AirTN and the contribution to ACARE goals

Air-TN Final Project Meeting
Bonn, 11 December 2013

ACARE / Christoph Schneider

ACARE achievements so far

ACARE

A comprehensive response to Vision 2020

EUROPEAN AERONAUTICS:
A VISION FOR 2020

Strategic Research Agenda

- **Responding to society's needs**
- **Securing global leadership for Europe**

2002

SRA-1

STRATEGIC RESEARCH A

2004

SRA-2

2008 Addendum to Strategic Research Agenda

2008

Addendum

Flightpath 2050

A decade of Successful Innovation

Success stories and benefits beyond aviation

Flightpath 2050 Europe's Vision for Aviation

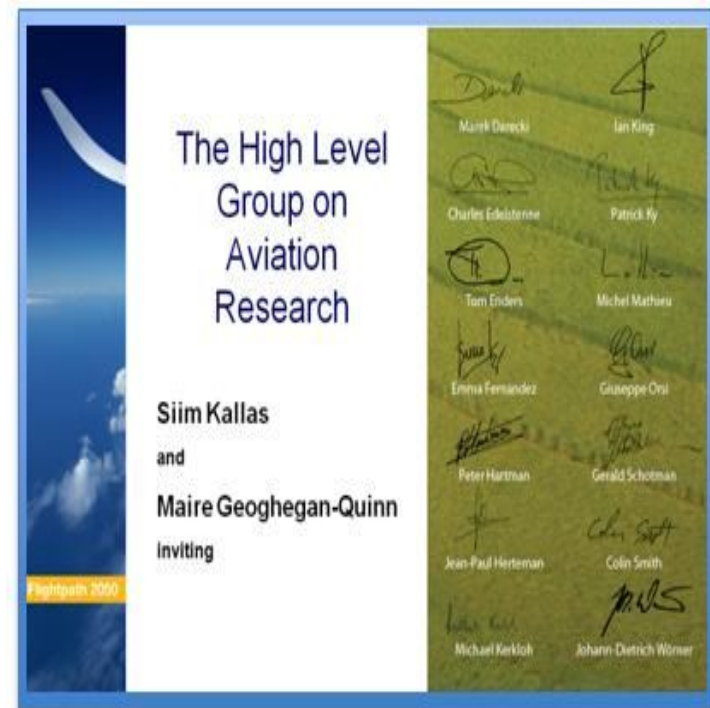Strategic Research & Innovation Agenda
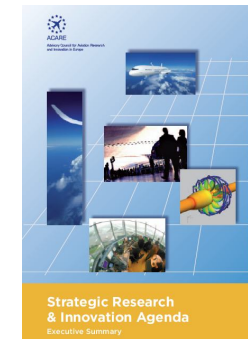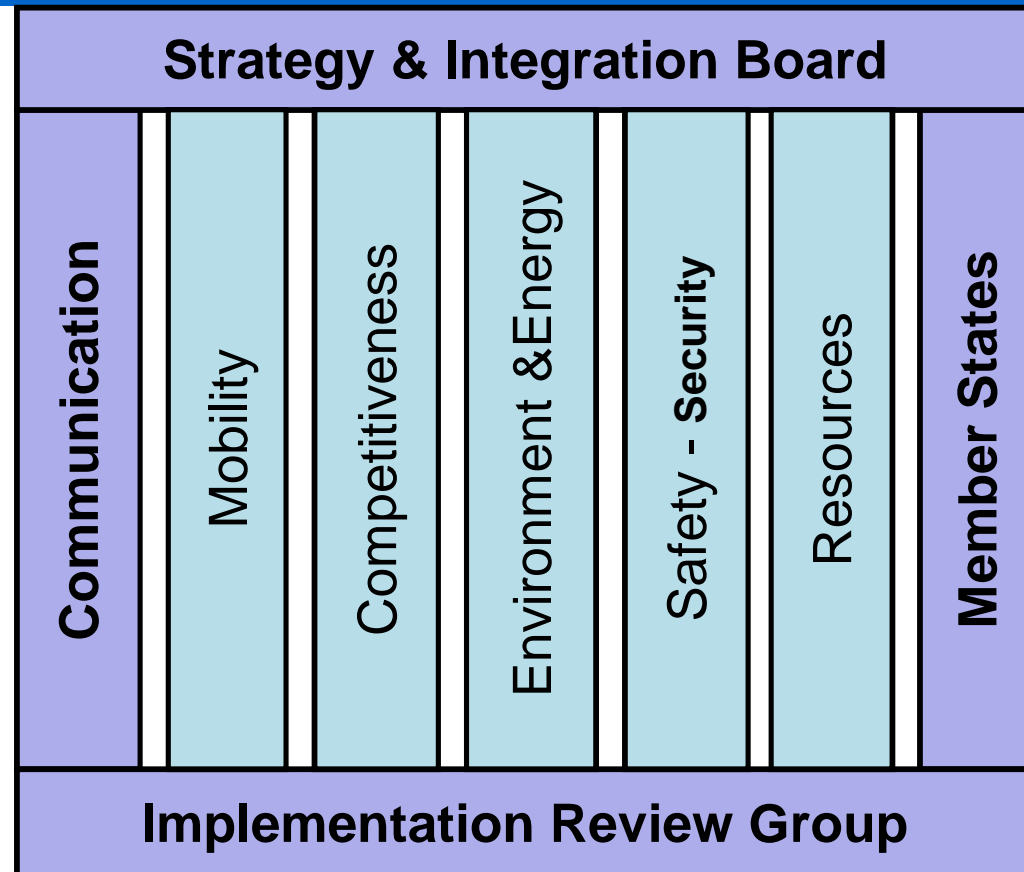
SRIA- 2012

ACARE Mission

ACARE

- ➢ **Establish a network for strategic research in aviation for all European stakeholders**

- ➢ **Develop and maintain the Strategic Research and Innovation Agenda (SRIA) and monitor implementation at European and national levels**

- ➢ **Make strategic and operational recommendations to achieving the goals of Flightpath 2050**

- ➢ **Maintain links with the relevant technology sectors and other transport modes**

The High Level Group on Aviation Research

Siim Kallas
and
Maire Geoghegan-Quinn
inviting

Marek Darecki — Ian King
Charles Edelstenne — Patrick Ky
Tom Enders — Michel Mathieu
Emma Fernandez — Giuseppe Orsi
Peter Hartman — Gerald Schotman
Jean-Paul Herteman — Colin Smith
Michael Kerkloh — Johann-Dietrich Wörner

- ➢ **Develop and implement a communication strategy to promote awareness of the SRIA**

- ➢ **Facilitate stakeholder co-operation in Europe and internationally as well as aviation representation at events and forums**

ACARE structure & membership

ACARE

General Assembly

- 28 Member States
- European Commission
- Manufacturing Industry
- Airlines
- Airports
- Air Navigation
- EASA
- Eurocontrol
- Research Centres
- Universities
- Energy
- Regulators

Over 50 members

Strategy & Integration Board

| Communication | Mobility | Competitiveness | Environment &Energy | Safety - Security | Resources | Member States |

Implementation Review Group

Strategic Research and Innovation Agenda (SRIA)

ACARE

Road map for aviation research, development & innovation

Content aligned to five goals of Flightpath 2050:
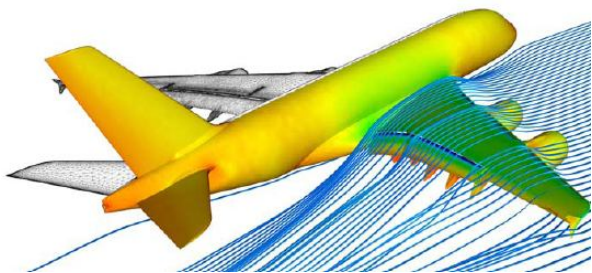
Meeting Societal and Market Needs

Maintaining and Extending Industrial Leadership

Protecting the Environment and the Energy Supply

Ensuring Safety and Security

Prioritising Research, Testing Capabilities & Education

Published in 2012

1) Mobility

> **Aviation as an integral element of the Single European Transport Area** – creating the basis for user-centric, integrated seamless travel in Europe

> **Travel process management**
> Tools for inter-modal door-to-door travel choice, single ticketing, easily reconfigurable journey

> **Processes, technologies & communication systems** for resilient, predictable and seamless global passengers & freight traffic management

©RWTH

Seamless door to door travel in 4 hours. Handling 25 million flights per year in Europe.

2) Competitiveness

Development of technology: **Radical new aircraft architecture**

Efficient processes for development, manufacturing, testing and certification

Optimised **public-private investment**

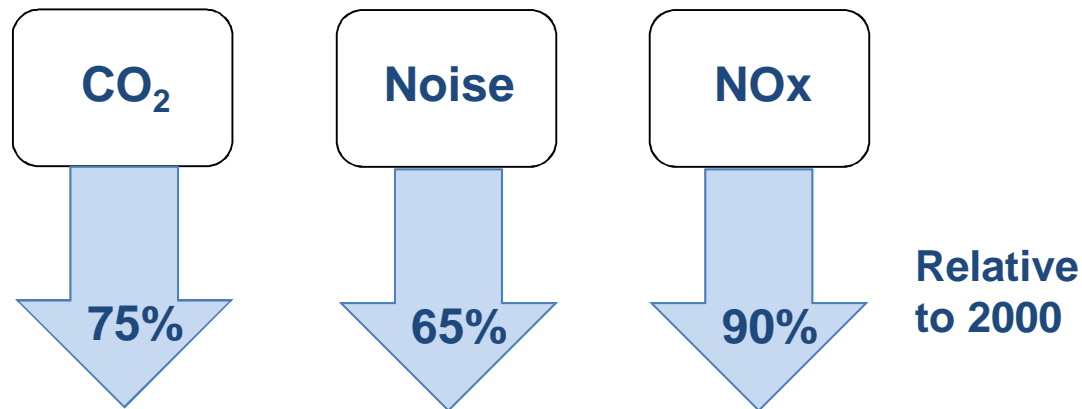**Policy and Regulatory framework** promoting **innovation**

Maintain Leading Edge Design, Manufacturing, System Integration Capabilities and jobs

3) Environment and Energy

By 2050, per passenger kilometre:

CO_2	Noise	NOx
75%	65%	90%

Relative to 2000

Optimise air operations and traffic management

Improve airport noise and air quality

Provide affordable and sustainable alternative fuels
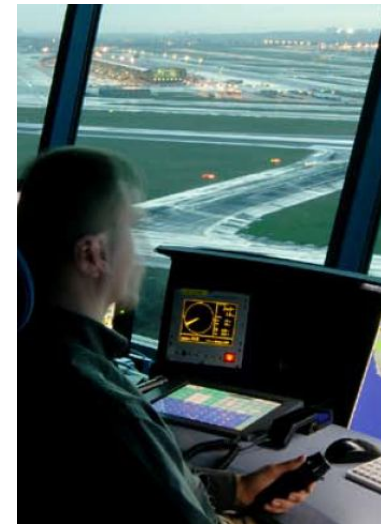
Atmospheric Research

4) Safety & Security

ACARE

Efficient, queue-free and threat modulated processing

Defences against hostile cyber activity

Safety hazard mitigation

Air vehicle operations and Traffic Management

Human centred automation

- Passenger and personnel / crew

Less than one accident per ten million commercial aircraft flights

5) Resources


Strategic roadmap on research infrastructures, test, simulation and development facilities

Multidisciplinary clusters of excellence.
Joint effort : e.g. flying test beds (X-planes)

Fully integrated European Aviation education system to attract talent, tailored to the sector needs.
University and industry partnerships

**Courses offered by European Universities closely match the needs of Aviation Industry**
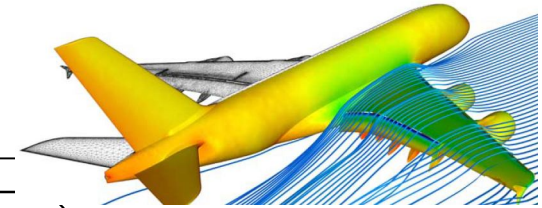
SRIA - Recommendations

To achieve the very ambitious Flightpath 2050 goals, Europe (as a whole, not just the EC) **must join forces and align efforts to:**

- ➢ **Lead the development of an integrated resilient European air transport system**

- ➢ **Maintain global leadership**

- ➢ **Champion sustainable growth to further reduce emissions/noise**

- ➢ **Improve the sector's safety track record even further**

- ➢ **Establish efficient and effective policy and regulatory frameworks**

- ➢ **Provide incentives and long-term R&T programs**

- ➢ **Provide long term thinking**
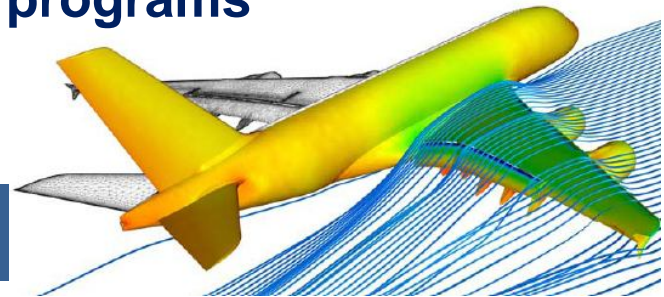
Strategy, Networking, Monitoring

SRIA - Implementation

Implementation of SRIA needs

- ➢ a close cooperation of <u>all</u> stakeholders and

- ➢ the support of the entire innovation chain including

  - ➢ Industrially oriented research and test infrastructures

  - ➢ Small and medium sized research projects and

  - ➢ Public Private Partnerships (PPP's) e.g. Clean Sky and SESAR

- ➢ Horizon 2020 and national programs will be key elements

- ➢ January 2014 start

Horizon 2020

 ACARE

ACARE role during implementation of H2020 as Advisory Council:

➢ **Close cooperation of all Stakeholders**

➢ **Ensure H2020 reflects SRIA priorities**

➢ **Cover the full cycle of R&TD from:**

    ❑ **incubating new breakthrough ideas**

    ❑ **fundamental research**

    ❑ **full scale system/sub-system demonstration**

➢ **Alignment between H2020 and national programs**

➢ **Working Groups to assess level of completion of ACARE goals and identify gaps and priorities – CA's**

January 2014 start
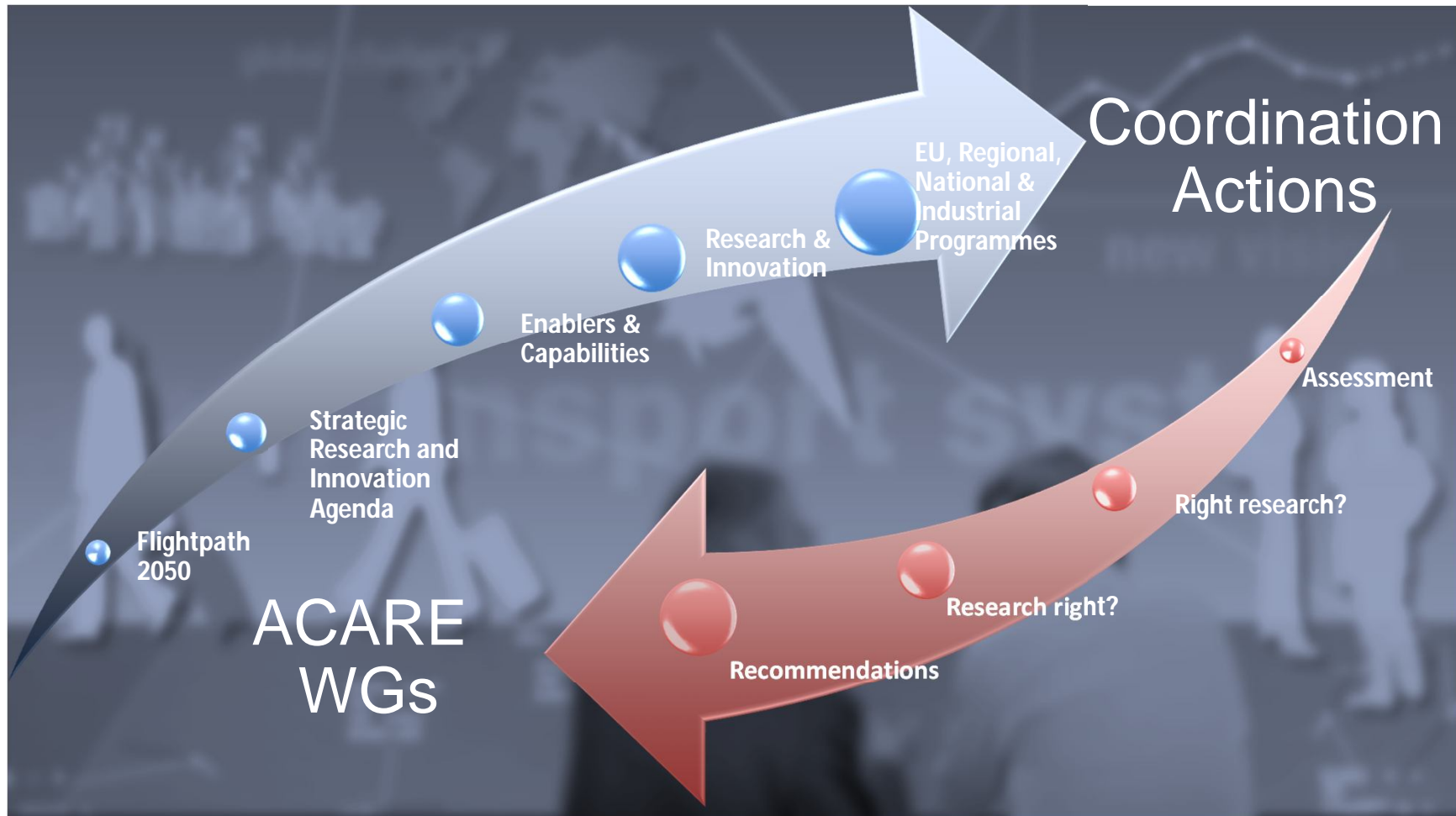
Coordination Actions

- Time Efficiency [WG1 Mobility]:

   CATER

- Cost Efficiency [WG2 Competitiveness] :
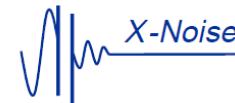
   CAPPADOCIA

- Environment [WG3 Environment & Energy]:

   - **FORUM-AE** (emissions)

   - **CORE-JetFuel** (alternative fuels)

   - **X-Noise** (noise (started 12/2010))

- Safety [WG4 Safety - Security]:

   OPTICS

Common tasks of CAs *

ACARE

- ## Yearly basis:
  - State of the art of R&I
  - Identify gaps
  - Formulate recommendations

- ## Over the project duration
  - Assess progress towards ACARE goals
  - Web central entry point for relevant projects
  - Dissemination

* Tasks may slightly differ for CORE-JetFuel which has a specific Topic

Thank you → Questions?

ACARE

Flightpath 2050 Launch
at EC Aero days
2011 in Madrid

SRIA Launch
at ILA Air Show
2012 in Berlin

www.acare4europe.org