

**Call for contribution of expertise**

CERN invites collaborating institutes and universities to contribute with the expertise of their qualified employees to the activity described below.

**Start date:** 1.09.2019

**Duration:** One year, possible extension to a maximum of up to three years.

**Project/Activity:** Engineer / Mechanical Engineer for the HL-LHC vacuum layout design and studies.

**Detailed description of Activity:**

The expert will perform mechanical and vacuum engineering studies related to the design, conception, simulation, integration, and procurement of vacuum systems. S/he will focus his work for the design of the vacuum systems linked to the magnet, the superconducting cable, the collimation, the RF crab cavity, the absorber of neutrons and the hollow electron lens projects.

The detailed list of tasks is summarized hereafter:

- Design the vacuum layout in the room temperature and cryogenic vacuum sectors of the HL-LHC machine.
- Perform integration studies with CATIA.
- Perform mechanical and thermal structural analysis with ANSYS.
- Produce fabrication drawings.
- Compute vacuum levels and pressure profiles with *e.g.* VASCO or MOLFLOW.
- Update the HL-LHC vacuum layout data base.
- Fulfil the HL-LHC quality assurance plan.
- Evaluate the resources needs in terms of cost, manpower and planning.
- Report & document the progress of the work Engineer / Mechanical engineer at regular meeting.
- Write down functional and technical specifications.

**Profile:** Engineer / Mechanical engineer

**Specific details:** The expert shall be able to take initiatives and to work in a team within a multidisciplinary environment. The candidate shall possess a good working knowledge of either English or French.

**Status at CERN:** Associated Member of the Personnel (Project Associate).

Conditions in accordance with CERN's Staff Rules and Regulations and Administrative Circular No. 11. Subsistence allowance is payable by CERN to cover the additional cost arising from the individual's (and, as applicable, their family's) stay in the local area while performing activities at CERN.

**Option:** Collaborating institutes and universities can propose to support the activity of the qualified employees participating in this "Call for contribution of expertise" with students or other employees. Their status and Subsistence allowance when applicable will be adapted to their relation with their institutions

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**Reference:** 2019\_Q2\_019