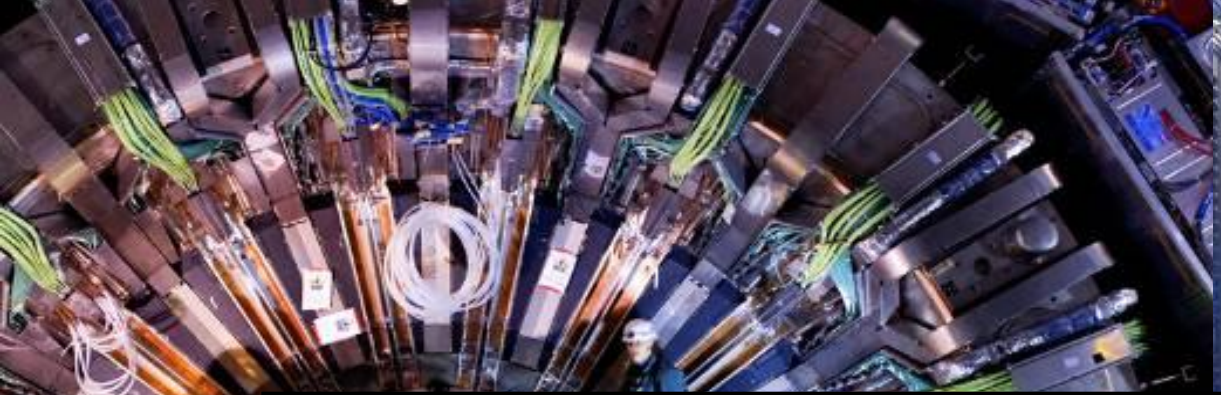
Research Infrastructures in HORIZON 2020

ASPERA Event
21 November 2011

Christian Kurrer

European Commission
Directorate General for Research & Innovation
Unit "Research Infrastructures"



Facilities, resources, and related services used by the scientific community

- **Major scientific equipment**
- **Scientific collections, archives and structured information**
- **ICT-based infrastructures**

- **Extending the frontiers of knowledge**
- **Exchanging and transmitting knowledge**
- **Training the next generation of top researchers**
- **Supporting industrial innovation**

Why a European approach for research infrastructures?

- To open access to the research infrastructures existing in the individual Member State to all European researchers
- To avoid duplication of effort and to coordinate and rationalise use of the facilities
- To connect national research communities and increase the overall quality of the research and innovation
- To share construction and operation costs
- To exchange best practice and develop interoperability of facilities and resources
- To become an international partner

ESFRI – European Strategy Forum on Research Infrastructures

- Set up by the EU Council of Research Ministers in 2002
- Brings together representatives of Ministers of the 27 Member States, 10 Associated States, and of the European Commission
- Supports a coherent and strategy-led approach to policy making on Research Infrastructures
- Mandate to develop a Roadmap (2006) and its updates (2008, 2010)
  - → contains 48 projects
  - → requiring major financial investment (~20 b€) and long term commitment for operation (~2 b€/year)

ESFRI roadmap 2010

48 new - or major upgrade of - Research Infrastructures of pan-European interest

(+ 3 additional projects from the CERN Council strategic roadmap for particle physics*)

Social Sc. & Hum. (5)	Life Sciences (13)		Environmental Sciences (9)		Energy (7)	Material and Analytical Facilities (6)	Physics and Astronomy (10)		e-Infra-structures (1)
SHARE	BBMRI	ELIXIR	ICOS	EURO-ARGO	ECCSEL	EUROFEL	ELI	TIARA*	PRACE
European Social Survey	ECRIN	INFRA FRONTIER	LIFEWATCH	IAGOS	Windscanner	EMFL	SPIRAL2	CTA	
CESSDA	INSTRUCT	EATRIS	EMS	EPOS	EU-SOLARIS	European XFEL	E-ELT	SKA	
CLARIN	EU-OPENSCREEN	EMBRC	SIAEOS	EISCAT_3D	JHR	ESRF Upgrade	KM3NeT	FAIR	
DARIAH	Euro BioImaging	ERINHA BSL4 Lab		COPAL	IFMIF	NEUTRON ESS	SLHC-PP*	ILC-HIGRADE*	
	ISBE	MIRRI			HiPER	ILL20/20 Upgrade			
	ANAEE				MYRRHA				

Distributed research infrastructures

Single sited research infrastructures

Commitments within Innovation Union

- ***« By 2015 (…) have completed or launched the construction of 60% of the priority European research infrastructures currently identified by the ESFRI (…). The Member States are invited to review their Operational Programmes to facilitate the use of cohesion policy money for this purpose.»***
- ***« … opening of Member State operated research infrastructures to the full European user community…»***
- ***« The European Union should step up its cooperation on the roll-out of the global research infrastructures… »***

Horizon 2020 – Framework Programme for Research and Innovation (2014-2020)

Excellent science

- European Research Council
- Marie Curie actions
- Future and Emerging Technologies (FET)
- **Research infrastructures (including e-infrastructures)**

Societal challenges

- Health, demographic change and wellbeing
- Food security, bio-economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action and resource efficiency
- Inclusive, innovative and secure societies.

Industrial leadership

- ICT, nanotechnologies, advanced materials, biotechnology, advanced manufacturing and processing, and space;
- Access to risk finance
- Support innovation in for SMEs

Research Infrastructures in Horizon 2020

1. **Developing the European RIs for 2020 and beyond**
   - 1.1 Developing new world-class RIs
   - 1.2 Integrating and opening national RIs of pan-European interest
   - 1.3 Development, deployment and operation of ICT based e-Infrastructures
2. **Fostering the innovation potential of RIs & their human capital**
   - 2.1 Strengthening the innovation potential of RIs
   - 2.2 Strengthening the human capital of RIs
3. **Reinforcing European RI policy and international cooperation**
   - 3.1 Reinforcing European policy for RIs
   - 3.2 Facilitating strategic international cooperation

Main actions

Specific actions

Policy actions

1.1 Developing new world-class RIs

Objective: To ensure the implementation, long-term sustainability and efficient operation of the RIs identified by the European Strategy Forum on Research Infrastructures (ESFRI) and other world-class RIs

EU support to contribute to:

- the **implementation and operation** of the RIs on the ESFRI Roadmap 2010 that have set up a European governance, e.g. ERIC

and also to:

- the **preparatory phase** of newly identified RIs

- **design study** for new RIs of European-wide relevance

1.1 Developing new world-class RIs - Implementation and operation -

EU funding to contribute to (leverage effect, no capital investment) e.g.

- R&D activities, engineering work, technology transfer activities
- Central coordinating hub for distributed RIs
- Extension of membership and coordination with other stakeholders (e.g. JPIs)
- Outreach, training and international cooperation activities
- Access
- Data collection, curation and archiving
- **Development of regional partner facilities** in synergy with DG REGIO actions (structural funds and social funds)

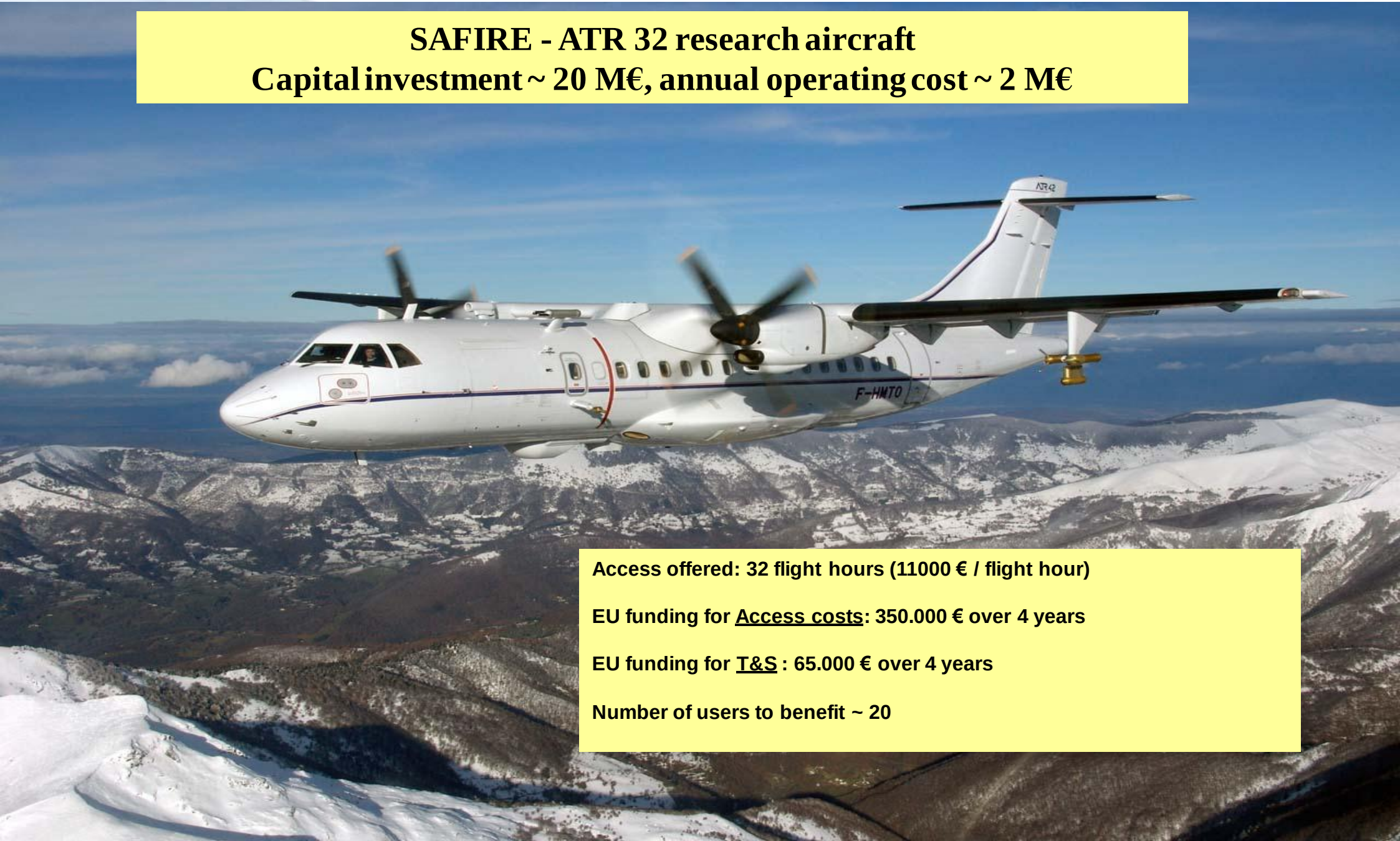
1.2 Integrating and opening national RIs of pan-European interest

Objective: The aim is to open up key national research infrastructures to all European researchers and to ensure their optimal use and joint development

EU support to contribute to the creation of "European Research Infrastructures Networks" bringing together infrastructures in a given field and ensure access for all European researchers.

➔ continuation and reinforcement of the successful FP7 Integrating Activities and FP6 I3s

EUFAR - An **Integrating Activity** for **Airborne Research in Environmental and Geo-sciences** provide the scientific users with access to **14 research aircrafts**



SAFIRE - ATR 32 research aircraft
Capital investment ~ 20 M€, annual operating cost ~ 2 M€

Access offered: 32 flight hours (11000 € / flight hour)

EU funding for Access costs: 350.000 € over 4 years

EU funding for T&S : 65.000 € over 4 years

Number of users to benefit ~ 20

1.2 Integrating and opening national RIs of pan-European interest

EU funding to contribute to

- **Access activities**
- **Joint research activities** to explore new fundamental technologies or techniques underpinning the efficient and joint use of the RIs
- **Networking activities** e.g. international cooperation, training of users, best management practices, outreach to industry and universities, creating links with relevant public authorities, creating links with JPIs or any other EU or international relevant initiatives

Other relevant information

FP7 and Capacities Specific Programme

- http://cordis.europa.eu/fp7/
- http://cordis.europa.eu/fp7/capacities/

Research Infrastructures on Europa website

- http://ec.europa.eu/research/infrastructures/

ESFRI on CORDIS

- http://cordis.europa.eu/esfri/