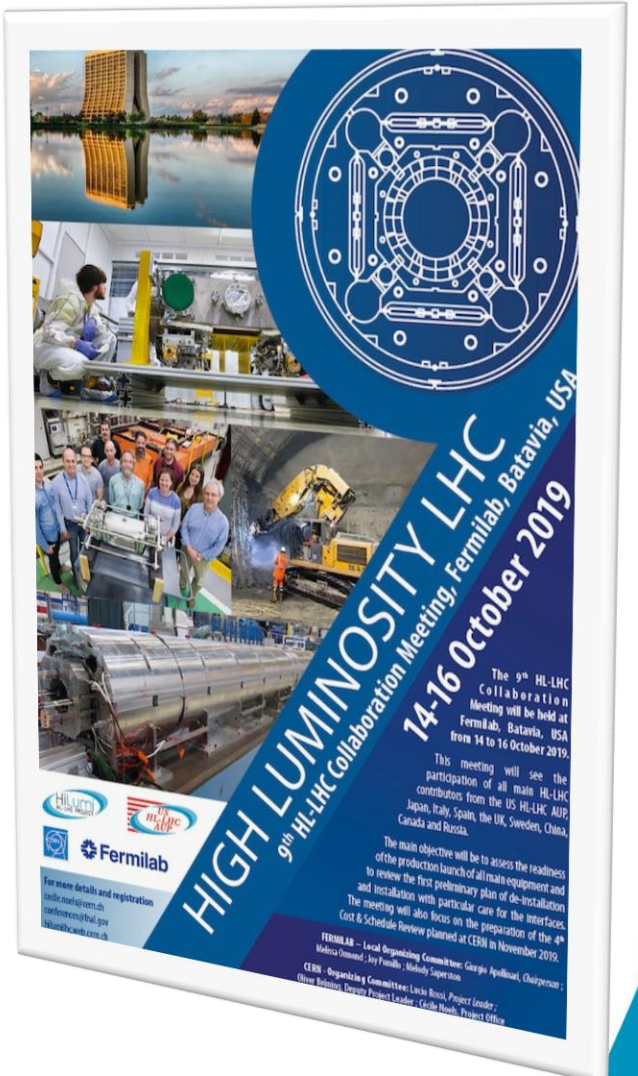
Close out of HiLumi CM # 9

Lucio Rossi

HL- LHC Project Leader

Fermilab – 14 October 2019



Goal of HL-LHC

From EC-FP7 HiLumi LHC Design Study application of 2010

The main objective of HiLumi LHC Design Study is to determine a hardware configuration and a set of beam parameters that will allow the LHC to reach the following targets:

A peak luminosity of L_{peak} = **5×10^{34} cm^{-2}s^{-1} with levelling**, allowing:

An integrated luminosity of **250 fb^{-1} per year**, enabling the goal of

L_{int} = 3000 fb^{-1} twelve years after the upgrade.

This luminosity is more than ten times the luminosity reach of the first 10 years of the LHC lifetime.

Ultimate performance established 2015-2016: with same hardware and same beam parameters: use of **engineering margins:**

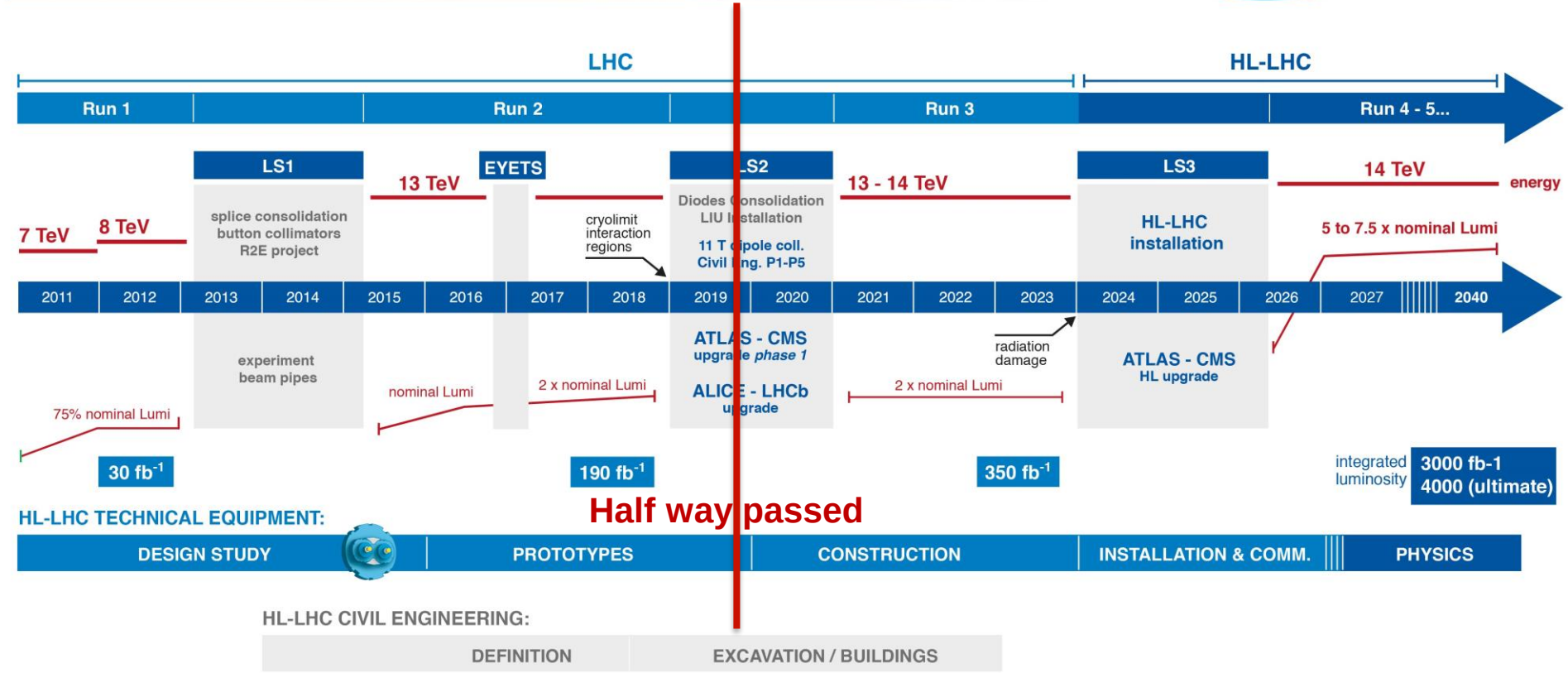
$L_{peak\ ult} \cong 7.5\ 10^{34}$ cm^{-2}s^{-1} and **Ultimate Integrated $L_{int\ ult} \sim 4000$ fb^{-1}**

LHC should not be the limit, would Phys

Experiment are designing for this goal. be compatible with it!

Project approved by CERN Council in June 2016

LHC / HL-LHC Plan



Half way passed

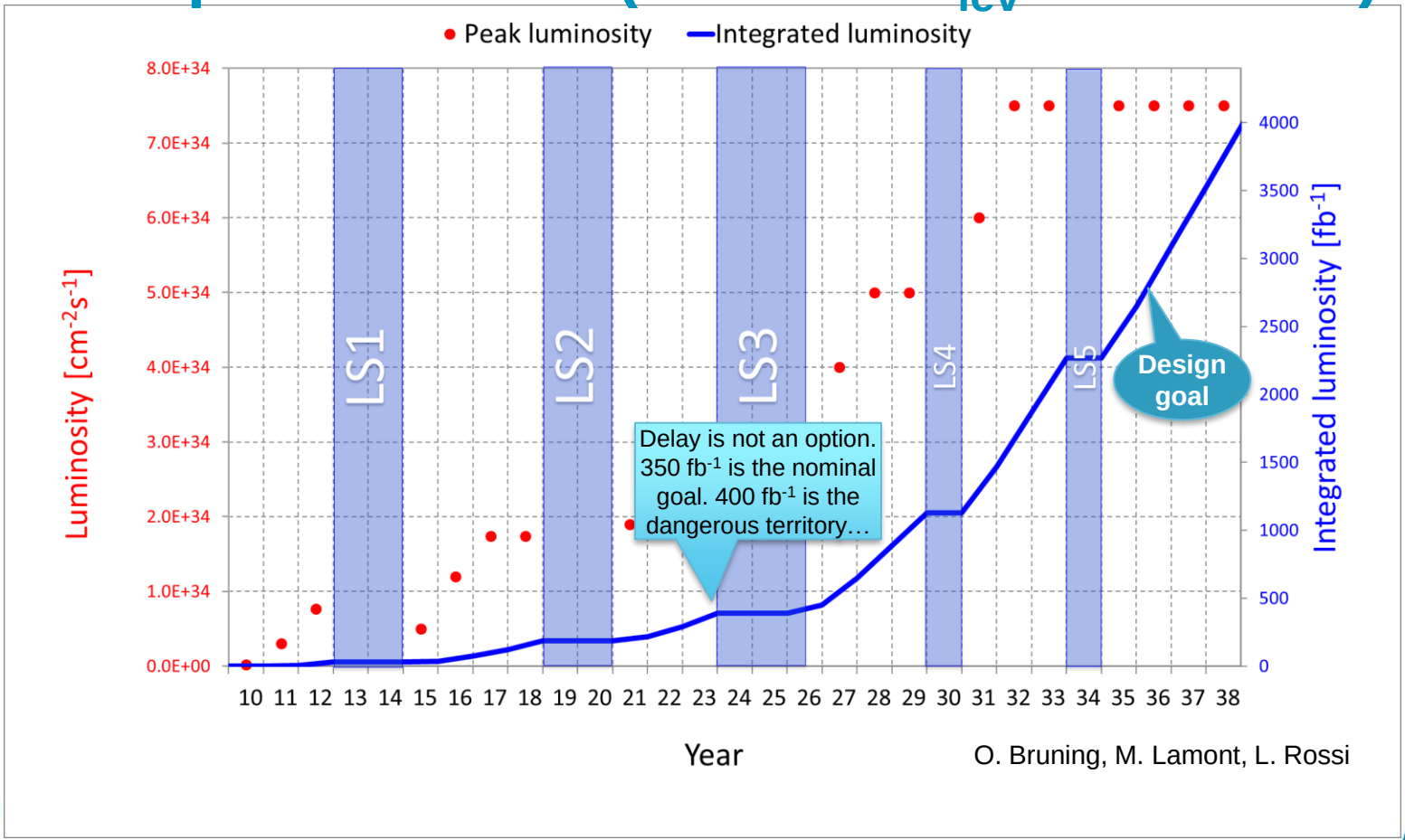
HL-LHC TECHNICAL EQUIPMENT:

DESIGN STUDY	PROTOTYPES	CONSTRUCTION	INSTALLATION & COMM.	PHYSICS

HL-LHC CIVIL ENGINEERING:

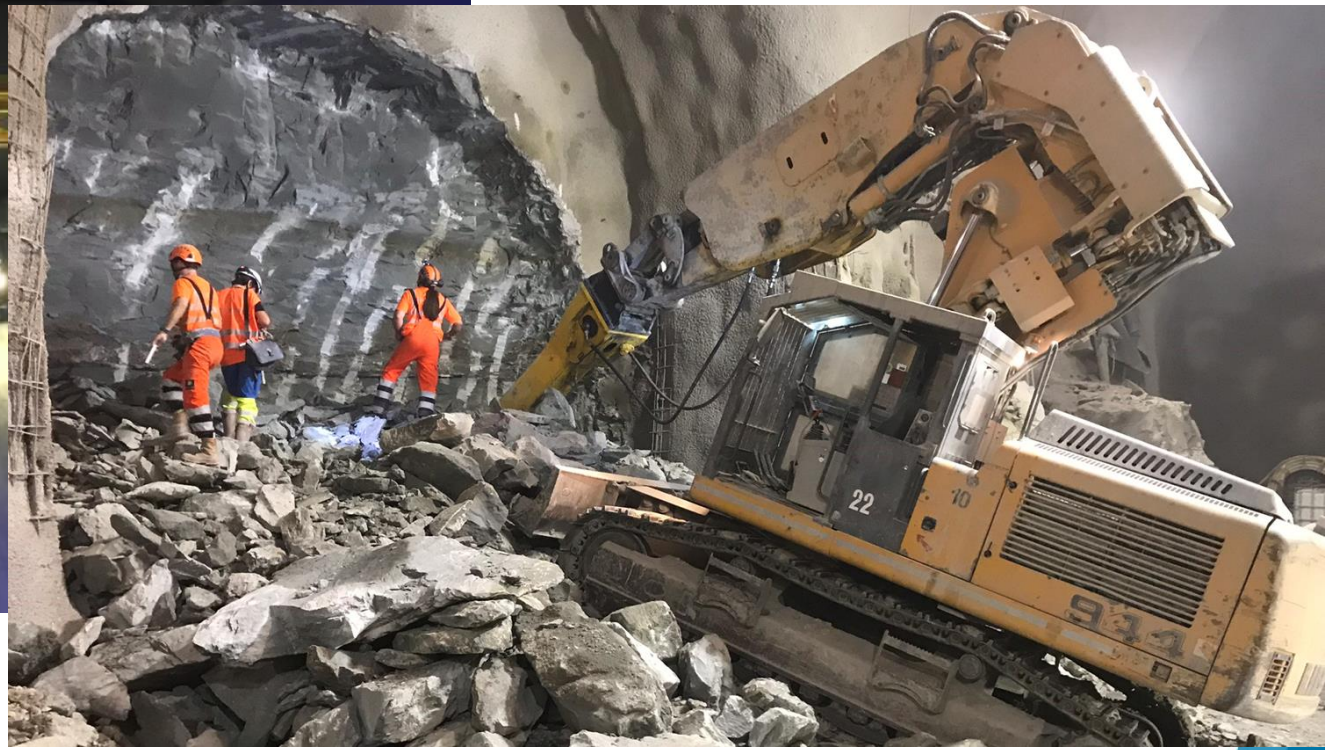
DEFINITION	EXCAVATION / BUILDINGS

HL-LHC performance (ultimate L_{lev} from 2032)



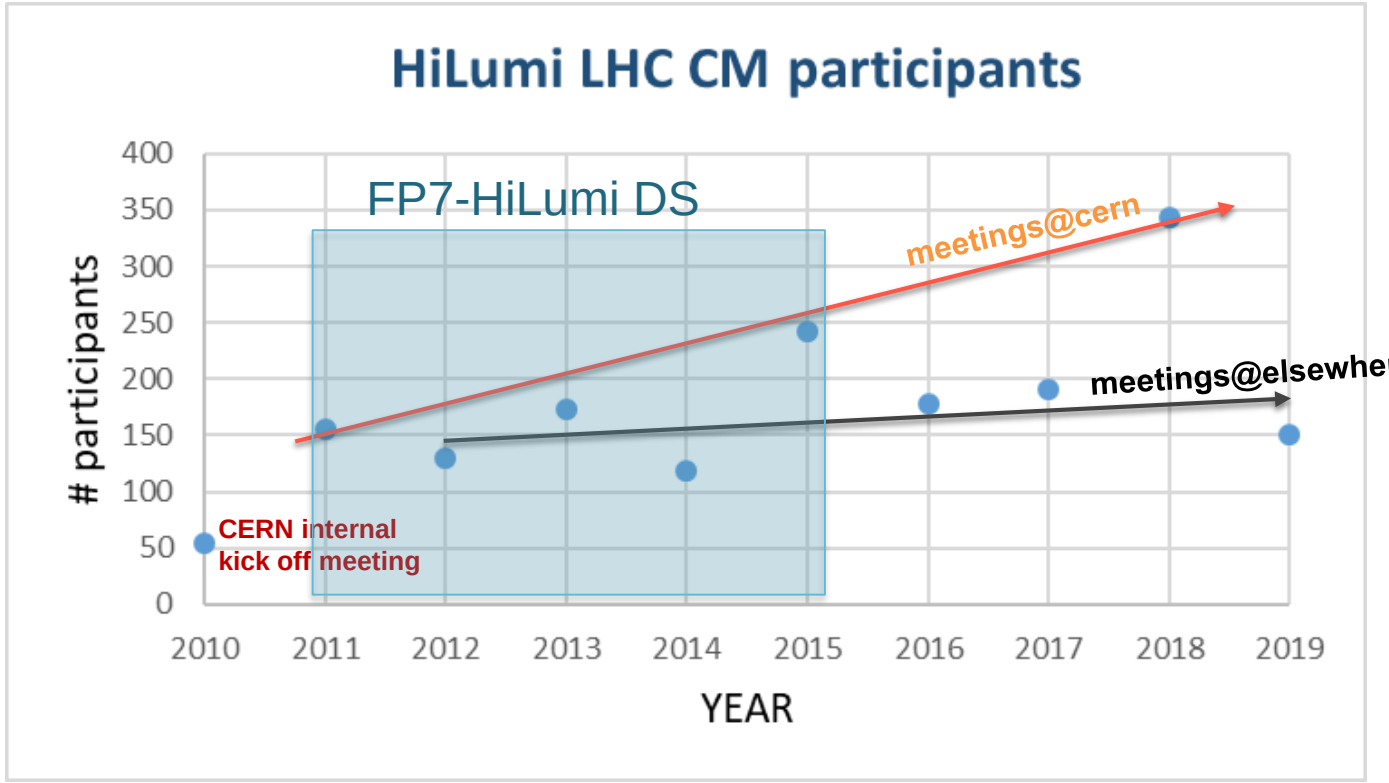
What we bring home from this meeting

- The cost optimization exercise has been digested.
- We have a few deliverable for LS2, among them the first **11 T dipole, TLCD, TDIS, TAN**,…
- Most of the issues of last year have been solved or mitigated: but not all. The effort will continue:
  “Yogi Berra: It ain’t over till it’s over.” ***Bruce dixit…***
  - Needs to have first MQXFA/B at nominal and above…
  - Need to have a CC cryomodule full working…
  - In general, transition to construction is longer than anticipated
- Preparing the next C&SR4: this time schedule is critical as cost
- **IF there is a shift of LS3, we must strive to keep our schedule!!!**


22
10

Knocking at LHC doors… literally.

Partecipants HiLumi Collaboration Meetings



It's you

Question: are you happy with the format?
3 days – with possible satellite meetings…

HL-LHC Collaboration Board

HL-LHC CB Chairs

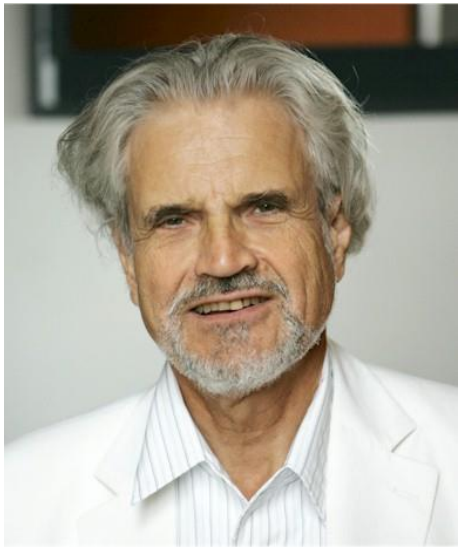
2011 to 2015 (FP7-HiLumi)

Andy Wolski (UNILIV)

2015 to 2018

Rob Appleby (UNIMAN)

Elected 2018



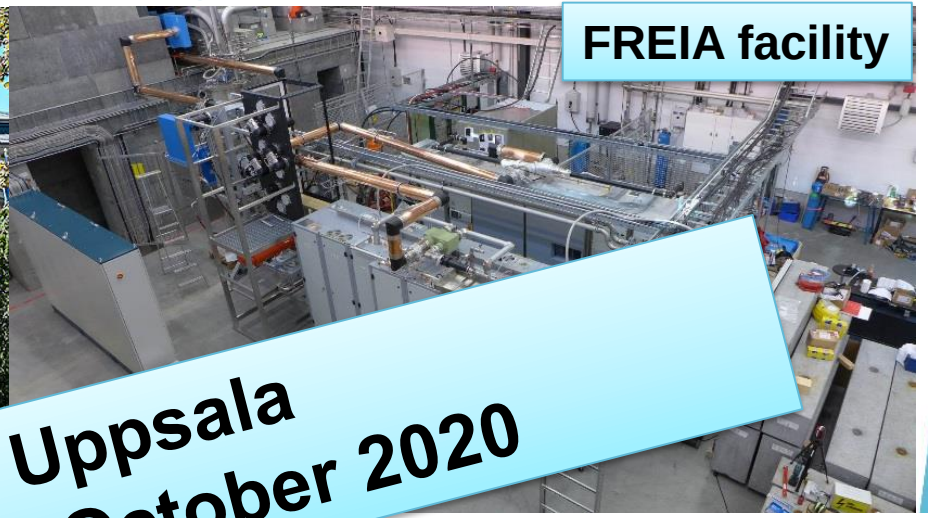
Tord Ekeloff (Uppsala U.)

CB#9 at Fermilab

- Review of collaboration principle:
- From MS Institutes CERN gives a contribution in cash/material of 50% of CORE value (Material)
- For NMS Institute normally a full in-kind is expected.
- CERN ackowledge that the total cost for the Institute is >> CORE
- Review of collaborations plan
  - The project relies heavily on collaborators:
  - The 123 (136) MCHF of in-kind must not mislead: the co tributiin is critical

Next Annual Meeting CM#10

Uppsala University



FREIA facility

See you in Uppsala
In the week 12-16 October 2020