Call for contribution of expertise

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

Start date: 01.10.2020	*Duration:* One-year, possible extension to a maximum of up to 3 years.

Project/Activity: Electrical Engineer

Detailed description of Activity:

The expert will join the TE-MPE group and contribute, within the scope of the HL-LHC Magnet Circuit Forum, to the definition, simulation, design, and documentation of the superconducting circuits of the High Luminosity Upgrade project. The main tasks will include, amongst others to contribute to:

- Global optimization of the HL-LHC circuits having in mind performance, operation and cost, considering the number of circuits and the different powering and protection configurations to be implemented within the LHC and HL-LHC constraints.
- Organization of technical and global reviews on aspects of the design of the different systems related to interfaces and having an impact on the overall, operational performance and costs.
- Investigation on the various solutions considering aspects in the domain of Accelerator Physics and Performance, S.C. Magnets Design, Cold-Warm Powering, Machine Protection, Cryogenics, Integration and Installation issues.
- Preparation of the strategies and related documents pertaining to the definition and verification of circuit instrumentation as well as magnet and circuit polarities throughout the design, construction and commissioning of the HL-LHC powering system.

Profile: Master degree in the field of Electrical Engineering or equivalent.
The expert shall have demonstrated experience:
• in the design of electrical equipment and/or networks, like or equivalent to particle accelerator's superconducting magnet chains.
• within the domain of electrical diagnostics and related equipment (measurement techniques and instrumentation, data acquisition and analysis tools) would be an asset.
• with systems approach in the domain of superconducting magnets, their powering and protection will be highly appreciated.
Specific details: Good communication skills and well-developed team-working attitude. The expert will be expected to possess a good working knowledge of either English or French. Documentation shall be produced in English.

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 relationship with their institutions

Contact person: Isabel Bejar Alonso	*Reference:* 2020_Q2_009_WP7_MCF