

Strategy for LS2

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LS2
Project

Maintenance & Consolidations
LHC Injectors' Upgrade
High Luminosity LHC
LHC Detectors' Upgrade

LS2 Team

- José Miguel JIMENEZ Project Leader
- Jean-Philippe TOCK Project Office Manager
- Katy FORAZ Project Planning Manager

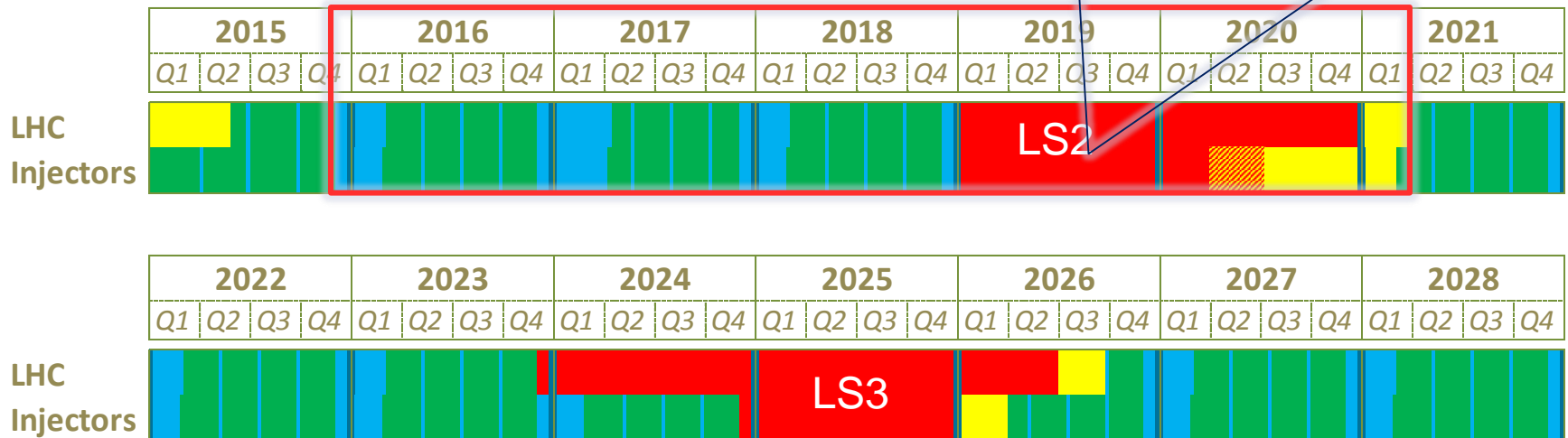
- Thomas OTTO Project Safety Officer
- Ana Paula BERNARDES Project Safety Officer

- Mirko POJER PLAN Quality Officer
- Samy CHEMLI LSC Secretary
- Stefanie SAPOUNTZI Admin Support Officer

Long Shutdown 2 (LS2) Project

Project Schedule

- Perform major Maintenance and Consolidations
- Increase intensity/brightness in the injectors to match HL-LHC requirements (LIU Project)
- Increase injector reliability and lifetime to cover HL-LHC run (until ~2035) closely related to consolidation programs (in synergy with LIU Project)
- Anticipate HL-LHC work



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Project Scope & Mandate of LS2 coordinator (1/2)

Scope covers all **activities** carried out and **resources** needed in the context of LS2 over the **whole CERN accelerator facilities**.

The mandate of the LS2 Project Coordinator includes:

- Prior to the start of the LS2, the **definition of main works** to be achieved over the LS2 and of **potential options** based on priorities given to activities. This study shall highlight in particular LS2 duration and resources needed for each option and be presented to the Directorate **by mid-2017 for final decision**;
- The definition of a CERN-wide “**resource-loaded planning**”, ensuring the compatibility of resources and planning across the LHC Machine and LHC Experiments;

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Project Scope & Mandate of LS2 coordinator (2/2)

The mandate of the LS2 Project Coordinator includes: (cont.)

- The preparation, coordination and follow-up till completion of all LS2 activities in the frame of the **Maintenance and Consolidations, LIU, HL-LHC Projects** and **other CERN approved projects**. Work packages will define:
 - The **work absolutely essential** to achieve the LS2 objectives, which execution will be closely followed up by the LS2 Coordinator;
 - The **work which can be postponed** to the LS3, which impact on LS3 will be assessed by the LS2 Coordinator.

The **flexibility to use the end-of-year technical stops** before and after the LS2 to decrease the load of the LS2 is **left at the discretion** of the **LS2 Coordinator** and is also part of the scope of the project.

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Equipment Owners remains KEY players...

- Equipment Groups remain responsible for the:
 - Integration.
 - Installation, Work site organisation and resources (Personnel & Material).
 - Commissioning.

And this includes all Safety aspects including Conformities...

- Equipment Owners get involve in the overall coordination since they should:
 - Ensure the availability of components and report asap on potential delays.
 - Safety and Technical Conformities.
 - Be opened to schedule changes in case of project delays and/or coactivity popping up.

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A successful demonstrated approach...

- Project responsibility mainly for:
 - Project organisation and administration;
 - Performance specifications;
 - Integration follow-up;
 - Master Schedule;
 - QA including Engineering Change Requests;
 - Rescheduling options if needed.
 - Setting compensatory and/or mitigation measures if needed;

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In practice this implies that the...

- LS2 Coordination defines together with Project Leaders:
 - Zoning of working areas to make the Coordination more efficient;
 - Defines a sequencing of the major declared activities;
 - Review the requests, the resources and validate the time window for execution of the work; (including cross-works)
 - Ensure the Safety in case of co-activities by providing an overall Project Safety Coordination;
 - Check the component availability and reschedule in case of delays;
 - Follow-up the Engineering Changes and in particular their potential collateral effects on integration issues...
 - Prevent “Snow Ball effect” by implementing alternative paths and/or discussion contingency measures (waiving NCs).

A successful demonstrated approach...

- Coordination is not “Police”, it’s a **common effort** towards finding alternative paths to overcome changes:
 - Issues are addresses on specific meetings, not in “public”;
 - Executive reports provided to all partners;
 - Solutions are found all together...
- Building “Confidence” and “Knowledge” of Infrastructures and Equipment:
 - Teams are encouraged to give early warning on difficulties, and get helped by Colleagues instead of being blamed;
 - Alternative schedules and/or delays are used for additional training of teams, testing, consolidations...
 - Main “Stream” should never get blocked
 - Fixing non-conformities is (often) a dedicated task of Experienced Staff from Equipment Groups;
 - Master Schedule should not get revised too often, Management shall empower trust on schedule...
 - Failure scenario shall be prepared and fixing them requires Equipment Experts...

Thank you !



LS2
Project