



aerodays2015

Aviation in Europe – Innovating for Growth

The 7th European Aeronautics Days



Coordinating Air Transport Time Efficiency Research

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ALTRAN

COORDINATING
AIR TRANSPORT
TIME EFFICIENCY
RESEARCH

Contents

- CATER Project Overview
- Europe's Time Efficiency Goals
- Assessment Process & Framework
- Assessment Results
- Promoting Successful R&I



CATER Project Overview

- Coordination and Support Action (CSA) - Oct 2013 to Sept 2017
- Focussing on Time Efficiency R&I



Europe's Time Efficiency Goals

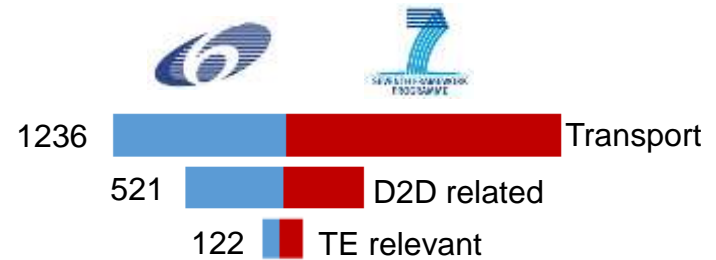
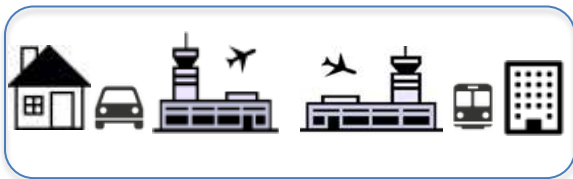
Flightpath 2050 - Europe's Vision for Aviation - TE related goals	
Meeting Societal & market needs	90% of travellers within Europe are able to complete their journey, door-to-door within 4 hours
	Flights arrive within 1 minute of the planned arrival time regardless of weather conditions
	European citizens are able to make informed mobility choices and have affordable access to one another, taking into account: economy, speed, and tailored level of service
	An air traffic management system is in place that provides a range of services to handle at least 25 million flights a year of all types of vehicles, (fixed-wing, rotorcraft) and systems (manned, unmanned, autonomous) that are integrated into and interoperable with the overall air transport system with 24-hour efficient operation of airports
	A coherent ground infrastructure is developed including: airports, vertiports and heliports with the relevant servicing and connecting facilities, also to other modes.
Ensuring safety and security	Weather and other hazards from the environment are precisely evaluated and risks are properly mitigated.
	Efficient boarding and security checks allow seamless security for global travel, with minimum passenger and cargo impact.



Assessment Process



D2D Model



ACARE
SRIA
Vol 2



FLIGHTPATH
2050
Goals



**R&I
Assessment
Framework**

**Project
Assessment**

**Gap analysis
between R&I
and
opportunities
/needs**

1st year / closed projects

Air Transport	Multimode Transport	ICT & Security	Total
72	21	6	99



Assessment Framework

Project Info

- Name
- Acronym
- Duration
- Budget
- Contact
- Links

D2D model Stage:

- 1- From Door to Origin Airport
- 2- At Origin Airport
- 3- From Gate to Gate
- 4- At Transit Airport
- 5- At Destination Airport
- 6- From Destination Airport to Door

Activity Type

- Concepts
- Knowledge
- Policy
- Others
- Infrastructure
- Technology

Transport Mode

- Air
- Rail
- Water
- Road
- Multimode (MM)
- All
- All+MM

Project Domain

1. Physics
2. Structures
3. Propulsion
4. Vehicle Systems and Equipment
5. Mechanics
6. Integrated Design & Validation
7. Traffic Management
8. Transport Nodes
9. Human Factors
10. Innovative Concepts & Scenarios

Implementation:

- Theoretical / General recommendations
- Simulation using real data / Specific solutions-recommendations proposed
- Implementation in limited pilot projects (specified duration, no continuation of operation)
- Commercial implementation, on-going use

Industrial involvement

- Research Institutes - No industrial involvement
- Low sized Aerospace company
- Mid sized Aerospace company (in top 50) / Airport
- Major Aerospace company (in top 20)
- Other SMEs
- Other Large Companies

ACARE SRIA vol 2:

- SRIA Capability
- SRIA Enabler

2050 Goals:

- 90% travelers...
- Flights arrive...
- etc

Potential Impact

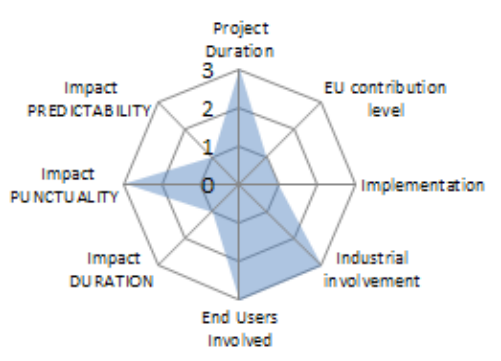
- DURATION
- PUNCTUALITY
- PREDICTABILITY

End Users Involved

- Yes
- No

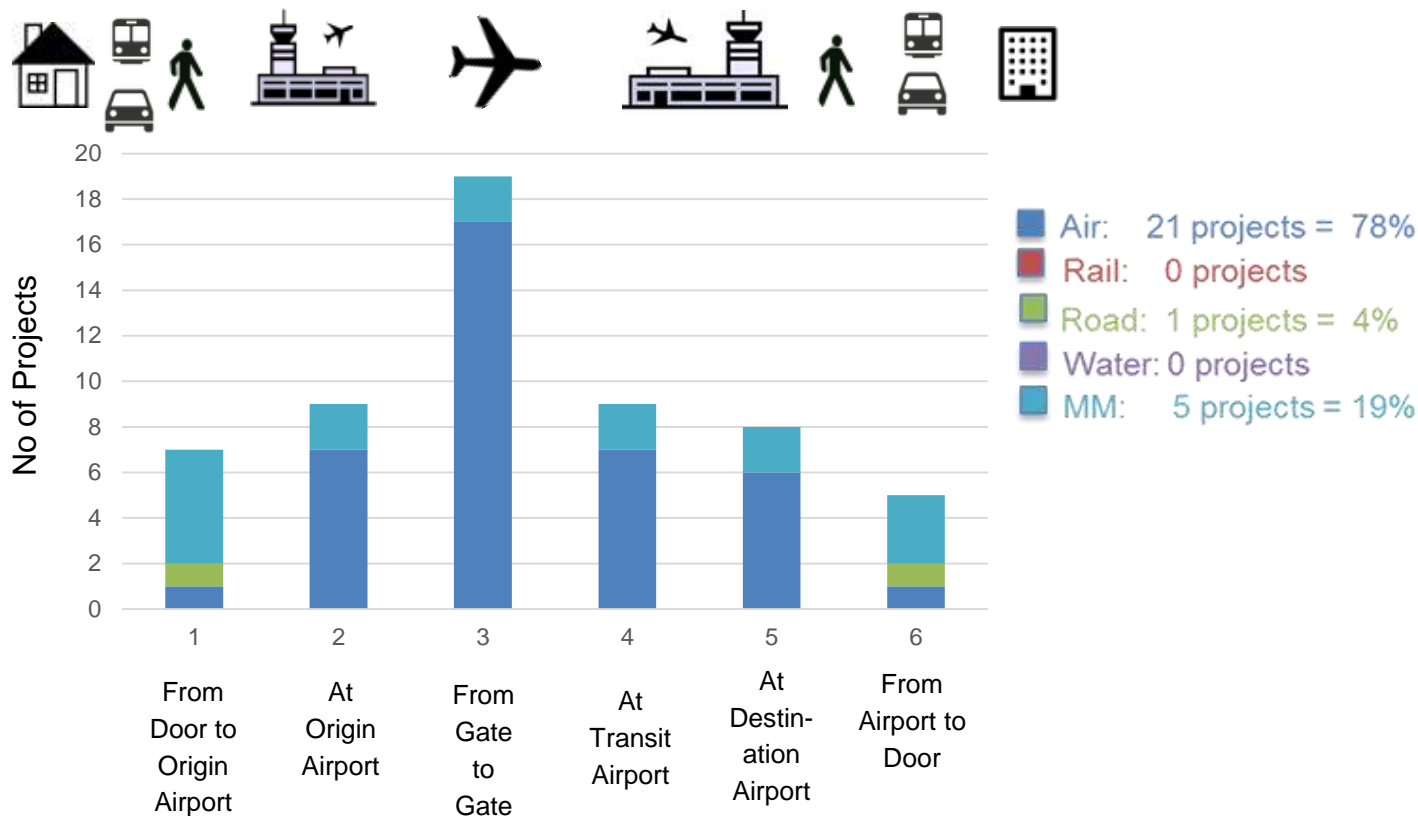


Assessment Example

TITAN		Turnaround Integration in Trajectory And Network ⁽³⁾				FP7						
Duration:	01/2009 to 02/2013	50 Months	Budget:	Project Total:	EU Funding:	Level:						
				€ 3,600,000	€ 2,600,000	Till 5 M€						
Contact:	INGENIERIA Y ECONOMIA DEL TRANSPORTE S.A. Paseo de la Habana 138 MADRID, Spain Administrative contact: Laura SERRANO MARTIN, (Head of Department for ANS European Projects) Tel.: +34-914-525727 Fax: +34-914-521306 contact@titan-project.eu											
Website:	http://www.titan-project.eu/											
Cordis:	http://cordis.europa.eu/projects/233690											
TRIP:	http://www.transport-research.info/web/projects/project_details.cfm?id=41675											
Description	Mainly focusses on turnaround process, but also upstream events like passengers getting to airport & delays in CDM context											
Type of activity:	Concepts		Project Domain:	7.9. Transport Node Operations 7.1. Overall Traffic Management								
D2D Stage :	<table border="1"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> </table>		1	2	3	4	5	6				
1	2	3	4	5	6							
Transport Mode:	MM											
SRIA	Enablers			Capabilities								
	From Airports to Air Transport Interface Nodes - Design of more efficient and effective air transport interface nodes, including their systems and processes - Human-centred automation			-Optimised Process for passenger, baggage, freight (time, seamlessness, convenience, predictability, etc) -Aircraft, airport and ground handling technologies are integrated to support people in the turnaround process and links to other transport modes								
Flightpath 2050 Goal:	- 90% of travellers within Europe are able to complete their journey, door-to-door within 4 hours. -Flights arrive within 1 minute of the planned arrival time regardless of weather conditions. -European citizens are able to make informed mobility choices and have affordable access to one another, taking into account: economy, speed, and tailored level of service - A coherent ground infrastructure is developed including: airports, vertiports and heliports with the relevant servicing and connecting facilities, also to other modes.											
Implement-ation:	Simulation using real data / Specific solutions-recommendations proposed			Duration	Punctuality	Predictability						
Industrial involvement :	Major Aerospace company (in top 20)		End-Users Involve	Yes	Yes*	Yes*						



Results by Travel Phase and Mode

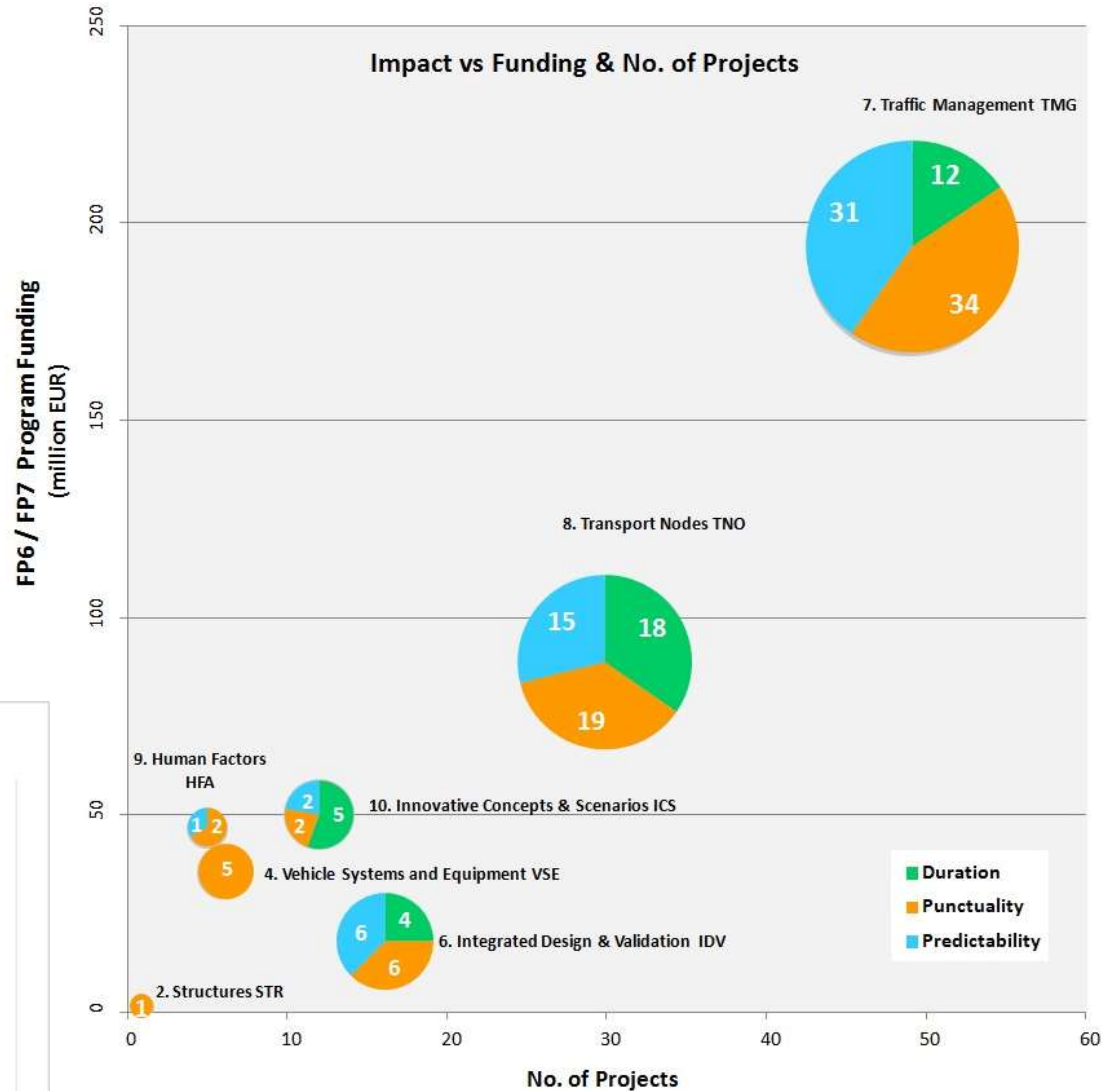
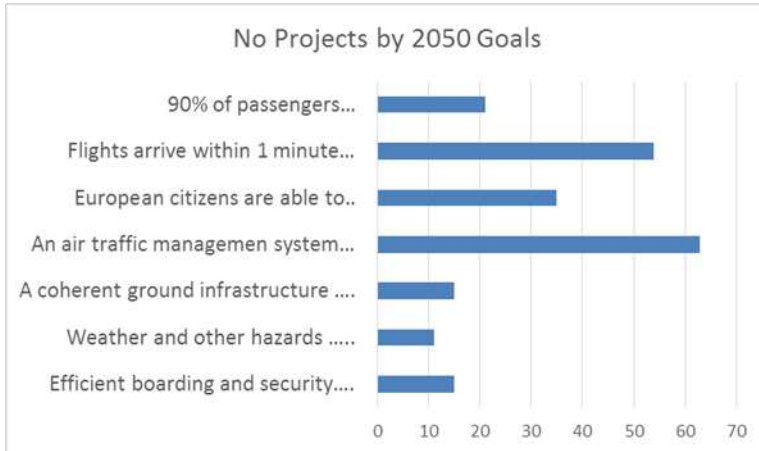


- Flight phase of travel is well represented
- Airport landside ops & coordination with other transport modes are potential areas for improving passenger journey

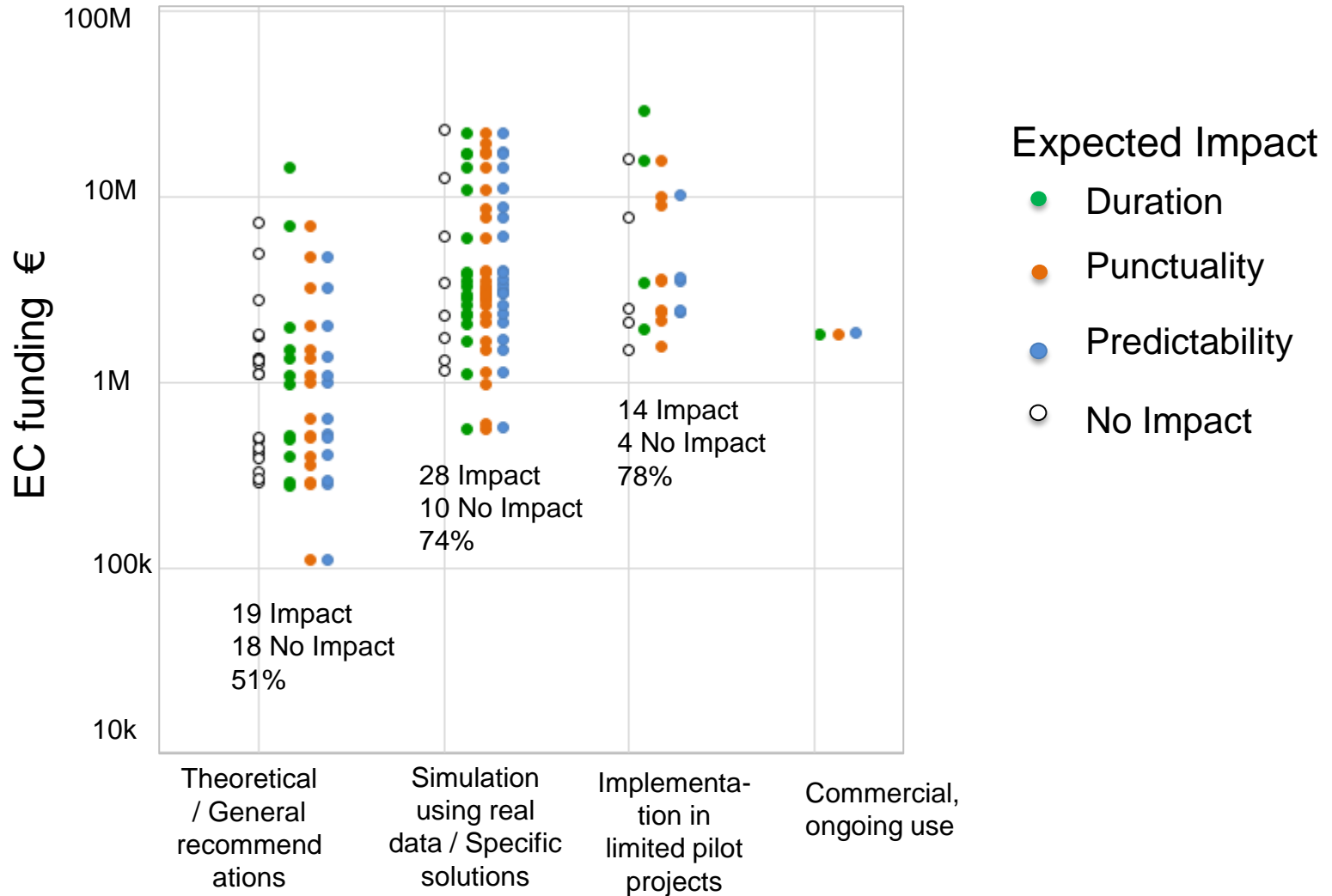


Impact by Funding & No. of Projects

- Highest Concentration of projects in Traffic Management (ATM, CDM ,etc) & Transport Nodes/Hubs
- Out of ~100 projects assessed 37% did not have a direct impact on TE
- 63% had a potential impact on
 - Duration
 - Punctuality
 - Predictability
- 9% provided quantifiable TE results



Impact Success Rate by Implementation



- Success rate is correlated to level of implementation



Promoting Successful R&I

Address lack of quantifiable results:

- Agree on KPIs, measurable results before project start
- Knowing which project targets were not achieved also provides valuable lessons learned

Assure continuity & communication:

- Avoid losing knowledge once project terminates, learn from past projects, don't reinvent the wheel, learn from external knowledge & Technology Watch

Balance the innovation pipeline:

- Create an appropriate mix of size & number of early stage concepts/knowledge & later stage implementation

Promote Collaboration instead of silos

- Get balance of large companies, SME & Academic, Research Institutes in same project
- Involve end users
- Coordinate different modes of transport

Bring results to implementation

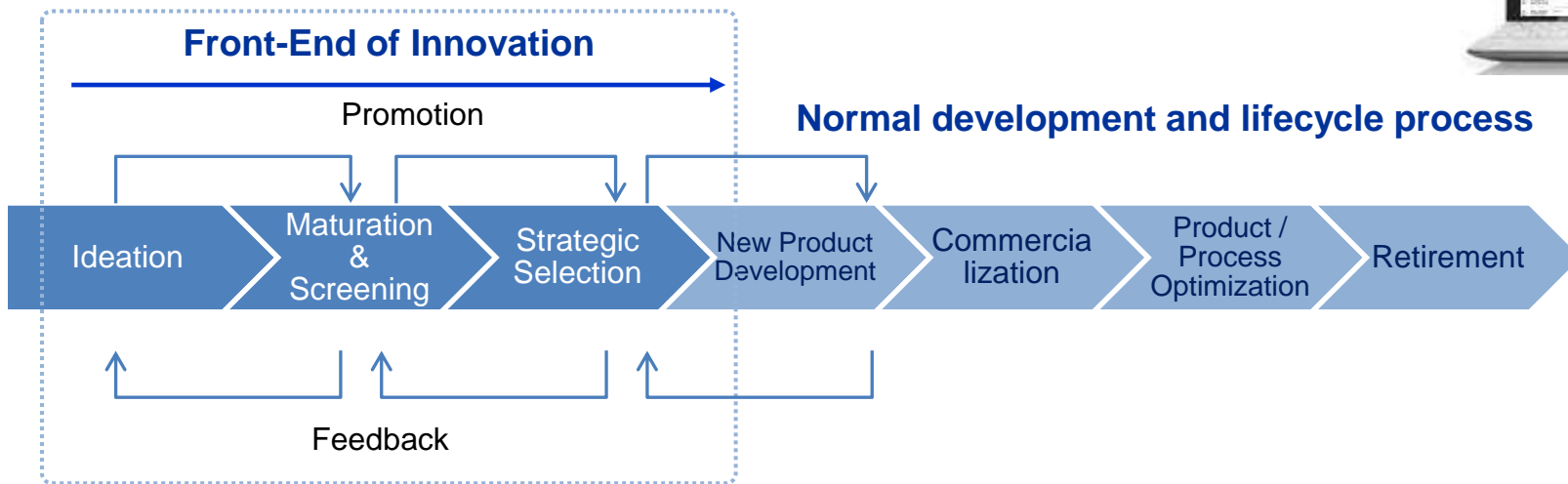
- Implement a well defined innovation process



Innovation Management for better R&I results



- Well-defined innovation processes are key success factors for improving innovation performance



- IMPA is a SW platform developed under EC FP7 funding to promote step changes in aeronautics
- It is currently being used in CATER to gather and assess technology and market trends relevant to TE.



Thank You

Come and see us at the CATER / IMPA Stand 5-18!





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L O N D O N



20 – 23 OCTOBER 2015