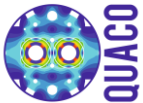




# Introduction to the QUACO project

Marcello Losasso, CERN

OMC – CERN – March 30<sup>th</sup> 2016



# Practical information

- 08:30 Welcome coffee and distribution of badges
- 09:00 Start of meeting
- 10:30 Coffee break
- 13:00 End of meeting
- 13:00 -13:50 Light lunch
- 13:50 Shuttle bus for the technical visit. Please take your personal belongings and passport with you
- 14:00 -15:30 Technical visit
- 15:30 End of visit
- Drop-off at CERN reception (building 33)
- If you need a taxi/transport to the airport or train station, please contact Julia Cachet, phone +41 75 411 4162, email [julia.cachet@cern.ch](mailto:julia.cachet@cern.ch)

# Agenda

**Information session (9:00 -12:00 CET) This session will be webcast.**

This session will include a series of presentations that will provide an overview of the QUACO project and consortium, the pre-commercial procurement process and the objectives of the procurement activity. It will include information about the technical scope and requirements as well as the legal and contractual framework in which the procurement will be executed.

**Information session (14:00 -15:30 CET) This session will NOT be webcast.** This interactive session between the QUACO Consortia and potential suppliers present at the open market consultation will be organized in a visit format in the CERN lab. During the visit it will be shown examples of tools and fabrication methods that could be used in the frame of QUACO project. It will be explored the requirement of the procurement in terms of tooling, how it matches current market offerings and where developments will be necessary.

# Agenda

- 08:30 Welcome coffee and distribution of badges
- 09:00 Introduction to the HL-LHC (HiLumi) Project
- 09:30 Introduction to the QUACO Project
- 10:00 Introduction to the technical contents - The Q4 magnet
- 10:30 Coffee break
- 11:00 Introduction to the PCP process
- 11:40 Next steps & Time plan
- 12:00 Public session of Q&A
- 13:00 -13:50 Light lunch
- 14:00 -15:30 Technical visit
- 15:30 End of visit

# Scope of the OMC

- To inform and prepare the market to the upcoming CfT
- To share information about the status of development of the Q4 magnets
- To gather feedbacks and suggestions from potential bidders to complete the tender documentation

# QUACO Project

- What we want to procure
- Who is involved
- Where we are
- Why using the PCP (Pre-commercial-Procurement)

# What we want to procure

- The scope of the project is to develop and procure 2 pilot superconductive quadrupole magnets valid for use in the frame of the Hi-Lumi project, the Q4.
- The Q4 are part of the IR magnets in Hilumi-LHC providing the strong focusing of particle beams.
- The technical content is detailed in the Helene Felice presentation.

# Who is involved

The QUACO project partners are:

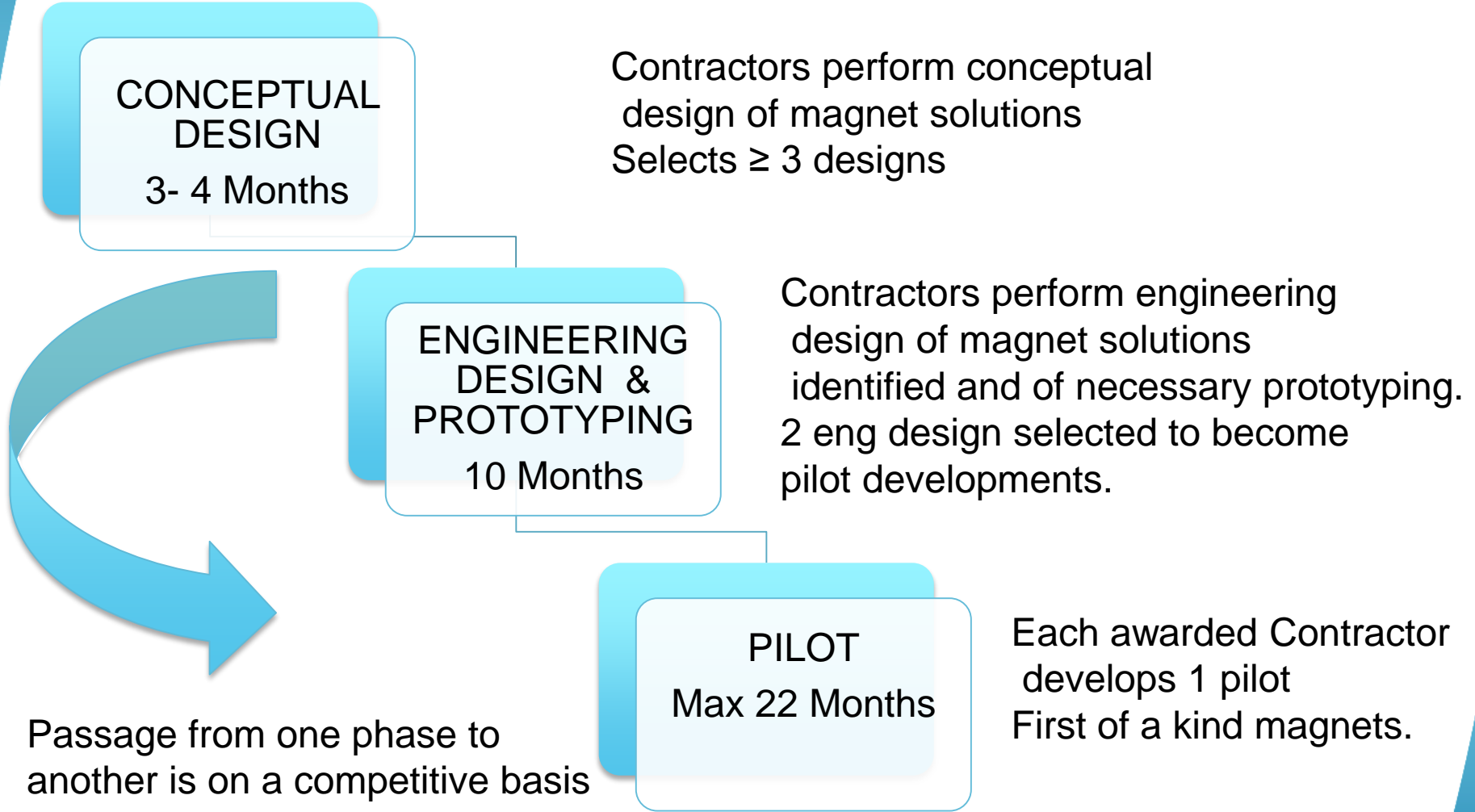
- CEA - Commissariat à l'Energie Atomique et aux Energies alternatives, Fr
- CERN - European Organization for Nuclear Research , CH
- CIEMAT - Centro De Investigaciones Energeticas, Medioambientales Y Tecnologicas, ES
- NCBJ - (Narodowe Centrum Badan Jadrowych, Poland

CERN will act as the lead procurer that will coordinate and lead the joint procurement for the benefit of the aforementioned organizations. The presentation from CV, KE, FJ will detail the legal & administrative aspects

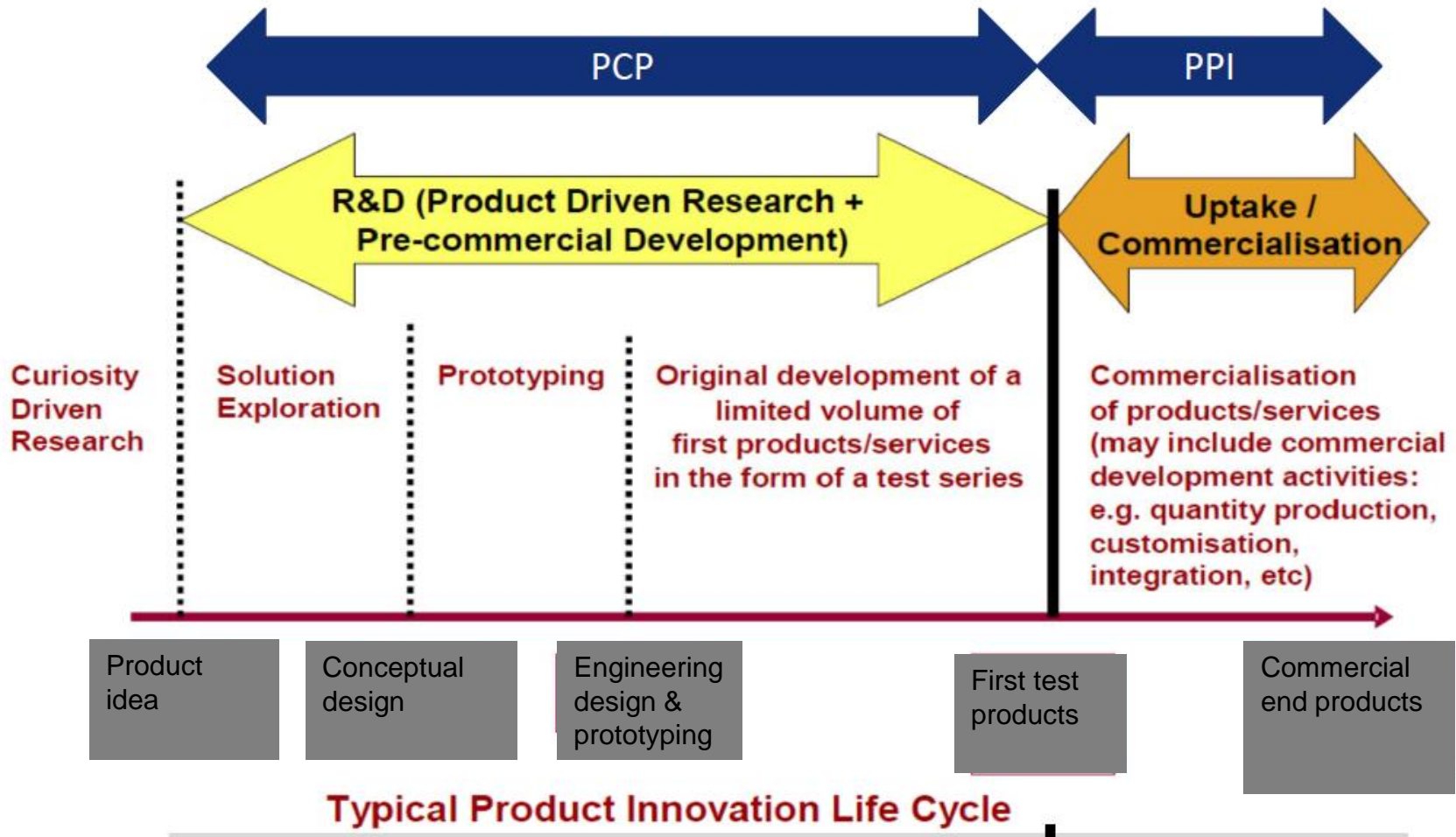


# Implementation in 3 phases of QUACO project

After preparatory phase including Market Survey, and after request for tender, bidders have 2 M to prepare the offer for Phase 1 & binding costs up to phase 3.



# Where we are



# Why a PCP

- Disseminate accelerator magnet design in EU (our basic design is a good starting point)
- Increase competition, trying not to disfavor SME
- Favoring dissemination of construction competence and also tooling in EU Industry
- For this we are to pay a price: two prototypes instead of one, more follow up.

# Why a PCP

- No off-the-shelf technology is ready to meet the challenge represented by HL-LHC needs.
- The small volume of the market and the technologic risk are obstacles to a “conventional” tender.
- The PCP instrument can serve the purpose of enlarging the market basis (by reducing financial barrier for SMEs), to attract SMEs (by sharing the technological risk of committing into difficult R&D), to mitigate risk of over or under specifications, by engaging industries at the early stage).

# QUACO PCP

Quaco Consortium has committed >1.9 M€ of funds to specify and prepare the development of innovative superconductive magnets and to follow-up their procurement and manufacture

The pilot magnets will be made available to end-users accelerator community for the needs of Hi-LUMI project

Co-funded via H2020 (March '16-Feb '20) under Grant Agreement 689359

**Total QUACO budget 6.5M€**  
**Total procurement budget 4.6M€**



# Before the QUACO PCP

Development of new challenging technology in accelerator area has always required long R&D programs.

The funding of these programs has been almost always in-kind contributed.

This mechanism, while proved successful for the final result of the R&D, is demonstrated not optimal to enlarge the market basis and to shorten time to commercialization.

# Going beyond QUACO PCP

QUACO is the first PCP project in the area of sc magnets.

- We want to make it a « first-of-a-series » for this EC co-funded type of business.
- We aim to:
  - Progress from R&D of pilots magnets to small series production
  - To broaden and extend the project for similar scope in the accelerator area.
  - To speed up the technical background and the transfer of technology from national labs to industry

# Going beyond QUACO PCP

- Progress from R&D of pilots magnets to small series production
  - it is expected that Public Procurement of Innovation (PPI) will be the small series production following of the Quaco project
- To broaden and extend the project for similar scope in the accelerator area.
  - the PCP example can set a benchmark in the market sector
- To speed the adoption of technical background and technology transfer from national labs to industry
  - by using a mechanism of risk sharing to transfer and develop know-how able to enhance the industries capability.



# Technical Background from the Consortium to QuaCo

- QUACO Consortium will provide a possible magnetic design of the Q4, including a configuration of coil ends and quench protection scheme, based on know-how developed in our laboratories.
- Contractors will be free to pursue a different design, provided it answers the functional requirements specified.



*Questions?*

