EUROPEAN SPALLATION SOURCE

Neutron Scattering Systems Status and Overview

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Agenda

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In-kind
- Pre-construction / Design Update
- Potential during Construction

Organisation
- Line / Project

Instrument Projects
- Phase 1 – Preliminary Engineering

Review
- Schedule
- Recommendations & follow-up

Performance in 2013
- Earned Value
- High level milestones

In-kind and Design Update

The NSS project managed a total of 47 in-kind contributions that are part of the “ESS Design Update Phase”. The last ones were recently presented to the Preliminary In-Kind Review Committee (PIKRC).

Lessons learnt

Negotiating deliverables

Experiencing in-kind framework

Identified potential in-kind partners and interact with them…one-to-one, EoI’s or IKON meetings…

In-kind and Procurement

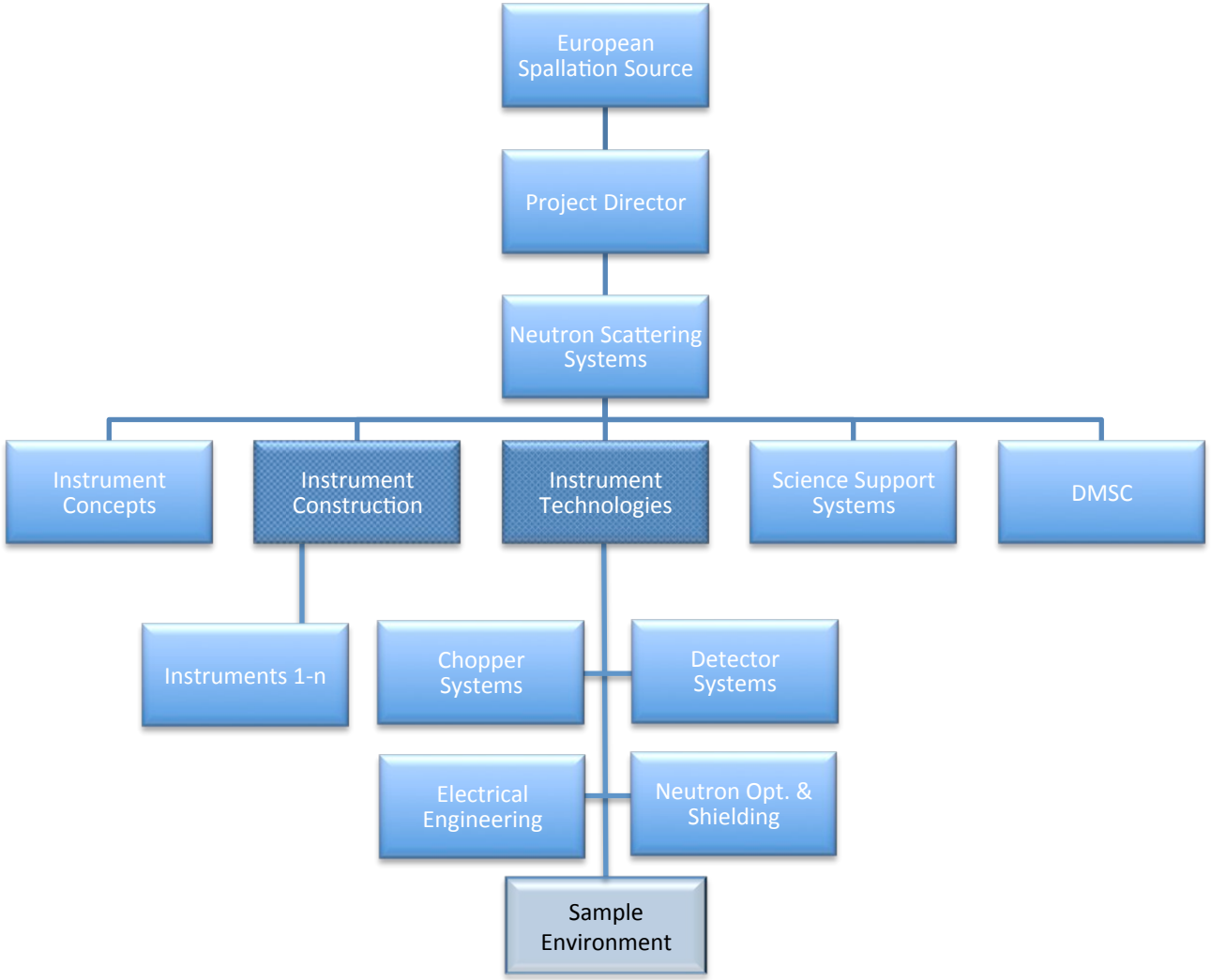
Potential for in-kind contributions

- *Instrument Concepts*
  - ≥30%
- *Science Support Systems*
  - ≥30%
- *Instrument Construction (*per instrument ≤70%)
  - Total ~70%
- *Instrument Technologies*
  - ≥16%
- *DMSC*
  - ≥20%

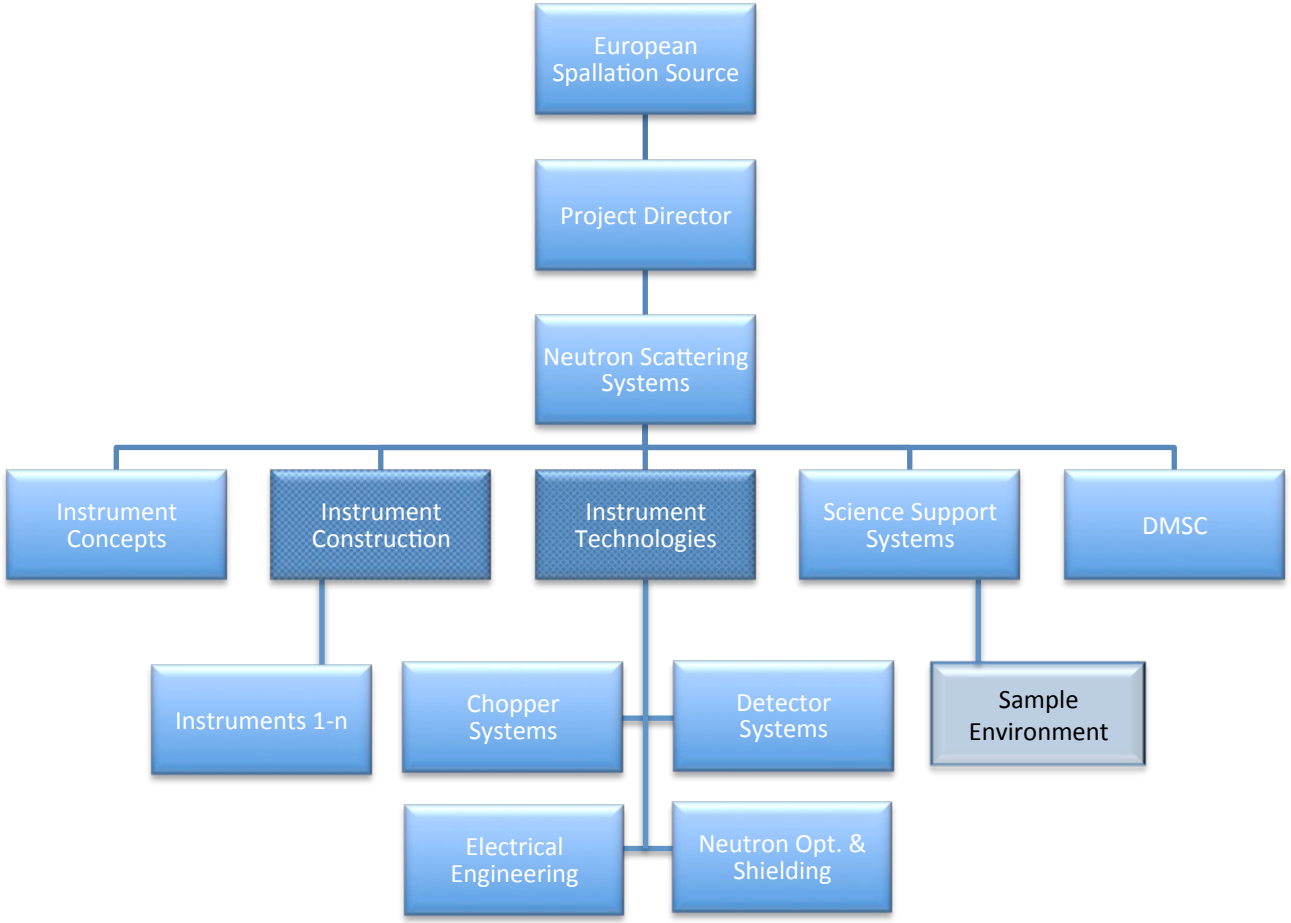
Current estimate of in-kind potential is about 35% of the NSS total budget (~123 Mio€)

Opportunity to access expertise, knowledge and skills that ESS as a "Green Field" site does not yet have
Note: Not a complete list of partners

Organisation



Organisation



Instruments – Round 1

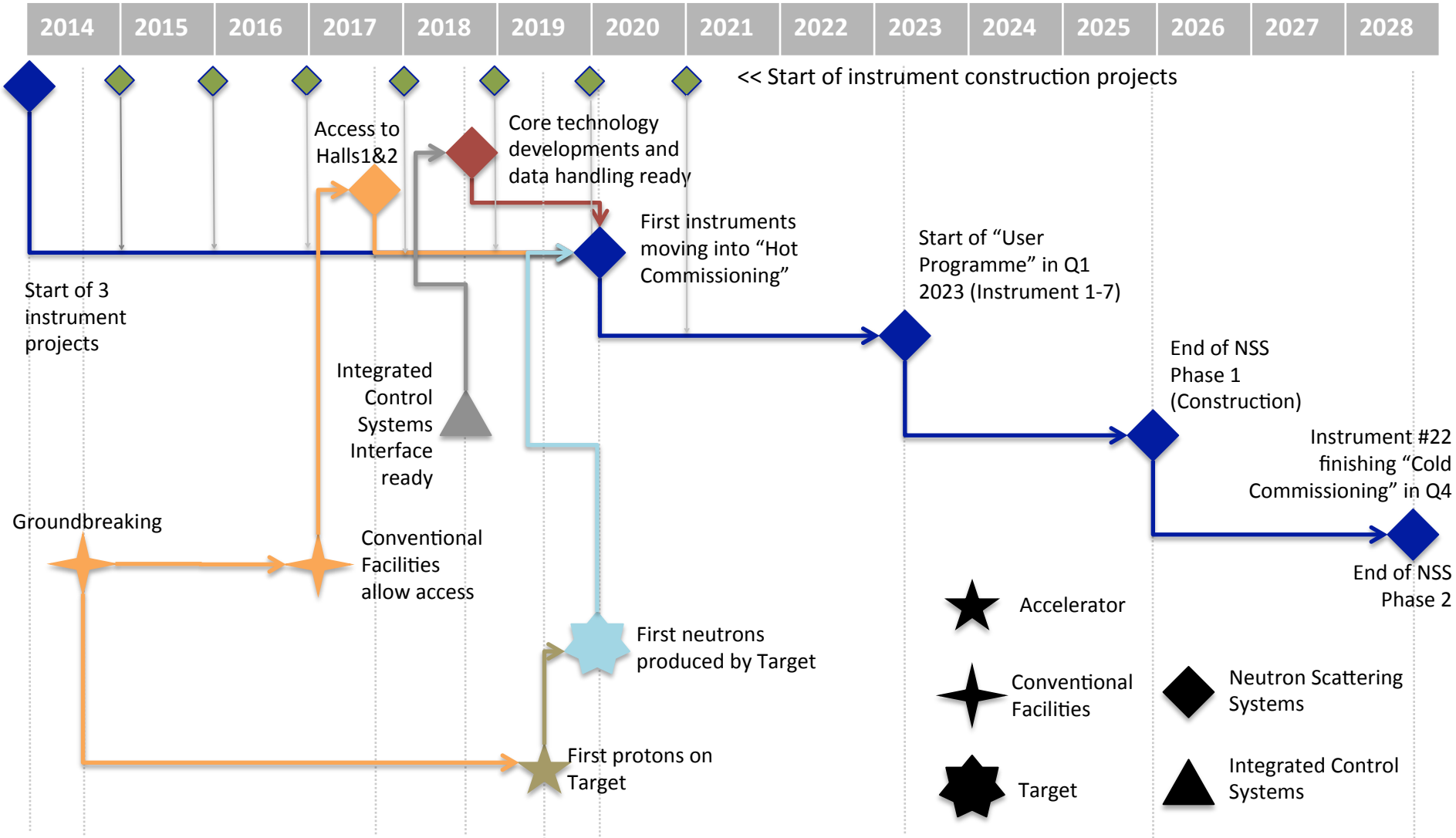
Estblished "Instrument Teams" for Phase 1


- LOKI (SANS)
  - Andrew Jackson (Lead Instrument Scientist)
  - Stewart Pullen (Interim, dedicated Instrument Engineer – Clara Lopez - to start in March)


- NMX (Macromol. Diffractometer)
  - Esko Oksanen (Lead Instrument Scientist)
  - Guiseppe Aprigliano (Instrument Engineer)


- ODIN (Imaging)
  - Markus Strobl (Lead Instrument Scientist)
  - Stewart Pullen (Instrument Engineer)

Schedule & Milestones



Review Recommendations

EUROPEAN SPALLATION SOURCE

8 Recommendations

- Conduct a project level review of the NSS budget to reduce the risk of delivering less than 16 instruments to an acceptable level
- Establish an acceptable scope for NSS, consistent with budgetary constraints and seek endorsement of stakeholders
- Establish agreements with in-kind partners for implementation of instrument development and construction, and for bringing those instruments to full potential
- Reassess instrument construction costs, with due consideration of the impact of a high proportion of in kind contributions
- Focus existing personnel on attracting in-kind contributions and establishing interfaces /standards to accommodate those
- Maximize consolidation of procurements for key components with other subprojects (e.g. steel, concrete...)
- Establish a detailed work program for the Data Management and Software Centre including a time-line for recruiting staff
- Conduct an independent assessment of instrument construction cost, with 1st level cost differentiation (e.g. low, medium and high cost prototypes)

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Internal workshop on 27. & 29. of November
Reassessment of all work packages (strategy, work units, costs)

Internal follow up on
- Chopper Systems (13. December 2013)
- Detector Systems (17. January 2014)

Peer review (TAP)
- Neutron Optics&Shielding (23. & 24. January 2014)
- Detectors & Choppers – March 2014

Updated project plan in place by 31. March 2014

Review Recommendations

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Scope of NSS – 350 Mio € (ring fenced)

16 instruments funded out of Construction budget
3 distinct tranches
Supporting infrastructure

Gradual increase to 22 instruments accessing pre-operational and operational funds; instrument construction finished in 2028

Revised plan by 31. March 2014

Review Recommendations

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Workshop with partners to discuss e.g. Cooperation Centers/ Nodes and the implementation process for instrument

Follow on activities with partner /at partner labs

Due date to have process finalised: 31. December 2014

Review Recommendations

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Scope of NSS

Utilise the full set of instrument proposals and the basis of estimations to compare with existing spallation source instruments, and work with partners with knowledge of in-kind contributions to better understand the impact.

Revised projections of instrument costs by 31. April 2014

Review Recommendations

Recommendations

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Connect personnel at all levels of the organization with partners with the intent of finding areas of interest for in-kind contributions.

Ongoing effort that already started by e.g. identifying postdocs from France working on instrument concepts.

Review Recommendations

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Work with other parts of ESS to coordinate this information;
Consolidated procurement plan instrument construction

Delivery date: 31 December 2014

Review Recommendations

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Establish the scope of the DMSC as part of the internal project review, and develop a detailed project plan for the DMSC which includes a staff time-line accessing pre-operational and operational funds.

Partially done during workshop in November – presentation to SAC during this meeting

DMSC plan by 31. March 2014

Review Recommendations

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Cost differentiation/categories

Started as part of the revision of the ESS Cost Book
Internally reviewed in December 2013 / January 2014

External review to be scheduled

Endorsement by 31. April 2013

Review Summary

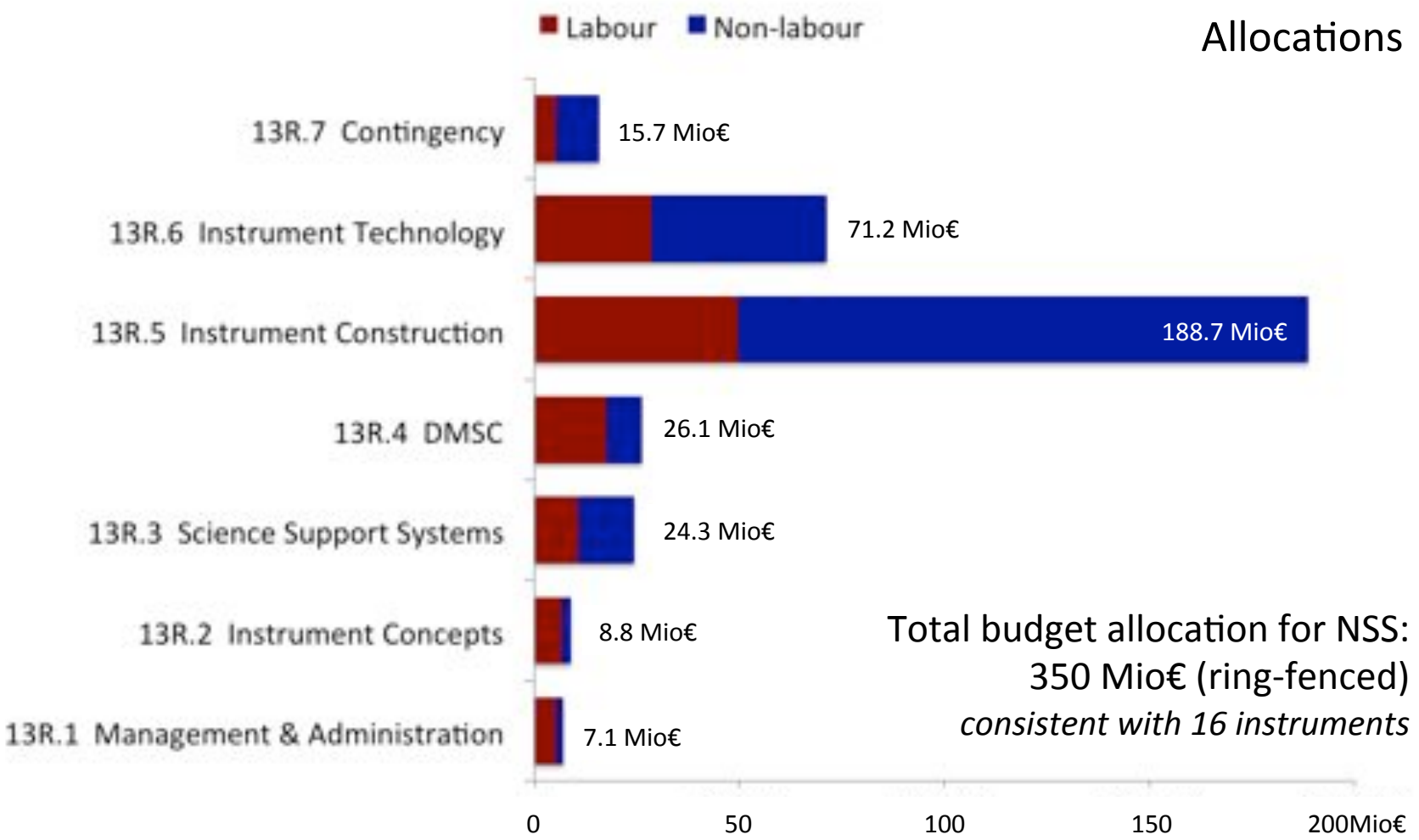
Provide an independent assessment and recommendations on NSS Status and Brief Description of Present Achievements

The NSS project team has done a commendable job in the establishment and implementation of a process for engaging the EU community in the instrument selection process

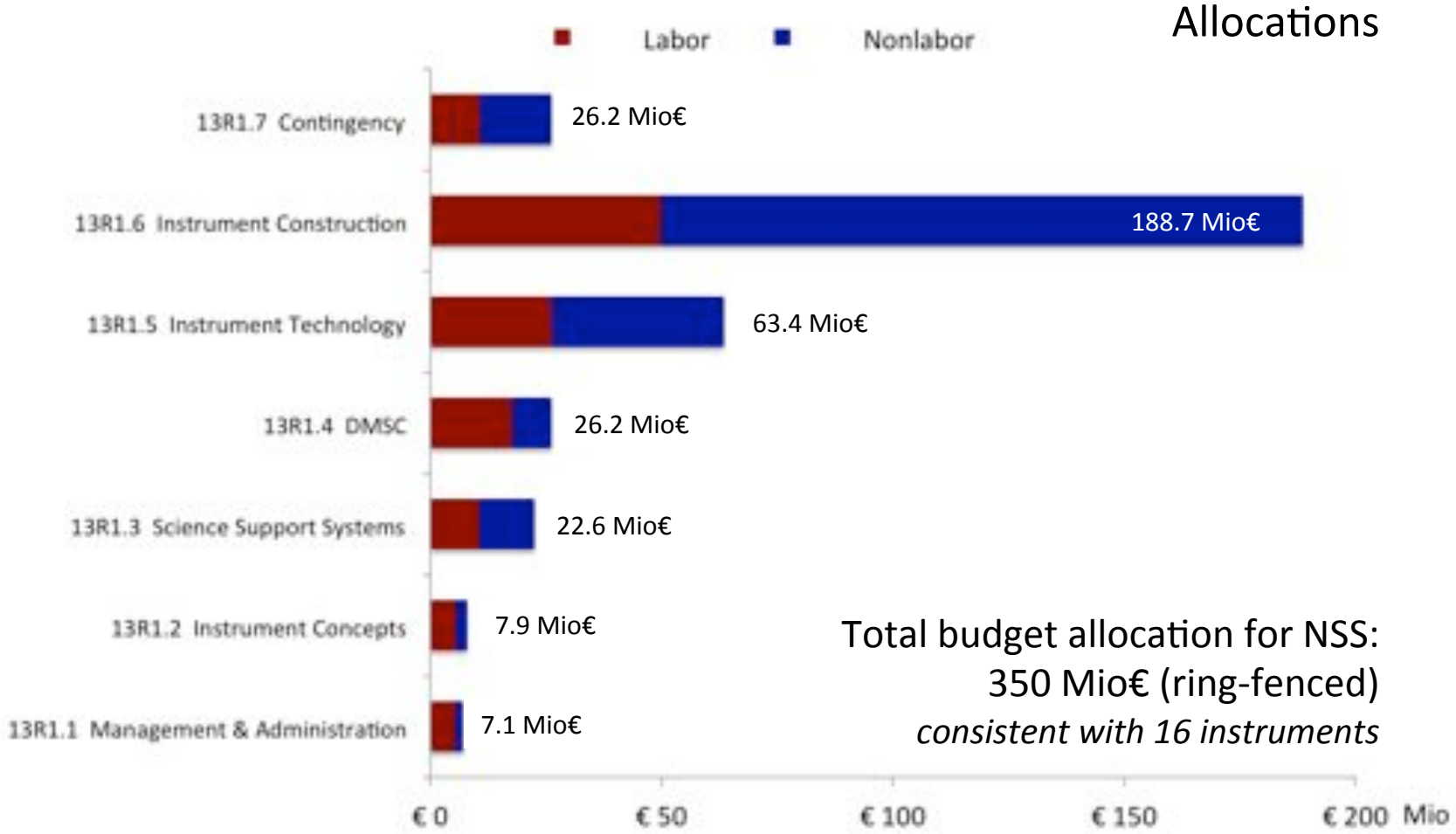
Neutron technologies division has identified key competencies required to be managed in-house and recruited competent leaders in all those areas
Progress towards initiation of construction of the first three instruments is well advanced

Concept development and design of essential neutron beam infrastructure (transport systems, detection, automation, DAE etc.) is progressing in timely manner

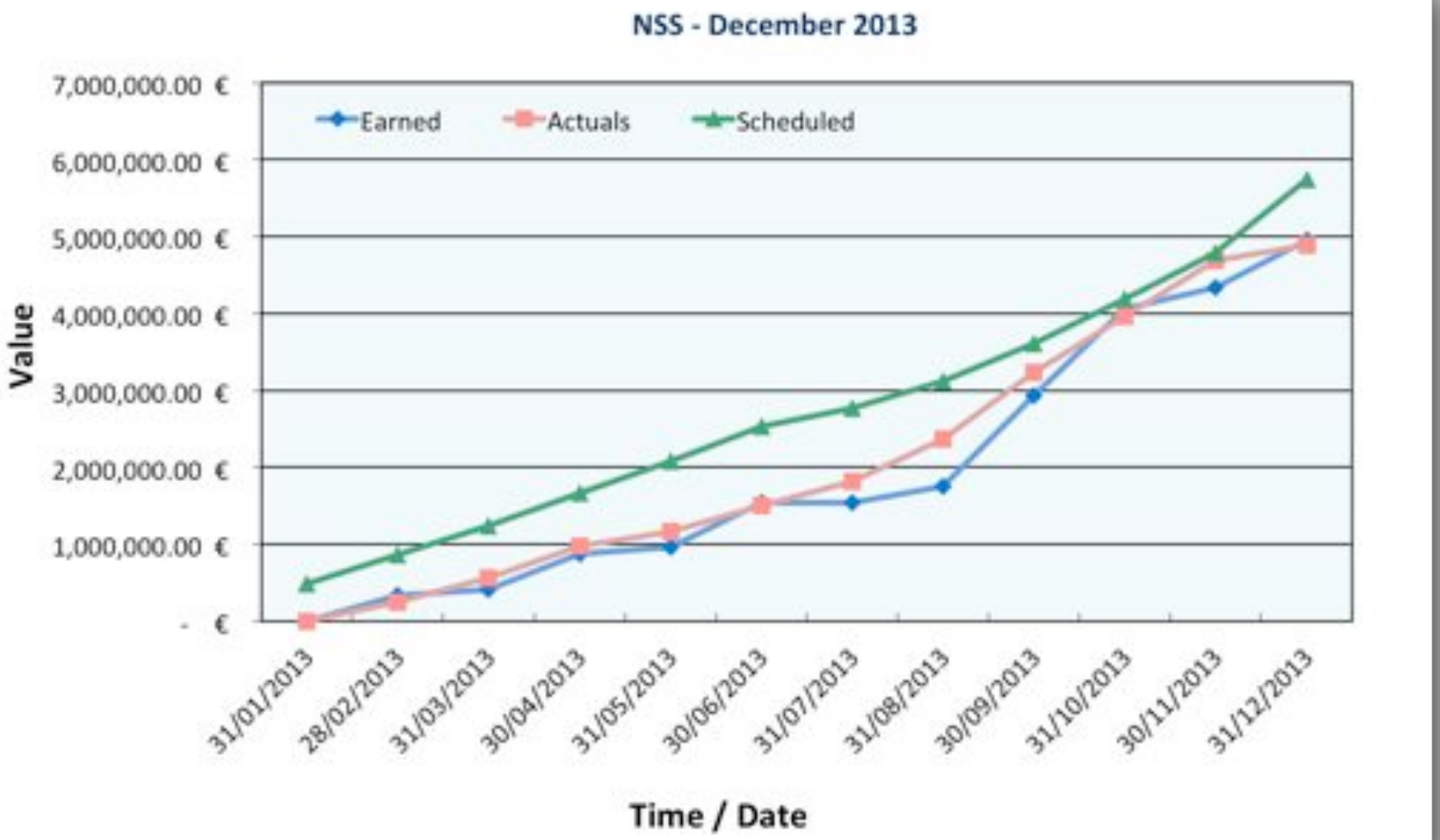
Costs per work package – pre-review



Cost per workpackage – post review



Earned Value – December 2013



NSS High Level Milestones - 2013