



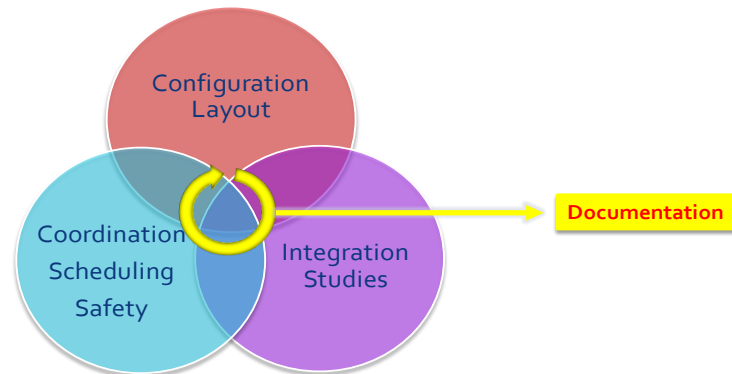
# First year at CERN: working in the organisation and scheduling section

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**EN-ACE**  
UPM visit

# EN – ACE provides project coordination for the accelerator, support and expertise in matter of project & develops and supports CERN's engineering

## Projects implemented Long Shutdown 2 (LS2):

- **HI-LUMI - LHC (High-LUMInosity LHC):** upgrade of the LHC to **achieve instantaneous luminosities a factor of five larger than the LHC nominal value**
- **LIU - Injectors (LHC Injectors Upgrade):** The LHC Injectors Upgrade should plan for **delivering reliably to the LHC** the beams required for reaching the goals of the HL-LHC
- **Consolidation of existing facilities**

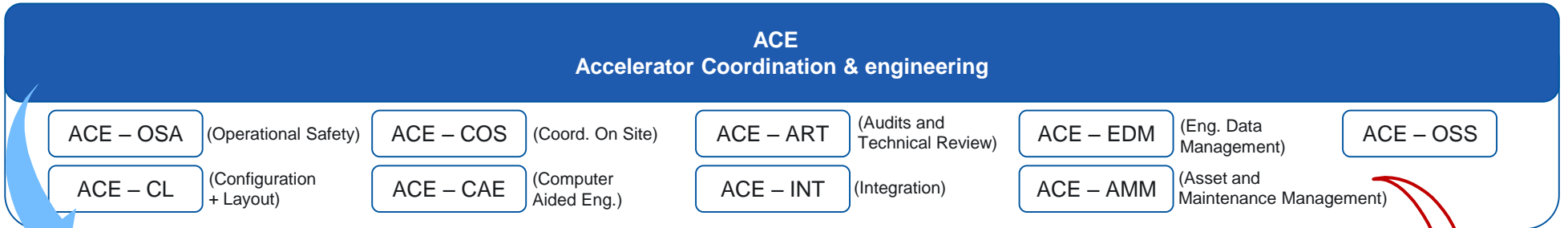


**Management of the configuration relative to the machines** (*Space reservation, Engineering Change Request, Functional Specification, Engineering Specification, Installation Procedure, Tests Procedure etc...*)  
**Update of the layout databases**

**Central information of the 3D models between all design office** (*services, mechanical etc...*)  
**Identification of the interferences**  
**Non-conformities of installation**

**Central information of the activities to schedule taking into account the logistic and operational safety aspects**  
**Follow-up of the documentation** (*Space reservation, Engineering Change Request, Functional Specification, Engineering Specification, Installation Procedure, Tests Procedure etc...*)  
**Follow-up of the Non-conformities of installation**

# EN-ACE-OSS, within the EN-ACE group, is in charge of the organisation and planning of the activities done in all the accelerators



## Some of the tools developed by EN- ACE

Layout Database



Layout Drawings



PLAN



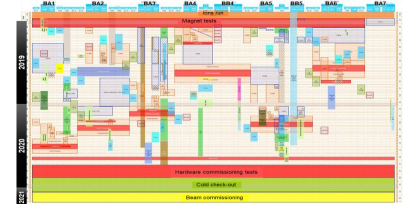
Track It



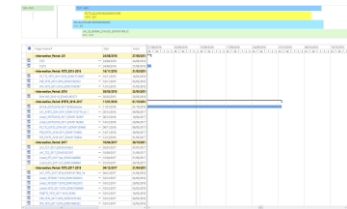
LHC

Injectors

Planning (linear planning)




Project server

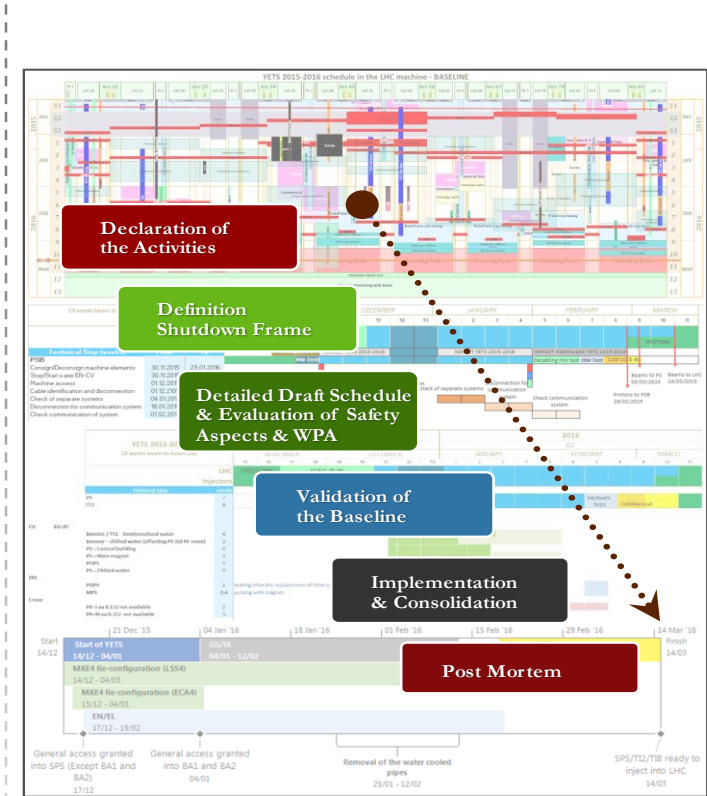


# CERN has the necessity of coordinate the accelerators complex during the long shutdown

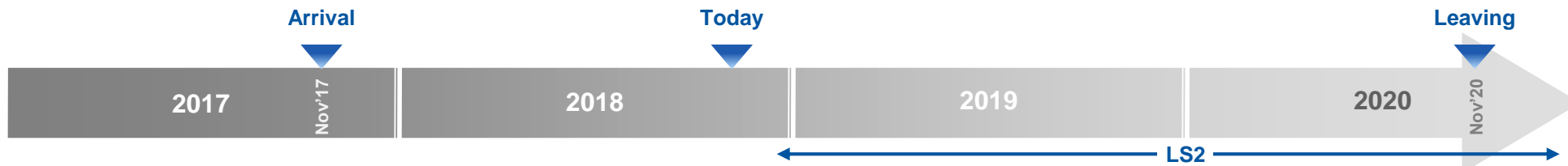
## Main challenges

Limited amount of time	Hundreds of activities involving different groups and departments
 <p>Long Shutdown (LS2): 2 years                  Technical stop(TS) : ~days                  End of Year Technical Stop (EYETS): ~2 months</p>	<p>SPS Beam Dump project: More than 100 tasks involving +15 different groups</p> <ul style="list-style-type: none"> <li>- TE-ABT</li> <li>TE-EPC</li> <li>EN-HE</li> <li>...</li> </ul> <p><b>Co-activities</b></p>
Different locations of works and links between them	Safety aspects
<p>E. g. :</p> <ul style="list-style-type: none"> <li>LHC: 27 km tunnel + surface</li> <li>SPS: 7 km tunnel + surface</li> </ul>	<p>E. g. : There is a project to install fire safety equipment in the SPS tunnels during the LS2</p> <p><b>SAFETY FIRST!</b></p>

## Workflow



# The complexity of an high technology organisation as CERN requires high qualified workers



## Engineering, physics or project management

### Project Description:

As an Organization & Scheduling Support in the Engineering Department (EN), inside the Alignment, Coordination and Engineering Group, within the Organization, Scheduling & Support Section you are responsible for planning and coordination of installation of different projects associated to the accelerator complex.

Stakeholders of the section are the Beams, Physics, General Services and Technology departments, as well as the other groups within the Engineering department itself

**Tasks:** In collaboration with the different stakeholders, you will:

- 1 Plan and coordinate all installation and maintenance activities for the different accelerators, ensuring all activities are carried out within agreed overall schedule.
- 2 Prepare all supporting documentation and liaise between the stakeholders.
- 3 Manage the impact of operational problems affecting the installation and maintenance work on the schedule, in order to minimize any delays.
- 4 Identify and resolve conflicting co-activity issues with the stakeholders concerned and the Project Leaders.
- 5 In collaboration with the relevant Safety Coordinator, ensure that all safety concerns related to the installation work are identified and that the relevant safety rules/procedures are applied

**Profile:** Master's degree in the field of engineering, physics or project management (or equivalent).

- 6 **Specific details:** Spoken and written English.  
French is an asset and the willingness to learn French is required.

<ol style="list-style-type: none"> <li>1</li> <li>2</li> <li>3</li> <li>4</li> </ol> SPS coordination	<p><b>SPS beamline coordination</b></p> <ul style="list-style-type: none"> <li>• Manage and coordinate the time resources</li> <li>• Centralise all the activities which will be done in LS2</li> </ul> <p><b>SPS Schematic View</b></p> <ul style="list-style-type: none"> <li>• Define an schematic view of the SPS which will contain all the equipment as coordination tool</li> </ul> <p><b>Vacuum resources coordination</b></p> <ul style="list-style-type: none"> <li>• Along with vacuum section, define and coordinate all the support tasks and personnel resources involved during LS2</li> </ul>
<ol style="list-style-type: none"> <li>1</li> <li>2</li> <li>5</li> </ol> Decabling project	<p><b>De-cabling Project in all the injectors</b></p> <ul style="list-style-type: none"> <li>• Coordinate and organise the different information and the groups involved in the de cabling projects</li> <li>• Manage the online site (SharePoint) of the project</li> <li>• Help in the in-situ classification of the works</li> </ul>
<ol style="list-style-type: none"> <li>6</li> </ol> French	<ul style="list-style-type: none"> <li>• Courses offered by the organisation</li> <li>• The objective is to be able to lead meetings both English or French due to the general use of both languages</li> </ul>

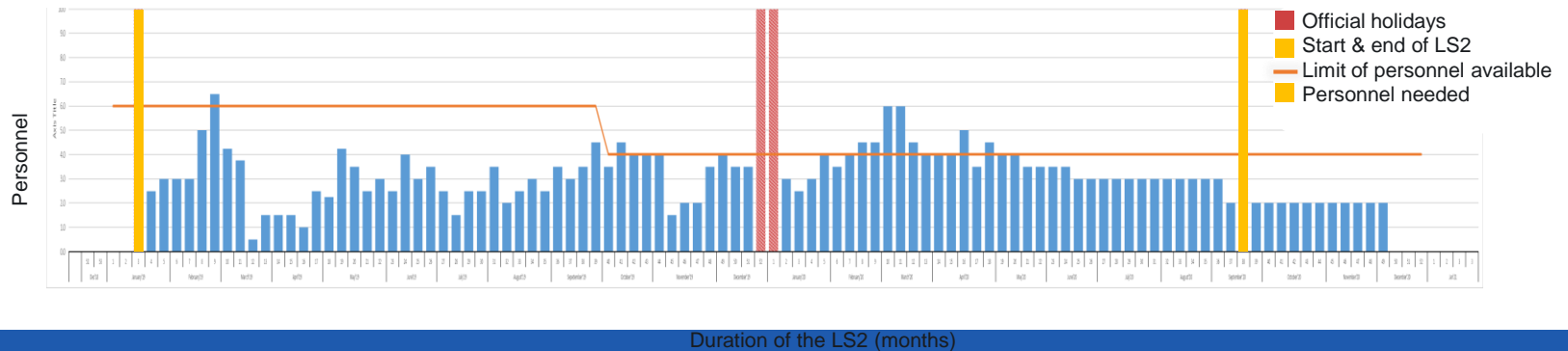
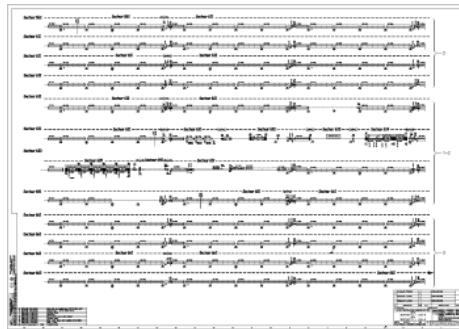
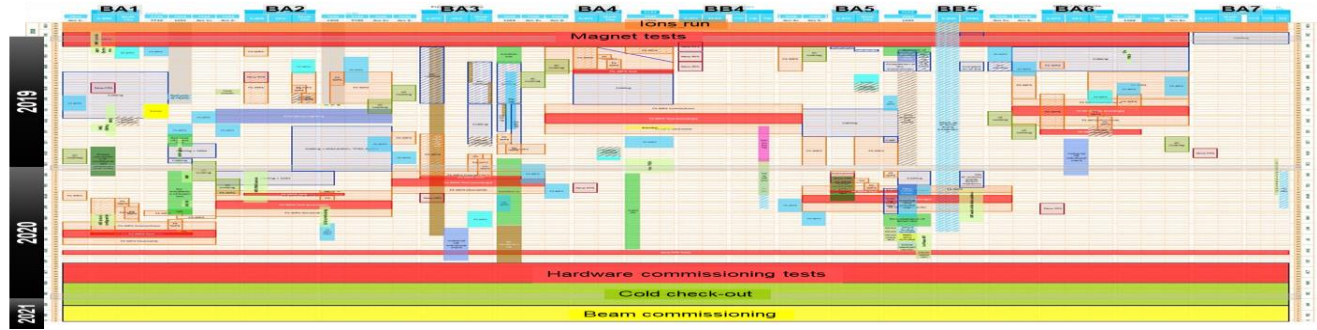
# SPS coordination: the main objective is to develop a planning for the LS2, as well as define the vacuum resources

## SPS Coordination

SPS Beamline Coordination

SPS Schematic View

Vacuum resources coordination





# De-cabling: the removal of obsolete cables is necessary in order to make space enough for the LIU installation

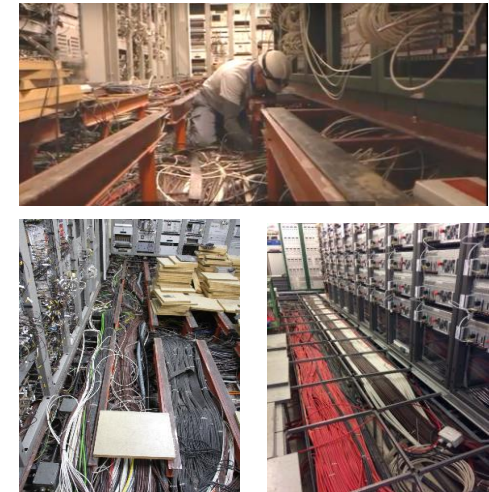
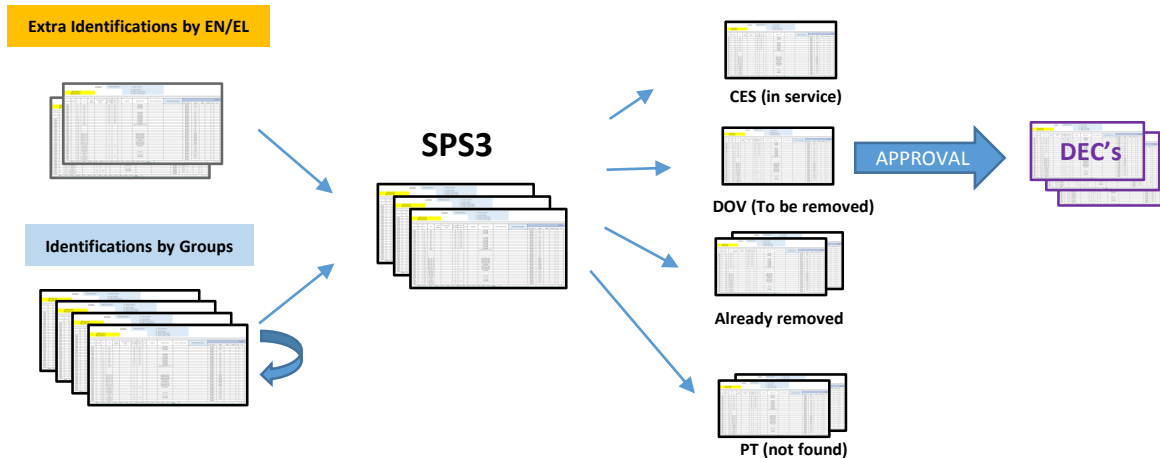
The main objective of the project are:

- **Space:** the removal of the cables is a **key step prior to** install the upgrades of the **LIU project**
- **Safety:** regarding this field, **the removal of the obsolete cables leads to improve safety**, because the less cables on site, the **less fire risk, electrical issues...**

## Typical workflow

Working in the office  
+  
Online platform

Work in situ





## **Conclusion: working at CERN is making me learn in technical areas and improving my personal background**

### **Technical background**

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- **Organise the work of a high complexity facility**
- **Manage of high amount of information**
- **Use of computer tools as SharePoint or MS Project**
- **Liaise and organise stakeholders**
- **French**

### **Personal background**

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- **Working at CERN is allowing me to understand a big organisation, working in a more practical way and applying the theoretical concepts learned at the university**
- **The international environment is giving me a different approach in developing projects**
- **I have the possibilities of getting in touch with different fields which let me improve my knowledge in different areas**



[www.cern.ch](http://www.cern.ch)