



EUROPEAN
SPALLATION
SOURCE

ESS Fundamentals

Rob Connatser
Chief Instrument Project Engine





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An International Collaboration

**Sweden,
Denmark and Norway:
50% of construction cost**

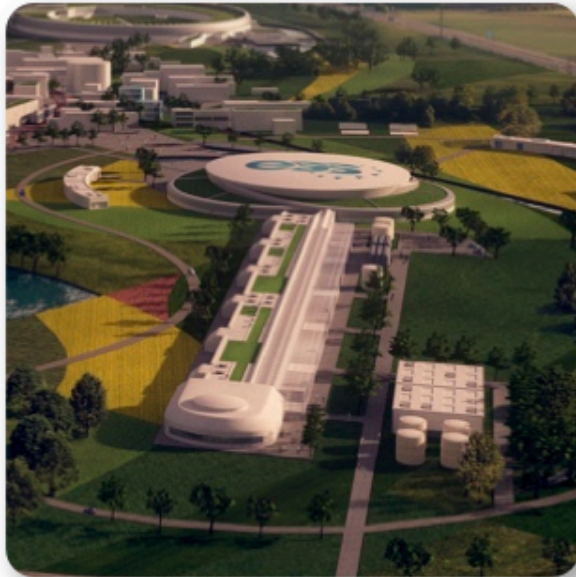


European partners



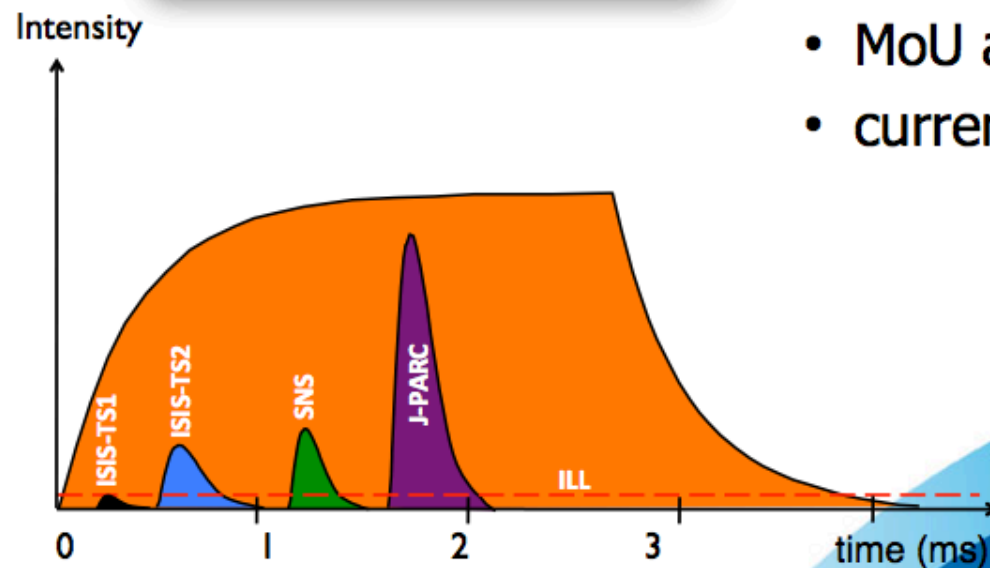
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ESS project: key facts

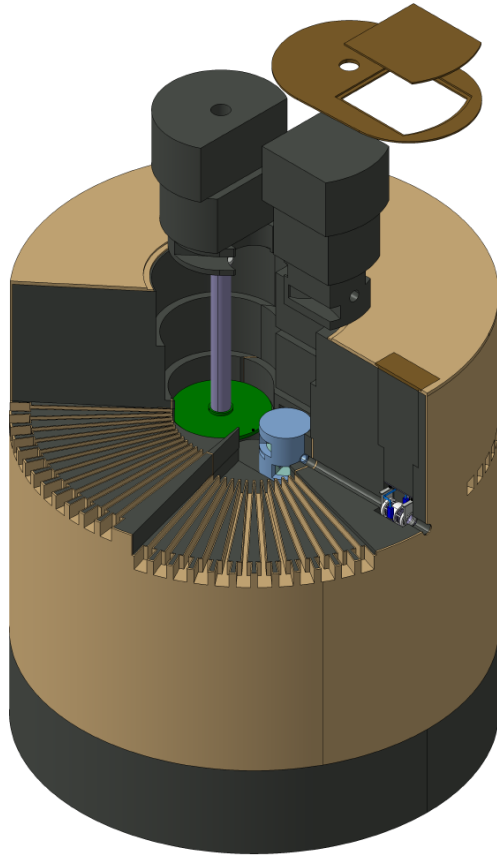


- 5MW long-pulse neutron source.
- First neutrons in 2019 on 7 instruments.
- 22 instruments by 2025
- ESS will be user facility.

- Total cost 1478 M€; funding negotiation
- MoU agreed with 17 european countries
- currently in pre-construction phase



Target Module



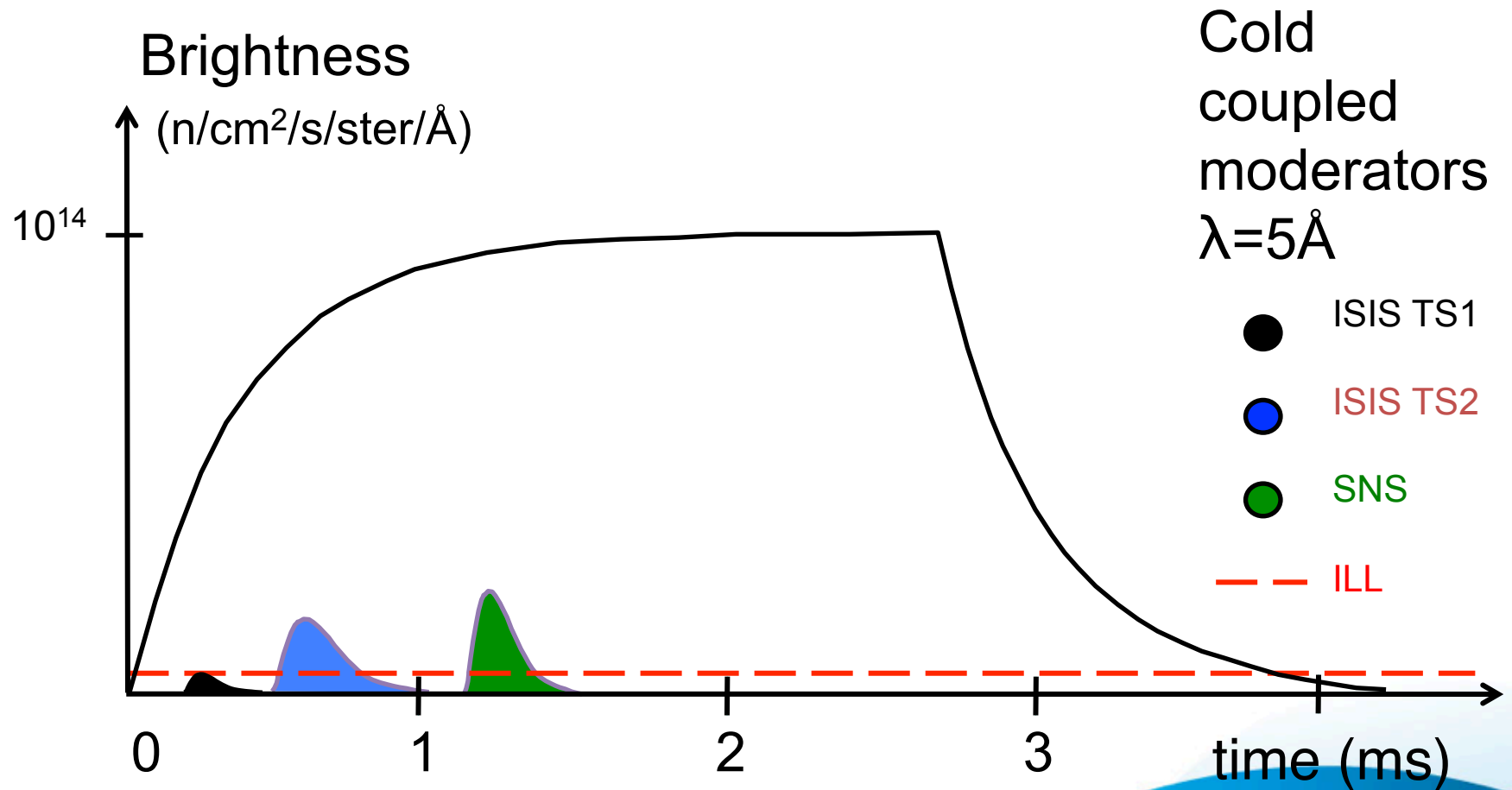
- Rotating tungsten target
- Proposed He cooling
- Moderators: Cold & thermal
- Image of target wheel removal (preliminary)



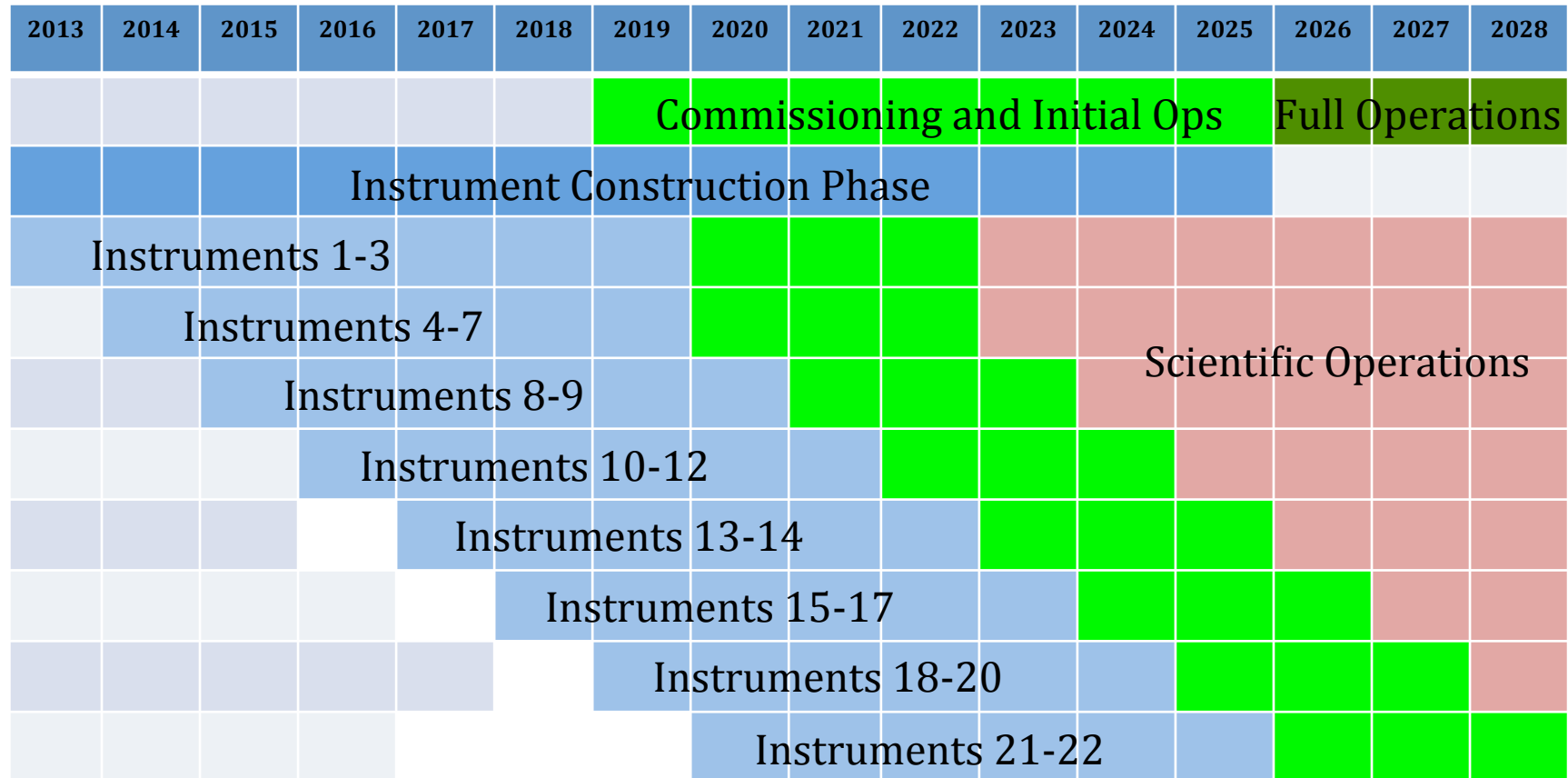
Key Parameters

Parameter	Unit	Value
Average beam power	MW	5
Number of target stations		1
Number of beam port positions		50
Number of beam ports by 2025		22
Number of instruments in construction budget		22
Separation of beam ports	degrees	5
Number of moderators (bi-spectral: thermal & cold)		2
Proton kinetic energy	GeV	2.5
Average macro-pulse current	mA	50
Macro-pulse length	ms	2.86
Pulse repetition rate	Hz	14
Maximum linac length	m	482.5

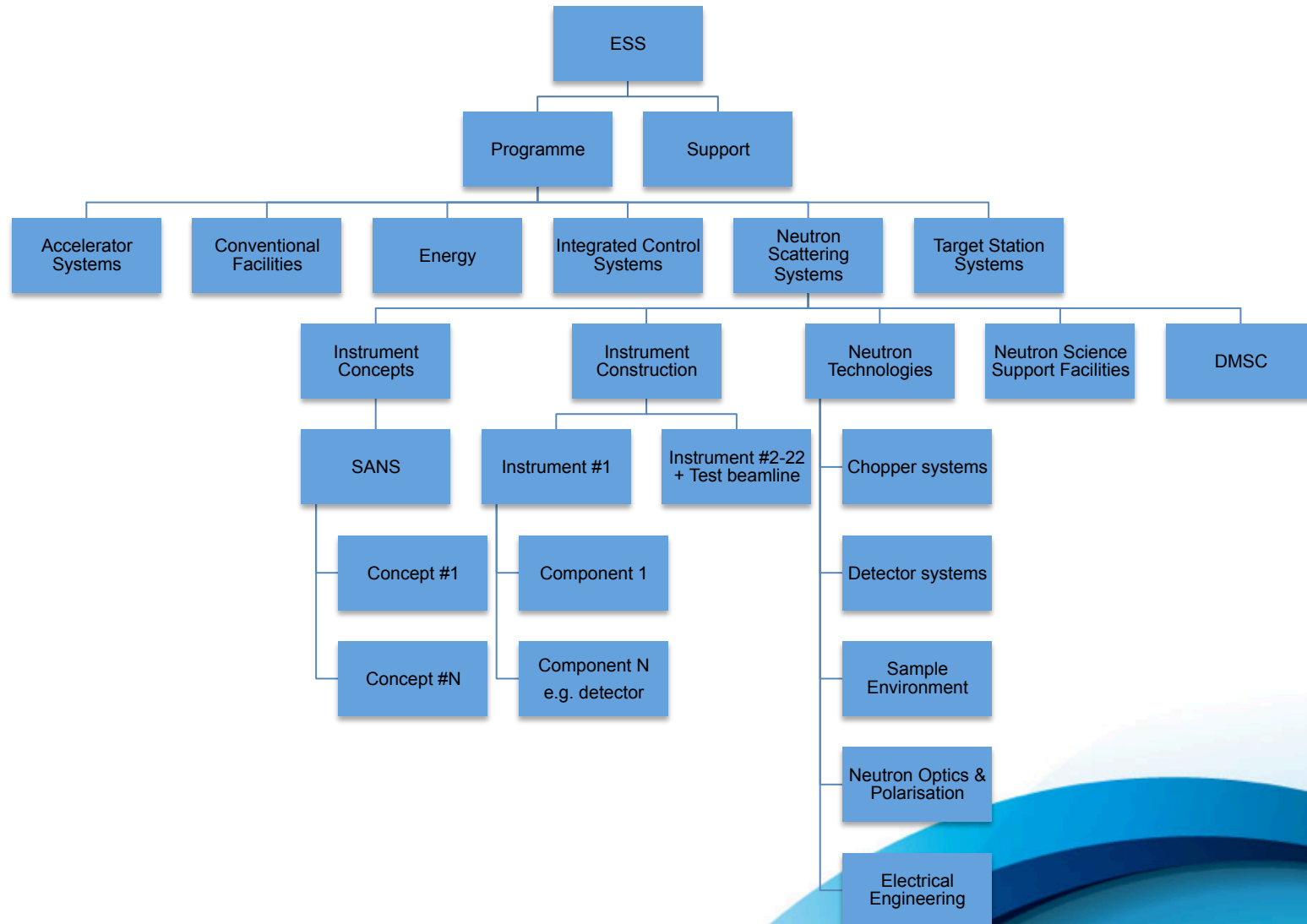
Long-Pulse Principle



Schedule



Programme Organization

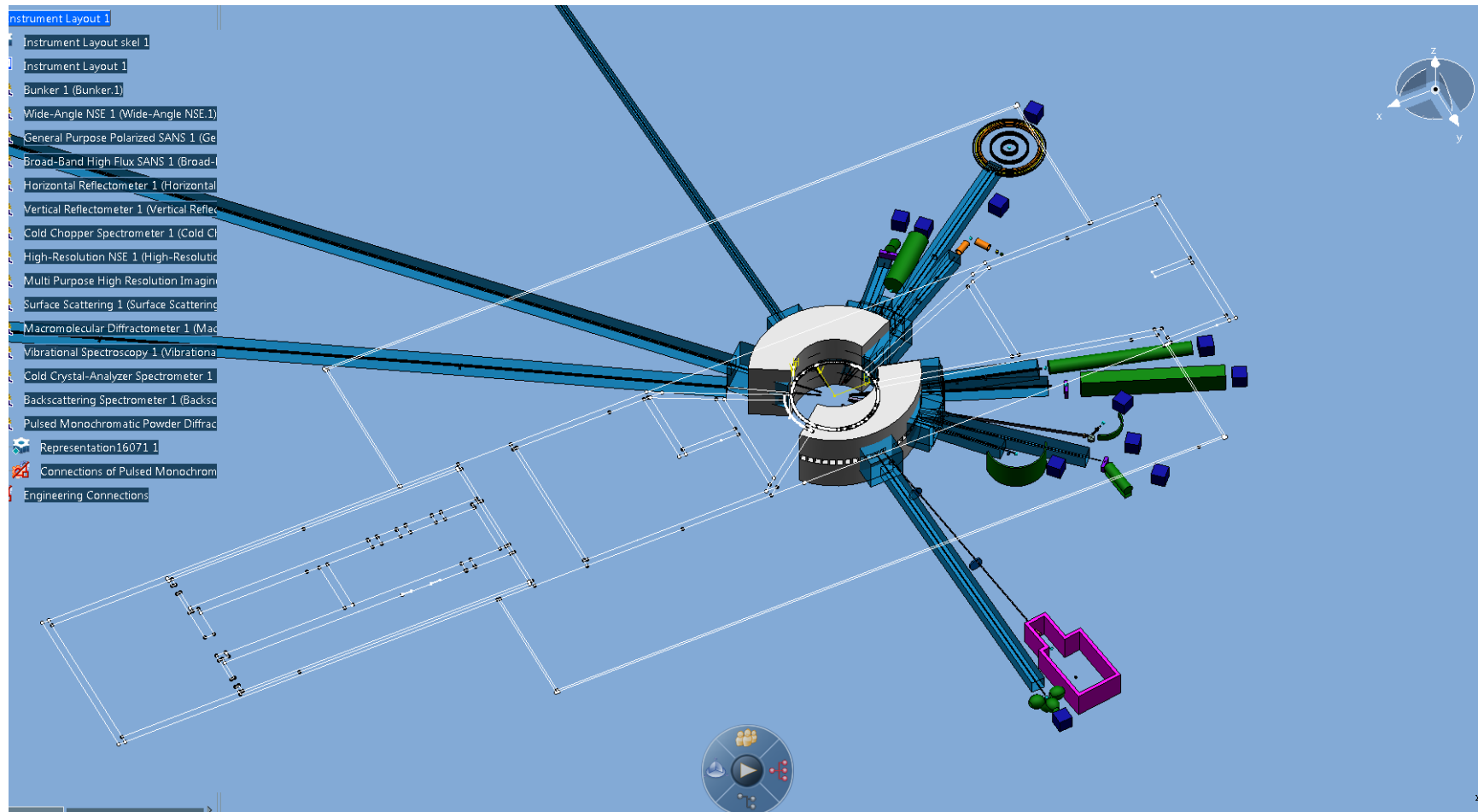


Current Activities

- Develop Systems Engineering processes and documentation
- Develop Engineering processes
- Coordinate and negotiate interfaces with Target Systems and Conventional Facilities
- Develop requirements for conventional facilities

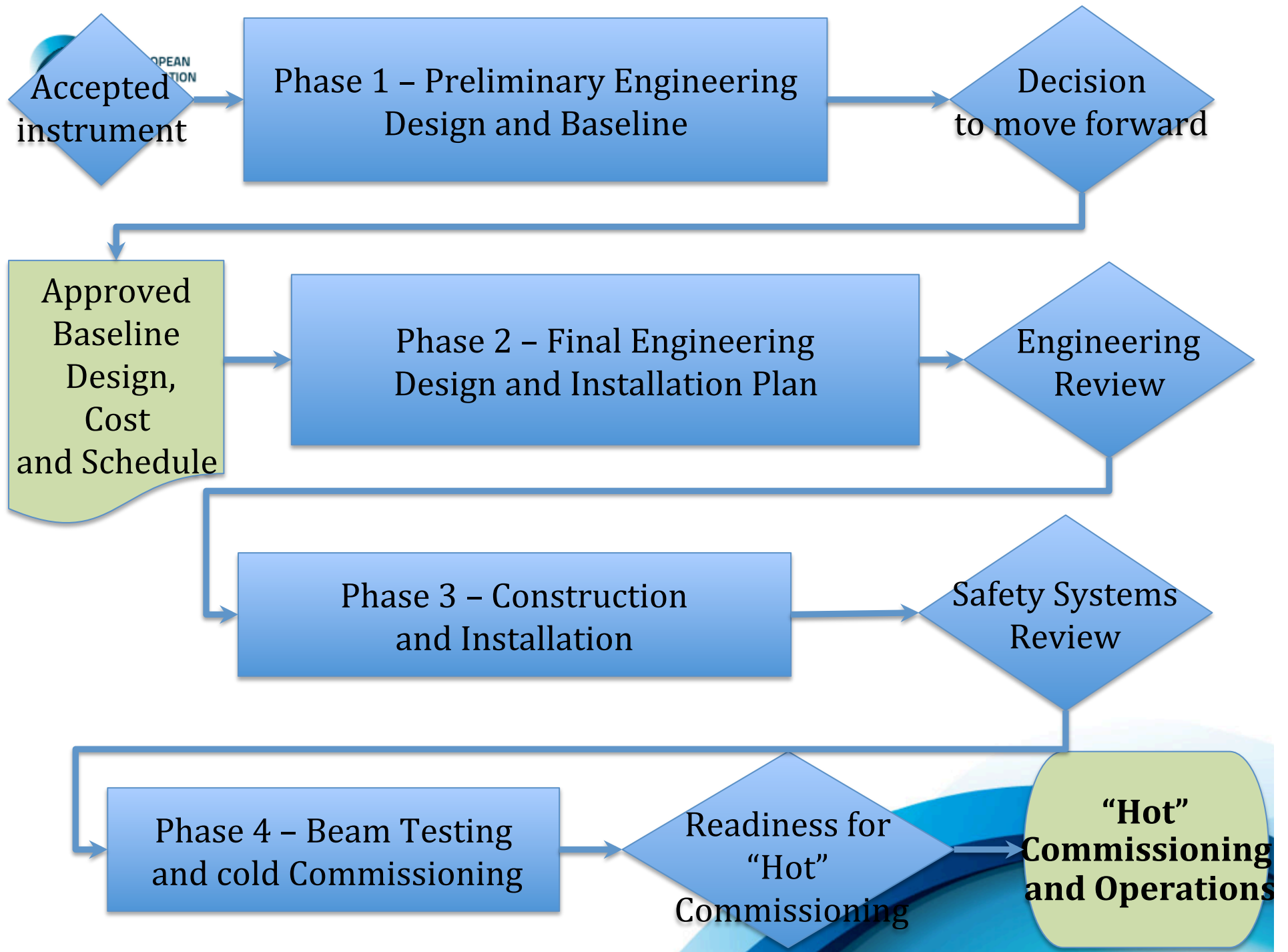


Layout of Potential Instruments



Current Activities

- Develop Systems Engineering processes and documentation
- Develop Engineering processes
- Coordinate and negotiate interfaces with Target Systems and Conventional Facilities
- Develop requirements for conventional facilities
- Write processes



Current Activities

- Develop Systems Engineering processes and documentation
- Develop Engineering processes
- Coordinate and negotiate interfaces with Target Systems and Conventional Facilities
- Develop requirements for conventional facilities
- Write processes
- Hire people:
ess-scandinavia.eu/open-positions



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 - Ken Anderson
 - Arno Hiess
 - Erik Nilsson
 - Oliver Kirstein

