# IO2010 Control Application Developer SCOD-011

## General information

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| Job category | Standard |
| Status | Published |
| Department | SCOD / Science & Operations Department |
| Division | SCOD / Control System Division |
| Section | SCOD / CSD / CODAC Section |

## Job description

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| Main job | Computer Science - System Administration |
| Title of the position | Control Application Developer SCOD-011 |
| Job family | Coordinating Technician |
| Grade | G5 |
| Direct employment | Not required |
| Purpose | To develop a software suite, entitled Control, Data Access and Communication (CODAC) Operation Application System, with particular emphasis on data access and data services; To extend and maintain the in-house applications (web applications, middleware software) and improve their performance and robustness; To deliver the test suite for the different Unified Data Access (UDA) clients (written in multiple languages and running on various Operating Systems); To deliver appropriate services to all clients of ITER data in accordance with the project needs.<br><br>Background information:<br>The ITER CODAC is the integrated control, data access and communication system to control and operate ITER facilities. The CODAC has continuously developed two software suites in accordance with purposes and released at regular intervals.<br>i) CODAC Core System is a software tool kit for plant control system developments. It's based on Linux and Experimental Physics and Industrial Control System (EPICS) and includes configuration tools, communication middleware, device drivers and human machine interface tools.<br>ii) CODAC Operation Application System is another software suite for operation of ITER facilities, execution of plasma experiments, remote participation and data services.<br><br>With respect to data handling in a part of operation application system, all the data produced during ITER lifetime shall be archived and serviced to all users on-site and off-site in the effective, flexible and homogeneous way by implementing a UDA system. |
| Main duties / Responsibilities | Takes part in evaluation of visualization tools and web-based applications to access ITER's archived data;<br>Develops ITER plugins for selected web-applications from the fusion community ;<br>Collects user requirements for data services and translates them into new application features;<br>Monitors the different services and takes part in the migration and maintenance of the central services;<br>Develops, maintains and implements utilities to ease data access based on user requirement;<br>Assists in the review and improvement and supports in the execution of various test plans;<br>Improves the performance and robustness of the applications;<br>Collaborates with the development team and IT staff in defining specifications for new applications;<br>Writes high-quality code to program complete applications on schedule;<br>Maintains and develops C/C++ code written by third-parties;<br>Contributes to the graphic design of applications;<br>Produces and maintains all documents to support the aforementioned activities;<br>May be requested to be part of any of the project/construction teams and to perform other duties in support of the project schedule;<br>May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays;<br>Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics. |

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| Measures of effectiveness | Reports to the CODAC Section Leader;<br>Closely interfaces with the CODAC Development Team;<br>Acts as an interface with all clients using ITER data handling software;<br>In response to requests from the Director-General and/or Head of Science & Operations Department (SCOD), or proactively, informs the DG/ Head of SCOD of any important and urgent issues that cannot be handled by the concerned line management and may jeopardize the achievement of the Project's objectives.<br><br>Successfully and timely delivers high quality application software (i.e. web-based applications, utilities for data services, etc) for data services;<br>Maintains data access services with a high degree of availability, especially the Unified Data Access (UDA) server and web-based applications;<br>Correctly monitors systems in operation and reports issues with proposed solutions;<br>Maintains up-to-date documentations related to software engineering activities in the aforementioned scope of work;<br>Performs timely and accurately the work duties and reporting as described in the Detailed Work Schedule.<br><br>Project Construction Phase |

## Applicant criteria

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| Level of study | At least Bachelor's degree or equivalent |
| Diploma | Computer Science or other relevant discipline |
| Level of experience | At least 7 years |
| Technical experience/knowledge | Extensive experience in similar jobs (involving similar work responsibilities) and/or additional training certificates in relevant domains may be considered a reasonable substitute for the required educational degree.<br><br>At least 7 years of experience in software development, including at least 4 years' experience in Java and Python;<br>Experience in developing Python script with Matplotlib, numpy, h5py modules or other similar programs;<br>Experience in Tomcat, HTML5, JavaScript, Web services (REST/SOAP);<br>Strong knowledge in design of Web application design (REST/SOAP);<br>Strong understanding of security principles in web application design;<br>Experience with C/C++ programming;<br>Experience in software development techniques, especially agile methods;<br>Experience with databases (MySQL, Postgre SQL or Oracle);<br>Good experience with Linux systems |
| Social skills | Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit |
| General skills | Excellent organizational skills and the ability to set priorities and meet deadlines;<br>Ability to facilitate dialogue with a wide variety of contributors and stakeholders;<br>Ability to adjust communication content and style to deliver messages;<br>Ability to persist in the face of challenges to meet deadlines with high standards;<br>Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity. |
| Languages | English (Fluent) |
| Specific skills | MS Office standard (Word, Excel, PowerPoint, Outlook) |
| Others | Knowledge of industrial software quality standards (MISRA, HIC++ and others) is considered an advantage;<br>Knowledge of IT security;<br>Experience with MS SharePoint and/or Atlassian tools is considered an advantage;<br>Knowledge of Windows development environment is considered an advantage. |