

# Section mandate: comparison

## Current mandate

### The **LHC Commissioning and Upgrade** section:

- Is responsible for the optics design and development for the nominal LHC machine.
- Studies the mechanical aperture and magnet field imperfections of the machine as installed and impact on beam dynamics.
- Contributes to the study of commissioning and machine operation scenarios, measurement procedures, including specifications of LHC beam parameters.
- Provides support for the operation of the LHC during its initial commissioning phase. Participates in machine studies aimed at improving the machine performance.
- Hosts the Project coordination for the LHC collimation system.
- Contributes to R&D efforts related to the Phase II LHC collimation system.
- Contributes to the study of LHC beam limitations and ways to overcome them to reach and exceed LHC nominal performance (LHC upgrade studies and LHeC).
- Is responsible for the development and maintenance of software tools for accelerator design and operation.
- Contributes to and co-ordinates the EUCARD-related R&D activities (LHC upgrade studies).

## Proposed mandate

### The **Hadron Synchrotron Design** section:

- Is responsible for the optics design and development for all existing CERN circular accelerators.
- Studies the mechanical aperture and magnet field imperfections of the machines as installed and impact on beam dynamics.
- Contributes to the study of commissioning and machine operation scenarios, measurement procedures, including specifications of beam parameters.
- Provides support for the operation of the CERN machines either during initial beam commissioning or during routine operation. Participates in machine studies aimed at improving the accelerators' performance.
- Hosts the Project coordination for the LHC collimation system and its upgrade.
- Contributes to R&D efforts related to CERN future projects in terms of studying and overcoming beam limitations to reach and exceed standard performance.
- Is responsible for the development and maintenance of software tools for accelerator design and operation.
- Contributes to European funded networks and studies.