

Scope of PCP Phase 1: Solution Design of Q4 First-of-a-kind prototype

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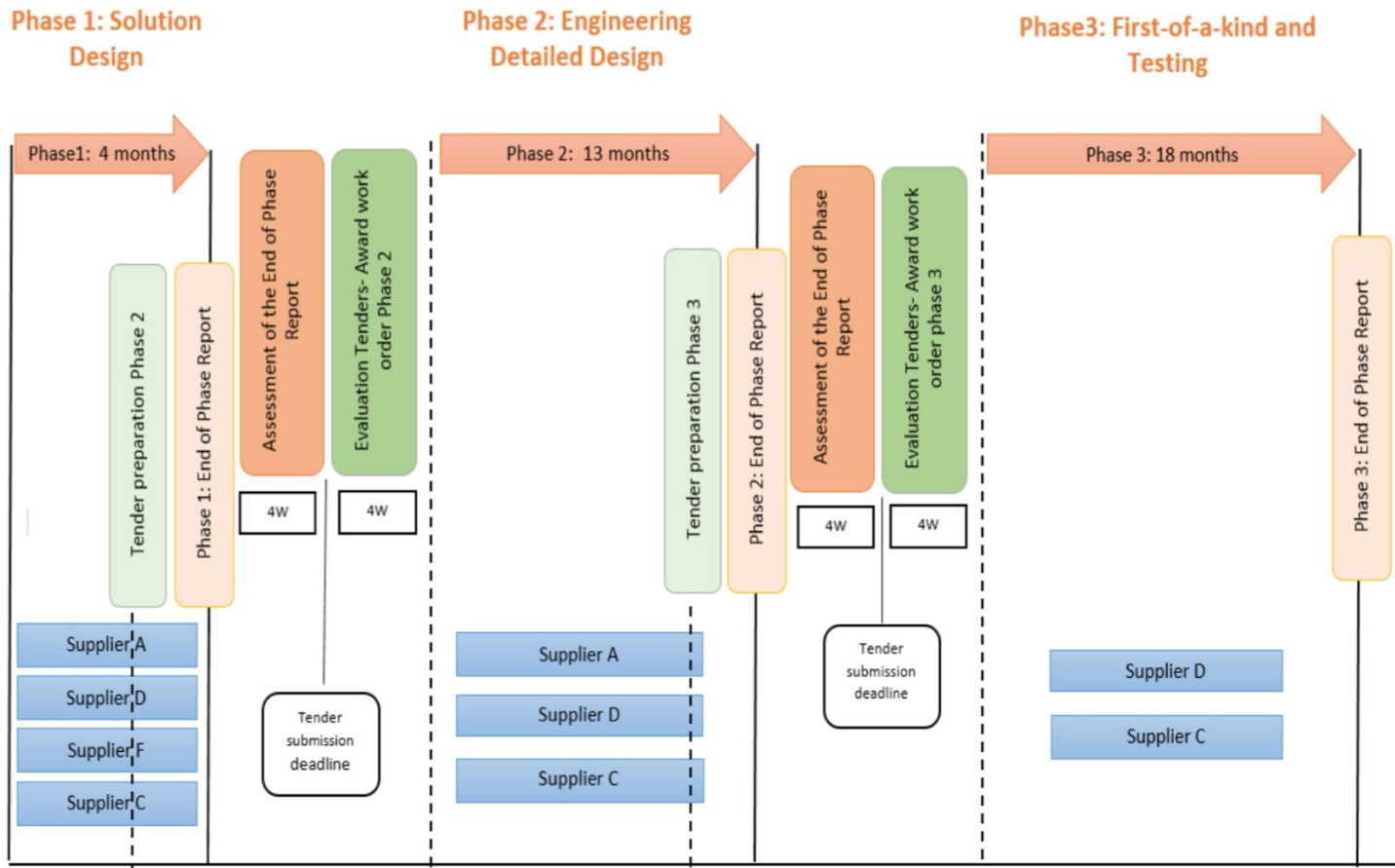
**Narodowe Centrum Badań Jądrowych
National Centre for Nuclear Research
Świerk**

Outline

1. Initial Procurement plan definition
2. Objectives guidelines
3. Phase 1 Evaluation process
4. Contractual Phase 1 boundaries
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Initial Procurement plan definition

- First 4-months Phase of MQYY prototype procurement scheme
- Research phase of the best **conceptual design of the novel MQYY magnet, the materials and the supporting equipment (tooling)** on the basis of the Functional Specifications (see FS 2.1.1) to meet the specific requirements of the HI-LUMI LHC



Objectives guidelines

- Elaborate the Conceptual design of First-of-a kind MQYY determining the approach to develop the new design solutions including materials choice and conceptual technical description of manufacture equipment.
- Based on the PCP Functional Specifications IT-4191/TE/HL-LHC to demonstrate the technical, financial and commercial feasibility of the proposed MQYY concepts, in line with the PCP procurement needs and the HI-LUMI requirements

Contractual Phase 1 boundaries

- The Framework Agreement remains binding for the duration of the Phases for which Contractors remain in the PCP.
- Tenderers who are **awarded a Framework Agreement** will also be awarded a **Work Order for Phase 1**.
- Detailed offer for **Phase 1 including goals, and outline of the plans for Phases 2 and 3 (incl. price conditions) .**
- Award of a of Framework Agreement and a Work Order for Phase 1 (see section 4 of the RfT) to a **minimum of four Contractors**. (can be reduced if limited tenders)
- The maximum available budget for **Phase 1 is 399.000 € (excl. VAT)**. **The Financial Offer of each Tenderer shall not exceed 99.750 € (excl. VAT)**.
- Maximum duration of **four calendar months**.
- The **Buyers Group** will evaluate the **technical and non-technical deliverables submitted within the End of Phase Report** and the successful completion of the milestones. The validation and approval of the solution design is a pre-requisite to access Phase 2.

Conceptual Design scope

- The phase 1 CDR shall demonstrate that a preliminary magnetic and mechanical design with a preliminary CAD design model of the coil and support structure meet the functional specification (Reference IT-4191-TE-HL-LHC-V13) Requirements :
 - ❖ *General Requirements (Table 5)*
 - ❖ *Magnetic Requirements and targets (Table 6,7)*
 - ❖ *Mechanical Requirements (Table 8)*
 - ❖ *Electrical Requirements (Table 9)*
 - ❖ *Magnet protection and instrumentation Requirements (Table 10)*
 - ❖ *Cryogenic Requirements (Table 11)*
 - ❖ *Minimum set of electrical tests during fabrication (Table 12)*
 - ❖ *Specific Material Requirements (Table 13)*
 - ❖ *Interface Requirements (table 14)*
- The **Phase 1 preliminary manufacturing plan** shall outline the **conceptual design of manufacture processes and assembly tools** in each phase.
- This plan is the **backbone of the manufacture work description** including the provisional **subcontracted packages, the sequence of assembly, use of dedicated tool with the related inspection points.**
- The provision for **tool procurement plan** shall be described including the **schedule of documents.**

Phase I deliverables (1/2)

Deliverable	Description
D1.1	Conceptual Design Report (CDR) of the magnet covering the results obtained in Phase 1 including: <ul style="list-style-type: none">• Magnetic design study• Conceptual mechanical design study• List of requirements met by the design
D1.2	Preliminary 2D and 3D CAD models of the magnet
D1.3	Conceptual Design Report of the Tooling including: <ul style="list-style-type: none">• Coil fabrication tooling conceptual design• Magnet assembly tooling conceptual design
D1.4	Development and Manufacturing plan including: <ul style="list-style-type: none">• Detailed plan for Phase 2 detailed mock ups engineering design• Detailed plan for manufacturing, assembly and testing processes of the magnet• List of available tooling including required upgrade if necessary• List of tooling to be procured to complete the 3 Phases• Subcontracting plan

Phase I deliverables (2/2)

D1.5	Detailed schedule for 3 Phases
D1.6	Preliminary Quality Assurance plan including risk assessment one month after the start of Phase 1 for Buyers Group approval.
D1.7	Final Phase 1 Technical Report including the reassessment report of R&D effort for Phases 2 and 3 End of Phase Report is assessed by the Buyers Group based on FS 2.2.1

Non-Technical Deliverables	Description
D1.8 – D1.11	D1.8 Description of the state-of-the-art versus innovation gap; D1.9 Measures taken to protect results (IPR); D1.10 List of names and location of personnel that carried out the R&D activities; D1.11 Abstract of the main results achieved (EU-format).

PCP Phase 1 main milestones

FY '16

FY '17

06 07 08 09 10 11 12 01 02 03

30/06/16 Deadline for submitting questions on tender documents

◆ 07/07/16 Bid conference

◆ 18/08/16 Submission of tenders for Phase 1

22/08/16 Opening tenders of Phase 1

◆ 26/09/16 Notification of decision on award of contract

13/10/16 Signature of Framework contract and Phase 1 work orders

◆ 13/10/16 Start of the implementation Phase 1

◆ 14/11/16 Project abstract publication and IPR declaration

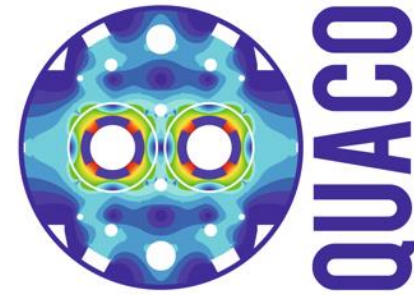
◆ 15/12/16 M1.1 mid phase review

◆ 20/02/17 End of phase report

- D1.7 Ph1 end report, Phase 2,3 revaluation
- D1.8 -1.11 Non tec. deliverables

Phase 1 Technical deliverable evaluation

- According to PCP, each Phase, including Phase 1 will need a **call-off organised in order to award contracts based on the award criteria** (RfT § 3.5) assessed by the Evaluation Committee.
- Eligibility for participation in the next Phase will be subject to **successful completion of the current Phase End of Phase Report** (including all deliverables D1.1 till D1.11)
- Each of the deliverables of phase I Solution Design listed in slides 7-8 shall be evaluated with respect to the merit of the **key technical challenges** to be addressed and achieved.
- **The End of Phase report shall be assessed against the quality and completeness of:**
 - the conceptual mechanical and magnetic analysis,
 - the details and level of integration of CAD models.
 - the tooling conceptual description.



THANK YOU

Any additional questions?