



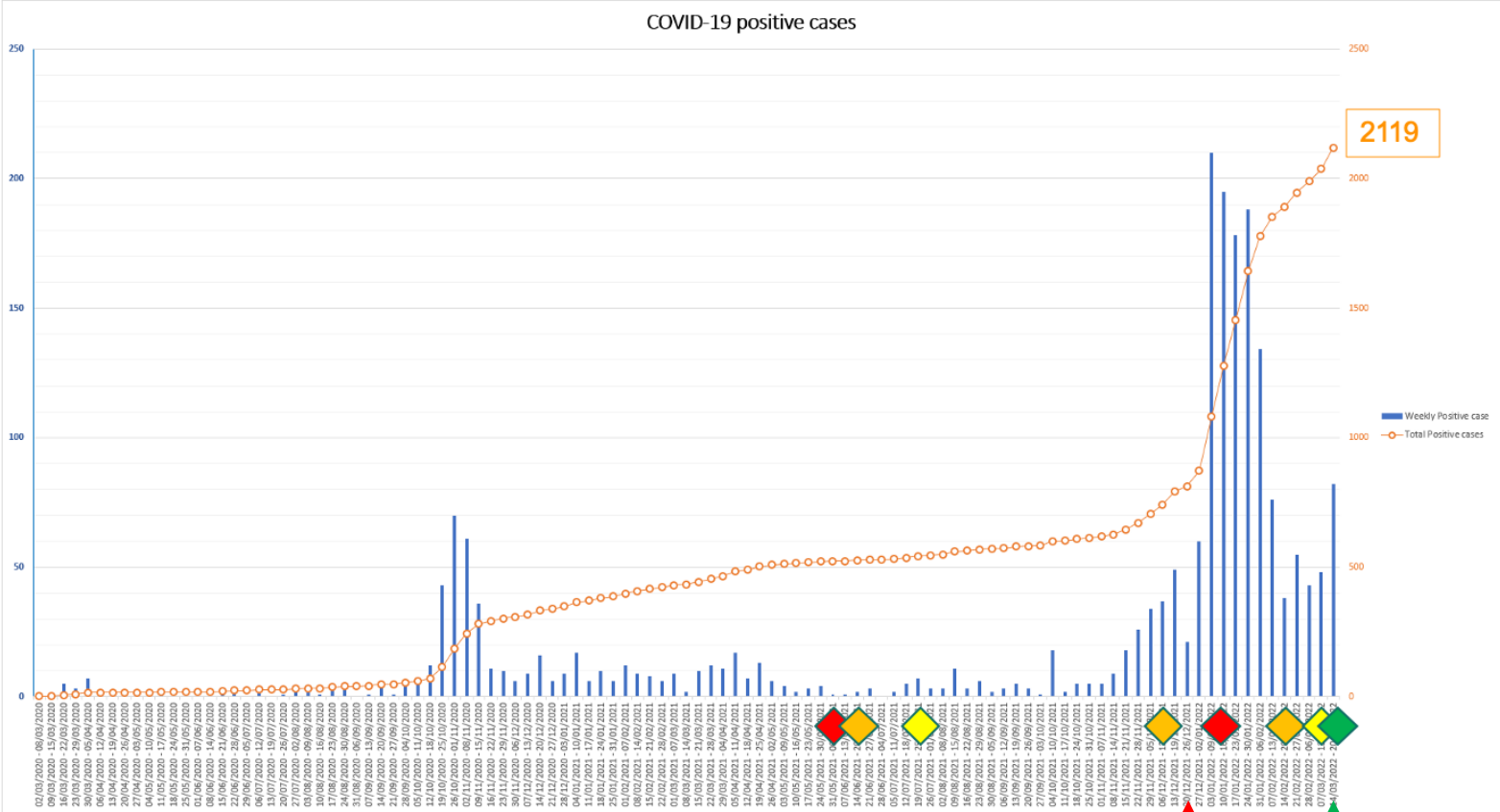
CERN Status and News

Plenary RRB 54th Meeting

Joachim Mnich

April 25, 2022

Covid Cases at CERN (Personnel + Contractors)



Xmas
break

14.03.2022 Green level
(with some additional measures)

COVID-19 <https://hse.cern>
Coronavirus information

CERN'S COVID-19 SCALE AND MEASURES

The COVID-19 level in place reflects the prevailing epidemiological situation, and determines corresponding measures across the Laboratory.

TRANSITION BETWEEN LEVELS

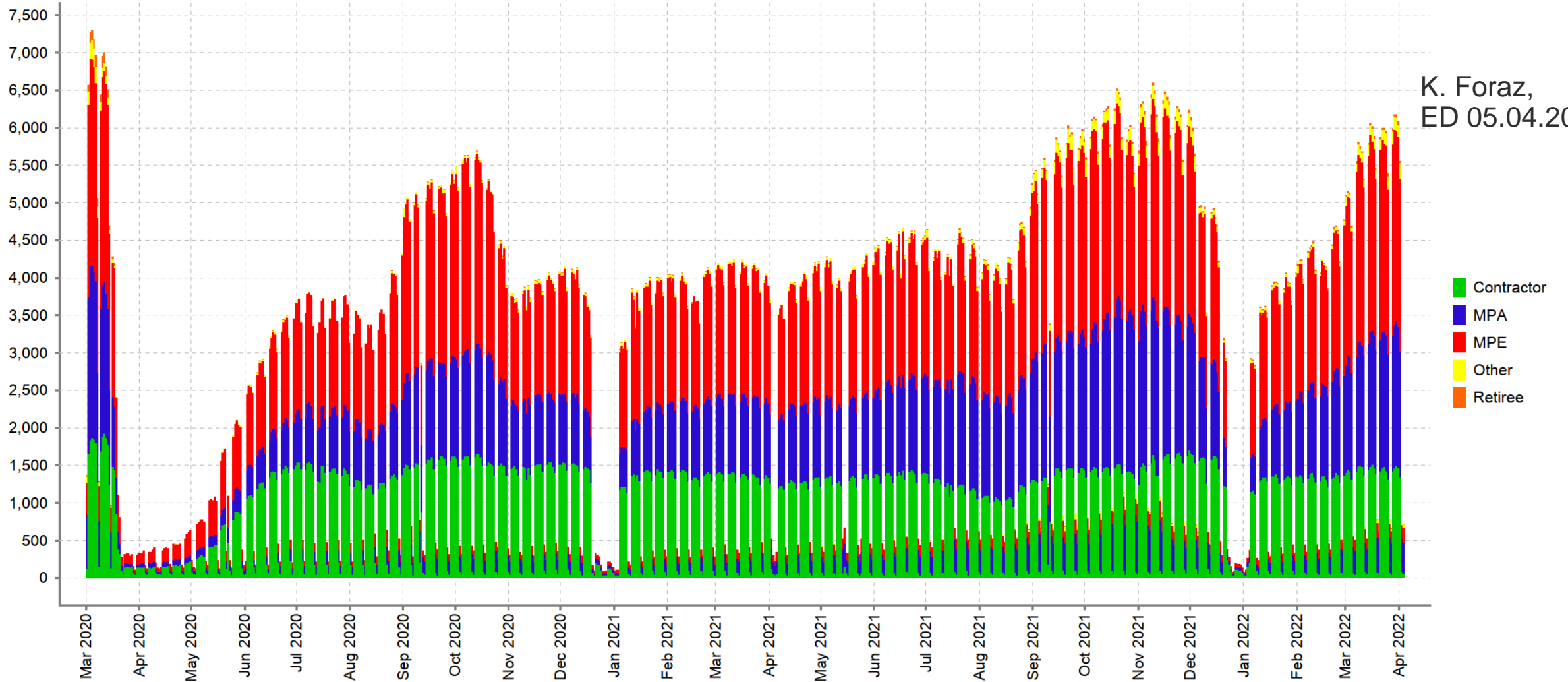
Determined via a combination of the incidence rate in the local area and a qualitative assessment by CERN.



Level	4	3	2	1
Weekly virus circulation in local area	High Over 100 cases per 100 000	Medium Over 10-25 cases per 100 000	Low Fewer than 10-25 cases per 100 000	Negligible
Qualitative assessment	Based on number of confirmed cases at CERN, presence of new variants, vaccination, stratified testing campaign, etc.			

Telework (TW) measures*	Level 4	Level 3	Level 2	Level 1
Access to CERN sites**	Members of personnel (MP) who can telework should telework, though one day per week on-site is possible.	MP who can telework should telework, though two days per week on-site are possible.	Normal working conditions apply. Telework may be exceptionally requested by the Organization.	Normal working conditions apply
	MP and honorary members are authorised, only for professional reasons and in consultation with their		MP and honorary members are authorised in	Standard Access

Number of individuals seen at CERN sites per date by CLASS group as of 04 Apr 2022



K. Foraz,
ED 05.04.2022

10th Anniversary of Higgs Boson Discovery



On 4 July 2022, CERN will mark 10 years since the ATLAS and CMS experiments announced the discovery of the Higgs boson.

The centrepiece is a full-day scientific symposium in CERN's main auditorium. This will celebrate the discovery, give an overview of what's been learned since then, and take a look forward at what's still to come.

Full details will be published soon but, in the meantime, save the date of 4 July 2022!

CERN Family

23 Member States:

Austria, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Israel, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Serbia, Spain, Sweden, Switzerland, United Kingdom

10 Associate Member States:

Croatia, Cyprus*, Estonia*, India, Latvia, Lithuania, Pakistan, Slovenia*, Turkey, Ukraine

* in the pre-stage to Membership

4 Observers:

Japan, USA, European Union, UNESCO
(Russia and JINR suspended on 8 and 25 March, respectively)

~60 ICA (International Cooperation Agreements):

with non-Member States, some with countries with developing particle physics communities (CERN mission is also to help build capacity and foster growth of particle physics worldwide).



March 3, 2022: CERN Director-General Fabiola Gianotti and Brazilian Minister for Science, Technology and Innovation Marcos Pontes signed an agreement admitting Brazil as an Associate Member State of CERN

Agreement awaiting ratification by the Government

Main issues 54th LHC RRB

- **Status preparation Run 3**
 - Including M&O reports and requests
- **Status Phase II Upgrades**
 - New schedule released in January 2022
- **Russian War on Ukraine**
 - Potential impact on the LHC scientific programme

LHC Schedule

Phase II upgrade
ATLAS & CMS

Recall schedule discussion of December 2021:

- following recommendations of LHCC and HL-LHC Cost & Schedule Review CERN management proposed to extend Run 3 by 1 year and LS3 by ½ year
- feedback from funding agencies (RRB) was supportive

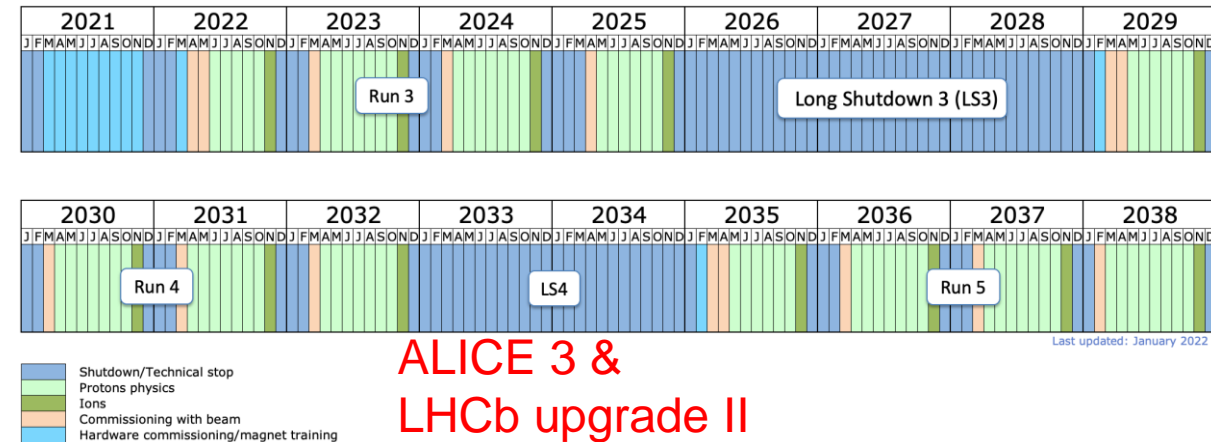
Thank you very much for your many useful comments and your support!

- CERN management decided in January 2022 to adapt the schedule as proposed underlining that any further shift of LS3 is technically excluded!

CERN measures to consolidate the Phase II schedule:

- CERN EP, ATLAS and CMS established a priority list and roadmap for electronics
- CERN will try to continue the CHIPS initiative and support it with experienced workforce
- discussion with Fraunhofer IPA in Germany started this institute is specialized on (industrial) process optimization plan for workshops with experiments once re-baselining is completed (hopefully Q2 2022)

In addition, both experiments are working hard to consolidate the schedule



Russian War on Ukraine: Measures taken by CERN Council

Statement from 25 March:

<https://home.cern/news/news/cern/cern-council-takes-further-measures-response-invasion-ukraine>

In response to the military invasion of Ukraine by the Russian Federation, the 23 Member States of CERN today decided to:

- suspend the participation of CERN scientists in all scientific committees of institutions located in the Russian Federation and the Republic of Belarus, and vice versa;
- suspend or, failing that, cancel all events jointly arranged between CERN and institutions located in the Russian Federation and the Republic of Belarus;
- suspend the granting of contracts of association as associated members of the CERN personnel to any new individuals affiliated to home institutions in Russia and Belarus.

Measures taken by CERN Council

Regarding relations with the Joint Institute for Nuclear Research (JINR), with which CERN holds reciprocal Observer status, the CERN Council decided:

- to suspend the participation of CERN scientists in all JINR scientific committees, and vice versa;
- to suspend or, failing that, cancel all events jointly arranged between CERN and JINR;
- that CERN will not engage in new collaborations with JINR until further notice;
- that the Observer status of JINR at the Council is suspended and CERN will not exercise the rights resulting from its Observer status at JINR, until further notice.

Council have asked for more information with a view to making a decision in June on the possible suspension of international cooperation agreements

Guidance on publications

Following the Russian invasion of Ukraine, the spokespersons of the four big LHC experiments proposed a suspension of publications.

CERN management will not interfere with the publication choices of the Collaborations, but supported this approach as being pragmatic given the current circumstances.

CERN management can now pass on guidance from the closed Council session regarding publications:

“Authorship should be based on scientific grounds, and that Council would be favourable of having a cover statement that a given paper is based on work performed before Feb 24th 2022”

The Collaboration Boards of the four large LHC experiments considered proposals based on this guidance, and aiming to align their policies.

Agreement among the 4 LHC Collaborations

Until the guidance or rule changes issued from the 16/17 June CERN Council have been implemented:

- Submit papers to arXiv.org and to CDS with “The XYZ Collaboration” only, that is, without author list nor acknowledgments.
- Submit the papers without author list and acknowledgments to journals for review. If a paper is accepted for publication before the June CERN Council meeting, a delay in publication will be requested.

The submitted papers would contain final results. Any release of preliminary results is continued in the usual manner.

Backup

Long-term LHC Schedule

Run 3 will be extended by 1 year until end 2025
and LS3 by ½ year until end 2028

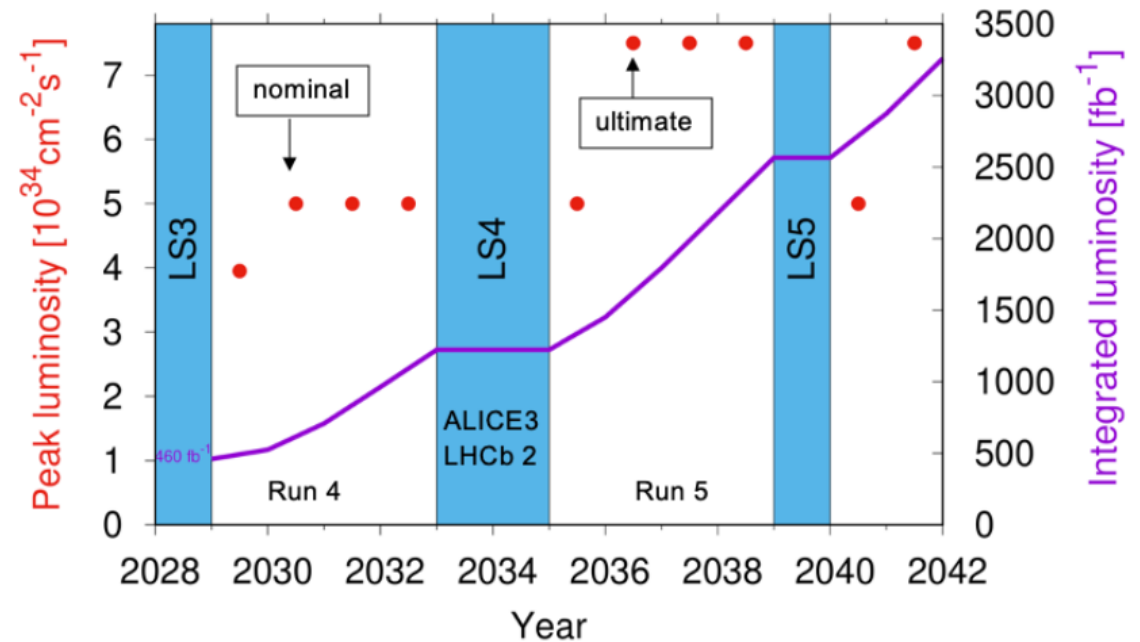
Note:

- no further extension of Run 3 or LS3 possible!
for technical and political reasons

Measures are taken to make the new schedule as solid as possible

- engagement of external professionals in process optimisation
- work on a combined prioritized schedule for ASICs design and production
- CERN will help as much as possible
- but will not be able to solve all current and undoubtedly arising future problems
- full engagement of entire collaborations is required

Preliminary (optimistic) schedule of HL-LHC



Important:

- success of Run3 and the Phase II upgrades are of crucial importance for CERN and the field
- keeping the Phase II schedule is a key element!

Long-term LHC Schedule

- the HL-LHC goal of providing 3000 fb^{-1} integrated luminosity to ATLAS and CMS would require HL-LHC operation until ≈ 2041
- ending HL-LHC in 2038 would provide $\approx 2500 \text{ fb}^{-1}$ per experiment

More details on long-term schedule are being worked on

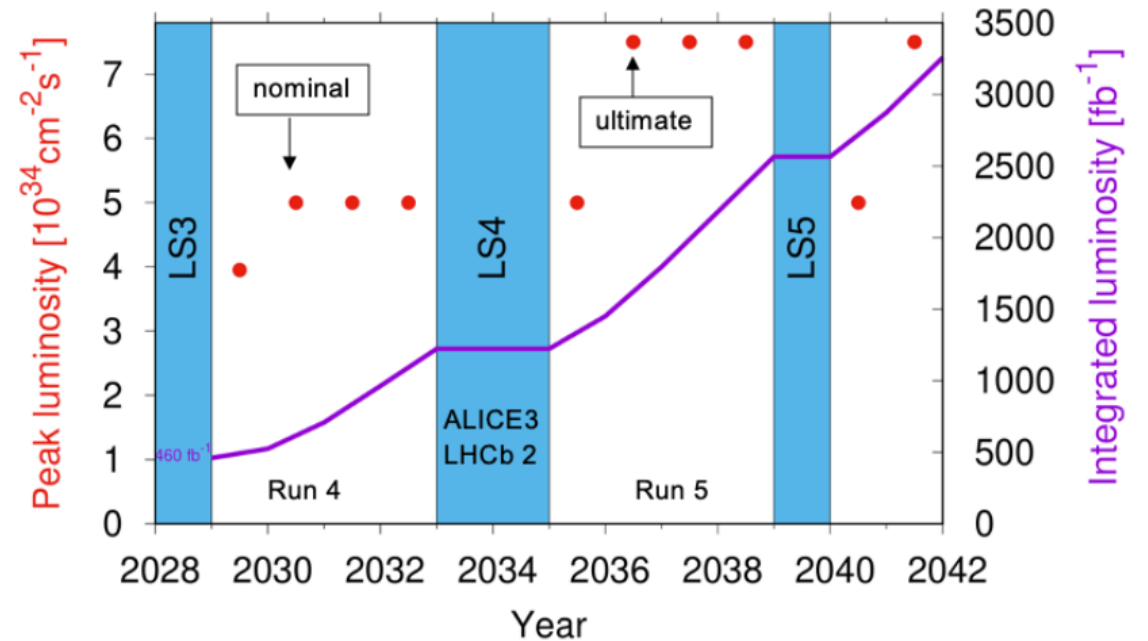
- luminosity predictions
- **HI running included in the current planning**
- upgrades of ALICE and LHCb in LS 4
 - Currently under LHCC scrutiny
 - Discussions with Funding Agencies starting
- and others

Boundary condition:

no HL-LHC running beyond ≈ 2041

in light of the need for a future large project

Preliminary (optimistic) schedule of HL-LHC



Final decision on the long-term HL-LHC schedule will have to be taken at the next (or next-to-next?) strategy update in light of:

- performance and results from the LHC, progress with the next project (FCC), ...