

HiLumi LHC

FP7 High Luminosity Large Hadron Collider Design Study

Milestone Report

Industry Forum on the HL-LHC Opportunities

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HILUMI LHC

FP7 High Luminosity Large Hadron Collider Design Study
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MILESTONE REPORT

INDUSTRY FORUM ON THE HL-LHC OPPORTUNITIES

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Abstract:

HiLumi LHC goes to Industry, an industrial event related to the major CERN project for the next decade, the High Luminosity LHC project, has been held at CERN on 25-26 June 2015.

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The HiLumi LHC Design Study is included in the High Luminosity LHC project and is partly funded by the European Commission within the Framework Programme 7 Capacities Specific Programme, Grant Agreement 284404. HiLumi LHC began in November 2011 and will run for 4 years.

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Delivery Slip

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Executive summary

HiLumi LHC goes to Industry, an industrial event related to the major CERN project for the next decade, the High Luminosity LHC project, was held at CERN on 25-26 June 2015.

1. INTRODUCTION

In line with the previous industry oriented workshop “**Superconducting Technologies for Next Generation of Accelerators**” held at CERN in December 2012, the HiLumi LHC goes to Industry event marked the end of the EU supported Design Study FP7-HiLumi LHC (grant n. 284404) and the beginning of the construction phase of the project.

Leading companies in the fields of **superconductivity, cryogenics, power electronics, electrical engineering and mechanics** were invited to meet the CERN management, several procurement and legal officers and High Luminosity LHC project engineers at the IdeaSquare premises to explore the technical and commercial challenges emerging from the design and procurement of the LHC upgrade accelerator, and to match them with state-of-the-art industrial solutions. The high number of participants obliged the organizers to find suitable logistical solutions and a video connection was arranged between the 60 participants seated in IdeaSquare and auditorium 13-2-005, where 80 industry representatives attended the presentations.

2. DESCRIPTION

The aim of the event was:

1. To connect CERN with all the potential industrial partners, fostering collaboration, technical exchange and the deployment of EU commercial potential.
2. To provide a structured environment for **debate, communication and exchange on information** and ideas on important topics regarding the HiLumi LHC project.
3. **To develop a dialog between all stakeholders.**
4. **To investigate bridging solutions** between industrial, scientific and commercial concerns to be included in our future Call for Tender.
5. **To disseminate technical requirements** on components and equipment for the project.

The agenda of the event and the list of participants are available on the HiLumi LHC goes to Industry website: <https://indico.cern.ch/event/387162/>

The relevant presentations focused on:

- **The technical challenges of the High Luminosity LHC project.**

Several technical presentations detailing the main technology domains as well as the construction and procurement challenges were given:

1. Cryogenics for HL-LHC, from technical needs to possible industrial contracts;
2. Magnet components and assemblies;
3. Electronics and instrumentation for accelerators;
4. Ultra vacuum components and systems;
5. Cryostats and subcomponents for cryogenic equipment;
6. Superconducting RF Crab Cavities;
7. HL-LHC Collimators and High Temperature Materials.

- **The High Luminosity LHC project and schedule.**

The HiLumi LHC project presentation and forthcoming procurement overview and schedule details provided the timeline of future procurement.

- **Procurement and legal framework.**

The procurement/legal presentation gave the legal framework of future procurement.

Following the request of many interested companies, some visits to CERN facilities were organized on Thursday afternoon, giving the opportunity to more than a hundred people to visit the SM18 facility, the cavity and collimation workshop and the Large Magnet Facility located in building 180.

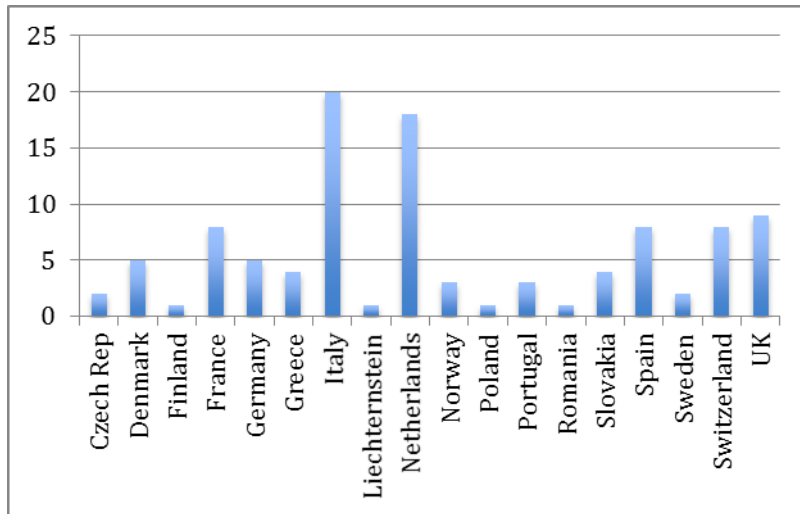
Additionally, the participants were welcomed with a working dinner on Thursday 25 June 2015 in the Annex of CERN Restaurant no.1.

On Friday afternoon, 26 June, after the technical presentations, almost 100 business-to-CERN short round-table discussions on topics relevant to the High Luminosity LHC project were arranged according to participant requests, in order to respond to the interest expressed by companies. Moreover, upon request of the ILOs, a special meeting was held in the afternoon between the ILOs, CERN Procurement and KT to discuss ways to improve the participation of industries in such events, and to better balance the geographical distribution.

The number of participants officially registered to the event before the closing date was 143. Some additional representatives showed up without registering. The number of different suppliers was around 136 from 18 countries. Some of the companies were not previously registered in the CERN procurement database.

Companies	Countries	Registered in Supplier DB	Not registered
136	18	81 (60 w/ orders in past 3 y)	29

The distribution of registered industry/countries to the HiLumi LHC goes to Industry event:



The distribution of the planned procurement for the next 18 months was also presented to the companies.



Procurement planned in next 18 months

<http://hilumilhc.web.cern.ch/>

Work Package	No. of Tenders	Tender value range	No. by range
WP 03, IR Magnets	65	➤ 200 KCHF	32
		50 kCHF up to 200 kCHF	33
WP 04 Crab cavities & RF	12	➤ 200 kCHF	5
		50 kCHF up to 200 kCHF	7
WP 05, Collimation	6	➤ 200 KCHF	6
WP 06, Cold Powering	14	➤ 200 kCHF	14
WP 07, Machine Protection	5	200 k CHF to > 750 kCHF	3
		50 kCHF up to 200 kCHF	2
WP 08, Collider-Experiment Interface	7	➤ 200 kCHF 50 kCHF up to 200 kCHF	-
WP 11, 11T Dipole	15	50 kCHF up to 200 kCHF	15
WP 12, Vaccum	51	➤ 200 kCHF	34
		50 kCHF up to 200 kCHF	17
WP 13, Beam Diagnostics	15	200 k CHF to > 750 kCHF	8
		50 kCHF up to 200 kCHF	7
WP 14, Beam Transfer & Kickers	10	200 k CHF to > 750 kCHF	2
		50 kCHF up to 200 kCHF	8
Price Enquiries	89	Invitation to Tender	104



3. CONCLUSION

Several ILOs congratulated CERN on the large participation from industry, the broad representation from member countries and the high quality of the presentations. There was also positive feedback from many of the participating industries. Early information to industry was unanimously agreed as a key factor to help CERN and industry meet the HiLumi LHC challenges.

4. ANNEXES

- A. Programme of HiLumi LHC goes to Industry
- B. Photo gallery: <https://cds.cern.ch/record/2029406>











HiLumi LHC goes to Industry

Thursday 25 June 2015 - Friday 26 June 2015

CERN
Programme

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Thursday 25 June 2015

Visit of various CERN facilities - Meeting point next to Reception (bldg. 33) (16:30-18:30)

Working Dinner - Annex (Restaurant no.1) (19:00-21:30)

Friday 26 June 2015

Welcome - IdeaSquare, building 3179 and 13-2-005 (09:00-09:05)

- Presenters: BORDRY, Frederick

Event presentation - IdeaSquare, building 3179 and 13-2-005 (09:05-09:15)

- Presenters: LOSASSO, Marcello

HiLumi LHC project presentation and Forthcoming procurement overview and schedule details - IdeaSquare, building 3179 and 13-2-005 (09:15-10:00)

- Presenters: BEJAR ALONSO, Isabel

Coffee break - IdeaSquare, building 3179 (10:00-10:30)

Procurement/legal presentation - IdeaSquare, building 3179 and 13-2-005 (10:30-11:00)

- Presenters: LEMOINE, Boi-Lan Nguyen

Cryogenics for HL-LHC, from technical needs to possible industrial contracts - IdeaSquare, building 3179 and 13-2-005 (11:00-11:15)

- Presenters: CLAUDET, Serge

Magnets components and assemblies - IdeaSquare, building 3179 and 13-2-005 (11:15-11:30)

- Presenters: SAVARY, Frederic

Electronics and instrumentation for accelerators - IdeaSquare, building 3179 and 13-2-005 (11:30-11:45)

- Presenters: VENESS, Raymond

Ultra vacuum components and systems - IdeaSquare, building 3179 and 13-2-005 (11:45-12:00)

- Presenters: BAGLIN, Vincent

Cryostats and subcomponents for cryogenic equipment - IdeaSquare, building 3179 and 13-2-005 (12:00-12:15)

- Presenters: DUARTE RAMOS, Delio

HL-LHC Collimators and High Temperature Materials - IdeaSquare, building 3179 and 13-2-005 (12:15-12:30)

- Presenters: BERTARELLI, Alessandro

Superconducting RF Crab Cavities - IdeaSquare, building 3179 and 13-2-005 (12:30-12:45)

- Presenters: GARLASCHE, Marco

Q&A - IdeaSquare, building 3179 or 13-2-005 (12:45-13:00)

Working lunch - IdeaSquare, building 3179 (13:00-14:15)

Ideasquare presentation - IdeaSquare, building 3179 (14:15-14:30)

- Presenters: NORDBERG, Markus

B2B meetings - IdeaSquare, building 3179 (14:30-15:30)

Meeting with the ILOs (for Project Management only) - 160-1-009 (14:30-15:30)

Coffee break - IdeaSquare, building 3179 (15:30-15:45)

B2B meetings - IdeaSquare, building 3179 (15:45-17:00)

Meeting with the ILOs (for Project Management only) - 160-1-009 (15:45-17:00)

Wrap-up - IdeaSquare, building 3179 (17:00-17:15)