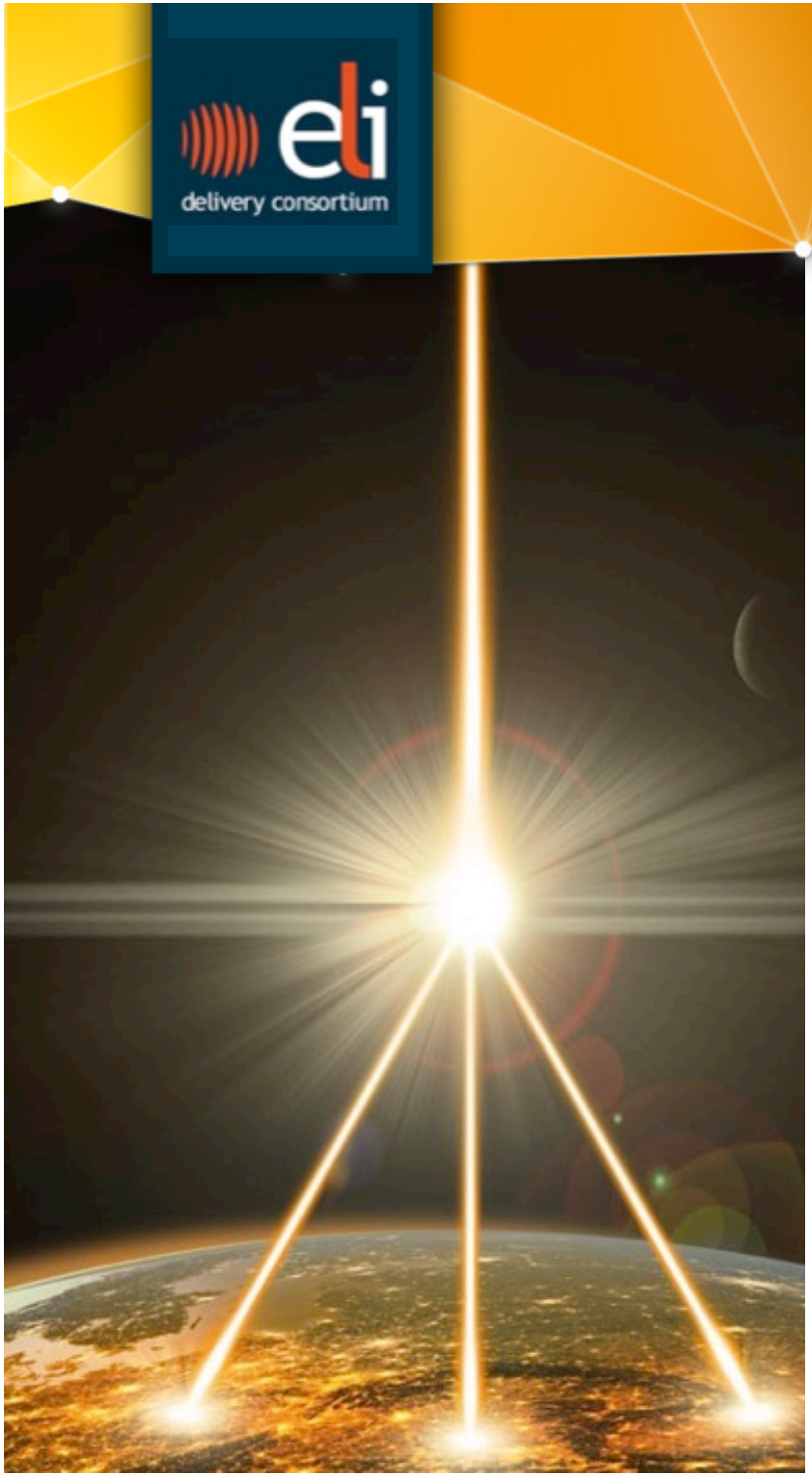

ETTORE MAJORANA FOUNDATION AND
CENTRE FOR SCIENTIFIC CULTURE
TO PAY A PERMANENT TRIBUTE TO ARCHIMEDES AND GALILEO GALILEI, FOUNDERS OF MODERN SCIENCE
AND TO ENRICO FERMI, THE "ITALIAN NAVIGATOR", FATHER OF THE WEAK FORCES
Ettore Majorana
Communication Trends in
Research Infrastructures
ERICE International School of Science Journalism
Allen Weeks
June 26, 2018

Allen Weeks

- Living in Europe since 1992
- Working with Research Infrastructures since 2005
- Background in Management
  - Pharma, technology, industry serving RIs
  - Strategy, marketing
  - Product and business development
- Specialist in Communications and Project Management
- Solid experience in science and technology management

ELI in brief



World's most advanced **international laser research infrastructure**

Recognised by **ESFRI since 2006**

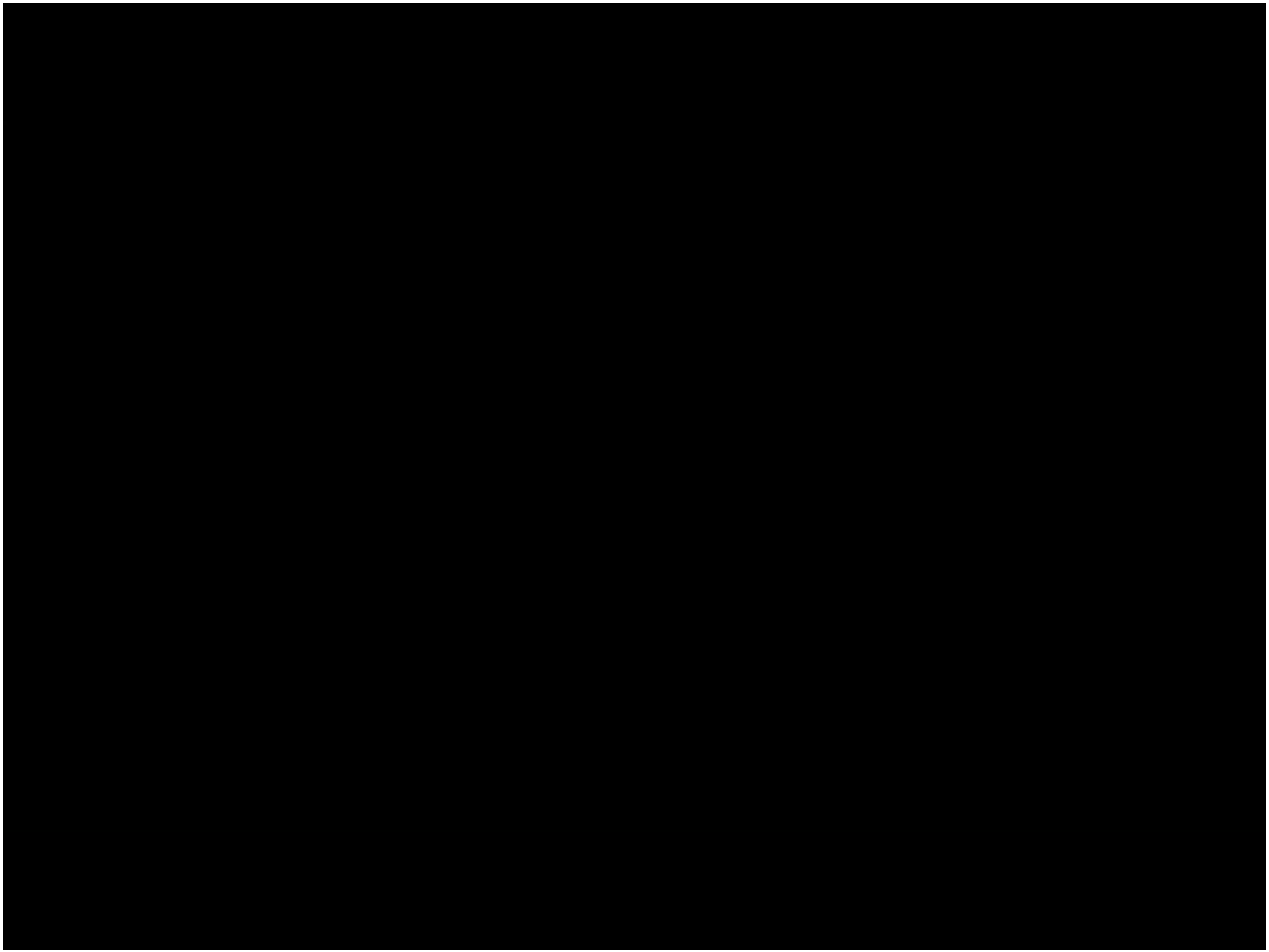
Funded between **ESIF, National and Framework** funds

First **multi-site research infrastructure** built completely in **Central Europe.**


ELI Beamlines
Dolní Břežany, Czech Republic
December 2015
30,000 m²
€278 Million
High-Energy Beam Facility, responsible for development and application of ultra-short pulses of high-energy particles and radiation stemming from relativistic and later ultrarelativistc interaction


ELI-NP
Măgurele, Romania
September 2016
33,000 m²
€311 Million
Nuclear Physics Facility with ultra-intense lasers and brilliant gamma beams (up to 19 MeV) enabling also brilliant neutron beam generation with a largely controlled variety of energies


ELI-ALPS
Szeged, Hungary
May 2017
24,462 m²
€231 million
Attasecond Laser Science, will capitalize on new regimes of time resolution



Communication Challenges

The NUMBER of STAKEHOLDERS is a challenge.

Multiple stakeholders with many different interests

- Hard to be one thing to all people.

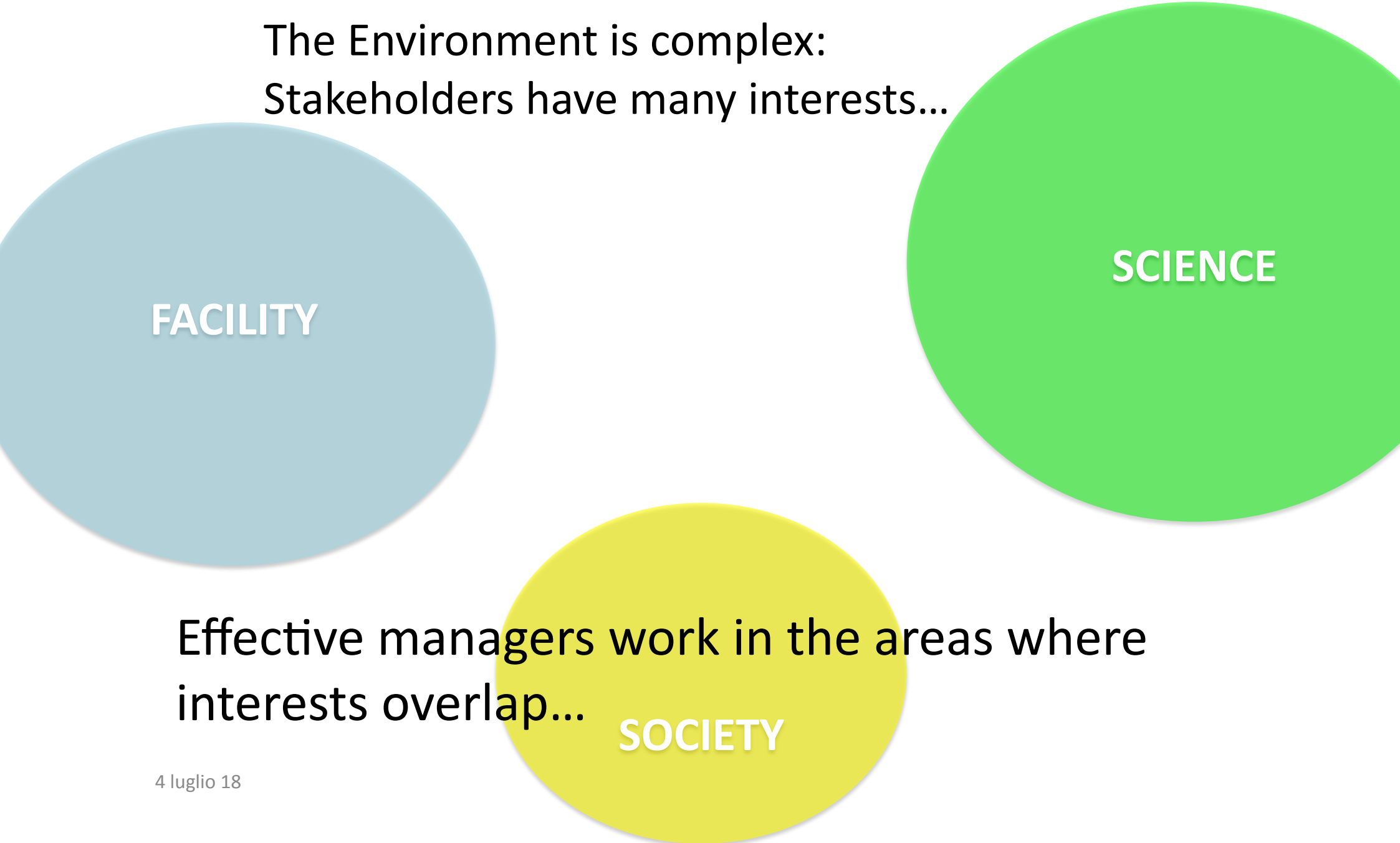
We have to let everyone find their story … the story comes first, because it is what connects the relevance.

Main question: What is in it for me?

Proximity Affects Perspective: in Time, Space, and Mind

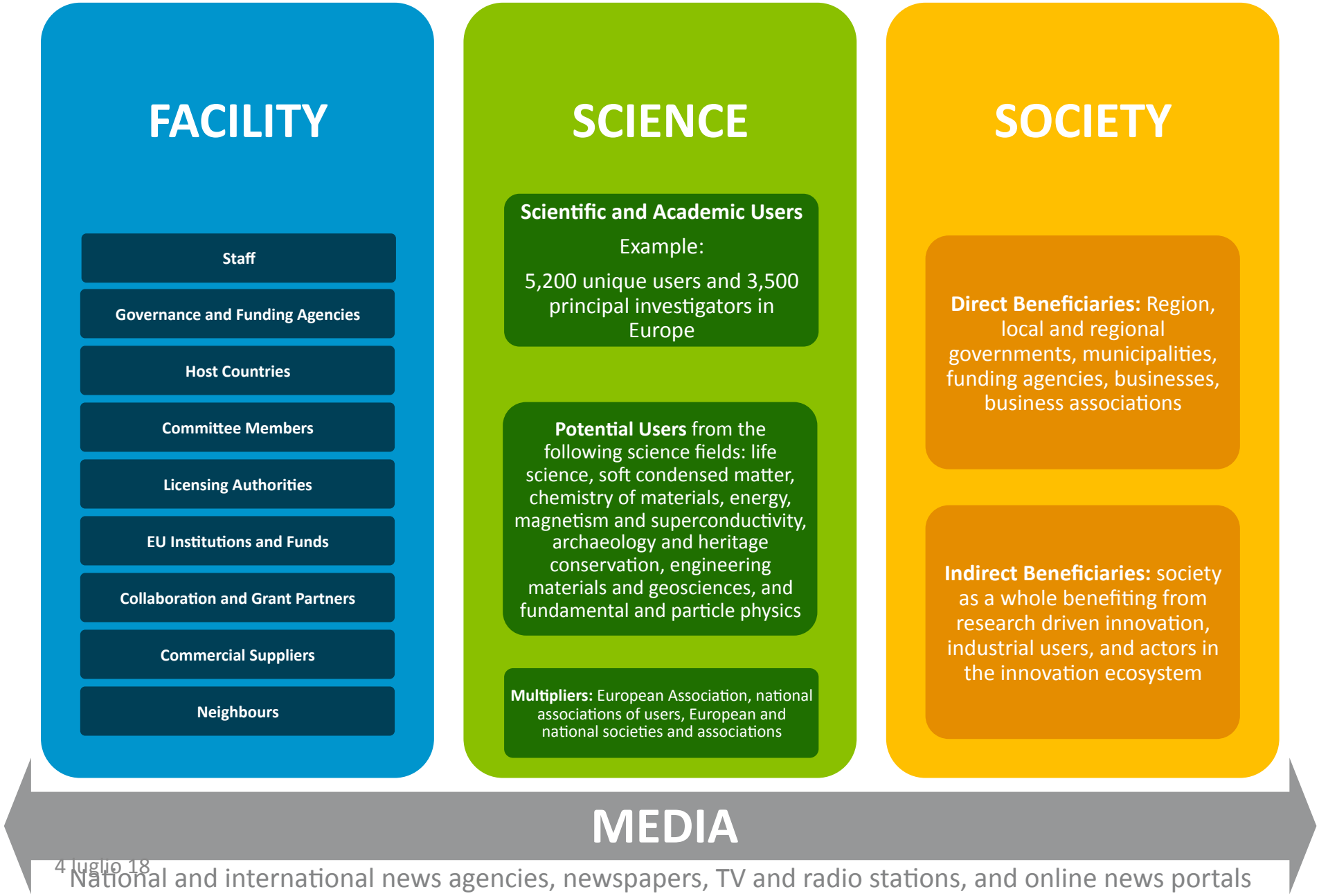
Stakeholders

The Environment is complex:
Stakeholders have many interests…



Effective managers work in the areas where interests overlap…

Stakeholder Groups



Stakeholders

What:

*The **people** that care about the **impact** of the RI's **mission***

Why:

They are the people that will **pay for**, and/or enjoy the **benefits** of - or - suffer the **consequences** of the RI's mission and have an interest in seeing it achieve that **mission**.

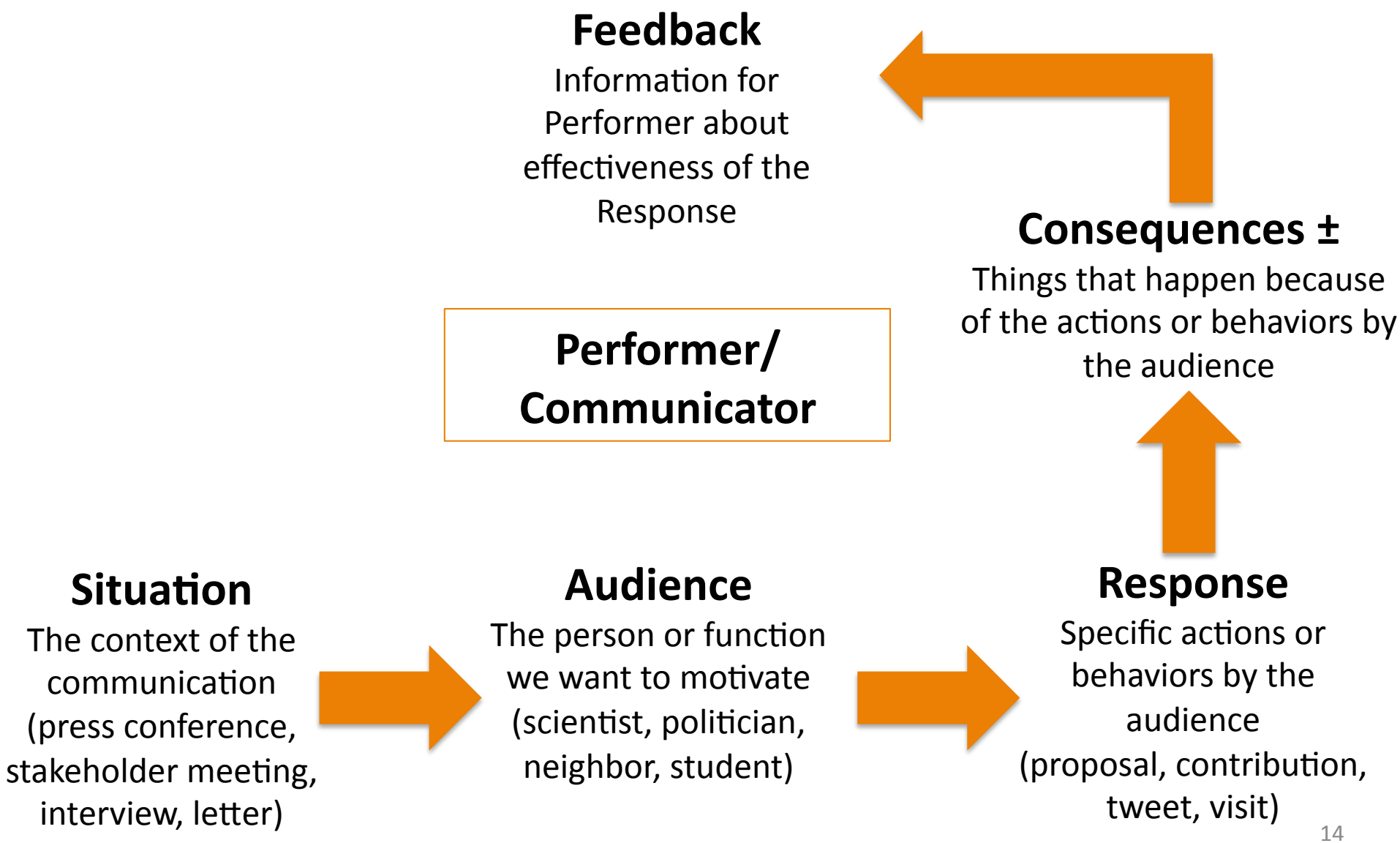
How:

Through **direct** and **indirect** interaction with the facility, they will monitor **indicators** and react to the performance − relative to the mission. The RI Management need to **interface** with multiple stakeholders.

What are the **P**olitical, **E**conomic, **S**ocial, and **T**echnological Indicators (**PEST**)?

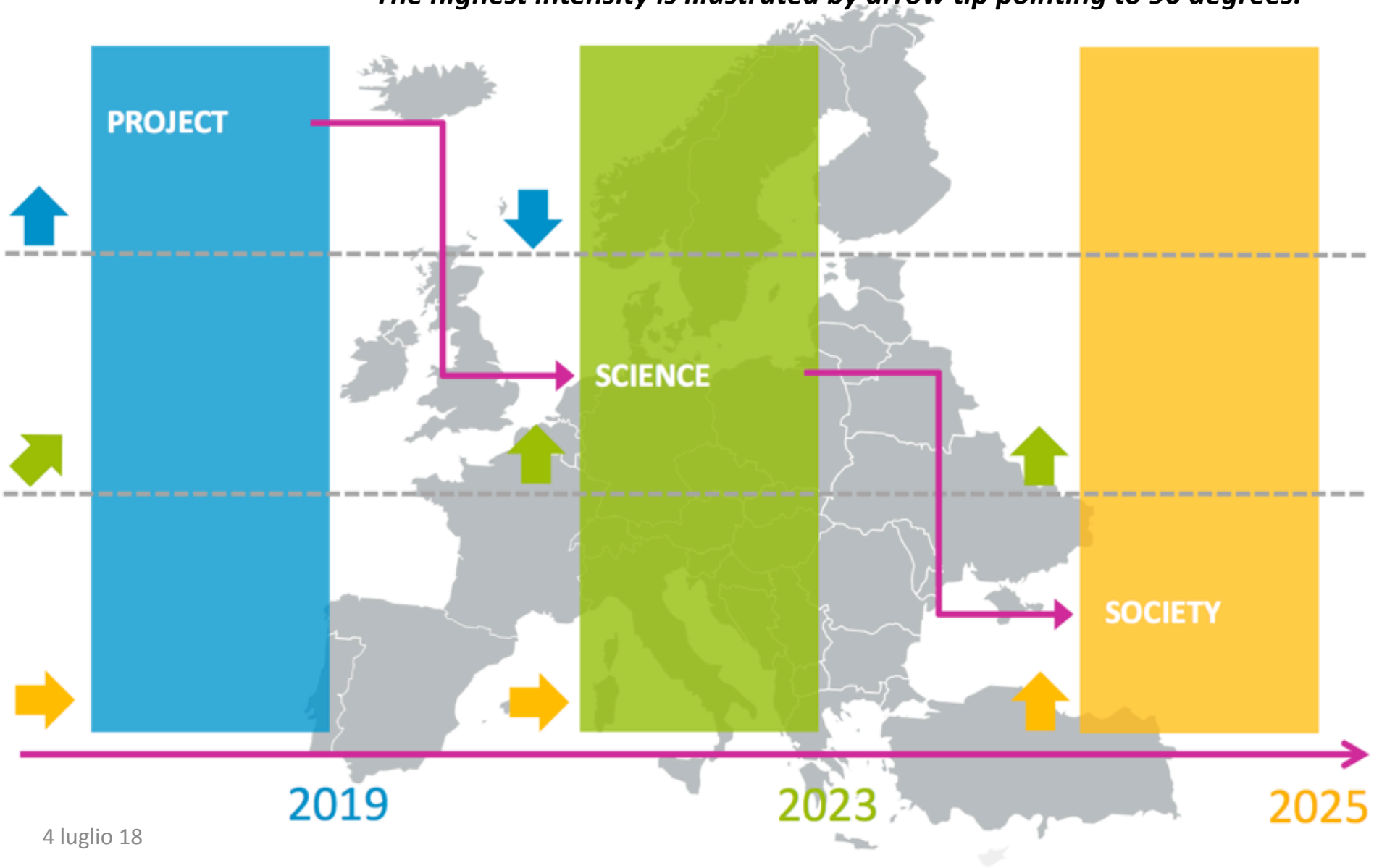
	Direct	*easy -- **measure** -- hard*	**Indirect**
Long-Term (*< 1 yr -- **measure** -- > 5yrs*)	• Publications • Jobs • Companies involved • Expanded Science Community • Return on Investment (?)		• Impact on Competitiveness • Advanced Materials • Regional Attractiveness • Kids interested in science • Community acceptance • Return on Investment (?)
Short-Term	• ***Jobs*** • ***Responsible spending*** • ***Earned Value*** • ***Buildings built*** • ***Industrial Return in contracts***		• Increased expert interest • Community acceptance • "Buy-in" from Users • Sense of Progress *Considered 'soft-indicators'*

Performance Based Communication: a Feedback Loop



Emphasis Over Life Cycle

Block arrows indicate the intensity of communications efforts.
The highest intensity is illustrated by arrow tip pointing to 90 degrees.

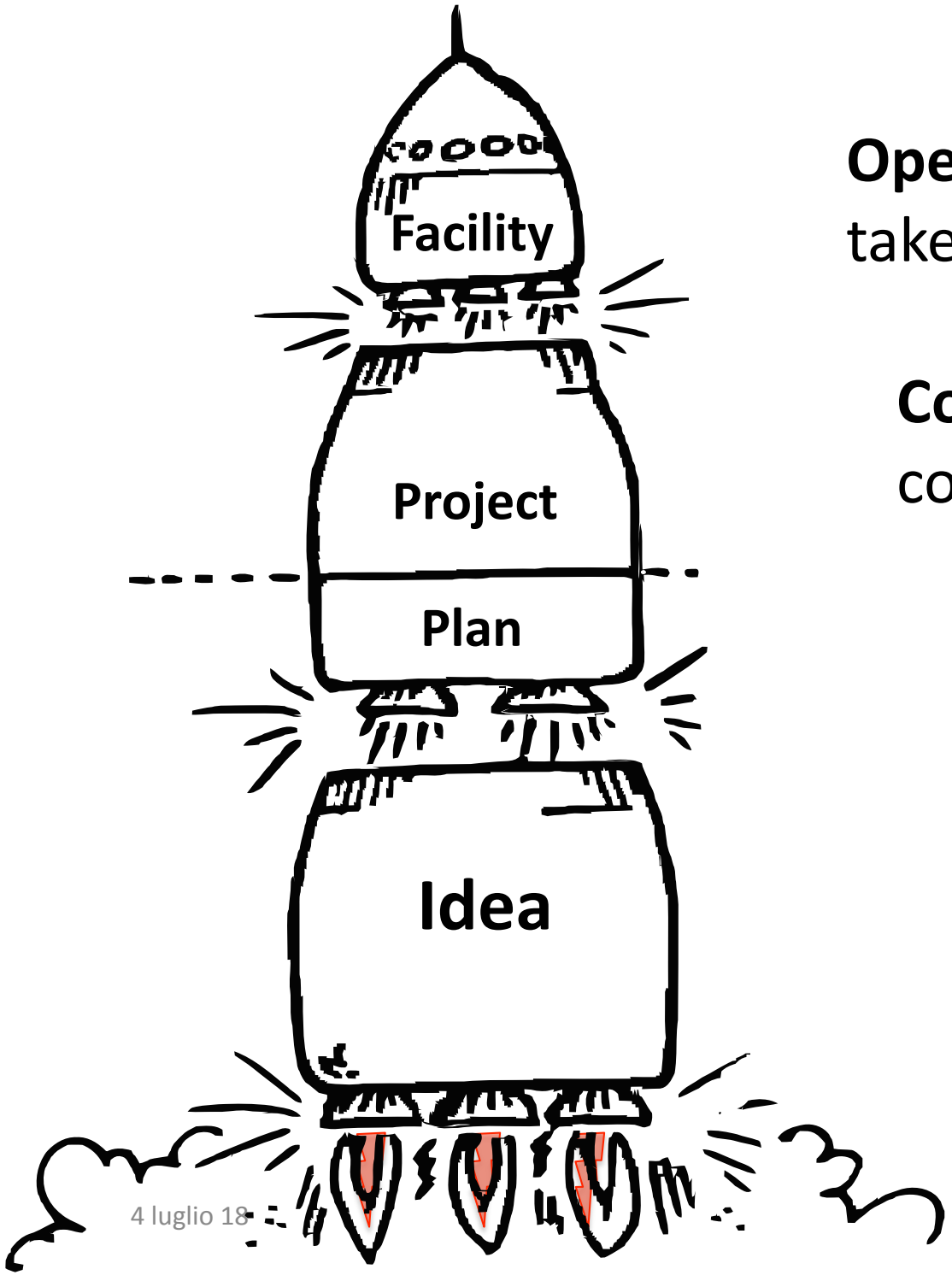


Sustainability

"*the capacity for a research infrastructure to remain operative, effective and competitive over its expected lifetime*".

- *OECD Global Science Forum 2017*

Achieving the mission over the full **life-cycle** of an RI is important because level of investment in resources must be matched − in time − to the stakeholder expectations.



Operations is when things take off …

Construction is when commitments are made…

The **Design** is when things start to get real …

First is a **Concept**

Emphasis Over Life Cycle

Block arrows indicate the intensity of communications efforts.
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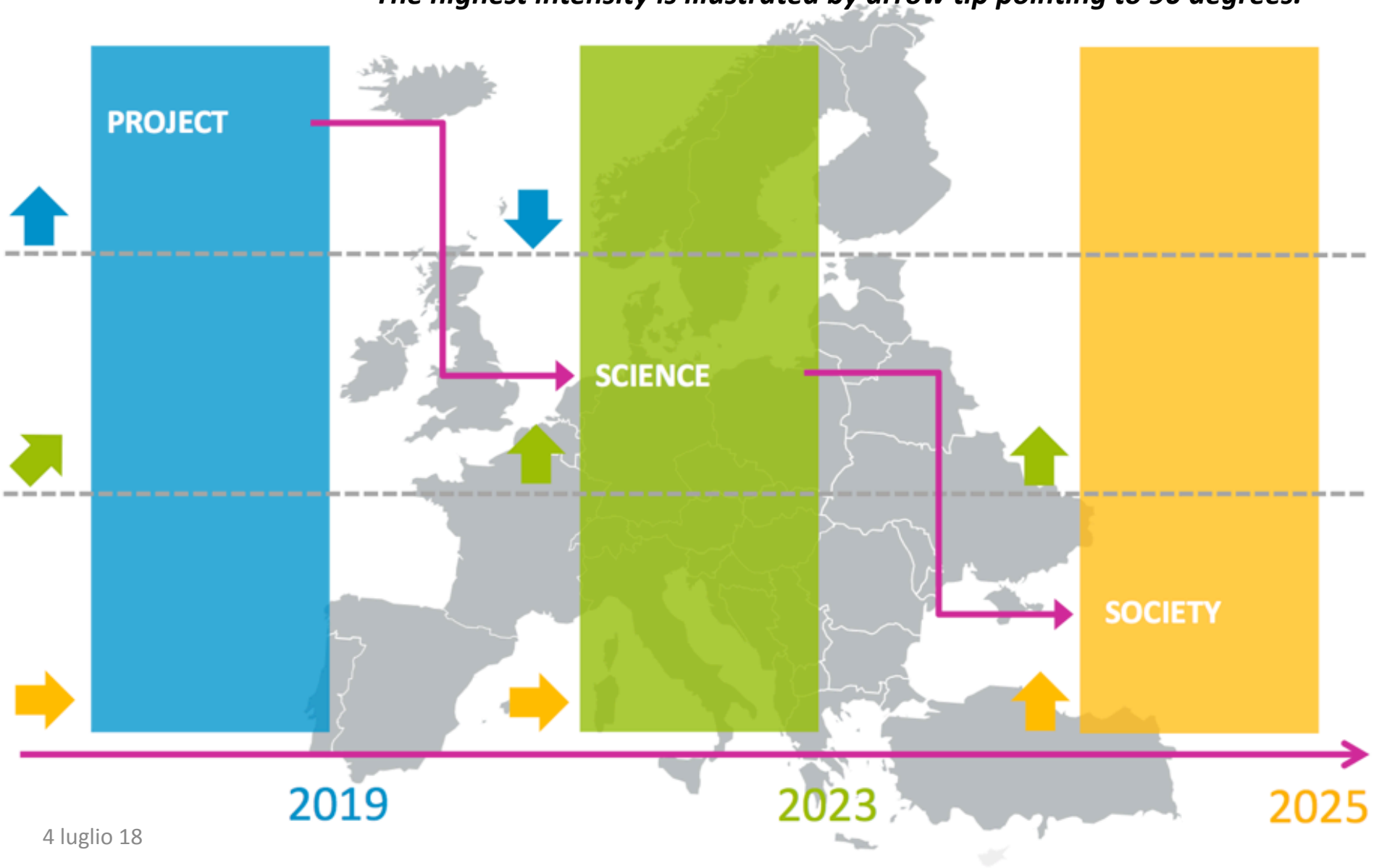
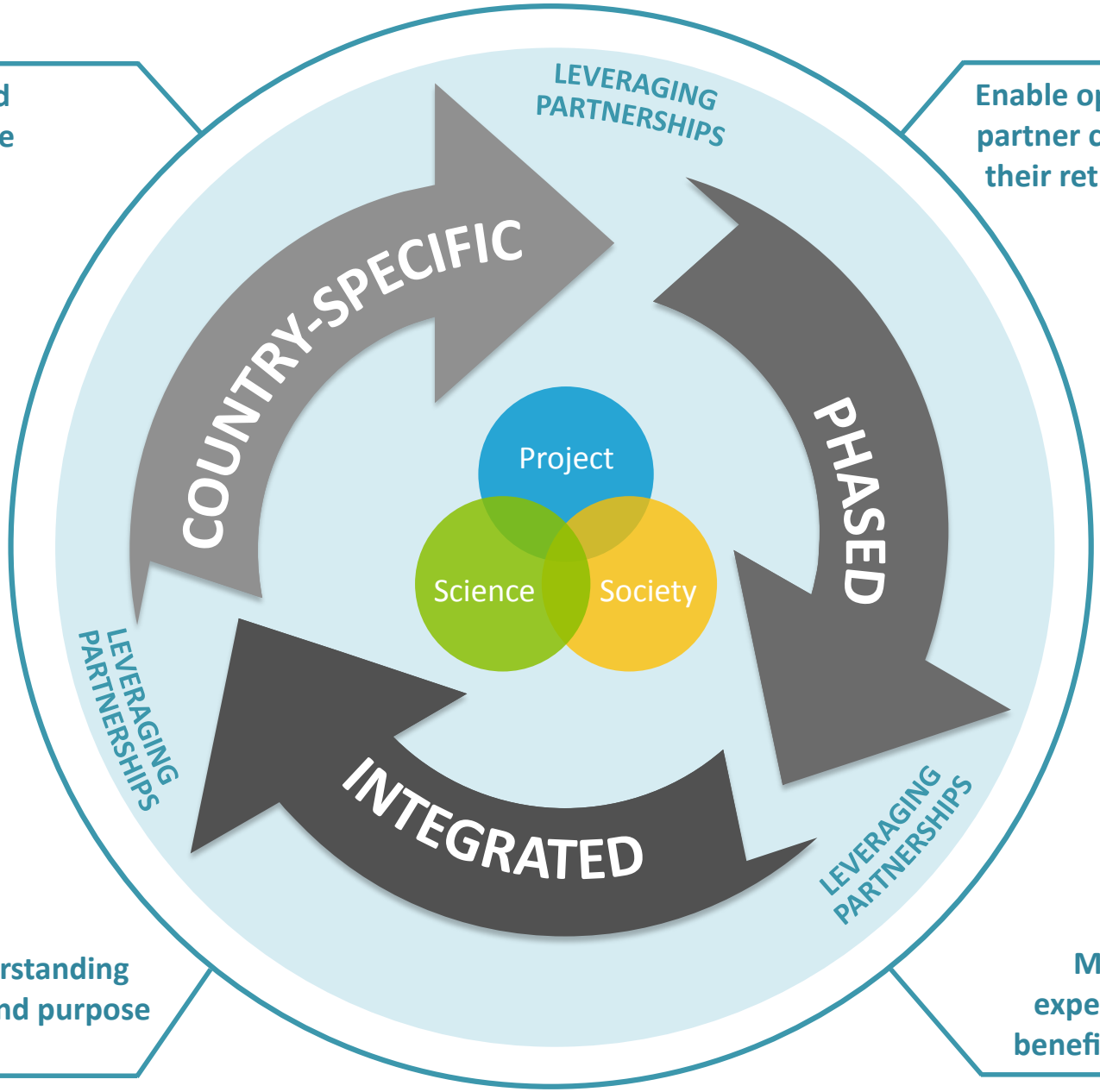
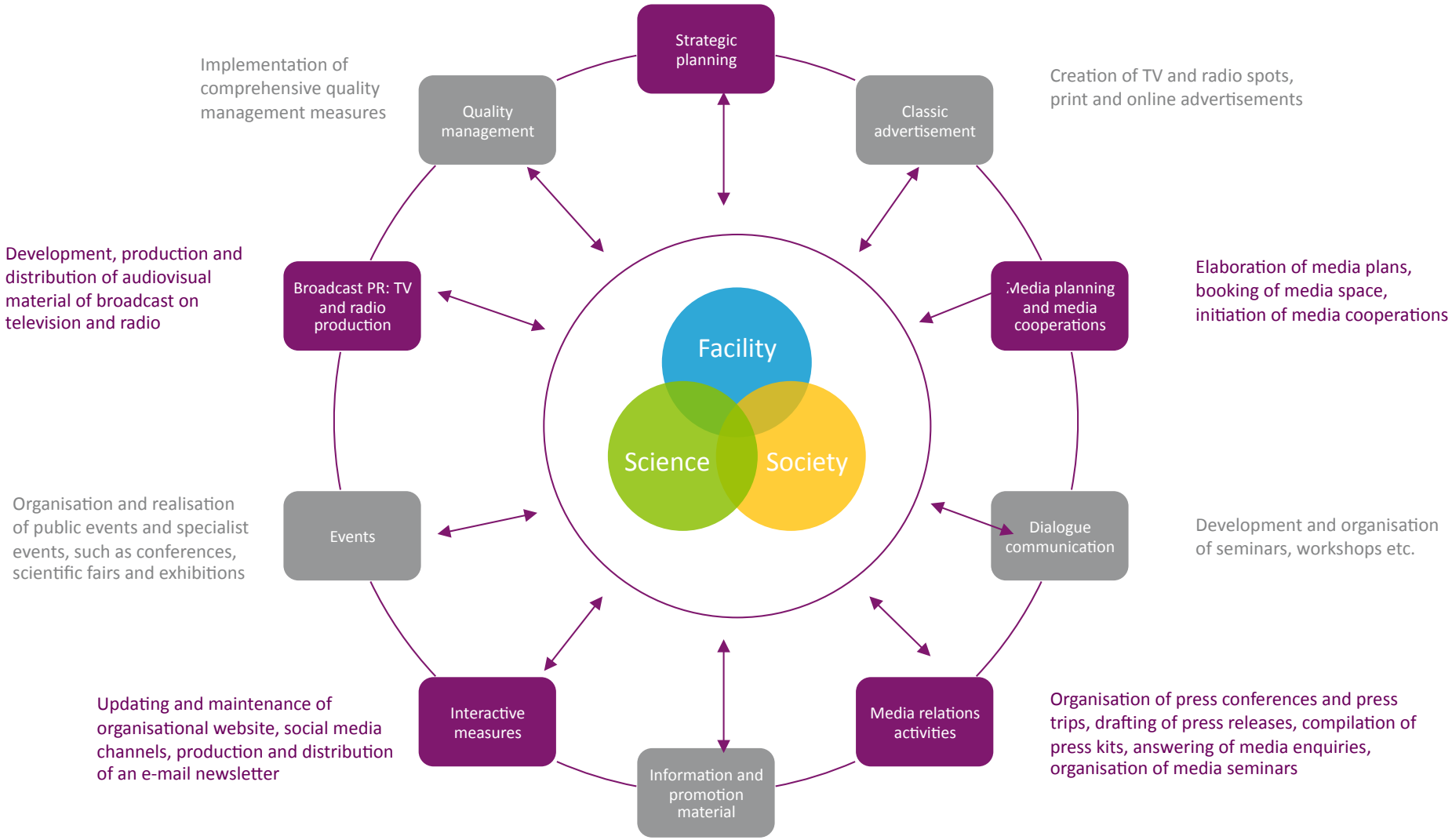


STRATEGIC APPROACH



Integrated Communications



IMPLEMENTATION: COMMUNICATION ACTIVITIES

- Quarterly staff meetings
- Weekly staff newsletter
- Intranet

- Media distribution lists
- Press releases
- Press conferences
- Media monitoring

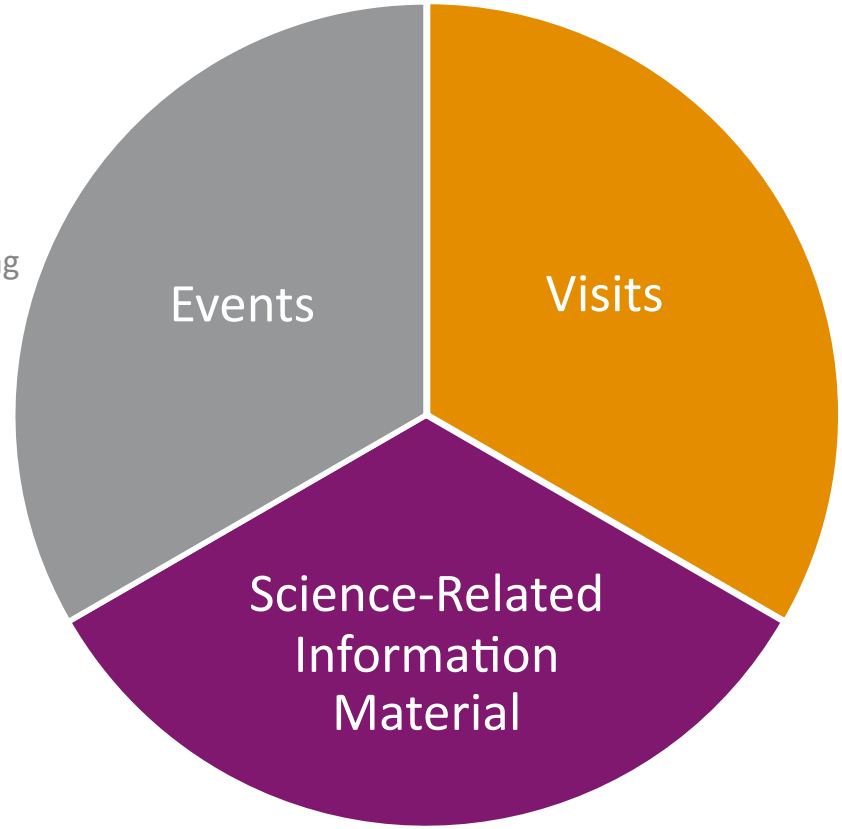
- Activity Reports
- Information leaflets
- Corporate brochures
- Targeted information material

- ESS website
- BrightnESS website
- Quarterly newsletter

- Films
- Asset Image Bank

IMPLEMENTATION: OUTREACH ACTIVITIES

- Partner and Industry Days
- ESS Science Symposia
- Participation in scientific conferences
- Co-branding and sponsoring of relevant events



- Business visits
- High-level stake holder visits
- Informational visits

- Science toolkit
- Detector brochures
- Neutrons for industry

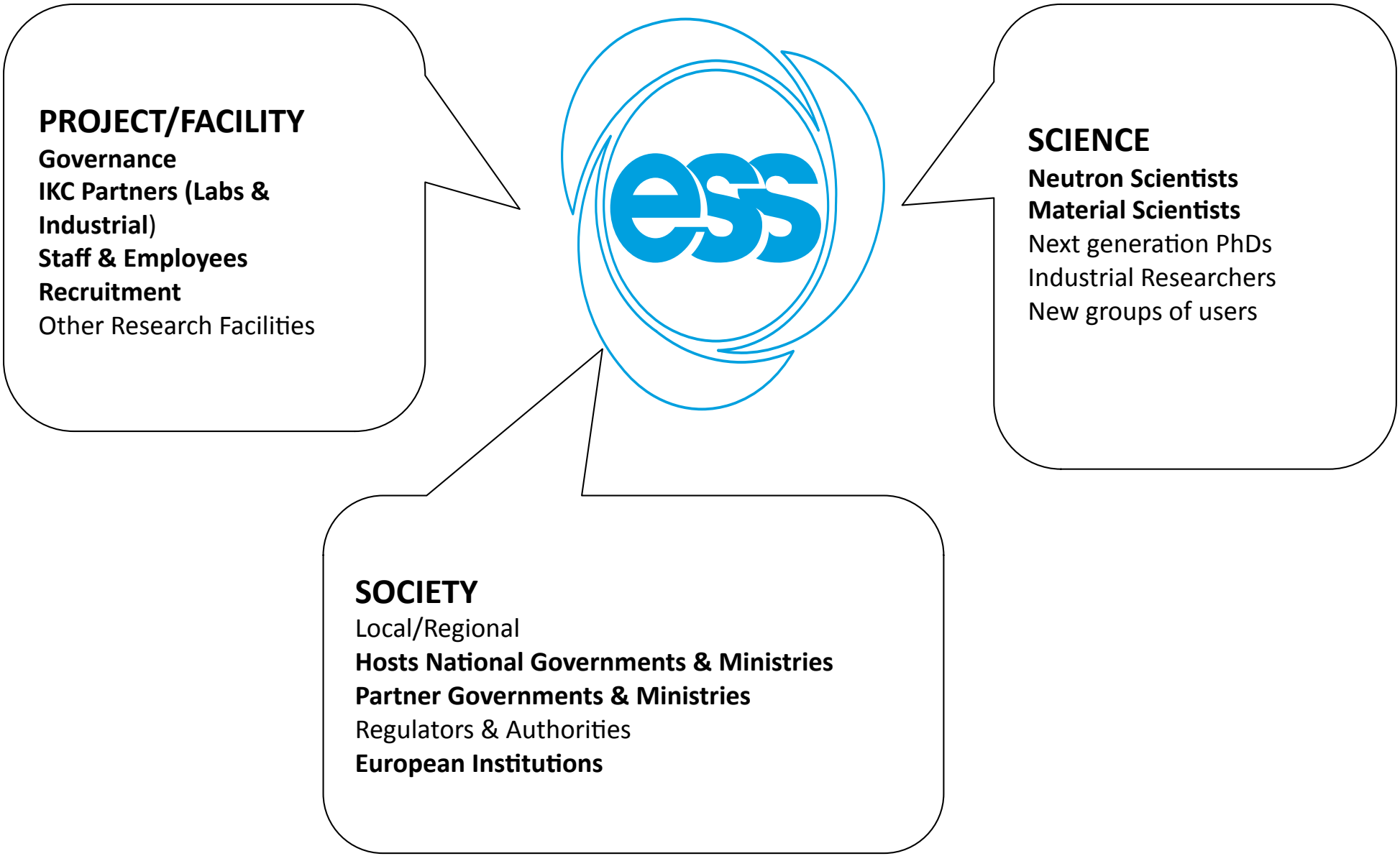
IMPLEMENTATION: ENGAGEMENT ACTIVITIES

- Twitter
- Facebook
- LinkedIn

- Ongoing Grants
  - BrightnESS
  - SINE2020
  - INEXT
  - SONDE
  - CREMLIN
- Joint Proposals and Letters of Support

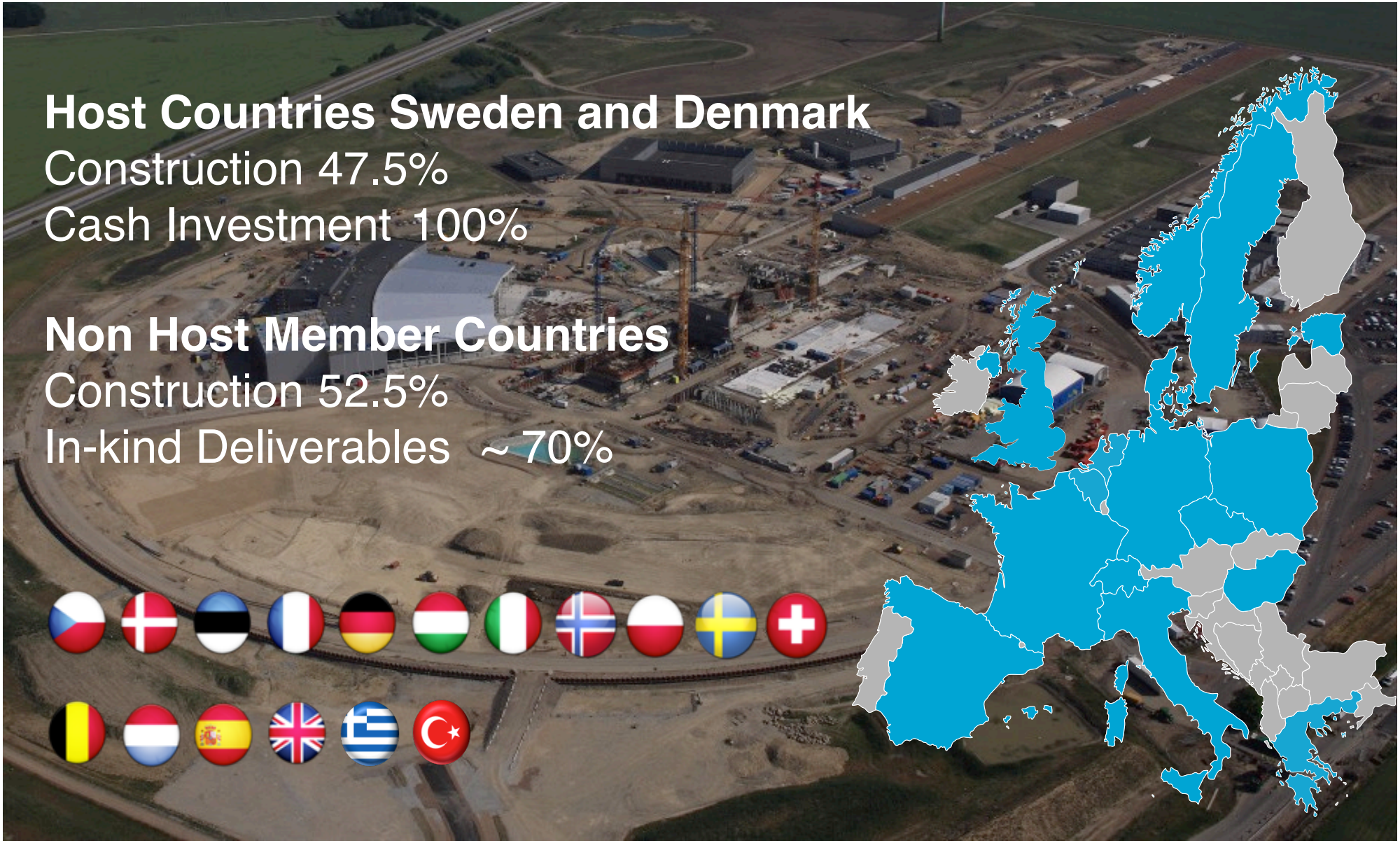
- Mentoring of PhD students
- Summer schools

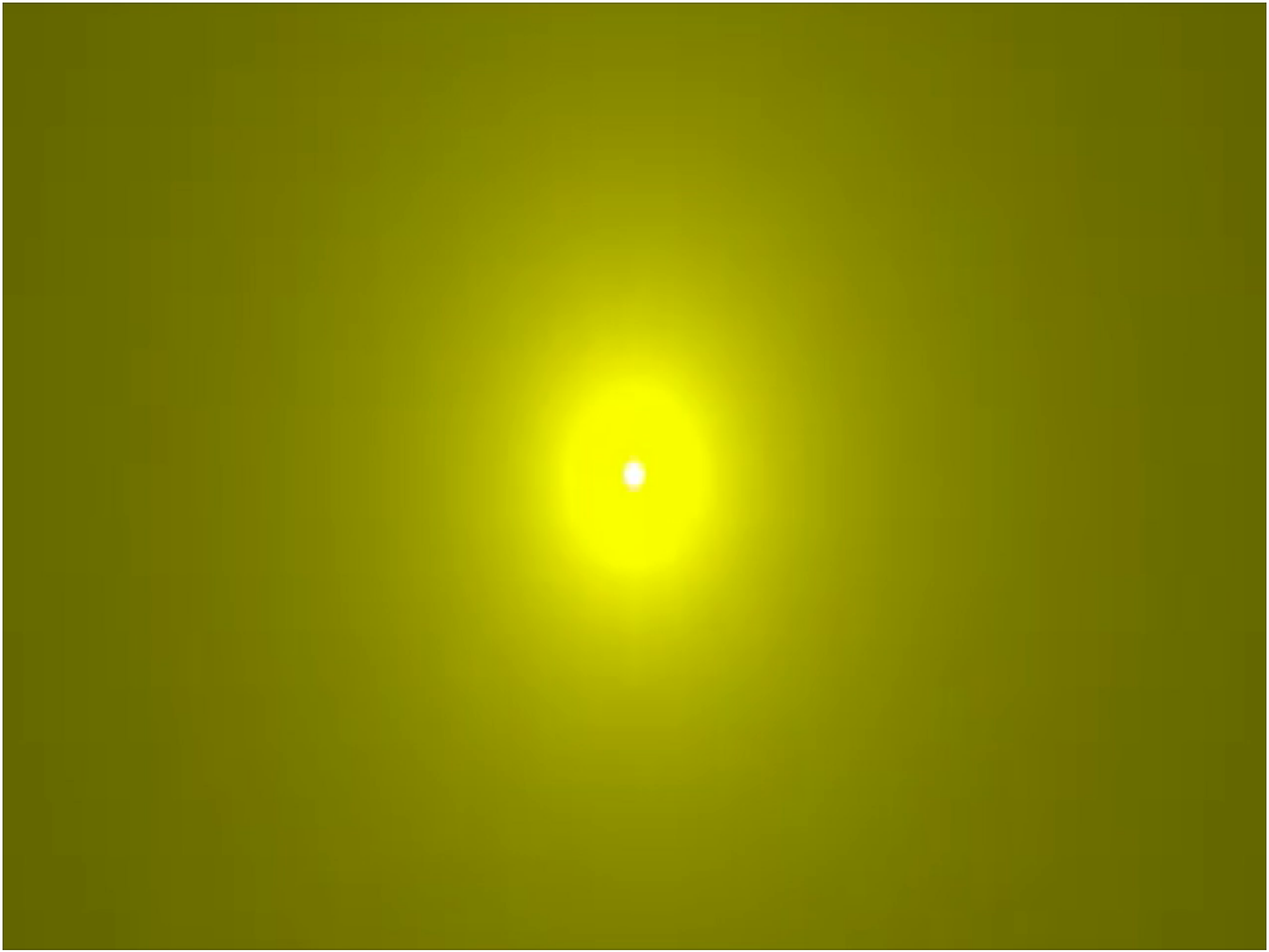
Key Stakeholder Groups



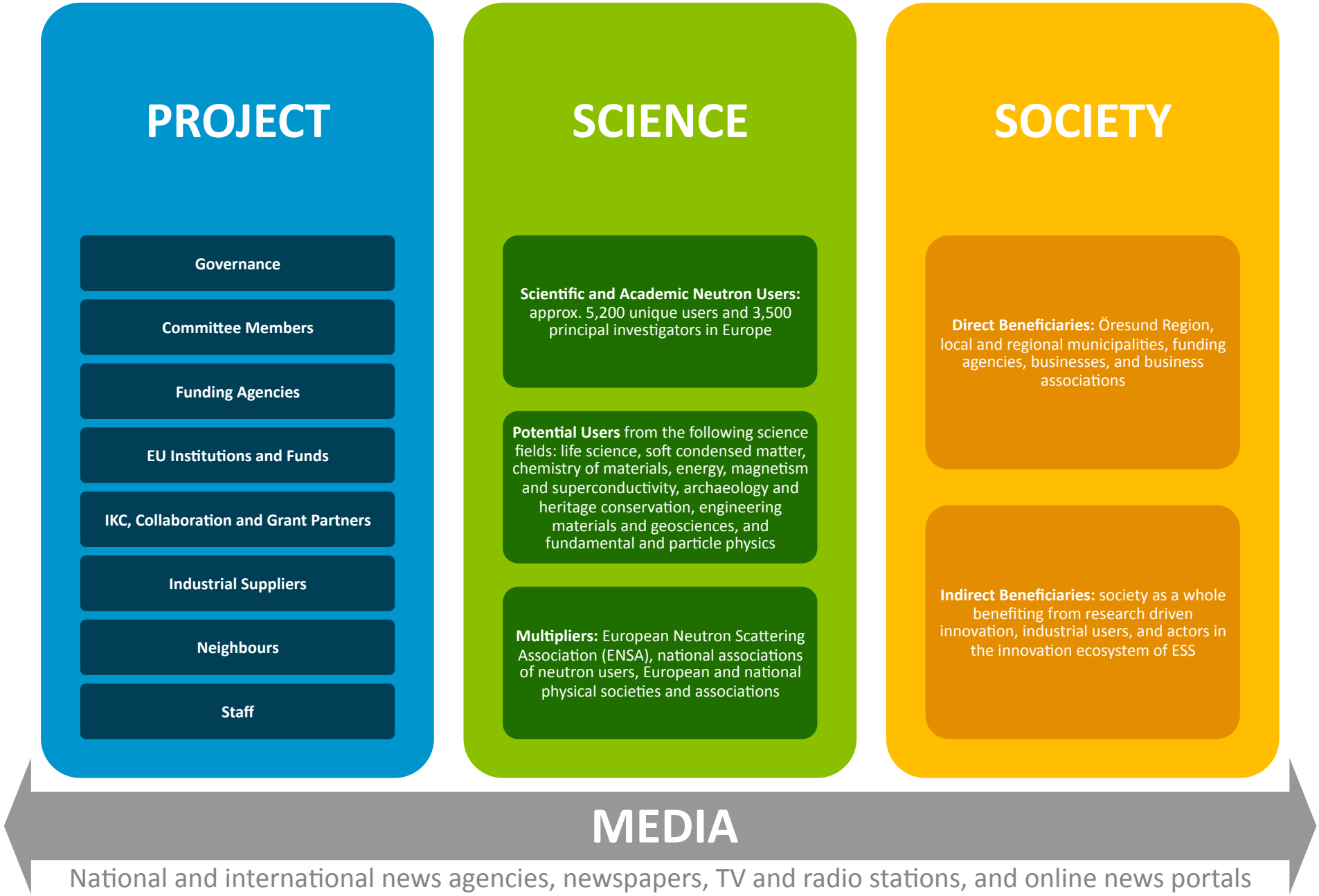
The European Spallation Source

€ 1.846 Billion





Long term projects require long-term commitments


PROJECT
Governance
Committee Members
Funding Agencies
EU Institutions and Funds
IKC, Collaboration and Grant Partners
Industrial Suppliers
Neighbours
Staff
SCIENCE
Scientific and Academic Neutron Users: approx. 5,200 unique users and 3,500 principal investigators in Europe
Potential Users from the following science fields: life science, soft condensed matter, chemistry of materials, energy, magnetism and superconductivity, archaeology and heritage conservation, engineering materials and geosciences, and fundamental and particle physics
Multipliers: European Neutron Scattering Association (ENSA), national associations of neutron users, European and national physical societies and associations
SOCIETY
Direct Beneficiaries: Öresund Region, local and regional municipalities, funding agencies, businesses, and business associations
Indirect Beneficiaries: society as a whole benefiting from research driven innovation, industrial users, and actors in the innovation ecosystem of ESS
MEDIA
National and international news agencies, newspapers, TV and radio stations, and online news portals

STRENGTHS

- ESS project is too big to fail: Approx. 96.5% of construction funding committed, almost 25% of construction works complete
- Strong and committed base of IKC Partners
- High reputation in Europe: ESFRI priority, 2016 ESFRI Roadmap landmark, GSO member etc.

WEAKNESSES

PROJECT

- Fragile political situation in some Partner Countries
- Weak representation of ESS in national governments of Host Countries
- Dependence on IKC Partners
- Delay leading to cost overrun and/or scope reduction
- Transition to new leadership implying extra time to understand key issues

COMMUNITY

- Neutron user community is small when related to investments and operations per country, and compared to users of other research methods
- High investment costs for the facility contrast with limited national research budgets
- Closure of ILL will lead to significant drop in neutron instrument availability
- ESS is not yet anchored in the Swedish academia
- Awareness of ESS in national neutron user communities is limited

OPPORTUNITIES

- Interdependence between Governance Committees, IKC Partners and Grant Partners
- Good working relations with Partner Institutes experienced in communicating science for impact
- Decision on instrument scope and timeline by 2016 will allow for targeted promotion of the launch of user programme in 2023
- Potential IKC success stories related to Estonia, Ion Source, Detectors etc. in the pipeline
- More than 2,000 visitors witnessed progress of civil works on site in the first half of 2016

THREATS

- Projected delay has not been clearly communicated internally
- Growing need for scope reduction
- Possible performance problems stemming from wrong specifications, wrong products etc.
- Imbalanced country representation in ESS procurements, currently dominated by Host Countries
- Lack of agreement on the operations cost models and contributions

CHALLENGES & SOLUTIONS

Funding gap	• Turn Observers into Members • Continue to approach potential new countries, including those outside of ERA • Raise awareness among decision makers in Member Countries about the potentially higher costs • Prepare a communication strategy addressing changes related to de-scoping
Project delay	• Raise awareness among ESS about the consequences of the projected delay • Use the communications networks of IKC Partners to maximize informed communication on national level

High dependence on IKC Partners	• Strengthen the ownership of ESS through early involvement of the Communications Division with IKC Partners to:
	  • Document project progress
	  • Communicate relevant milestones
	  • Celebrate project successes

Imbalance: national investments in ESS vs. size of user community	• Raise awareness for the instrument project:
	  • Encourage participation of latecomer countries in 17-22 instruments
	  • Emphasize excellence in the scope, capabilities, and user programme linked to 1-16 instruments
	  • Strengthen contacts with national neutron communities and support awareness raising for capacity building with funding agencies

Closing of existing neutron sources before ESS launches its user programme	• Raise awareness among national decision makers about the importance of national, medium-sized neutron sources • Support initiatives lead by Partner countries and facilities to design, test, and strengthen the position of medium-sized neutron sources

Status

	✓	✗
PROJECT	• One of the largest science infrastructure projects being built in Europe today • Partnership of 12 Founding Member and 3 Founding Observer Countries • Landmark on ESFRI Roadmap 2016	• Commitments made by countries cover only 96.5% of construction costs. When informal commitments by ES, CZ and LT are deducted, the cost coverage drops to 89.3% • VAT is considered among the most significant non-technical risks to timely construction of the facility • Report from 2016 Annual Review envisages 7-12 months projected delay. Every year of delay is expected to cost approx. 80M euro or more than 4% per annum • ESS will run out of cash by the end of 2016 and no loan has been approved yet • The Swedish government has appointed a dedicated officer to monitor the construction progress and signal any potential cost overruns
SCIENCE	• Europe has led the field of scientific studies using neutrons for approx. 40 years • ESS will deliver a neutron peak brightness of at least 30 times greater than the current state-of-the-art	• Many reactor-based neutron sources in Europe will be dismissed in the next years • Neutron user community in Europe is approx. 5-times smaller than the user community of synchrotron and FEL light sources • Report from the latest Annual Review points out there are serious doubts that the budget plan for 16 instruments is feasible within the 350M euro. Thus NNS should descope instruments to fit within its budget • The lack of a detailed bunker design and schedule is now causing issues for the target and will soon be an issue for partners who are delivering instruments
SOCIETY	• Nearly 45% of research carried out at neutron sources in Europe aims to address major societal challenges • ESS, like other neutron sources, will help to drive innovation and deploy science for the benefit of the society • In-kind contributions serve as means to secure return on investment for Member Countries	• Sweden disproportionally outbalances other supplier countries in terms of total expenditures in awarded procurements. 83% of all invoiced amounts in 2015 and 88% of all invoiced amounts in 2016 (Jan-Sep) came from Sweden

People **Product**	Project/Facility Stakeholders	Science Stakeholders	Society Stakeholders
Life Cycle: Campaigning 2010-2014	'What' will it be and do? • 'What' is the scope? • 'What' is the cost' • 'What' is the timeframe? 'Who' will pay? 'What' are the risks?	'Why' ESS? from scientific perspective, relative to other potential projects. 'What' is the Scientific vision? 'What' capabilities will it offer? 'Who' will benefit?	'Why' ESS? From a socio-economic perspective? 'What' will it bring from a community perspective? 'What' are the tradeoffs? 'What' are the risks?
Life Cycle: Constructing 2014-2020	'How' will we build ESS? 'Who' will build ESS? 'What' are the risks? 'Who' is paying? 'How' are ***we*** doing? 'What' is not included from scope?	'Who' is involved? Deciding? 'What' instruments? 'Who' will be future users? 'What' is not included? 'When' can we start? 'How' are ***we*** doing? (scope & time)	'What' are the risks? 'How' are ***they*** doing? (cost & time) 'What' are socio-economic impacts now? Future? 'Who' is involved? 'What' is the industry impact? 'What' are the risks?
Life Cycle: Operating 2020-2065	'Who' is paying? 'What' remains to be done? 'Who' are the users? 'How' do we manage the users? 'Why' didn't we include 'x'? 'How' to manage the facility?	'What' Science can we do? 'Who' gets to use ESS? Decides? 'What's' next? 'Why' didn't we include 'x'? 'What' are the results? 'What' happens to the data?	'What' are socio-economic impacts now? Past? Future? 'What' are the results? 'Who' is involved? Deciding? 'How' are ***they*** doing? (cost & time) 'What' are the risks?

Construction Project Phase Objectives:

Establish a collaboration basis
Coordinate the collaboration
Maintain a basis for resource support

- Science community events
- Expressions of Interest
- Direct contact with 'potential' partners
- Partner Days
- Creating a 'European' platform


EUROPEAN SPALLATION SOURCE

ESS AB

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Sweden

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+46 (0)46 888 30 00
info@esss.se

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Expression of Interest

6 maj 2013
Trenz Pruca
Title
Company Name
4321 First Street
Anytown, State ZIP

Dear Trenz,

Lorem ipsum dolor sit amet, consectetur adipiscing elit, set eiusmod tempor incidunt et labore et dolore magna aliquam. Ut enim ad minim veniam, quis nostrud exerc. Irure dolor in reprehend incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse molestaie cillum. Tia non ob ea soluad incom dereud facilis est er expedit distinct. Nam liber te conscient to factor tum poen legum odioque civiuda et tam. Neque pecun modut est neque nonor et imper ned libidig met, consectetur adipiscing elit, sed ut labore et dolore magna aliquam is nostrud exercitation ullam mmodo consequet. Duis aute in voluptate velit esse cillum dolore eu fugiat nulla pariatur.

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Sincerely yours,

Urna Semper

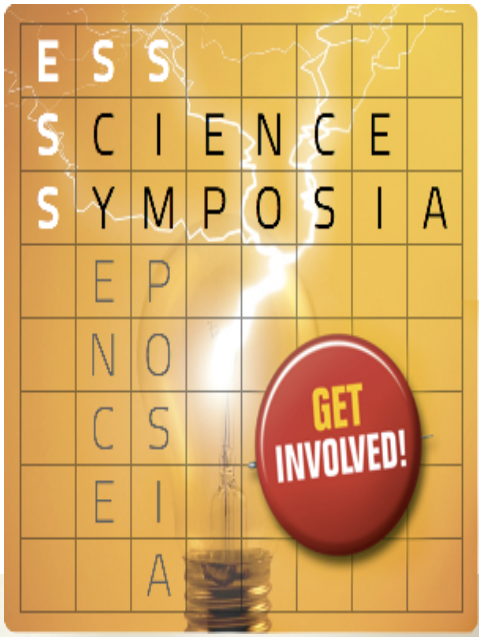
Scientific Communication

(Led by Science Directorate together with Comm & External Relations)

- IKON Meetings 4, 5, 6 (150 people each)
- Science & Scientists (200 people)
- ICNS Booth (800 people at ICNS)
- Science Symposia (15 meetings)
- IPAC 13 Shangahai (1300 people at IPAC)

Special:

- In-kind Workshop Malmö in February
- Internal Year of Crystallography
- Targeted Newsletter

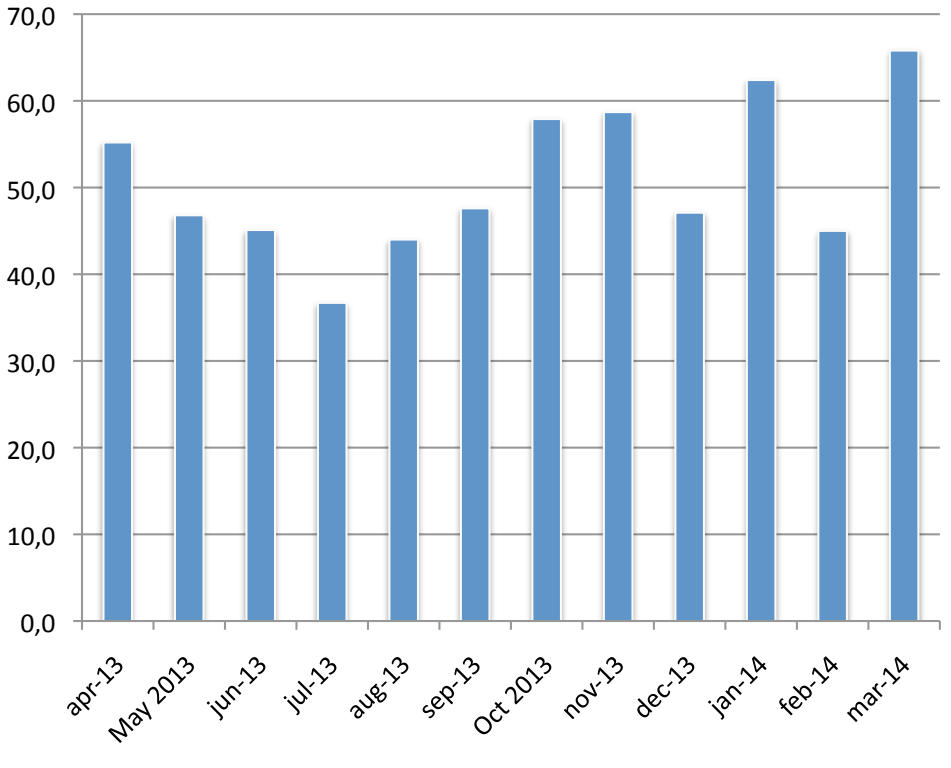


Digital Media

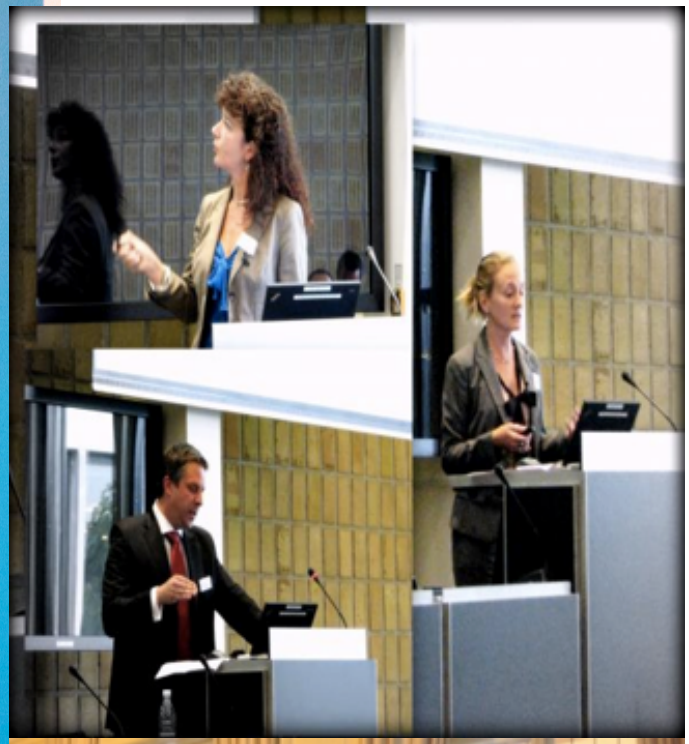
Internet

- Consolidating the site with emphasis on media
- Shifting to time-actual news
- Hiring a dedicated Web Editor

Average: 51,000 hits/mth
Estimated Visitors: 8,500



Partner and Industry



Press & Media: Themes & Issues

- Funding
- Licensing
- Ground-break
- Staffing

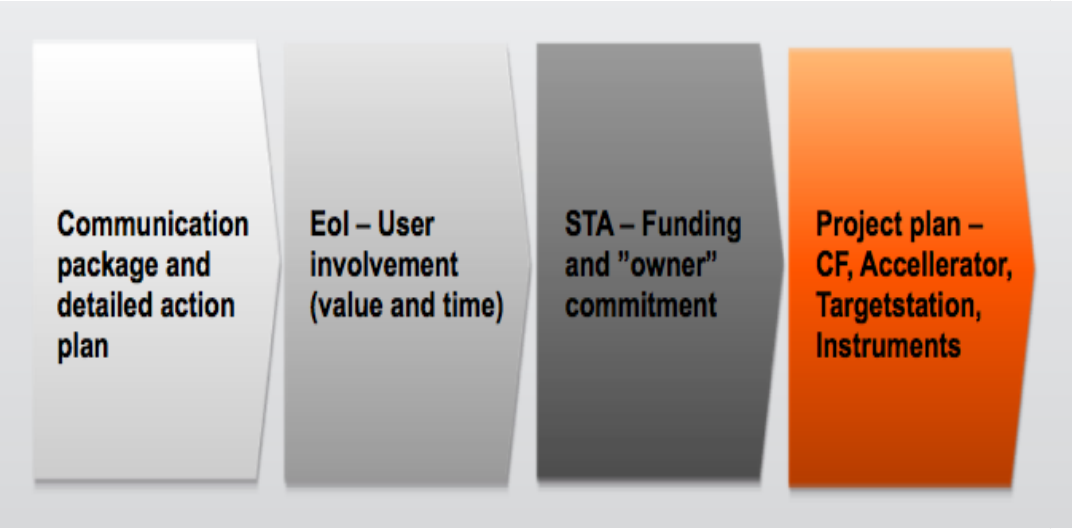
Construction Goals:
Establish ESS across Europe
Continue to build the ESS ‘Collaboration’

ESS bilbao

Material science is a part of everyday life.

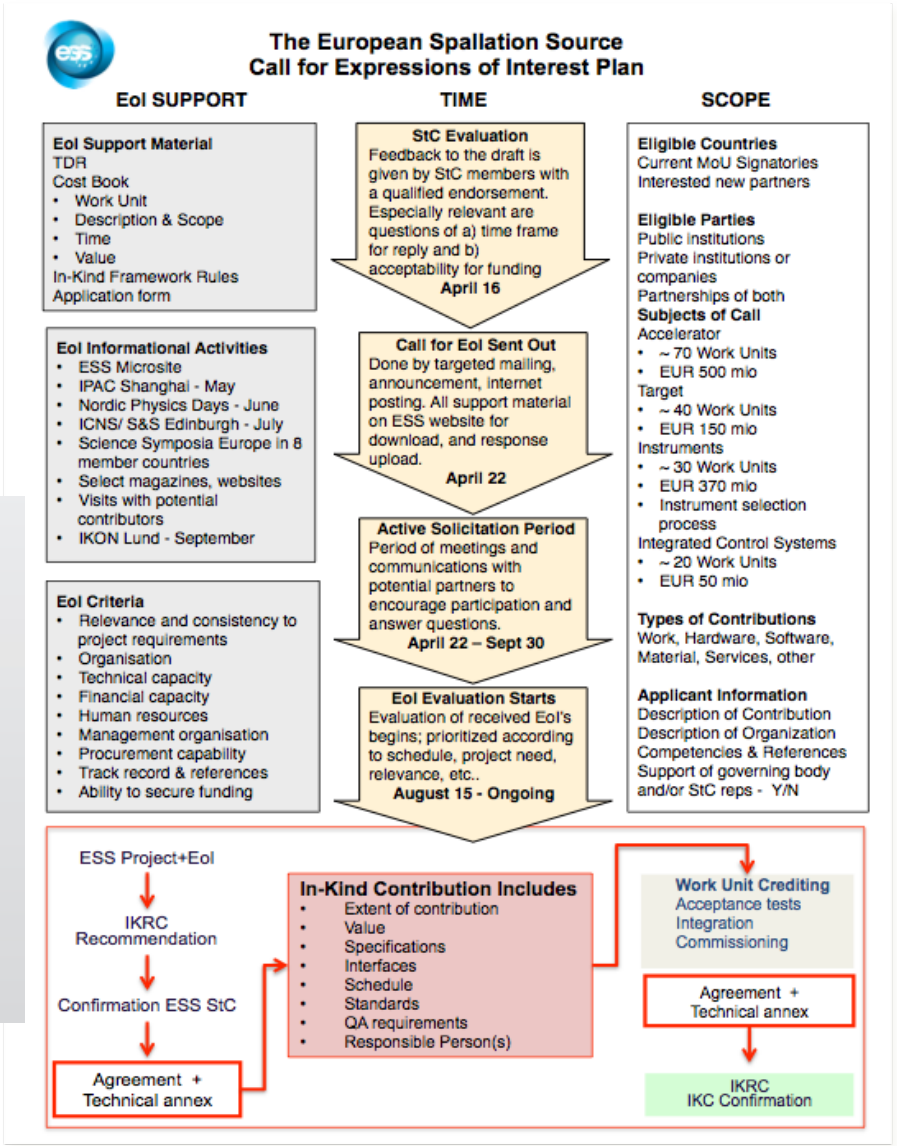
Example

- Understanding the sequences of ESS funding process



"Maintain credibility with stakeholders through openness and transparency"

- James H. Yeck



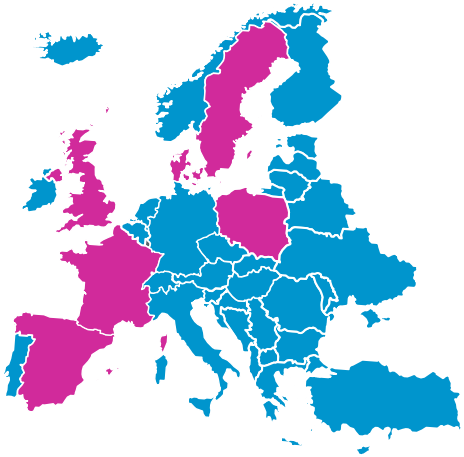
COUNTRY-SPECIFIC

The table below outlines integrated, country-specific communications approaches based on strong partnership building component which utilizes the resources, networks, and activities of EKC and Collaboration Partners of ESS

Priority target groups / priority key messages

* Countries requiring special communications focus

	MS	Status	n-RI	PIs	Specific Considerations	Project	Science	Industrial Supply	Society at Large
	Belgium	Observer		11	Link between SE investment in MYRRHA and ESS membership	Accelerator collaboration Oskarshamn	Awareness raising at universities	No dedicated ILO function yet	
	Czech Republic	Member	X	123	Very committed neutron community	BEER Target systems		Good collaboration with local industry	50% of CZ contribution form ERDF
*	Denmark	Member		65	DK Strategy in place	Role of Host Country DMSC location Industrial use focus Heimdal + Bifrost	Heimdal + Bifrost	Strong Big Science Secretariat ROI strategy	ROI due to Host Country role LINX portal
	Estonia	Member		7	Possible role model for Lithuania and Latvia	First IKC successes	Schools	Strong and supportive ILO Estonia major Skanska supplier	ERDF contribution
*	France	Member	X	678	LLB closing by 2020	Xy Instruments Key partner for Accelerator	637 PIs at LLB Strategy for post 2020 needed Compact source development	Strong supplier base	
	Germany	Member	X	398	HZB closing by 2020	7 instruments Target systems	Xy PIs at HZB Strategy for post 2020 needed Compact source development	Potential not used Inactive ILO	
	Hungary	Member	X	23	Broad set-up	Active in all project areas Instrument 17 -22	Schools		
	Italy	Member		140		Strong Accelerator involvement Instrument Vespa	Scattered neutron community	Strong industrial supply base	
	Netherlands	Observer	X	25	Roadmap incl. funding	Instrument 17 – 22	NL universities Top teams	Strong industrial base	Established industrial users
	Norway	Member	X	18		Small contribution across all projects	Schools Training aspects		
*	Poland	Member	X	53	Neutron community not linked to ESS	Only accelerator Instrument 17 – 22?	Connections to neutron community must be strengthened	Not particular active	Strong subcontractor for Skanska
*	Spain	Observer		95	No central government Missing Basque commitment	Target Wheel Accelerator Instrument Miracles	Stronger interaction with the neutron community	Strong supplier base	Regional impact for Bilbao must be demonstrated
*	Sweden	Member		120	SE Strategy not in place yet	Role of Host Country Conventional facilities Accelerator (UU, LU) Instrument (NMX?, 17+)	Capacity Building (SSF) Schools (Racirl, Nordforsk,)	Weak ILO 90% of all ESS contracts	Massive ROI
	Switzerland	Member	X	191		Instrument Estia + Odin	Strong neutron community	Strong, but expensive supplier base	Established industrial user practice
*	UK	Member	X	981	Brexit	LOKI + Freia Active Cells Accelerator	Largest n-community in Europe	Strong supplier base Active ILO	Proven record of demonstrating impact



Don’t forget the most important thing…

The story comes first.

Before the science.

Has everyone found their story … the story comes first, because it is what connects the relevance.

What is in it for my audience or stakeholder?

Acknowledgements