



The RINGO proposal – a new, holistic approach for the identification of aviation research infrastructure needs in Europe

Dr.-Ing. Gerrit von Borries

A satellite view of the Earth, showing the continent of Europe and the surrounding Mediterranean region. The image is a curved slice of the globe, with the blue of the oceans and the green and brown of the landmasses clearly visible. The text "Knowledge for Tomorrow" is overlaid on the right side of the image.

Knowledge for Tomorrow



Just about **125 years** ago ...



... mankind mastered flying with **heavier-than-air** concepts



Over the following century ...

... **heavier-than-air** concepts
steadily **improved**



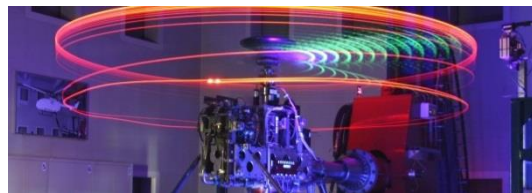
Airbus A380 and rebuilt Otto Lilienthal Glider in 2016 – Source: Airbus/DLR



Over the following century aviation research facilities evolved all over Europe



WIND TUNNELS



TEST BENCHES



FLIGHT TEST BEDS



MATERIAL FACILITIES



SIMULATORS



SUPERCOMPUTERS

**Nucleus:
Aerodynamics**



Source pictures above: DLR — Source pictures below: Europäische Investitionsbank EIB (www.eib.org)



How about the future of European research infrastructures (RI)?

What are the RI needs of the future?



Source picture: Europäische Investitionsbank EIB (www.eib.org)

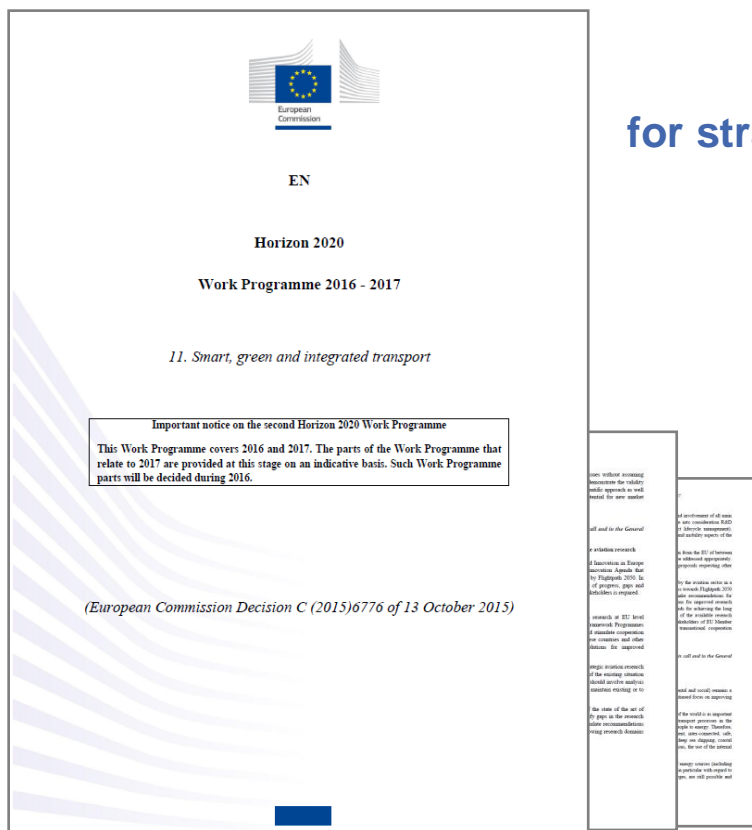


Call from the European Commission

H2020 ▶ Work Programme 2016-17 ▶ RI Call published: 15 October 2015

Topic: MP-1.5-2016-2017

“Identification and assessment of the needs, gaps and overlaps for strategic aviation research infrastructures in Europe.”



Coordination and Support Action Proposal Submission on 26 January 2016



RINGO consortium partners

Research Infrastructures – Needs, Gaps, Overlaps



Centro Italiano Ricerche Aerospaziali



Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center



representing the association of research establishments



RINGO consortium partners *+ involvement of further stakeholders*

| Partner | Country | Domain |
|---|---------|------------|
| DLR – Deutsches Zentrum für Luft- und Raumfahrt | DE | Research |
| CIRA – Centro Italiano Ricerche Aerospaziali | IT | Research |
| DNW – Stichting Duits-Nederlandse Windtunnels | NL | Research |
| INTA – Instituto Nacional de Tecnica Aeroespacial Esteban Terradas | ES | Research |
| ONERA – Office National d'Etudes et de Recherches Aérospatiales | FR | Research |
| DBL – Deep Blue | IT | SME |
| EVALUE Innovacion | ES | SME |
| UPM – Universidad Politecnica de Madrid | ES | Higher Edu |
| RWTH – Rheinisch-Westfälische Technische Hochschule Aachen | DE | Higher Edu |
| TUD – Technische Universiteit Delft | NL | Higher Edu |
| PIAGGIO – PIAGGIO Aero Industries | IT | Industry |
| AIRBUS – AIRBUS SAS | FR | Industry |
| EASN – EASN Technology Innovation Services | BE | Others |
| RB – Roland Berger | DE | Others |



Today's approach

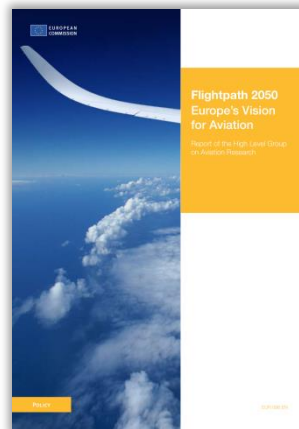
Available RI



What
do
we
have?

Challenges 2050

Flightpath 2050



Meeting societal & market needs

Maintaining and extending industrial leadership

Protecting the environment and the energy supply

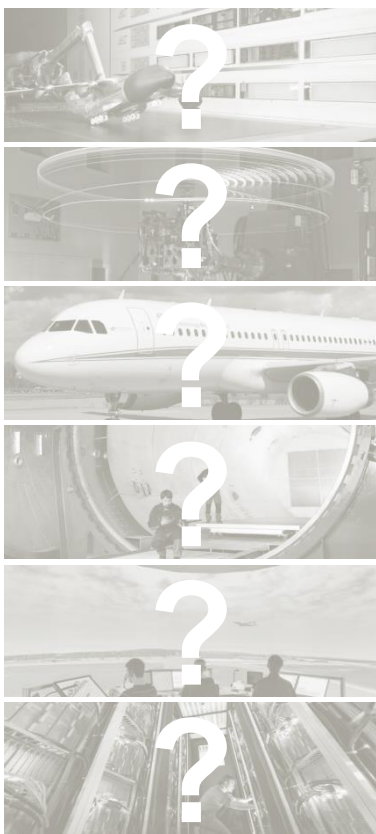
Ensuring safety and security

Prioritising research, testing capabilities & education



RINGO approach

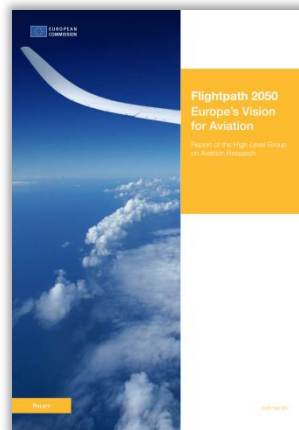
Needed RI



What
do
we
NEED?

Challenges 2050

Flightpath 2050



Meeting societal & market needs

Maintaining and extending industrial leadership

Protecting the environment and the energy supply

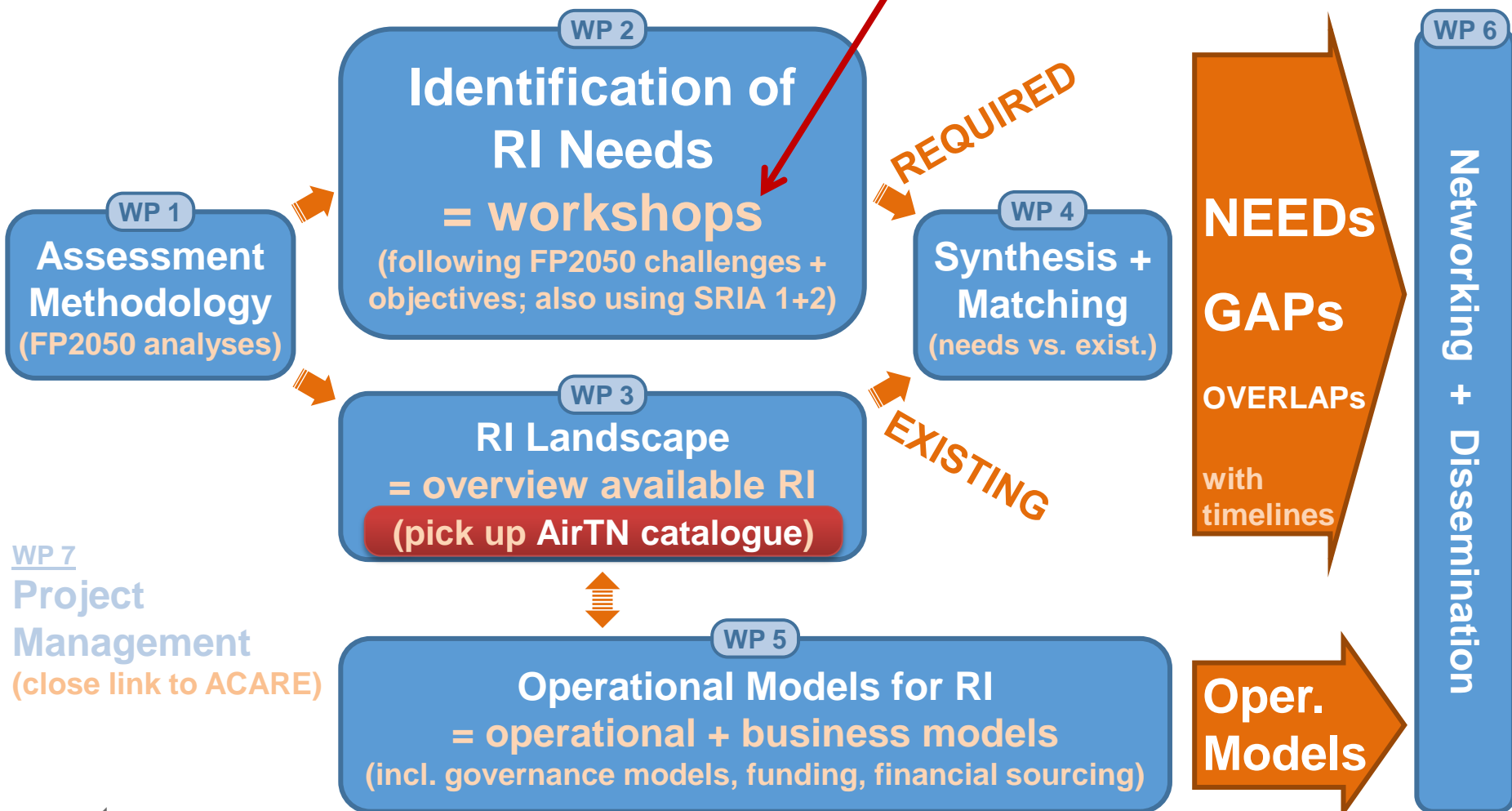
Ensuring safety and security

Prioritising research, testing capabilities & education



subject matter experts and stakeholders
from across the whole aviation community

RINGO work packages



WP 7
Project Management
(close link to ACARE)



RINGO financial structure

67%

Independant Establishments

1.305 k€

Higher Edu 672 k€

SME's 306 k€

Others 192 k€

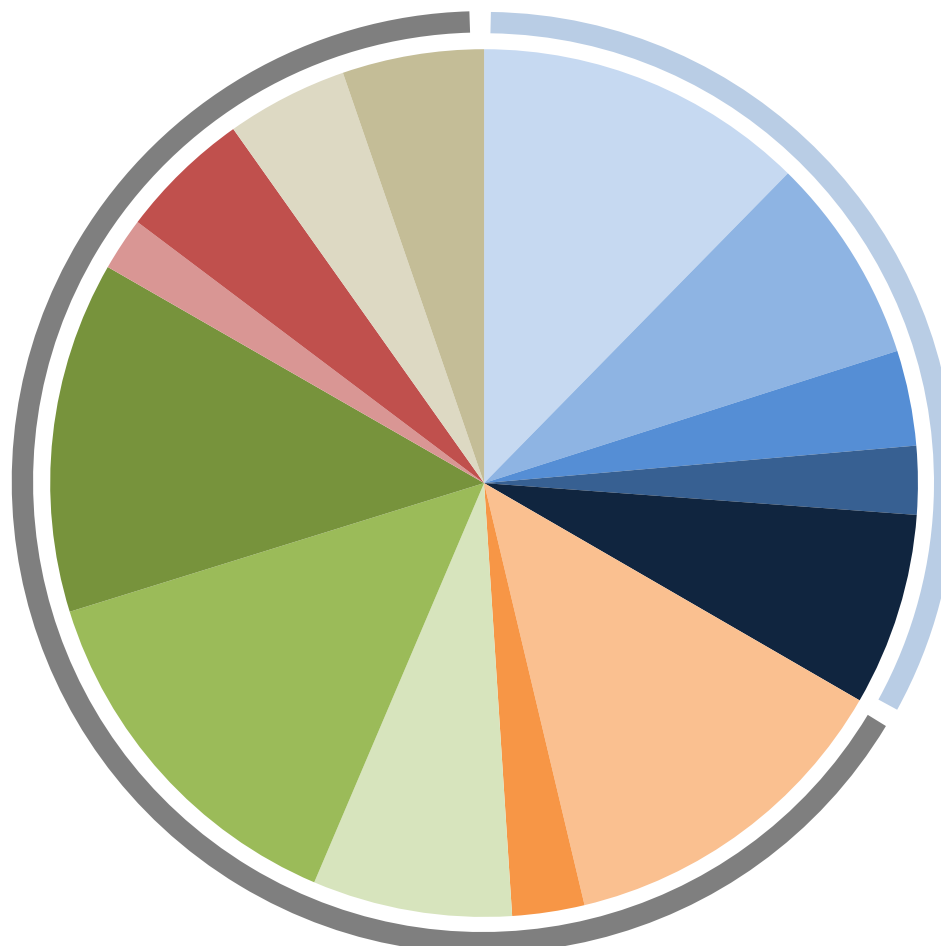
incl. Industry 135 k€
supporting in 2 WPs

33%

RI Operating Establishments

653 k€

Research Est.



- DLR
- CIRA
- DNW
- INTA
- ONERA
- DBL
- EVALUE
- UPM
- RWTH
- TUD
- PIAGGIO
- AIRBUS
- EASN
- RB



RINGO proposal evaluation status

Information Letter and Evaluation Summary received in May 2016

- Evaluation above Threshold
- Yet: „currently not high enough“
- RINGO put on Reserve List



Evaluation Result

Total score: 11.50 (Threshold: 10)



RINGO outlook (if CSA will be granted) Contribution to ACARE Roadmap

„ Strategic European aerospace test, simulation and development facilities are identified, maintained and continuously developed. The ground and airborne validation and certification processes are integrated where appropriate. “

FP 2050

European Commission



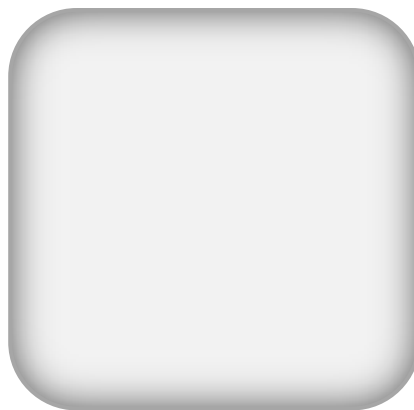
ACARE ETP



Source Flightpath 2050: ACARE (www.acare4europe.com)

AirTN
Air Transport Net
RI Catalogue

+



ACARE Road Map

incl. RI



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FP 2050

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RINGO
RI Needs Gaps
Overlaps
Business Models



ACARE Road Map

incl. RI





Let's shape Europe's (RI) future



THANK YOU



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