

## 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:* asap

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

*Project/Activity:* Electronics/Electrical engineer

### *Detailed description of Activity:*

The CERN current calibrator is a high precision current source based used for the calibration of measurement devices for CERN power converters. This project proposes to upgrade the existing design in order to enhance its performance. The expert will:

- Complete the existing simulation model for both the electronic and magnetic components;
- Propose and implement improvement to the existing circuits including replacement of obsolete components but also schematic and layout modifications if deemed necessary to improve performance;
- Propose and implement improvements to the cabling and inter circuit connection for better EMC;
- Propose and implement new layouts for the PCBs;
- Propose and implement new thermal and mechanical configuration for the CDC aiming at  $\Delta T$  reduction on the most critical circuits;
- Build and validate a prototype.

*Profile:* Bachelor/Master in Electronics/Electrical engineering.

*Specific details:* Very good knowledge in analogue electronics. Good knowledge in measurement electronics and instrumentation. Experience with electronics simulation using Spice (in particular LTSpice). Knowledge of magnetic materials and transformer theory.

Good level of English, French is an asset.

*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 are encouraged 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

*Contact person:* Isabel Bejar Alonso

*Reference:* 2019\_Q4\_039