R&T programmes
- Champion sustainable growth to further reduce emissions/noise
- Maintain the sector’s safety track record
- Provide long term thinking