



**EUROPEAN
SPALLATION
SOURCE**



EUROPEAN
SPALLATION
SOURCE

In-Kind Contributions

Allen Weeks

Head of Communications, External Relations
& In-Kind Contributions

Financing Includes Cash And Deliverables

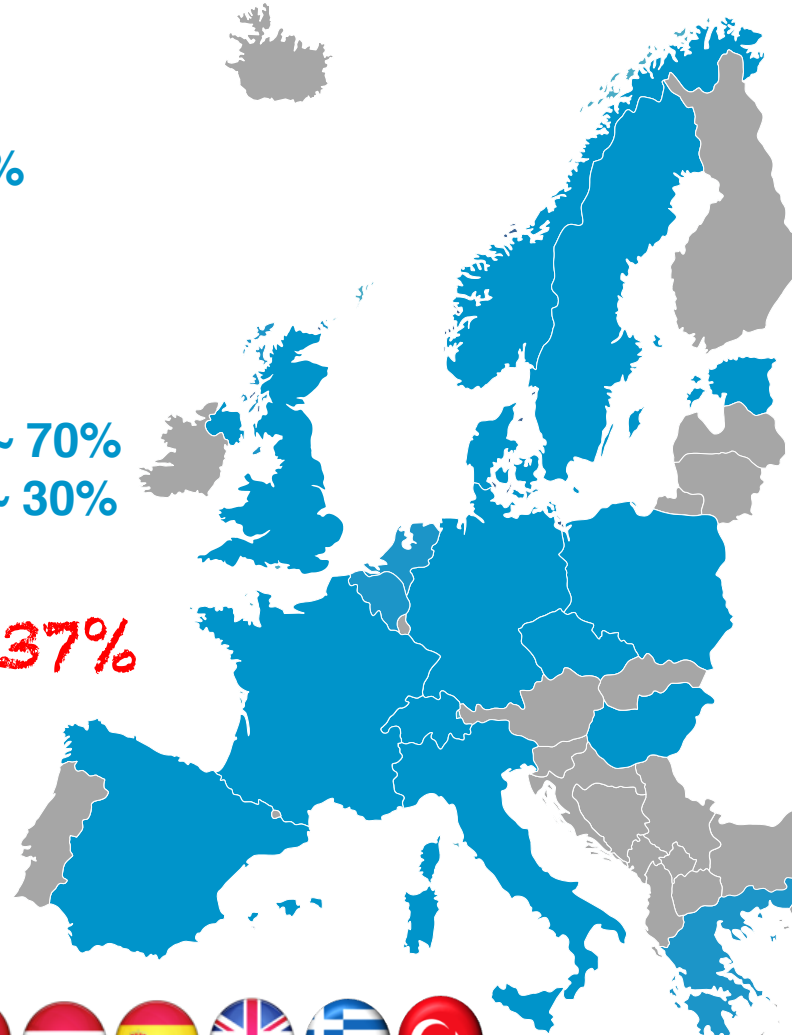
Host Countries of Sweden and Denmark

Construction	47.5%	Cash	100%
Operations	15%		

Non Host Member Countries

Construction	52.5%	In-kind Deliverables	~ 70%
Operations	85%		

Members' In-Kind Goals = 37%
€685 million



In-Kind Partners



Aarhus University
Atomki - Institute for Nuclear Research
Bergen University
CEA Saclay, Paris
Centre for Energy Research - Budapest
Centre for Nuclear Physics
CNR, Rome
CNRS Orsay, Paris
Cockcroft Institute
Elettra – Sincrotrone
ESS Bilbao
Forschungszentrum
Helmholtz-Zentrum
Huddersfield University
IFJ PAN, Krakow
INFN, Catania
INFN, Legnaro
INFN, Milan
Institute for Energy Research (IFE)
Rutherford-Appleton Laboratory, Oxford(ISIS)

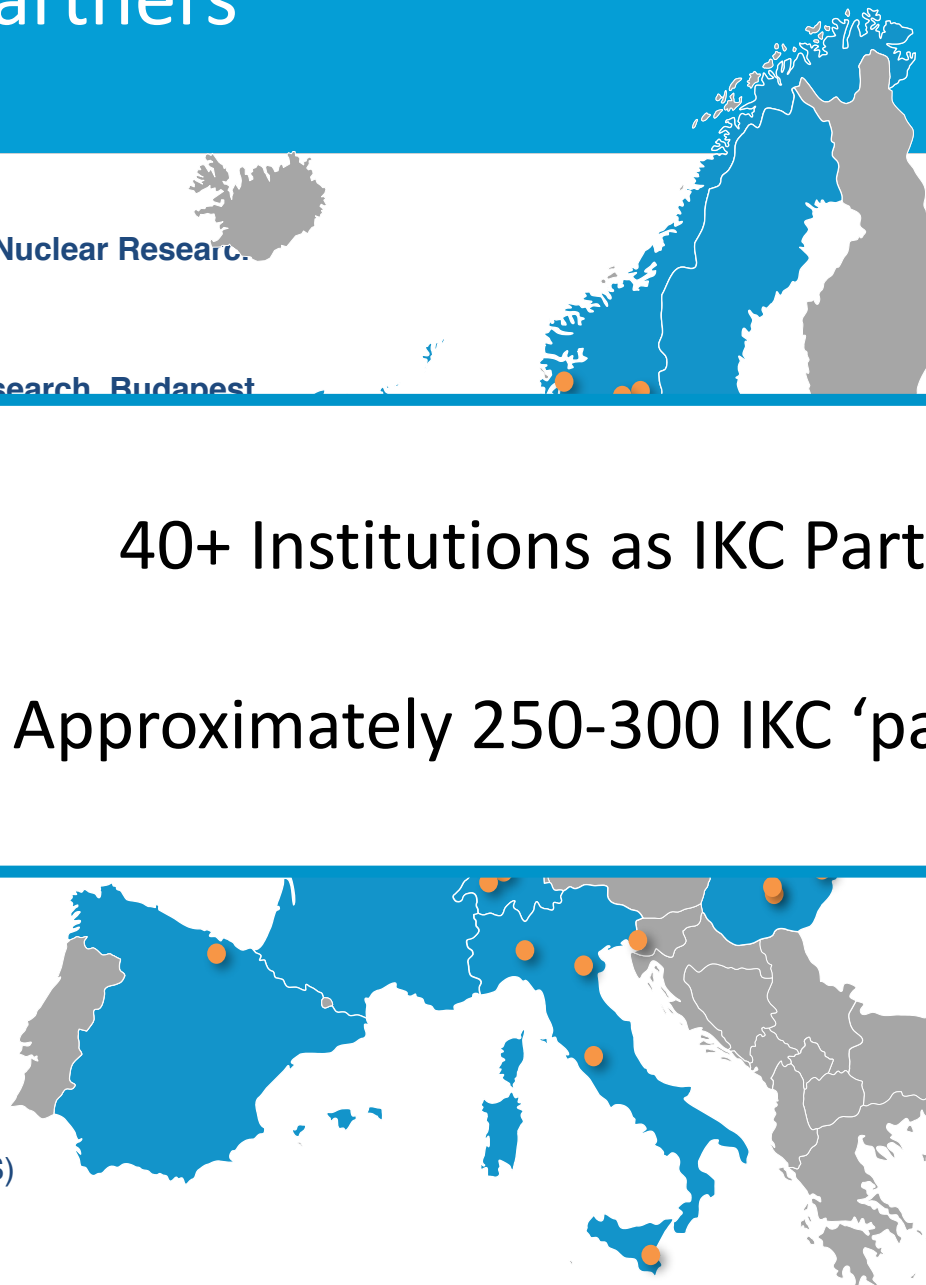
40+ Institutions as IKC Partners

Approximately 250-300 IKC ‘packages’

Kopenhagen University
Laboratoire Léon Brillouin (CEA – CNRS – LLB)
Lund University
Nuclear Physics Institute of the

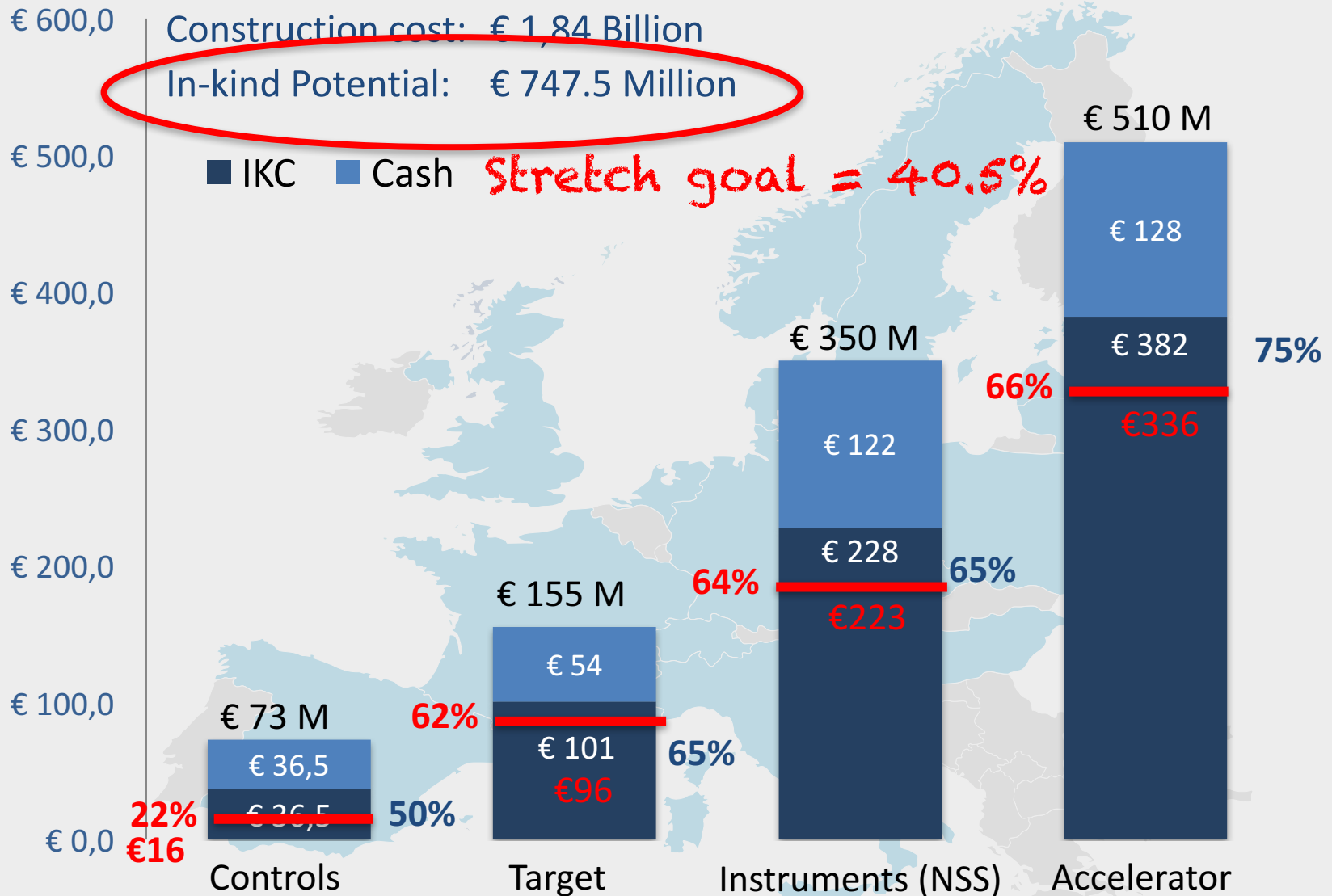
ite (PSI)
etyczna - PGE
iversity
of Denmark
Munich
ogy Facilities

University of Tartu
Uppsala University
WIGNER Research Centre for Physics
Wroclaw University of Technology
Warsaw University of Technology
Zurich University of Applied Sciences (ZHAW)



ESS In-kind Goals (based on 2013 Cost Book)

“A non-cash contribution in labor or material to ESS.”



What: *A non-cash contribution in labor or material to ESS.*

Why:

- ESS is a greenfield project – we need the knowledge, capacity and contributions of Europe’s best experts.
- Large RI’s today require cooperation due to scale

How:

- Technical components for the facility (also personnel needed to perform the testing, installation and/or integration)
- R&D work (also personnel needed to perform the work)
- Personnel made available for specific tasks during the construction phase
- Other products and services relevant for the completion of the facility



GET IN VOLVED

Do You want to be a part of
building the
European Spallation Source?

Express your Interest in
the In-Kind Contribution now.

More information on
europeanspallationsource.se/eoi.



EUROPEAN
SPALLATION
SOURCE



What Is The Best Way For Potential Partners To “Get Involved”?



SEARCH

Information På Svenska Phone Book

ABOUT ESS

SCIENCE & INSTRUMENTS

TECHNOLOGY

BUILDING ESS

CAREERS

PARTNERS & INDUSTRY

Call for Expression of Interest for In-Kind Contributions

The European Spallation Source (ESS) is to be built in the spirit of cooperation, sourcing the knowledge of Europe’s leading experts and institutions. In that spirit, all interested parties are invited to submit an Expression of Interest (EOI) for in-kind contributions (IKC) to the construction.

**GET
IN
INVOLVED**

The European Spallation Source is preparing to move into the Construction Phase and beginning the process of formally agreeing with partners for contributions to the construction phase. The first step in this process is identifying contributors to become In-kind partners. ESS invites all interested parties, with relevant experience and expertise, to indicate their interest in participating.

To assist potential contributors in determining how to join the project, the "Call for Expression of Interest" ([ess_eoi_2013.pdf](#)) provides guidelines for responding, as well as the framework for IKC. The ESS Cost Book ([ess_cost_book_2013.pdf](#)) is also available, and indicates work package opportunities for IKC. Also included here is a link to the ESS Technical Design Report (TDR). The TDR provides the technical description of the project. Contributions may include:

PARTNERS & INDUSTRY

IN-KIND CONTRIBUTIONS

Call for EOI

In-Kind Document Downloads

PROCUREMENT

ILO NETWORK

PARTNERS & INDUSTRY EVENTS

INDUSTRIAL R&D

<http://esss.se/eoi>

ESS In-kind contributions – Contract structure

3 'parts' of an IKC Agreement

- Agreement (General Terms and Conditions)
- Framework for handling in-kind contributions

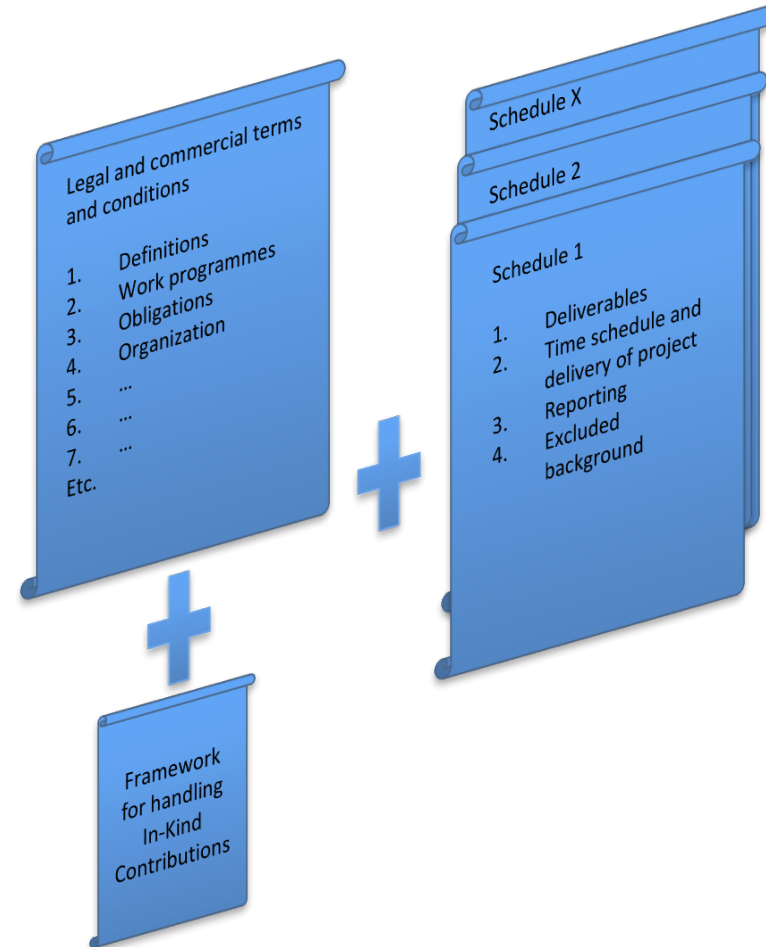
STC
approved

Signed only once with each partner

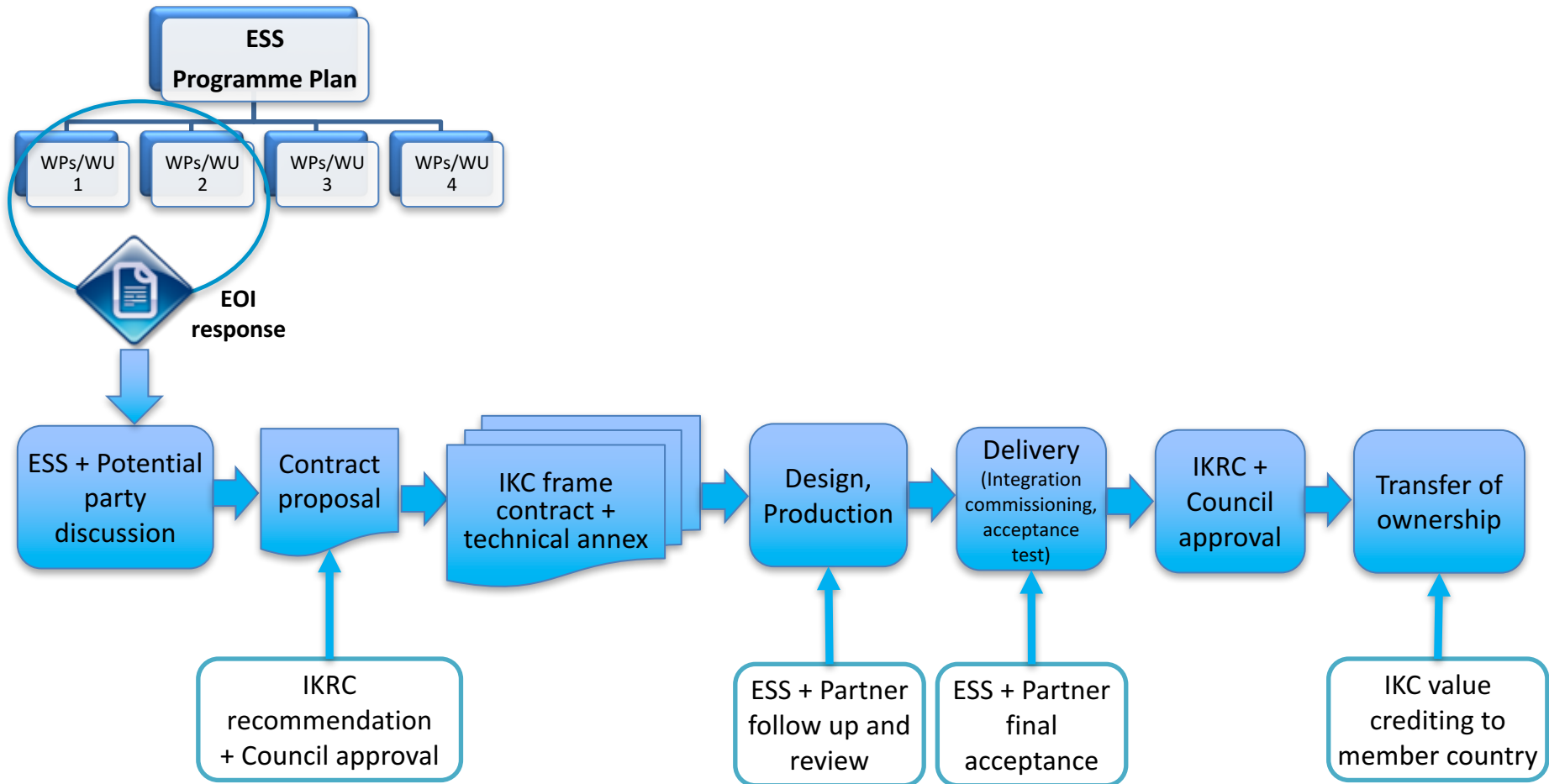
Schedule (Technical Annex)

IKRC
reviewed

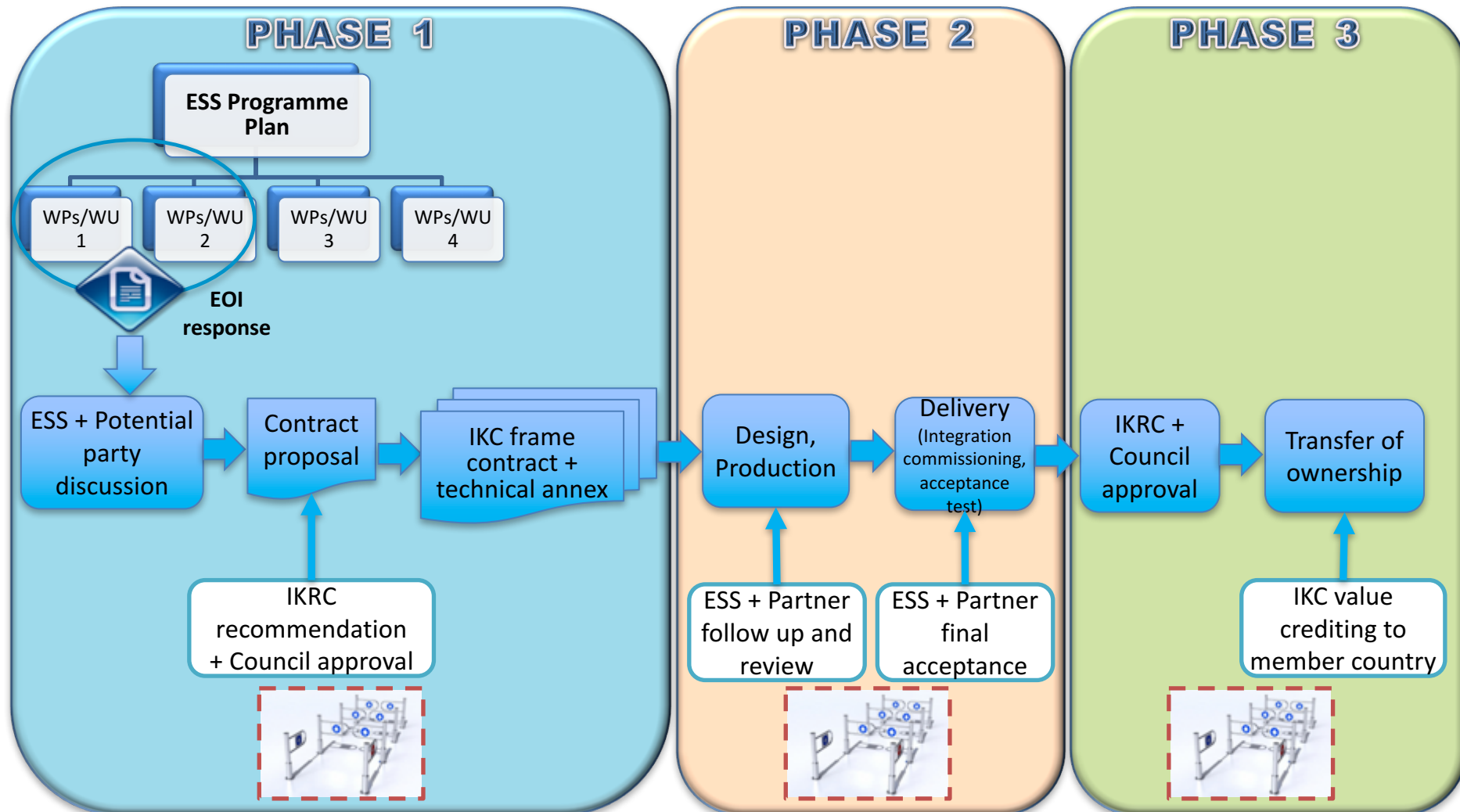
Added separately for each WP/WU



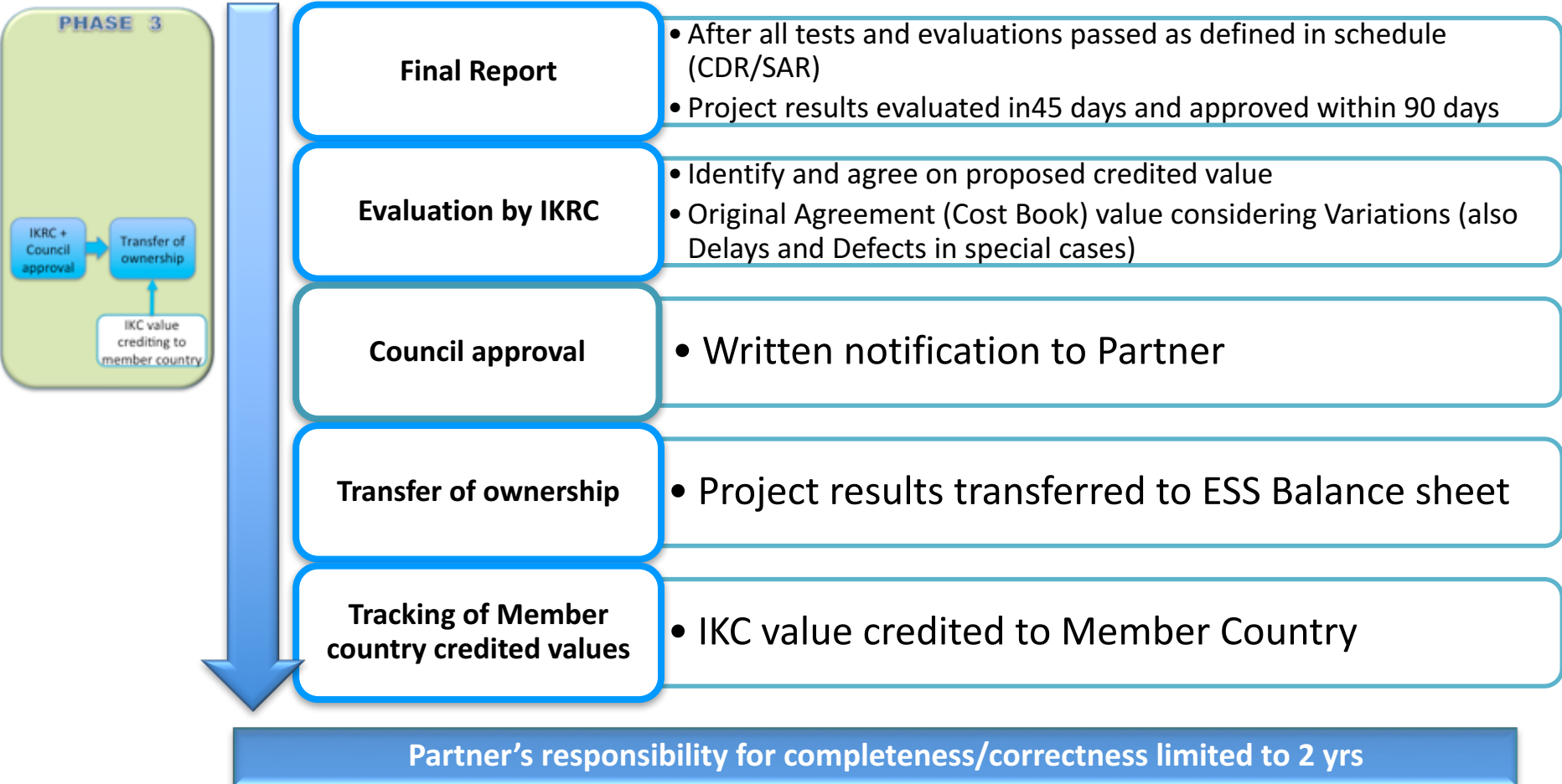
The In-Kind Process



ESS In-kind contributions – In-Kind process



Phase 3 Conclusion – Processes



IKC Agreement documents online

ABOUT ESS

SCIENCE & INSTRUMENTS

TECHNOLOGY

BUILDING ESS

CAREERS

PARTNERS & INDUSTRY

In-Kind Document Downloads

Please click on the document to view it as a PDF. Option-click to directly download the PDF to your hard drive. All documents on this page are also available to download by file name at the bottom of the page.

In-Kind Agreement Template:

TABLE OF CONTENTS:

1. DEFINITIONS
2. AGREEMENT DOCUMENTS
3. WORK PROGRAMS OF THE PARTIES
4. OBLIGATIONS OF THE PARTNER
5. OBLIGATIONS OF ESS AB
6. ORGANISATION
7. DELIVERY OF THE PROJECT RESULTS
8. VARIATIONS



27 pages, 620 KB PDF

PARTNERS & INDUSTRY

IN-KIND CONTRIBUTIONS

Call for EOI

In-Kind Document Downloads

PROCUREMENT

ILO NETWORK

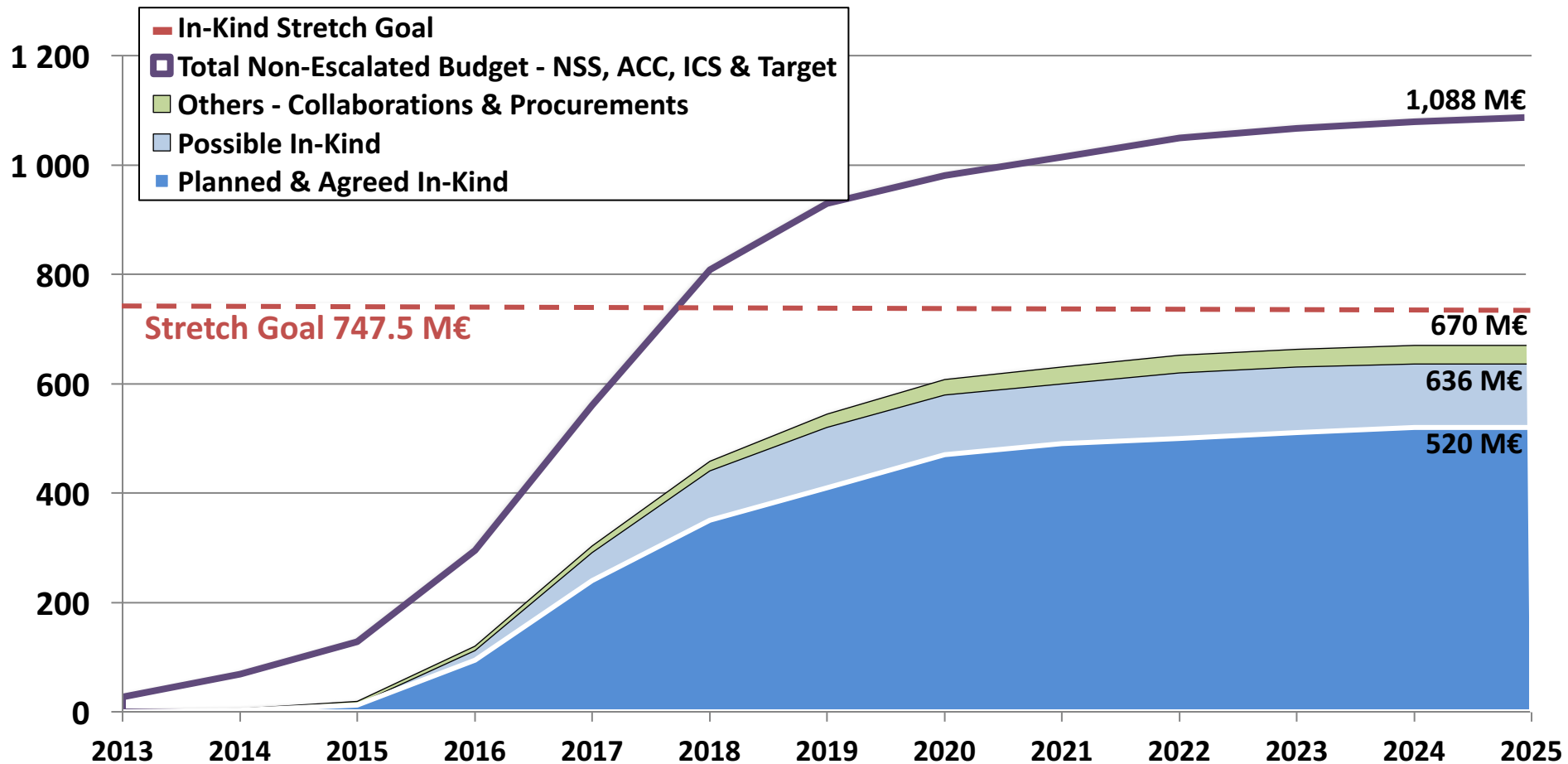
PARTNERS & INDUSTRY EVENTS

INDUSTRIAL USAGE OF NEUTRONS

<http://esss.se/eoi>

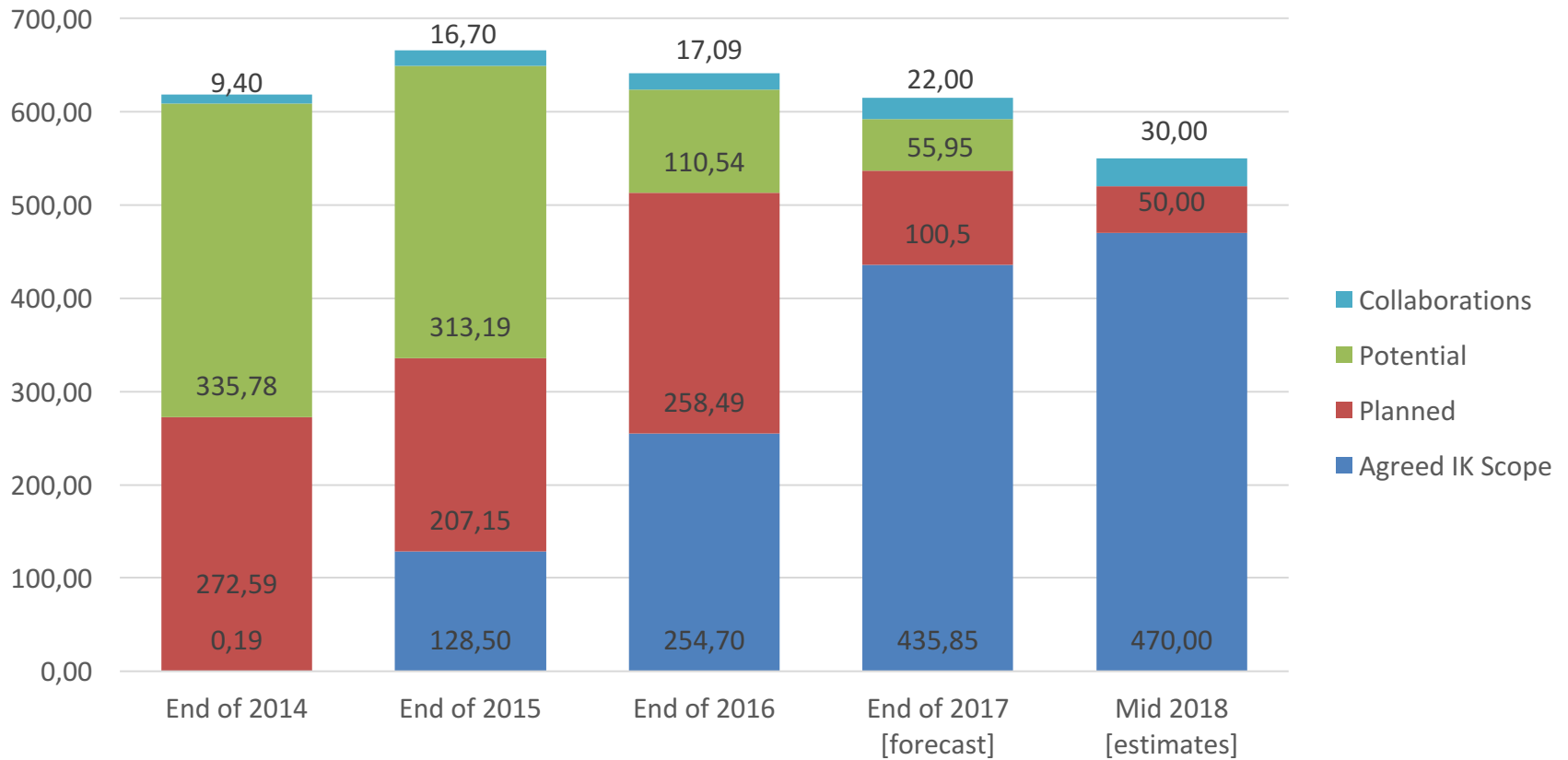
In-kind possible and agreed/planned

IKC Status - Agreed/Planned, Potential vs Total Budget & Objective



Year by Year In-Kind planning

Breakdown



Three challenges ahead for IKCM

Signing Main IK Agreements

- Currently more than 50M€ in TAs without a Main Agreement – Focus on UK/DE/ES.

Moving potential into planned

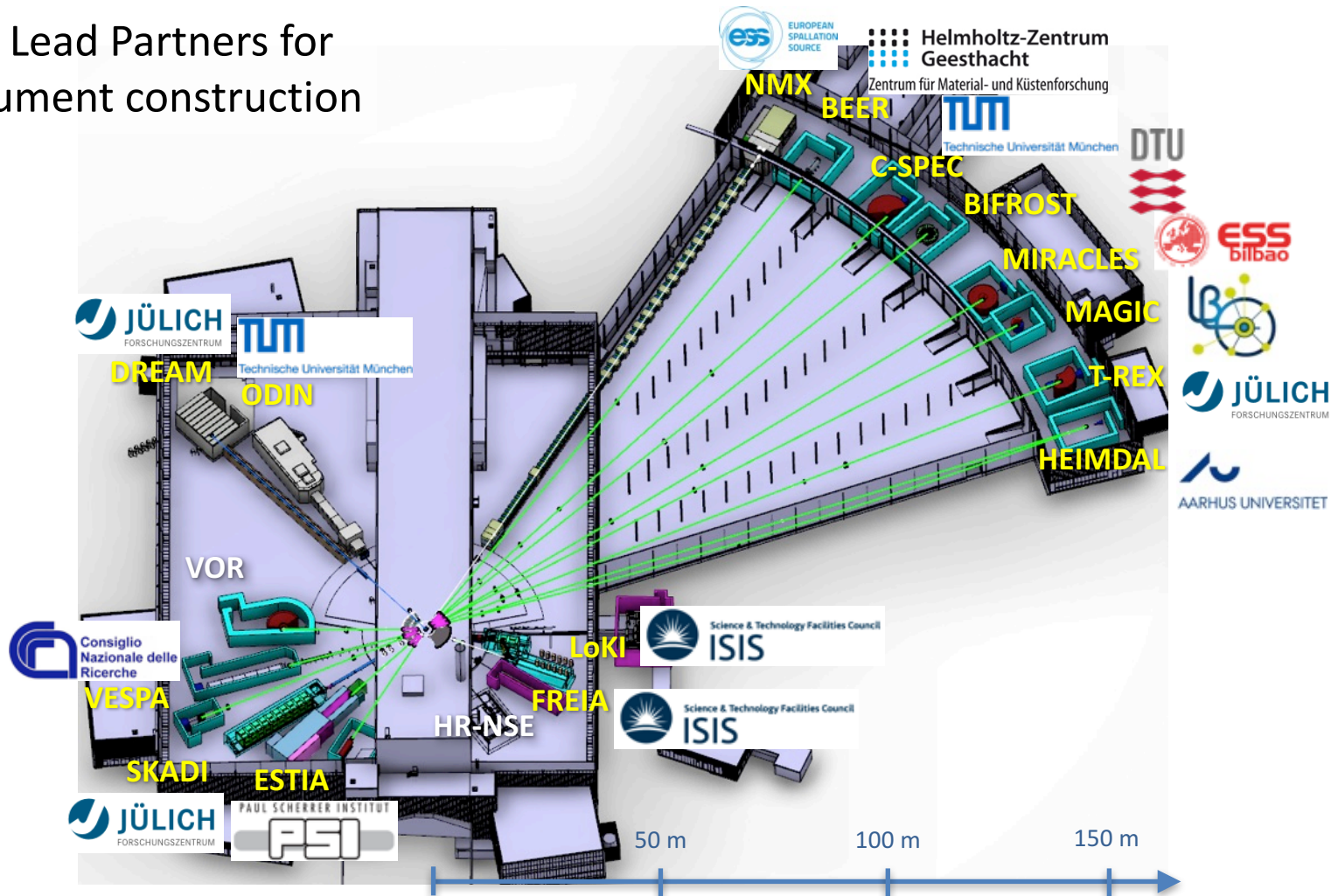
- The goal is to enter 2018 with very little, if any potential.

Establishing stronger information flow

- Utilizing resources to increase information flow.

NSS Interfaces for Neutron Instruments

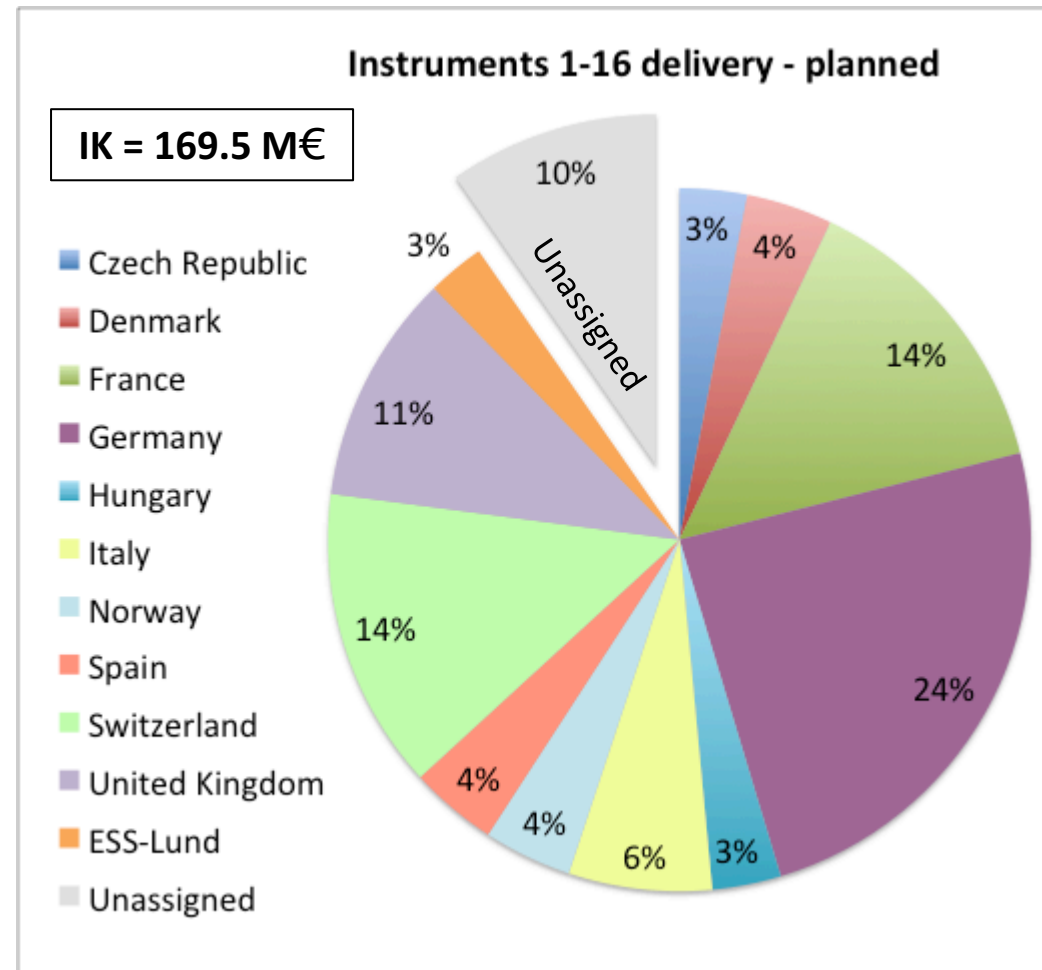
ESS Lead Partners for instrument construction



ESS In-Kind Partners also collaborate on sample environment, data systems etc.

Contributions to Neutron Instruments Country Summary

Partner Country	Commitment to Instruments (M€)	% of Instrument budget
Czech Republic	6.0	3.1%
Denmark	7.7	4.0%
France	27.0	14.0%
Germany	47.0	24.3%
Hungary	6.1	3.2%
Italy	12.8	6.6%
Norway	7.8	4.1%
Spain	7.8	4.0%
Switzerland	26.9	13.9%
United Kingdom	20.5	10.6%
ESS-Lund	5.1	2.6%
Unassigned	18.7	9.7%
total	193.3	100%

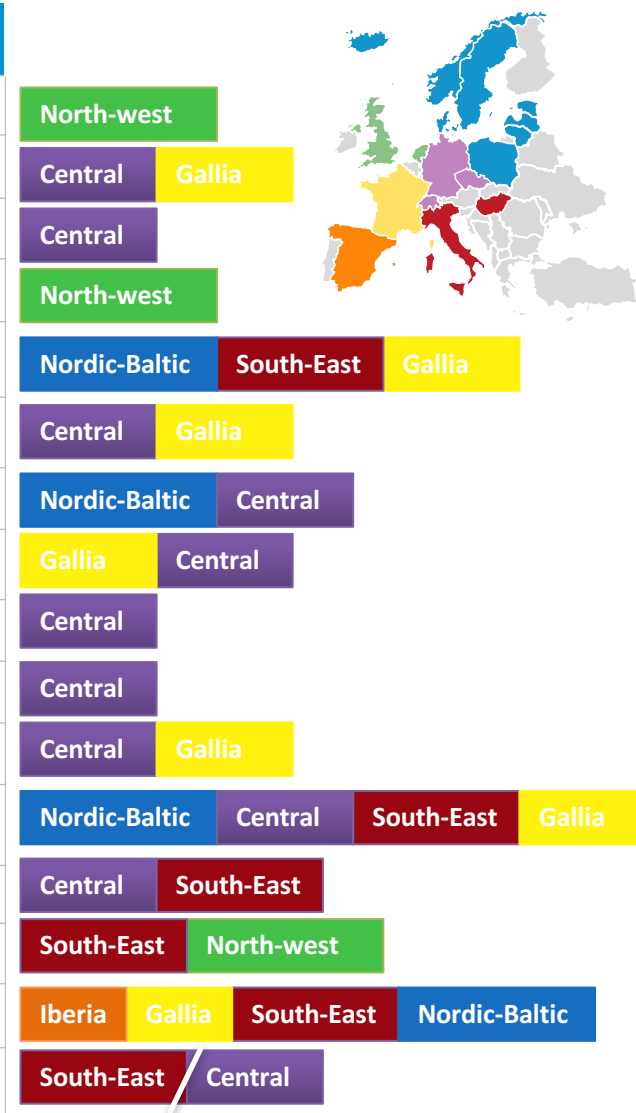


Main unassigned scope

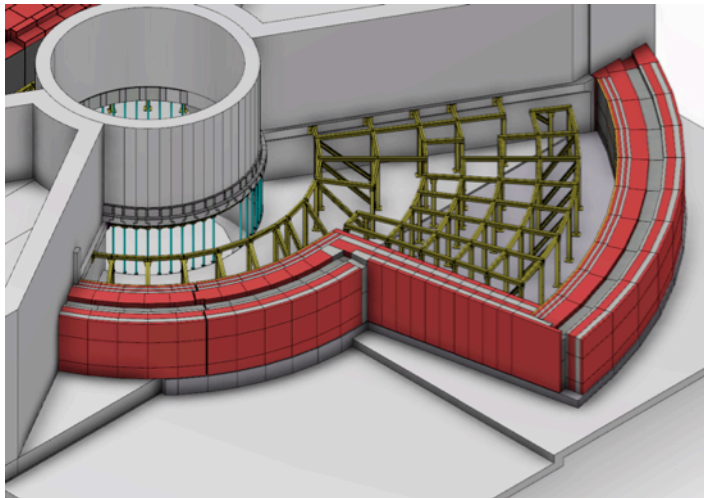
- 16th Instrument (6th Spectrometer)
- 25% each of VESPA & MIRACLES
- 6% of NMX

Example: ESS Instrument Projects – IK Field Coordinators regional hubs

Instrument	In-kind Partners (% contribution)	Cost (M€)	% IK
LOKI broadband SANS	UK (ISIS)	12.2	90%
SKADI general-purpose SANS (note 1)	DE(FZJ 50%) + FR(LLB 50%)	12	100%
ESTIA focusing reflectometer	CH(PSI)	9	95%
FREIA liquids reflectometer	UK (ISIS)	9	95%
NMX macromolecular crystallography	ESS (<30%) + HU (Wigner and CER) + FR (LLB) + NO (Bergen Uni)	11.7	70%
DREAM powder diffractometer (bispectral)	DE(FZJ 75%) + FR(LLB 25%)	12	95%
HEIMDAL hybrid diffractometer	DK(AU 30%) +CH(PSI) +NO (IFE)	12	70%
MAGIC magnetism single-crystal diffractometer	FR (LLB 65%) + DE (FZJ 20%) + CH (PSI 15%)	12	100%
BEER engineering diffractometer	DE (HZG 50%), CZ (NPI 50%)	12	100%
ODIN multi-purpose imaging	ESS -> DE(TUM 50%) +CH (PSI 50%)	9	95%
C-SPEC cold chopper spectrometer	DE(TUM 50%) + FR(LLB 50%)	15	100%
BIFROST extreme-environments spectrometer	DK(DTU/KU 30%) +CH(PSI) + HU(Wigner) +NO (IFE) + FR(LLB)	12	70%
T-REX bispectral chopper spectrometer	DE (FZJ 75%) + IT (CNR 25%)	15	95%
VESPA vibrational spectroscopy	IT (CNR) + UK (ISIS)	12	100%
MIRACLES backscattering spectrometer	ES(Bilbao) +FR(LLB) +HU (Wigner) + ESS	12	95%
Spectrometer (VOR or Spin-Echo)	HU (Wigner) for VOR <u>or</u> DE (FZJ & TUM) for Spin-Echo	12	95%

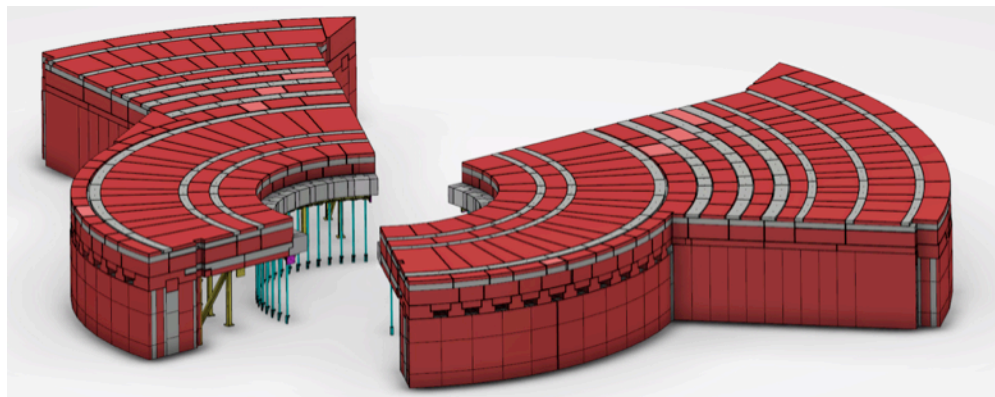


The neutron guide Bunker: milestones



Bunker design and delivery is self managed by NSS. In-Kind involvement in manufacturing is possible

- Bunker Project start (Manager: Sara G-N) - June 2015
- Initial costing (14.6 M€) - Aug 2015
- Neutronic calculations 1st report - April 2016
- Full time project manager (Zvonko Lazic) - June 2016
- Revised costing (17.9 M€) - Sep 2016
- Bunker concept design review - 4-5 Oct 2016
- Preliminary Design Review - 15-16 Dec 2016
- Critical Design Review - April 2017
- Start Manufacturing & Procurement - June 2017
- Delivery to site - Dec 2018



Final Thoughts

- The IKC relationship is not a supplier/customer relationship – it is an equal partnership with specific roles;
- Trust in personal and professional relationships, together with a ‘formal’ framework helps expedite decisions and clarify responsibilities;
- The IKC Process ‘belongs’ to ESS and the in-kind contributor;
- Delays happen at the beginning, typically for non-technical reasons, so it is important to ‘close the loop’ with all stakeholders, especially funding agencies.
- Success with IKC depends a lot on the attitude and approach