



**Building a Research Infrastructure and Synergies for Highest Scientific Impact on
ESS**

H2020-INFRADEV-1-2015-1

Grant Agreement Number: 676548

brightness

Deliverable Report D6.3: Three New ILO Nodes



1 Project Deliverable Information Sheet

BrightnESS Project	Project Ref. No. 676548	
	Project Title: BrightnESS - Building a Research Infrastructure and Synergies for Highest Scientific Impact on ESS	
	Project Website: brightness.se	
	Deliverable No.: 6.3.	
	Deliverable Type: Other	
	Dissemination Level: Public	Contractual Delivery Date: 31.7. 2018
		Actual Delivery Date: 23.8. 2018
	EC Project Officer: Mina Koleva	

2 Document Control Sheet

Document	Title: 20180823_D6.3.docx	
	Version: 1	
	Available at: https://brightness.esss.se	
	Files: 1	
Authorship	Written by	<ul style="list-style-type: none"> • Ute Gunsenheimer • Dušan Štric
	Reviewed by	<ul style="list-style-type: none"> • Juliette Forneris
	Approved by	<ul style="list-style-type: none"> • BrightnESS Steering Board on 21 August 2017



3 List of Abbreviations and Acronyms

ACFA	Asian Committee for Future Accelerators
AFC	Administrative and Finance Committee
BSBF	Big Science Business Forum
CEA Saclay	Saclay Nuclear Research Centre - Commissariat à l'énergie atomique
CERN	European Organisation for Nuclear Research
DESY	Deutsches Elektronen-Synchrotron
ERICs	European Research Infrastructure Consortiums
ESA	European Space Agency
ESO	European Southern Observatory
ESRF	European Synchrotron Research Facility
ESS	European Spallation Source ERIC
HL-LHC	High Luminosity LHC project
HZB	Helmholtz Center for Materials and Energy
IN2P3	French National Institute of Nuclear and Particle Physics
INFN	Istituto Nazionale di Fisica Nucleare
IUPAP	International Union of Pure and Applied Physics
GSI/FAIR	GSI Helmholtzzentrum für Schwerionenforschung
IKC	In-Kind Contribution
ILO	Industry Liaison Office
IPNO	Institut de Physique Nucléaire d'Orsay
IRFU	Institut de Recherche sur les Lois Fondamentales de l'Univers
LLB	Laboratoire Léon Brillouin
PSI	Paul Scherrer Institute
RIs	Research Infrastructures
STFC	Science and Technology Facilities Council



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5 Executive Summary

In September 2013 the European Spallation Source (ESS) launched its Industrial Liaison Office (ILO) Network to establish two-way communication with key stakeholders. The main purpose of the Network is to provide transparency and equilibrium for the benefit of the industries and labs of the Partner Countries. The ILO Network is a long-term activity as it is foreseen in the main research infrastructures, especially within large-scale facilities. The ILO Network at ESS is an distinguished instrument that anticipates preparations for In-Kind Contributions and procurement opportunities. Through various tools, information is disseminated to the ILO nodes to encourage participation and involvement in ESS. The ILO nodes in the Member States play a crucial role in coordinating the participation of the respective national industries by generating synergies, matchmaking, capacity building, networking, and mapping of companies' competences. This direct engagement with industry enables companies to maximise the benefit from ESS procurement opportunities and R&D partnerships, and for ESS to integrate the companies' know-how into the construction of the facility. ILO officers of ESS meet on a regular basis to share information about their respective national organizations, discuss in-kind opportunities and address questions to ESS management.

Though, the main focus of the network from the beginning until now has been on construction challenges, it is planned to evolve towards operational opportunities and industry involvement in the long run. The ESS is also exploring the value of the Network in terms of boosting innovation activities. The ILOs have an excellent understanding of the innovation potential of the equipment and state-of-the-art technologies developed at and for ESS. They are well-positioned to identify partners that can contribute to the development of new knowledge, and have the capacity to lead commercialisation of these technologies into broader markets. ILOs communicated to ESS that they want to play a more active role in the future innovation ecosystem of ESS. A stronger involvement would bring mutual benefits, i.e. it would support technology transfer and industrial use of the ESS facility, and also provide support to ILOs in their roles in their respective home countries.

This report presents the important role of ILOs in Big Science projects like ESS and gives an overview of activities of the ILO Network at ESS carried out within the framework of BrightnESS between September 2015 and August 2018. During the project period, a number of industry-related activities have been performed. Some of them consist of joint activities between several BrightnESS work packages and partners, while others have been co-sponsored activities with ESS partners outside the BrightnESS context.



6 Context

The mission of Big Science facilities is to provide Member/Partner countries excellence in fundamental or applied research opportunities and results. As such, they must also provide evidence of the advantages that the eventual industrial return and technology transfer opportunities, including educational opportunities for the scientific community, will be more than worth the investors' substantial investment.

One way to demonstrate these advantages is by the number and value of industrial contracts – which are quantifiable and in many cases seen as a source of innovation and knowledge transfer for the companies involved. Still, public procurement rules can be problematic in trying to maintain the balance between developing cost-effective long-term relationships with suppliers and openness and transparency in the tender process. ESS is doing all it can to be an effective and fair player in this process.

A handy report summarising the best practices for Big Science organisations to improve their interaction with industrial suppliers was published by BigScience.dk in 2017. The report shares recommendations on improving supplier databases, organising company visits and industry days, participating in industrial fairs, and using special procurement tools. For more information see: Best Practices for the Interactions between Big Science Organisations and Industrial Suppliers.¹ Parts of the report you are reading are largely inspired by the BigScience.dk report.

6.1 Drivers for Establishing Industry Liaison Functions

Large-scale research infrastructures (RIs) enable scientists to conduct research addressing the most pressing societal challenges of our times. As research questions become more complex so does the construction and operation of such facilities. Traditionally, large-scale RIs have a lifetime of several decades and go through major upgrades during this period. At the Big Science Business Forum (BSBF) organised in February 2018 in Copenhagen, RIs such as CERN, ESA, ESO, ESRF, ESS etc. presented business opportunities worth EUR 10 billion over the next five years.

The realisation of large-scale RIs requires systematic and strategic planning called roadmapping. According to a report of the OECD, “large-scale research infrastructures that are the object of roadmaps are very costly.”² The current European Strategy Forum on Research Infrastructures (ESFRI) Roadmap lists investments at over EUR 2.5 billion. This substantial financial commitment to Big Science projects is direct evidence of the importance of leveraging the resulting innovations both for Member nations and their local industries.

Establishing an Industrial Liaison Office (ILO) is one way to do this, and is typically paid for by a member state. An ILO's main responsibilities are to: motivate the respective national industry to participate in tenders issued by Research Infrastructures (RIs); identify business opportunities at RIs and promote them to national industry; and support them in the bid development, if necessary. An ILO's constant challenge is building an industrial partnership base and maintaining the relationships with industry to serve the RI, industry, and the member/partner nations to ensure research collaboration and technology transferred to the private sector that impacts the European economy and its citizens' quality of life.

¹ The report was published by BigScience.dk and is available online at:
http://www.bigscience.dk/media/1078/best_practices_big_science_industrial_suppliers_17022017.pdf

² OECD Global Science Forum. Report on Roadmapping of Large Research Infrastructures (2008), p. 8.
<https://www.oecd.org/sti/sci-tech/47057832.pdf>



Procurement procedures from RIs can be complicated and difficult to navigate for the industry. ILOs can provide invaluable help to companies through these complex processes. Their efforts can result in substantial amounts of project euros to be gained by companies.

With this understanding of what ILOs do, it is necessary to be aware of the complexity of the procurement processes of Research Infrastructures (RIs) to have an appreciation of the need for ILOs. These RIs are owned by a consortia of nation states organised in various legal forms (international organisations, European Research Infrastructure Consortiums (ERICs), Ltds., foundations, etc.), that spend public money, i.e. they have to follow their own public procurement principles. Each country has their own way of financially handling this type of investment. On the back end, there are also different ways of handling the technology transfer, intellectual property, etc.

The European Spallation Source (ESS), for example, has an investment cost of EUR 1.843 billion, and an estimated annual operations budget of approx. EUR 140 million over an estimated lifetime of 40 years of operation. This substantial amount of investment capital has connected to it an expectation of substantial return for stakeholders. A big part of the budgets are spent in the respective host countries of the RIs since maintenance and staff costs are mainly spent locally. An ILO can help the delicate balance between fulfilling the conditions of the procurement/tender process, and satisfying local industry.

Two of the main difficulties are a part of this process: a.) insufficient time for multiple activities, and b.) the challenge of motivating researchers/engineers to take timely action or opportunities to interact with industry.

Other challenges include:

1. Mediating between Industry and researchers/engineers when projects don't go as planned;
2. Protecting the intellectual property of individual companies while developing opportunities to expand industrial involvement;
3. Helping smaller companies to submit tenders to make up for the fact they don't have years of experience in dealing with the procurement processes and challenges;
4. Creation of a team environment where stakeholders can effectively collaborate and communicate on their projects.

For an international organisation like ESS, an ILO may assume the delicate role of coordinating inputs from industry hi-flyers and their respective scientists.

Another challenging reason for needing an ILO is that intellectual property obligations to sponsors can also impose barriers in negotiating new joint ventures and licensing technology to other companies.

That said, the main drivers for an ILO are a combination of exciting research and the need to find a strong and demonstrable fit to industry needs and future products and services. Generally, ILOs enjoy the excitement and intellectual stimulation of working at the nexus of cutting edge research and technology development to help design research programs that meet industry needs and fosters innovation.



6.2 Challenges of the Big Science Market

This section is largely inspired by the BigScience.dk report titled “Best Practices for the Interactions Between Big Science Organisations and Industrial Suppliers”.³

One of the biggest challenges of Big Science organisations is developing a good pool of expert suppliers to ensure that tenders have enough competition to keep costs down and quality up. There is also a concerted effort to avoid single sourcing to reduce the risk of relying on one company too much. As such, there are also a myriad of issues relating to purchasing from many different companies and countries, all of whom have different procedures and tax laws with regard to dealing with Big Science facilities. The Industrial Liaison Office’s role is integral to working with partner countries and identifying locally relevant industrial suppliers.

‘Prime Contractors’ leverage relationships with the Big Science market to interact closely and strategically with public authorities, thereby gaining some measure of control of Big Science projects and the necessary technologically demanding supplies, and increasing their share of the market.

This market’s evolution since the middle of the last century has been a source of stable work, and represents a tradition for some companies who have grown with the industry, and have been a part of every phase its growth.

It is this tradition that defines the through-line of these companies that are conservative in practice, yet cutting-edge in technological innovation. As a result, it can be a daunting and difficult experience for smaller companies to gain a first offer on the market.

Access to this first offer will often be the result of the politics of national programs and activities with industrial partners, as well as through the interventions of ILOs. After gaining a first order, it is much easier to gain the next one because the obligatory references are already in place.

The market’s reputation is that it’s dominated by a small number of large companies that have all been through the process, and know how to work within the system. Often, a tender’s short turnaround time, capital requirements, and the required voluminous paperwork make it next to impossible for smaller companies to devote the resources to even apply. Their only way “in” is as a subcontractor. These are the challenges an Industrial Liaison Office can help mitigate or try to overcome.

6.3 Establishment of an ILO Network at ESS

In 2012 discussions began in earnest to set up an ILO network at ESS. After approval by ESS management, the concept was presented to the Administrative and Finance Committee on 4 June 2013 to determine support for the initiative in order to synchronise the responses to the Expression of Interest call and provide the Partner Countries with initial national assessments. From the beginning ESS has demonstrated their belief that the ILO’s role was broader than a mere procurement-related function. In those discussions ESS took into account that the non-host countries contribute the majority of their budgets in-kind, and that the ILOs presented huge potential for facilitating and supporting the process of identifying suitable IKC partners in their countries.

³ Best Practices for the Interactions Between Big Science Organisations and Industrial Suppliers (2017). http://www.bigscience.dk/media/1078/best_practices_big_science_industrial_suppliers_17022017.pdf



In July 2013 a letter to Steering Committee members requested their appointment of an ILO for their country. Of a total of 17 countries declaring their interest in working towards the establishment of ESS, 12 of the ESS Partner Countries took part in the launch of the ESS Industry Liaison Office Network (ILO) on 30 September organised at the ESS Headquarters in Lund. The following countries sent ILOs to the kick-off: Sweden, Denmark, the Czech Republic, Estonia, France, Germany, Hungary, Italy, Lithuania, the Netherlands, Norway, Poland, Spain, Switzerland, and the United Kingdom.

The Role of ILOs

The ESS Industry Liaison Office (ILO) Network, is a network of offices located in each respective Partner Country with a central node in Lund whose main purpose is to provide communication, equilibrium, and transparency for the benefit of the industries and labs of these Countries with regards to the various opportunities that will arise during the construction and operation of ESS.

The ILO Network is a distinguished instrument anticipating preparations for In-Kind Contribution (IKC) and procurement opportunities, in addition to other interesting offers. The ILO Network is not a decision-making body, but a platform for exchange between ESS and the Partner Countries focusing on disseminating information and encouraging participation.

The ILO representatives are expected to have extensive knowledge about their national science industry and labs (with strong experience in liaising with other research infrastructures) to stimulate opportunities in the most tangible ways. The ILOs serve the interests of its national labs and industries by leveraging the business opportunities provided by ESS. The responsibilities of the ILOs include:

- **Information:** Identifying business opportunities at ESS (tenders, IKC, other relevant opportunities) and communicating those between ESS and the private sector;
- **Matchmaking:** Mapping of companies' competences, finding suitable partners, and setting up joint bids;
- **Capacity-building and networking:** Training on tender requirements and processes

Each Partner Country has to cover the cost and management of its respective personnel (appointed, maintained, and equipped by national governments), infrastructure, travels, and other expenses that encompass the operation of their national node. ESS covers the costs of the central node and the central activities, including personnel, travels, and IT platform investments. The central node serves as a one-stop-shop for all requests, manages a yearly agenda (jointly developed by the network), and works with and manages information tools. The central node provides information on upcoming procurements, opportunities for In-Kind Contributions, and other relevant topics. The central node also organises and co-organises the ESS industry relevant events.

The ILO Network is developed and coordinated by ESS, the responsible organisation for planning and coordinating a broad-based annual plan for the activities of the Network as a whole. A contact person is available in Lund and is dedicated for the assistance and operation of the Network. The chair of the ILO network is involved in the setting up of the agenda of the ILO meetings.

The ILO Network is a long-term activity as it is foreseen in the main research infrastructures, especially within large-scale facilities. Though, the main focus of the network from the beginning until now has been



on construction challenges, it is planned to evolve towards operational opportunities and industry involvement in the long run.

6.4 Procurement at ESS

The European Spallation Source is a brick-and-mortar project with demand for niche and high-quality suppliers. The building of ESS is truly complex, with thousands of pieces of equipment to be delivered and integrated into the facility. Much of this will come from companies – large and small – who are selected through competitive procurement procedures, and which are notified on the ESS website and promoted through the international Industrial Liaison Officers Network of ESS. Article 7(3) of the ERIC Regulation states that “An ERIC is an international organisation within the meaning of Article 15(c) of Directive 2004/18/EC.” This implies that an ERIC is not required to follow the procurement procedures established by Directive 2004/18/EC on the Coordination of Procedures for the Award of Public Works Contracts, Public Supply Contracts, and Public Service Contracts, which was repealed by Directive 2014/24/EU of the European Parliament and of the Council on public procurement.

In other words, an ERIC has the possibility to decide on its own procurement rules, while respecting basic principles of transparency, non-discrimination, and competition. This approach allows ERICs to pull in resources in the most efficient way. In line with the provisions set out in the ERIC Regulation, ESS has adopted its own procurement rules. The rules were approved by the Council of the European Spallation Source ERIC in July 2015 and have been effective since 1 October 2015. They apply to all contracts for the provision of goods, works, and 10 services, concluded in writing between ESS and third parties and financed by the ESS budget. The aim of ESS in procuring goods and services from companies is to achieve the best value for money in order to optimise the construction of the facility. The European Spallation Source has a dedicated division for the procurement of goods and services. Flexibility in the procurement rules is of crucial importance for the construction of ESS as they provide indirect support to the Organisation in its quest to build the facility on time and budget, while meeting state-of-the-art performance requirements.

Background

The ESS Procurement Rules provide flexibility to the Organisation in addressing the most frequent issues relative to public procurement. They facilitate key challenges in the procurement of goods and services such as time constraints, ability to choose the most appropriate procedure, and need to interact with suppliers at an earlier stage.

The procedures for award of contracts by the Organisation shall respect the EU principles of transparency, proportionality, mutual recognition, equal treatment, and nondiscrimination.

While conducting procurement, the Organisation shall seek to promote the objectives of value for money, publicity, integrity, innovation and sustainability, as set out in the preamble to these rules.

The European Spallation Source ERIC considers it desirable to regulate procurement so as to promote the objectives of:

(1) Value for Money – Secure the best mix of quality, effectiveness and price over the whole life cycle of the purchased goods, works or services;



(2) Publicity – Contracts above certain thresholds shall be published in appropriate media, except where the circumstances or the nature of the contract justify reliance on specific exemptions;

(3) Integrity – All procurement shall be conducted in a manner above reproach and with complete impartiality and preferential treatment for none. Personnel of the Organisation shall adhere to the Organisation’s Code of Conduct and Code of Ethics in Contracting;

(4) Innovation – Where possible, procurement needs should be stated as outcomes as early as possible in a non-prescriptive way to maximise the opportunities for innovators and suppliers to present their solutions. Whenever practicable, early supplier involvement shall be sought with a view to realise the full potential of suppliers’ ideas;

(5) Sustainability – In accordance with relevant EU policy, the ERIC seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured. This may include, for example, the reduction of greenhouse gas emissions and air pollutants, improved energy and water efficiency, use of renewable resources, reduced hazardous waste and support for refuse and recycling. Seek to promote decent work, social inclusion, accessibility, employment opportunities, ethical trade, gender equality, health and safety and achieve wider compliance with social objectives, provided these are linked to the subject matter of the contract.

Choice of Procedures

Before the European Spallation Source became an ERIC, its procurement rules were guided by Directive 2004/18/EC implemented through the Swedish Procurement Act (LOU) and Directive 2014/24/EU which later replaced it. According to the provisions of the Directive, tenders of a value above 207k EUR have to be published in the *Official Journal of the European Union*: <http://eurlex.europa.eu/oj/direct-access.html>.

The Directive 2014/24/EU defines the following four types of procurement award procedures: • Open procedure outlined in Article 27,

- Restricted procedure outlined in Article 28,
- Competitive dialogue outlined in Article 30, and
- Negotiated procedure outlined in Article 29.

The procedures defined by the Directive are rather complex in nature and the period from the publication of a call to the awarding of a contract can take up to 250 days. Time flexibility and possibility to choose the type of procedure used are among fundamental reasons why the European Commission allows ERICs to set up their own procurement rules. The type of procedure used is decided based on the value, scope, and objective of the procurement, in consultation between the procurement staff and requestor and technically responsible owners. The principles enshrined in the procurement rules of ESS from 2015 are similar to those outlined in the respective EU Directives, and recognise several different procurement methodologies, which are implemented based on different value thresholds. The flexibility in timing, as well as the possibility to choose specific procedures available in the procurement rules are both important factors for realising ESS. A summary of the procedures and value thresholds included in the original version of the Procurement Rules is provided in the table and section below.



Value Threshold	Publication	Procurement methodology	Minimum Timing	Variations in Timing	Standstill Period
>200.000 EUR	Publication on ESS website. Other media depending on subject matter and value.	Open procedure	30 days	(+) 5 days if documents not available by internet (-) 3 days if receipt of tenders electronically (-) 10 days if SAN published 30 days - 12 months in advance	10 days
		Restricted procedure	25 days + 25 days		
		Competitive procedure with negotiation with or without initial tender	25 days / 30 days		
50.000 - 199.999 EUR	Publication on ESS website. Other media depending on subject matter and value.	Open procedure	20 days	(+) 5 days if documents not available by internet (-) 3 days if receipt of tenders electronically	optional
		Restricted procedure	15 days + 15 days		
		Competitive procedure with negotiation with or without initial tender	15 days / 20 days		
10.000 - 49.999 EUR	Optional on ESS website.	Request for Quotation on website or directly to minimum 3 suppliers from supplier roster, or seek optimal level of competition	-	-	-
<10.000 EUR	-	Request for Quotation or price comparison with limited competition	-	-	-
<300 EUR	-	Direct purchase with reimbursement or via ESS established account	-	-	-

Figure 1: Procurement value thresholds

ESS Does Not Apply the Principle of “Juste Retour”

Some Big Science organisations such as CERN or ESO are international inter-governmental organisations with their own procurement rules. This includes the principle of “Juste Retour” according to which the global value of contracts awarded within a member state should reflect as precisely as possible the amount of money that the country subscribes. It is intended to encourage the growth of pan-European industrial capability. “The implementation of the policy these days is complex to say the least. Different weighting factors are applied according to contractual sophistication (100 per cent for innovative technologies, zero for toilet rolls), and substantial managerial involvement . . . is necessary.”⁴

ESS’ procurement rules don’t follow the principle of “juste retour.” The juste retour quid pro quo procurement approach is not compatible with ESS’ procurement objectives of value for money, publicity, integrity, innovation, and sustainability, and as such means ESS has much more flexibility in making its own procurement rules. “Requirements for multiple vendors/contractors and for juste retour can be difficult to reconcile with optimal risk management. There may be situations in which juste retour requires the awarding of contracts to companies that would not be chosen if price, performance and minimisation of risk were the only selection criteria.”⁵ Therefore, it should be noted that “awarding a proportion of contracts to second-best bidders hardly leads to efficiency, and there is also the bureaucracy required to ensure that the juste retour principle operates.”⁶

⁴ <http://iopscience.iop.org/article/10.1088/2058-7058/1/11/1/pdf>

⁵ <https://www.oecd.org/sti/sci-tech/CERN-case-studies.pdf>

⁶ <http://iopscience.iop.org/article/10.1088/2058-7058/1/11/1/pdf>



Business Opportunities Relative to ESS

The ESS project is broken down into sub-projects, including Accelerator Systems, the Target Systems, the Integrated Control System, and Neutron Scattering Systems. ESS encourages all potential suppliers to familiarise themselves with the organisation of ESS and its technical areas. Businesses from all countries are eligible to participate in ESS procurement processes.

Companies are likewise encouraged to contact their country **Industrial Liaison Office (ILO)**. The ILOs have firsthand knowledge of business and collaboration opportunities at ESS, and are up-to-date on the status of each project.

ESS is a joint research infrastructure, which provides many opportunities for industry to contribute to the construction of the world's most powerful neutron source. These are the different possibilities of going into business with ESS:

1. Direct Procurement with ESS

Current and forthcoming at ESS is displayed on our procurement page. Contract award notices are also posted on the website. Companies are invited to submit their online Business Profiles to enable ESS to match potential suppliers with the relevant procurement at ESS.

ESS follows the European Spallation Source ERIC Procurement Rules, which are aligned with the EU treaty principles of transparency, non-discrimination, and competition.

2. As a sub-supplier to ESS In-Kind Partners

Around 30% of the ESS EUR 1.843 million construction budget will be realised by means of In-Kind Contributions (IKC) from European Partners.

Each ESS In-Kind Partner follows its own procurement rules. Companies are encouraged to contact an organisation directly if they see a match between their company's offerings and the listed IKC Agreement.

3. As a sub-supplier to Skanska (the construction company building ESS)

Skanska Sweden (75%) and Skanska UK (25%) are our partners for the civil construction works of ESS. As with our In-Kind Partners, Skanska follows its own procurement policies according to the Swedish construction industry regulations. All Skanska suppliers must conduct a prequalification, which is handled through the Skanska Supplier Portal. Here, suppliers can also upload current contact details and information about the goods or services they offer.

7 Activities

During the project period, a number of industry-related activities have been performed. Some of them consist of joint activities between several BrightnESS work packages and partners, while others have been co-sponsored activities with ESS partners outside the BrightnESS context.

Industry Outreach

Various outreach formats have been implemented in order to inform potential suppliers about business opportunities at ESS and those available with its In-Kind partners, as well.

Partner and Industry Days

This format was created in 2013 to promote ESS in potential member states. It presented collaboration possibilities for science labs and relevant industries to stimulate buy-in from the funding agencies in the respective countries. Over the years the focus of this format has naturally evolved and matured: now ESS and the IKC partners together present industry with the business opportunities relative to their technical work packages.

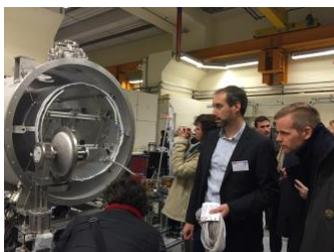
Industry and Partner Day in Paris, France, 4 – 5 February 2016 (lead with Gallia Hub)



The second French Industry and Partner day was held February 4-5. The half-day programme that was spent visiting the laboratories of CEA Saclay and CNRS demonstrated the progress of the French accelerator and detector developments for ESS. This set the stage for the full-day programme at the French Ministry of National Education, Higher Education, and Research on Friday.

Picture 1: Second day at the Second Industry and Partner Day in Paris on 5th February at the French Ministry of Education

The laboratory visit part of the ESS French Partner event exhibited the impressive facilities at the Institut de Physique Nucléaire d'Orsay (IPNO), Laboratoire Léon Brillouin (LLB), and the Institut de Recherche sur les Lois Fondamentales de l'Univers (IRFU) to the many participants from French institutes and industry, and included prototypes of large cryomodules, a view inside the activities in clean rooms, and a look at a neutron detector. The tour of the laboratories helped visualise some of the prototypes that will be produced later on in series and installed at ESS in Lund as part of the French team's In-Kind Contribution to the project.



Picture 2: Sebastian Boussin, Director of Accelerators Division, Institut de Physique Nucléaire Orsay (IPN), who also gave a talk



Picture 3: French partners laboratories visit and view at the assembling works in clean room environment

Superconductivity & Particle Accelerators, Kraków, 6 – 7 December 2016



Picture 4: Carlo Bocchetta, BrightnESS WP 2 Leader presenting ESS to Polish partners from academia and industry

The conference was focused on research in the field of particle accelerators performed in Polish research institutions, as well as by Polish scientists working in international laboratories. It was a continuation of the previous conferences held at the IFJ PAN in 2012 and 2014. The objectives of this conference were to identify current and potential areas of research in superconductivity and particle accelerators that were being developed and that are possible to develop in Poland, and to determine the needs in the infrastructure to support this research.

Opportunities for UK Industry to engage with ESS - 22 November 2016, Oxford UK (Lead North-West Hub)



Picture 5: Colleagues from ESS and STFC presented business opportunities to British industry

STFC, in partnership with BrightnESS, hosted an event that focused on how UK industry could engage with the European Spallation Source (ESS). The event was held at the Rutherford Appleton Laboratory (RAL), along with optional afternoon sessions at RAL and RACE, Culham Science Centre on Tuesday 22 November 2016. The morning session was open to UK industry only, whilst the afternoon session at RACE was open to all EU companies interested in the active cell's work package.

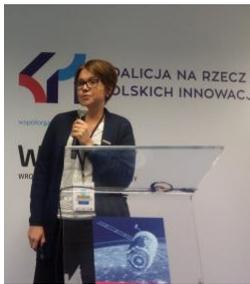
3rd HiLumi Industry Day in Warrington UK, 22nd May 2017



Picture 6: Meredith Shirey and Luis Ortega from the ESS Supply, Procurement and Logistics Division using the forum to present business opportunities at ESS

An industrial event concerned with the major CERN project in the next decade, the High Luminosity LHC project (HL-LHC), was held at the Park Royal in Warrington, United Kingdom on 22-23 May 2017. This event represented a follow-up to the 2nd HiLumi Industry Day held in Lisbon in October 2016. Leading companies in the fields of superconductivity, cryogenics, power electronics, electrical engineering, mechanics, ultra-high vacuum, and radiofrequency met HL-LHC project engineers to explore the technical and commercial challenges coming out of the design and procurement of the LHC upgrade accelerator, and to match them with state-of-the-art industrial solutions.

Innovative Europe 2017 - Fly me to Mars, Wroclaw, Poland, 23rd – 24th November 2017



Picture 7: Meredith Shirey, Head of Supply, Procurement and Logistics at ESS presenting business opportunities at the European Spallation Source

The Big Science Day was conducted as part of a larger event, the “Innovative Europe 2017 - Fly Me to Mars” conference. The coordinator of this path is Wrocław Technology Park S.A. Over two days, entrepreneurs, scientists, and experts from the Big Science institutions jointly reflected on how to strengthen the Polish role in the implementation of Big Science projects.

ESS Instruments Industry Day organized by French, German and Swiss ILOs, Paris, 8th June 2018



Picture 8: More than 130 participants attended first ESS Instrument Day in Paris and listened to the introduction of DG John Womersely

The objective of the event, “ESS Instruments Industry Day” is to provide regular meetings between the three stakeholders: ESS managers, physicists, and instrument engineers from the laboratories in charge, as well as with industrial companies, and are seen as highly valuable. The event was held Friday 8 June 2018 at FIAP Paris. On this occasion, the industrial companies were able to learn about the technical status updates of the project, and had the opportunity to present their technology and expertise to the national laboratories, as well as to ESS' contractors.

The ESS directorate, as well as the highest level representatives of CNRS, CEA, FZJ, and PSI, were present. The BrightnESS ILO team were pleased by the participation of about 80 representatives of the industrial world, as well as 60 academics and officials from France, Germany, and Switzerland. An exhibition of more than 40 posters that facilitate exchanges and serve as a basis for a “Business to Business” session was also organised.

Industry Delegation Visits to ESS Headquarters in Lund

On this occasion, ESS presented a more tailored and individual approach to the organisation of visits for company delegations. Two of these visits were organised within the framework of BrightnESS, and as usual include a small number of participants from a certain technology sector. After presentation of the ESS project, there was a presentation of company profiles and 1:1 meetings with technical people/Work Package Leaders to explore collaboration possibilities.

Italy@ESS, 7th June 2016 (Lead: Italian ILO)



Picture 9: 12 companies attended the meeting in Lund organized by Italian ILO Prof. Sandro Centro

On the 7th of June, 12 Italian companies visited ESS to meet Procurement, In-Kind, and Research representatives in a one-day event in Lund. The event is part of ESS’ engagement with the private sector and with Industrial Liaison Officers (ILO) in the member states.

“This was the first visit of Italian Companies to ESS with the objective to present their know-how and competencies of interest for the ESS project,” says Italian ILO Sandro Centro, professor at the University of Padua. “Possibly, according to ESS management, a future visit for a different set of Italian companies can be envisaged.”



Picture 10: Allen Weeks, Head of Communications, External Relations and In-kind Management providing a status up-date on ESS

In the second part of the meeting, companies presented their main areas of expertise and their portfolio of projects with other European research infrastructures to an audience of ESS accelerator and target experts.

French BrighnESS Workshop: Engineering Aspects of ESS (25th – 26th September 2017) in Lund, Sweden



Picture 11: 11 companies from France present themselves during the poster session to ESS managers and work package leaders

France is an ESS In-Kind Partner country providing an 8% contribution to the total construction cost. Two of the largest research organisations in France, CNRS and CEA, are highly involved to deliver technical contributions for the linear proton accelerator, the neutron scattering instruments, and the integrated control systems. French In-Kind contracts concerning the Accelerator are ongoing, and most of them will be active in 2017. Those concerning the Instruments are being specified and will be active later on.

8th International Particle Accelerator Conference - IPAC '17

IPAC '17 is hosted and co-organised by the European Spallation Source ERIC and by both the Max IV Laboratory (Lund, Sweden) and Aarhus University (Denmark). It was attended by more than 1,350 full time delegates from approximately 34 different countries. All participants considered (incl. JACOW team, grant students and exhibitors), IPAC'17 was visited by 1,550 people. It was organised under the auspices of the European Physical Society Accelerator Group (EPS-AG), and the International Union of Pure and Applied Physics (IUPAP). Industrial exhibitors (115 companies from 16 countries) occupied the Exhibition area and presented their high technology products and services to the delegates.



Picture 12: Antoine Daël and Florence Ragon from the BrightnESS Gallia Hub at IPAC



Picture 14: Industry Liaison Officer Marco Peloi from Elettra and his team



Picture 13: The Danish BigScience Industry stand at IPAC'17



Picture 15: More than 300 participants used the opportunity to visit the ESS construction site and walked through the 536m long Accelerator tunnel

Several of our BrightnESS and IKC partners used the opportunity to present themselves as supported by BrightnESS to the international industry at the 5-day event. Participants included: The International Union of Pure and Applied Physics (IUPAP), The American Physical Society Division of Physics of Beams APS-DB and the United States National Science Foundation (Plasma Physics and Accelerator Science) from the Americas, the Asian Committee for Future Accelerators (ACFA) with contributions from AS, IBS, IHEP, IMP, KAERI, KEK, KIRAMS, NSRRC, PAL, RIKEN Nishina, RIKEN Spring-8, SSRF from Asia, the European Physical Society Accelerator Group (EPS-AG) with contributions from ALBA, CEA Saclay, CERN, Cockcroft Institute, DESY, Diamond, ELETTRA, ESRF, ESS, GANIL, GSI/FAIR, HZB, IN2P3, INFN, JAI, PSI, SOLEIL, STFC from Europe.

The organisers of IPAC'17 are grateful to all sponsors for their valuable support.



Matin Durrani of *Physics World* wrote, “Most big-science facilities – be it CERN, the European Southern Observatory or the European Synchrotron Radiation Facility – are known for their cutting-edge research. But these facilities are also hotbeds of advanced technology, offering opportunities for businesses to make money and to hone their technological innovation.”

One of the goals of the Big Science Business Forum 2018 (BSBF 2018) was to be the first one-stop shop for European companies and other stakeholders to learn about Europe’s Big Science organisations’ future investments and procurements worth billions of euros. The forum offered businesses the chance to:

- Learn about business opportunities in the coming years, within a wide range of business areas,
- Meet representatives from Europe’s Big Science organisations and their key suppliers,
- Network and establish long-lasting partnerships via business-to-business meetings (B2B), business-to-customer meetings (B2C), and in the open exhibition area, and
- Get insight into procurement rules, IPR, technology transfer, and how businesses can interface with the Big Science market.

Big Science as a business area – 16 parallel sessions

BSBF2018 will address 16 topics of Big Science as a business area. Extensive parallel sessions will focus on Big Science investments in the coming years in the following areas:

- A1 Procurement, IPR and standards
- A2 Remote handling systems
- A3 Cryogenic technology
- A4 Affiliated Big Science organisations I
- B1 Technology transfer
- B2 Superconductivity and superconducting magnets
- B3 Safety systems, licensing, and protection of hazardous installations, access control, fire, and gas detection
- B4 Affiliated Big Science organisations II
- C1 Electrical, electronics, electromechanical and RF systems
- C2 High precision and large mechanical components – manufacturing and assembly
- C3 Instrumentation and Control and CODAC
- C4 Engineering methodologies and tools
- D1 Diagnostics, detectors, and instruments
- D2 Vacuum and leak detection technologies
- D3 Basic material technologies and advanced manufacturing techniques
- D4 Information and Communication Technologies

BSBF 2018 Objectives

The vision of BSBF2018 was to provide an important stepping-stone towards establishing a stronger, more transparent, and efficient Big Science market in Europe. The intention was to create a Big Science business model where research organisations could show their collective needs for the next 4-5 years to industry. This would result in raising the interest of a larger pool of companies than what each research organisation could achieve individually. Another goal was to show companies that the Big Science market was bigger than they thought, and so worthy of their R&D investment. The big science market will require more and more frontline technical developments, and there are fewer and fewer companies working on such long-term development. Big Science Business Forum 2018 was the first of its kind make this kind of approach from Big Science to industry.

Facts and figures:

- 1000+ participants,
- 500 Businesses and organisations
- 650 Business meetings
- 250 People for site visits to ESS and MAX IV
- 120+ speakers and presentations
- 62 exhibitors
- 29 countries

ESS involvement:

ESS was one of the co-organisers and was represented in the International Organising Committee (having met six times in the course of the preparation and follow-up of the event). ESS also contributed to the conference programme with 14 speakers presenting various topics. There were almost 100 of 1:1 meetings during the event by ESS staff from the management, technical departments, and the Procurement team.



Picture 16: WP 6 Leaders Ute Gunsenheimer and Juliette Forneris were both members of the IOC



Picture 17: EU Commissioner Carlos Moedas and Søren Pind, Danish Minister of Science, Technology Information and Higher Education, together with the Directors General of the 9 participating international research infrastructures

IPAC 2018, Vancouver



Picture 18: Dutch and Danish ILOs presented business opportunity within the European Big Science market

The 9th International Particle Accelerator Conference (IPAC'18), was held in Vancouver, British Columbia, Canada from April 29 to May 4, 2018. IPAC is the main international event for the worldwide accelerator community and industry. Attendees were presented with cutting-edge accelerator research and development results and gained the latest insights into accelerator facilities across the globe. The conference was hosted by TRIUMF and jointly sponsored by IEEE Nuclear & Plasma Society and the APS Division of Particle Beams.

IPAC'18 brought together more than 1,200 participants from 31 countries and industry delegates reflecting the importance of strong partnerships in the improving of the field of particle accelerators. The Scientific Program included 63 invited talks and 62 contributed orals organised into opening and closing plenaries and three parallel sessions. As a result, this event was well represented and covered a broad spectrum of topics.

7.2 Enlargement

The European Spallation Source's vision is to build and operate the world's most powerful neutron source. To better understand the development and growth of ESS' ILO network, the following background must be noted:

- When the ESS ILO Network was established in 2013, ESS was organised as a limited liability company owned by Sweden and Denmark. The relationships to the other 15 non-host countries were governed by a Memorandum of Understanding. This partnership of 17 countries changed its character and legal status with the establishment of the ERIC in 2015;
- Although only 11 of the 17 partners became founding members of the ERIC, the ILO Network has kept its open-minded approach towards non-member countries. This has been done strategically and on purpose. Experience has shown that exploring business opportunities are – next to the push from the relevant scientific communities – an important driver for governments to commit to joining international Big Science projects;
- In line with the ESS New Member Strategy, the ESS ILO Network has been open and pro-actively attracting participation from non-member countries.

The European Spallation Source ERIC currently has 13 Founding Members and 2 Founding Observers from Europe. The key priority for enlargement activities is to turn Observers into Members. A successful transition into Members will provide a foundation for the process and demonstrate the necessary steps to be taken for turning Observers or Potential Members into full Members. In parallel, the Organisation is undertaking activities aiming to prompt countries that have signed from 2009 onwards a Memorandum of Understanding (MoU) with ESS into becoming Observers and later Members. The European Spallation Source also continuously engages countries in the European Research Area (ERA), and seeks partners outside Europe.



Figure 2: Current member base and enlargement circles of ESS

Observer countries

- The ESS currently has two Observer Countries: Belgium and the Netherlands and both have been part of the ILO network,
- The UK changed its status from Observer to Member in June 2016 and has been part of the ILO network from the beginning,
- Spain transitioned from Observer to Member in April 2018 and has a representative in the ILO network.

MoU Countries

- Iceland and Latvia have never joined the ILO Network, whereas Lithuania has been there from the beginning.
- Only after the Lithuanian government took the decision in 2017 not to join ESS, the Lithuanian ILO representative stopped participating in the meetings of the network.

ERA

- After having held successful Partner and Industry Days in Turkey and Portugal in autumn 2015, representatives from these countries participated in their first ILO Network meetings in Lund in March 2016.
- Interactions between ESS and Turkey have slowed down due to political developments in the country. Contacts with Portugal are also limited.



Globally

- Thanks to BrightnESS, ESS has deepened its relations with Canada and arrange several meetings with representatives of the science and industry communities. A representative of the Industrial Technology Advisor at the National Research Council Canada, participated at the 10th ILO Meeting in Copenhagen in early 2018.

ILO Meetings

From the beginning of the BrightnESS project, ESS organized 7 regular and one extraordinary ILO meetings. The overview of the meetings is below:

Country (Status)	Participation at ILO Meetings (including pre-BrightnESS data for comparison)										
	9/13	2/14	9/14	2/15	9/15	3/16	9/16	2/17	9/17	3/18	6/18
Belgium (O)	N	N	N	N	P	P	N	P	N	P	P
Canada (G)	N	N	N	N	N	N	N	N	N	P	N
Czech Republic (M)	P	P	P	P	P	P	P	P	P	P	P
Denmark (M)	P	P	P	P	P	P	P	P	P	P	P
Estonia (M)	P	P	P	P	P	P	P	P	P	P	N
France (M)	P	P	P	P	P	P	P	P	P	P	P
Germany (M)	P	P	N	P	P	P	P	P	P	P	N
Hungary (M)	N	P	P	P	P	P	P	N	N	P	P
Iceland (G)	N	N	N	N	N	N	N	N	N	N	N
Italy (M)	P	P	P	P	P	P	N	P	N	P	P
Latvia (G)	N	N	N	N	N	N	N	N	N	N	N
Lithuania (G)	N	N	P	N	P	P	P	P	N	N	N
Netherlands (O)	P	P	P	P	P	P	P	P	P	P	P
Norway (M)	P	P	P	P	P	P	P	P	P	P	N
Poland (M)	N	N	N	P	P	P	P	P	P	P	P
Portugal (G)	N	N	N	N	N	P	N	N	N	N	N
Spain (M)	N	P	P	P	P	P	P	P	P	P	P
Sweden (M)	P	P	P	P	P	P	P	P	P	P	P
Switzerland (M)	P	P	P	P	P	P	P	P	P	P	N
Turkey (G)	N	N	N	N	N	P	P	N	N	N	N
United Kingdom (M)	P	P	P	P	P	P	P	P	P	P	P

M – Member
O – Observer
G – Guest

P – Participated
N – Not Present



5th ILO Network Meeting in Lund,
24th September 2015



6th ILO Network Meeting in Lund,
8th March 2016



7th ILO Network Meeting in Lund,
29th September 2016



8th ILO Network Meeting in Lund,
23rd February 2017



9th ILO Network Meeting, Lund,
13th September 2017



10th ILO Network Meeting, Copenhagen,
1st March 2018

Picture 19: ILO meetings

The continuance of the activities is secured by already planned 11th ILO Network Meeting. The event will take place in Lund, Sweden on 4th October 2018.

7.2.1 Innovation

As one of the largest research infrastructure projects being built in Europe today, ESS offers significant innovation opportunities. The Organisation is committed to “contribute to top-level research, technological development, innovation, and societal challenges” (ESS Statutes, Article 2.2.a), and to develop “upgrades to capabilities needed to remain at the cutting edge” (ESS Vision and Mission statement). To be able to fully deliver on the innovation potential of the facility, to contribute to new knowledge production, and to support EU competitiveness, ESS has to continue to build in-house capacity and effectively implement its long-term vision for innovation and engagement with industry.

Within the framework of BrightnESS, ESS has carried out activities which have resulted in the development and adoption of the ESS Policy for Innovation, the development of processes and procedures to encourage and track innovation, and the formulating of recommendations for an ESS Innovation Strategy. These elements jointly contributed to the establishment of an elemental innovation framework, which will play an important role throughout the entire lifecycle of the facility.

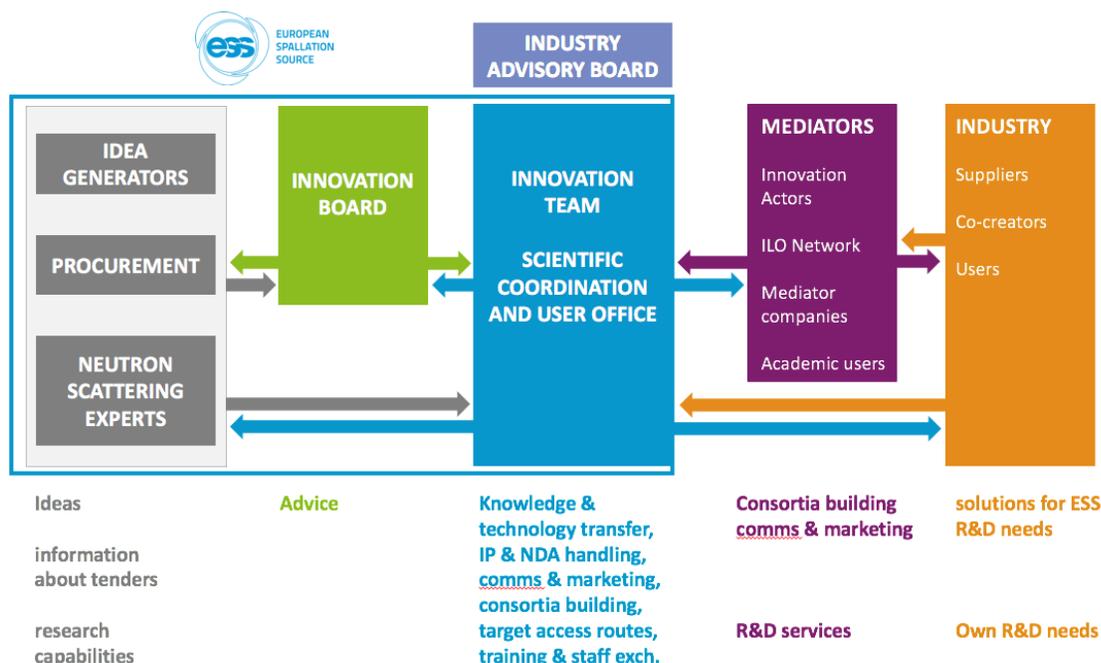


Figure 3: Innovation at ESS

The value of the Network in terms of boosting innovation activities of ESS has not been fully exploited yet. The ILOs have an excellent understanding of the innovation potential of the equipment and state-of-the-art technologies developed at and for ESS. They are well-positioned to identify partners that can contribute to the development of new knowledge, and have the capacity to lead commercialisation of these technologies into broader markets. Within the framework of BrightnESS, an *ad hoc* survey was carried out to collect input from members of the ESS ILO Network. The feedback received in the survey shows that ILOs want to play a more active role in the future innovation ecosystem of ESS. They underlined that a stronger involvement would bring mutual benefits, i.e. it would support technology transfer and industrial use of the ESS facility, and also provide support to them in their roles in their respective home countries.

ILO Strategy Workshop in Slangeup, Denmark, 28th - 29th June 2018

As part of BrightnESS Task 3.2, ESS together with DTU organised a 2-day ILO Strategy Workshop which took place in the Metalskolan (metal worker school) in Slangerup outside of Copenhagen. Representatives from 11 countries participated in it.



Picture 20: Successful ILO Strategy Workshop in Slangerup, 28./29. June 2018

The two days were dedicated to two specific objectives. Day 1 focused on the enhancement of the collaboration between ESS and the ILOs relative to business opportunities at ESS, and Day 2 assessed which additional role the ILOs could play in the long-term relative to innovation, education, and training.

The workshop was very well received. It was extremely useful and served as the kick-off of a long-term process to expand the scope of ILO activities relative to ESS.

8 Conclusion

The substantial amount of project money associated with research infrastructures requires the establishment of ILOs to leverage the industrial applications of their resulting innovations. As such, the existence of ILOs has been a tested concept within the landscape of Big Science facilities. It was smart that ESS established its ILO network as early as 2013 since it could use it not only for promoting business opportunities at ESS, but also to become an active player in the identification and allocation of IKCs. Since this process has been almost accomplished and ESS is moving from its construction phase to the initial operations phase, it is time to re-evaluate the potential of the ILO network and explore additional scope for activities relative to the innovation ecosystem of ESS. However, this needs to be stressed, the core business of the ILOs will always be the maximising of the industrial return of their countries relative to ESS. This is in the interest of ESS, since the goal of the Organisation is to have the broadest possible supply base which allows to select the best and economically most advantageous suppliers.



9 Literature

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Sustainable European Research Infrastructures – A call for action (2017)
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Final Report Summary - EIRIIS (European industrial and RI interaction and support study) (2013)
https://cordis.europa.eu/result/rcn/55898_en.html

Long Term Sustainability of Research Infrastructures (2017)
http://www.esfri.eu/sites/default/files/u4/ESFRI_SCRIPTA_TWO_PAGES_19102017_3.pdf

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<http://www.esfri.eu/roadmap-2016>

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The Impacts of Large Research Infrastructures on Economic Innovation and on Society: Case Studies at CERN
<https://www.oecd.org/sti/sci-tech/CERN-case-studies.pdf>



10 Annex: Meeting Agendas

**5th ESS Industry Liaison Offices Network
24th September 2015, Lund**

Tänkertanken Conference Room, Tunavägen 24, Lund

Wednesday, 23rd September

19:00 Joint Dinner
Restaurang Klostergatans Vin & Delikatess
Klostergatan 3, 222 22 Lund

Thursday, 24th September

- 9:00 **Welcome and opening of Network Meeting**
Approval of minutes from last meeting
- 9:10 **ESS Status Up-date / ERIC Focus**
James H. Yeck, Director General
- 9:40 **Procurement Overview and Forecast**
Meredith Shirey, Head of Procurement
- 10:15 *Coffee break*
- 10:30 **Accelerator Status Update**
Mats Lindroos, Head of Accelerator Division
- 10:50 **In-kind Contributions – Status Update**
Gábor Németh, Group Leader In-kind
- 11:25 **Skanska Procurement Overview and Forecast**
Mats Norén, Procurement Manager, Skanska ESS Construction
- 11:40 **BrightnESS and Other Activities**
Ute Gunsenheimer, Head of External Relations & EU Projects
- 12:00 *Lunch break*
- 13:00 **Internal ILO Meeting**
- 15:00 *Coffee break*
- 15:15 **Report on Results of Internal ILO Meeting**
- Discussion / Next Steps**
- 16:30 *End of meeting*



**6th ESS Industry Liaison Offices Network
8th March 2016, Lund**

Conference Room Ljuskården and Conference Room Tänkartanken, Tunavägen 24, Lund

Monday, 7th March

19:00 Joint Dinner - Restaurant Les Halles Lund

Tuesday, 8th March

09:45 *Welcome coffee*

10:00 **Welcome and opening of Network Meeting**
Approval of minutes from last meeting

10:10 **ESS Status Up-date**
James H. Yeck, Director General

10:30 **Procurement Overview and Forecast**
Meredith Shirey, Head of Procurement

11:00 **Accelerator Status Update**
Mats Lindroos, Head of Accelerator Division

11:15 **Target Status Update**
Eric Pitcher, Head of Target Division

11:30 **ICS Status Update**
Henrik Carling, Head of ICS Division

11:45 **NSS Status Update**
Shane Kennedy, NSS Project Leader

12:00 *Lunch break*

13:00 **In-kind Contributions – Status Update**
Allen Weeks, Head of Communications, External Relations, and IKC Management

13:30 **BrightnESS and Other Activities**
Ute Gunsenheimer, Head of External Relations & EU Projects
Jonas Andersson, Senior Technology Transfer Officer

14:00 **Internal ILO Meeting**

15:00 *Coffee break*



15:30 **Report on Results of Internal ILO Meeting**

Discussion / Next Steps

16:30 *End of meeting*



**8th ESS Industry Liaison Offices Network
23th February 2017, Lund**

Conference Room Ljuskåden and Conference Room Tänkartanken, Tunavägen 24, Lund

Wednesday, 28th September

19:00 *Joint Dinner - Restaurant Mat & Destillat, Kyrkogatan 17 • 222 22 Lund*

Thursday, 29th September

08:45 *Welcome coffee*

9:00 Welcome and opening of Network Meeting

Approval of minutes from last meeting

9:10 ESS Status Up-date

Allen Weeks, Head of Communications, External Relations & IKC Management

9:30 Procurement Overview and Forecast

Meredith Shirey, Head of Procurement

Q & A

10:30 *Coffee break*

10:45 **Up-date from the Projects** (20' presentation, 10' Q&A)

Accelerator Status Update

Peo Gustavsson, Deputy Work Unit Leader, EIS Division

11:15 Target Status Update

Rikard Linander, Deputy Head of Target Division

11:45 ICS Status Update

Henrik Carling, Head of ICS Division

12:15 NSS Status Update

Michela Dell'Anno Boulton, NSS IKC Officer

12:45 *Lunch break*

13:30 In-kind Contributions – Status Update



Gabor Nemeth, Head of IKC Management Group

14:00 **IPAC 2017 – Industry Exhibition**

Juliana Pranke, IPAC 2017 Event Management Officer

Rob Yarbray, IPAC 2017 Industry Exhibition Advisor

14:15 **Internal ILO Meeting**

15:15 *Coffee break*

15:30 **Report on Results of Internal ILO Meeting**

Discussion / Next Steps

16:30 *End of meeting*



**9th ESS Industry Liaison Offices Network
13rd September 2017, Lund**

ESS Construction Site, Conference Room BrightnESS, Odarslövsvägen 113, 225 92, Lund

Tuesday, 12th September

19:00 *Joint Dinner – Vendelsmatrum, Kastanjegatan 18, 223 59, Lund*

Wednesday, 13th September

08:45 *Welcome coffee*

09:00 **Internal ILO Meeting**

10:00 **Welcome and opening of Network Meeting, ESS Status Up-date& Last meeting minutes approval (20' + 10' Q&A)**

Allen Weeks, Head of Communications, External Relations & IKC Management

10:30 *Coffee break*

10:40 **Procurement Overview and Procurement (40' + 20' Q&A)**

Meredith Shirey, Head of Procurement

11:40 **In-kind Contributions – Status Update (15' + 5' Q&A)**

Gabor Nemeth, Head of IKC Management Group

12:00 *Lunch break*

Up-date from the Projects and Projects Q&A

13:00 **NSS Status Update (20' + 10' Q&A)**

Shane Kennedy, NSS Project Leader

13:30 **Target Status Update (20' + 10' Q&A)**

Mark R. Anthony, Head of Target Division

14:00 **ICS Status Update (20' + 10' Q&A)**

Henrik Carling, Head of ICS Division

14:30 **Accelerator Status Update (20' + 10' Q&A)**

Mats Lindroos, Head of Accelerator Division

15:00 *Coffee break*



- 15:10 **BSBF 2018 (10' + 5' Q&A)**
Toon Verhoeven, ILO Netherlands
- 15:25 **ESS ILO and ESS Organizational Innovation Activities Overview (10' + 5' Q&A)**
Dušan Štric, Innovation and Industrial Liaison Officer
- 15:40 **Discussion / Next Steps**
- 16:00 *End of meeting*
- 16:00 **Guided Construction Site Visit (app.60')**



**10th ESS Industry Liaison Offices Network
1st March 2017, Copenhagen**

Meeting Room Karavanen 9/10, Tivoli Hotel & Congress Center, Arni Magnussons Gade 2, 1577,
Copenhagen

Wednesday, 28th February

19:00 *Joint Dinner – Fleisch, Slagterboderne 7, 1716, Copenhagen*

Thursday, 1st March

08:45 *Welcome coffee*

09:00 **Welcome and opening of Network Meeting & Last meeting minutes approval (10')**
Ute Gunsenheimer, Head of External Relations & EU Policy

09:10 **Procurement Overview and Procurement Q&A (30')**
Meredith Shirey, Head of Supply, Procurement & Logistics Division

09:40 **ILO Working Group Discussion Outcomes (30')**
Anna Hall, ILO Sweden/ Michel Hübner, ILO Switzerland / Ole Peter Nordahl, ILO Norway /
Meredith Shirey, Head of Supply, Procurement & Logistics Division

10:10 Coffee Break

10:30 **In-Kind Contributions – Status Update (20')**
Miloš Davidović, In-Kind Officer

10:50 **Big Science Business Forum Debrief (30')**
Toon Verhoeven, ILO Netherlands

11:20 **Long Term Sustainability of ILO Network (30')**
Ute Gunsenheimer, Head of External Relations & EU Policy

11:50 **AOB (10')**
Dušan Štric, Innovation and Industrial Liaison Officer

12:00 *Lunch (Tivoli Hotel Brasserie)*

13:00 End of the Meeting



**ILO Strategy Meeting
28th/29th June 2018, Denmark**

Slagslundevej 13, 3550 Slangerup, Denmark

Thursday, 28 June

12.00 *Lunch*

13.00 **Welcome, introduction and overview of the agenda**
(Arne Jensen, ESS ILO Denmark/Ute Gunsenheimer, ESS)

13:15 Outcomes of the ILO Survey
(Ute Gunsenheimer, ESS)

13:40 ILO working group, next steps
(Anna Hall ESS ILO Sweden)

14:00 Workshop Session #1:
ESS Procurement Rules and practical application
(Mirko Menninga, ESS)

This session will include presentation, examples, and interactive group work (case studies) among ILOs

15:30 *Coffee break*

16:00 Workshop 2: ILO Terms of Reference
(Mirko Menninga, ESS/Meredith Shirey, ESS)

This session will include group work to discuss the four pillars of the ESS ILO network terms of reference:

- Information sharing
- Supporting companies
- Advocate for ESS
- Joint ILO collaboration

18:00 *Dinner*

19:00 Pan-European ILOs Association
(Søren Korsholm, DK ITER ILO/Juliette Forneris, DK CERN ILO)

Friday, 29 June

08:45 *Welcome coffee*

09:00 ILOs role in Innovation
(Ute Gunsenheimer, ESS/Dušan Štric, ESS)



9:30 Support of the ILO Network to the Neutron Usage
(Arno Hiess, ESS)

10:00 Workshop 3: Future of the ILO Network
(Anke Lohmann, ESP Central)

- Operational Phase Ecosystem Expectations
- Individual ILOs Operations and Operations Strategies Discussion
- Working on concepts for the further ILO Network utilisation
- Funding options

11:30 Wrap-up and next steps
(Arne Jensen, ESS ILO Denmark/Ute Gunsenheimer, ESS)

11:45 *Lunch*

12:30 End of meeting