

## **The GM-ASG section (CERN, Geneva) is looking for a survey engineer (CERN Fellowship Programme) from the 1<sup>st</sup> of September 2021**

**Deadline to submit applications : 1 March 2021 at noon (12:00 CEST)**

### **Introduction**

At CERN, the European Organization for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe. Using the world's largest and most complex scientific instruments, they study the basic constituents of matter - fundamental particles that are made to collide together at close to the speed of light. The process gives physicists clues about how particles interact and provides insights into the fundamental laws of nature. Find out more on <http://home.cern>

The Geodetic Metrology Group within the [Beams Department](https://be-dep-gm.web.cern.ch/) provides metrology and alignment for components installed in the accelerators, their beam transfer lines and the physics experiments throughout the CERN complex. Find out more on <https://be-dep-gm.web.cern.ch/>

The ASG Section is responsible for the geodetic metrology of the accelerators and their associated beam transfer lines for the whole CERN site. This activity includes:

- the quality controls and metrological works on the accelerator prototypes and components from their manufacture, to their assembly and calibration, when classical workshop metrology is inadequate,
- the alignment of various accelerator elements along the 63 km of beam lines,
- the "as built" measurements of equipment and buildings using laser scanner technology,
- research and development related to all these tasks for the existing and future machines,

measurements and developments in the field geodetic activities.

### **Fellowship Programme**

This Programme is aimed at graduates from universities or higher technical institutes in a wide range of applied sciences, computing and engineering with between 2 and 10 years' experience.

Please remember that you are applying for a programme and not a specific job. In order to help us offer you an interesting work project, for those of you outside of the particle physics field, we recommend that you let us know how your research interests and skills relate to CERN's diverse activities. You can include this during the online application process form or in a separate motivation letter.

### **Qualifications**

In order to qualify for a place on the programme you will need to meet the following requirements:

- You are a national of a CERN Member or Associate Member State (<https://home.cern/about/member-states>). A limited number of positions are also available to candidates from Non-Member States.
- You have a PhD, or at least 4 years' relevant experience since the completion of your MSc (or the equivalent diploma which gives access to doctoral programmes), and in both cases a maximum limit of 10 years' experience after completion of your MSc.
- *Please note that CERN Staff members are not eligible to apply for a Fellowship.*

## Functions

As a Survey engineer of the ASG section, you will reinforce the survey team in charge of the metrology and the alignment of accelerator components.

As a Survey engineer, you will:

- Take part to the LHC alignment activities, and ensure the maintenance of the related geodetic networks,
- Analyse the LS2 data in order to consolidate the maintenance program,
- Define instable area and propose monitoring solution,
- Perform metrology measurements at all stages during assembly of accelerator components using laser trackers,
- Define, prepare and perform high accuracy survey activities of accelerators components alignment using total station and CERN specific equipment and supervise the realisations of the field teams (including contractors),
- Carry out the data processing and analysis of the geodetic measurements taken for the alignment of accelerator components, by means of the database interface, using a 3D least squares adjustment software,
- Prepare measurement reports and procedures, present the results on all the aspects of completed geodetic measurements and alignment activities,
- Manage and/or participate in research and development activities for the development of new high accuracy survey measurement techniques,
- Take the initiative to improve and optimise related survey procedures, methods and software.

## Qualifications Required

Survey or Topographical engineer diploma or equivalent in the domain of Survey and Geodesy

## Experience and Competencies

Minimum 2 years of experience in the domain of high accuracy geodetic metrology.

- The technical competencies required for this post are:
  - Use of high accuracy survey instruments such as theodolites, total stations, optical levels;
  - Laser tracker measurements;
  - Use of standard compensation software;
  - Use of office software packages; (Word, Excel, PowerPoint ).
- The behavioural competencies required for this post are:
  - Working in teams: Works well in groups and readily fits into a team; participates fully and takes an active role in team activities
  - Demonstrating accountability: taking responsibility and being accountable for own actions;
  - Communicating effectively: Expresses opinions, ideas and suggestions with conviction and in a logical/structured manner; keeps to the point.
- The language competencies required for this post are:
  - Spoken and written English or French: ability to understand and speak the other language (or willingness to learn it) in routine situations.

These functions require:

- Work in radiation areas.
- Interventions in underground installations.
- A valid driving licence.

## How to apply ?

- Please use the application process available on :  
<https://jobs.smartrecruiters.com/CERN/743999728336493-senior-applied-fellowship-programme>
- **Deadline to submit applications : 1 March 2021 at noon (12:00 CEST)**
- In addition, please send your CV and motivation letter with the job reference (ASG-F2021) to Jean-Frederic Fuchs [jean-frederic.fuchs@cern.ch](mailto:jean-frederic.fuchs@cern.ch)