



Elettra Sincrotrone Trieste

# Software Engineer for the Elettra 2.0 Beamlines

Deadline: 13 June 2024

Ref: IA/24/28

## Background

Elettra Sincrotrone Trieste is an international multidisciplinary research center operated as a user facility, featuring a 2.0/2.4 GeV, third-generation synchrotron light source (Elettra), a new free-electron laser light source (FERMI) and a variety of support laboratories. The extremely high quality of the machines and beamlines has set new performance records and has been producing results of great scientific and technological interest. In order to allow the laboratory to remain competitive in the next 20 years, an entirely new source - Elettra 2.0 - belonging to the new generation of storage rings (DLSR or Diffraction Limited Storage Ring) is being developed. The new source will exhibit a major increase in the brilliance and coherence fraction of the photon beams. The Elettra 2.0 optics is based on our enhanced symmetric six bend achromat structure (S6BA-E) with a 12-fold symmetry and an emittance of 200 pm-rad at 2.4 GeV. The new structure creates also straight sections in the arcs permitting the installation of additional insertion devices, thus increasing the number of beamlines. Existing beamlines will have to be upgraded and new beamlines developed to take full advantage of the characteristics of Elettra 2.0. The new machine is scheduled for commissioning in the second half of 2026. See <http://www.elettra.eu> for more information.

## Beamline/Activity/Project description

The IT Group of Elettra Sincrotrone Trieste performs activities ranging from the administration of ICT systems and services to maintenance and development of the accelerator and beamline control system and beamline data acquisition software, from scientific business software development to scientific computing, as well as ICT research and development. The "Software for Experiments" team of the IT Group is focused on the development of control and data acquisition systems for the Elettra and FERMI beamlines. The control system of Elettra and FERMI consists of several computers distributed along the facilities that interface with the different equipment to be controlled. State-of-the-art hardware and software technologies are adopted; the TANGO control system software (<http://www.tango-controls.org>) is used to develop distributed control applications.

## Job description

Within the Elettra 2.0 upgrade programme we will replace the present control and data acquisition system for all beamlines with state-of-the-art hardware and software. We are seeking a Software Engineer (Full Stack Developer) to work on instrumentation and experiment control applications. As part of the "Software for Experiments" team, the successful candidate will contribute to the development and installation of the new beamline Interlock system and Personnel Safety system. Moreover, he/she will collaborate with Beamline Scientists in order to establish data acquisition processes, integrate scientific instrumentation and manage data collection/analysis tasks.

## Qualifications

A 3-year University degree in Computer Science, Engineering, Physics or a related field is required together with knowledge of modern programming languages and familiarity with instrumentation, detectors and networking concepts.

A work experience of at least 1 year in software engineering and familiarity with the TANGO framework is required.

Preferences will be given to candidates with previous work experience in large scale research infrastructures and research institutes.

The following technical skills will be considered a plus:

- knowledge of electronic CAD;
- familiarity with laboratory electronic instrumentation (multi-meter, oscilloscope, power-supply, welding station, ...);
- experience in the integration with PLC software;

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Elettra Sincrotrone Trieste

- familiarity with drafting technical documentation in support of certification of interlock and safety systems;

Good time management skills and the ability to prioritize are expected, together with the capacity to interact with staff and to work as part of a multi-disciplinary team.

Good oral and written communication skills in English are essential.

## General information

The appointment will be a fixed term contract with a duration of 36 months in accordance with the National Metalworkers' Union Collective Labour Agreement and the Company Union Agreement dated 28th March 2024, ex. art. 8 of the Decree Law 138/2011.

The salary will be commensurate with the previous experience and qualifications of the candidate.

Applications should include full curriculum vitae and contact information (including electronic mail) of at least three references.

Permanent employees of Elettra Sincrotrone Trieste S.C.p.A. will be excluded from the present selection procedure. In accordance with the provisions of article 21 of the Italian legislative decree no. 39/2013 and in conjunction with article 53 (subsection 16ter) of Italian legislative decree no. 165/2001, employees or former employees of any Italian Public Entity who have exercised authority over Elettra Sincrotrone Trieste S.C.p.A. or have negotiated with Elettra - Sincrotrone Trieste S.C.p.A. within the last three years will also be excluded from the present selection procedure.

The deadline for the submission of the application is June 13, 2024.

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For more information, please contact Roberto Pugliese (email: [roberto.pugliese@elettra.eu](mailto:roberto.pugliese@elettra.eu)).

To apply for this position please visit the following link:

<https://www.elettra.trieste.it/it/about/careers/working-withus.html?id=4201>

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