

## ITER 국제기구 공모 직위 직무기술서 (제202차)

### ○ 3개 직위

구분	분야	소속	직위	Job No.	등급
①	플랜트 엔지니어링 (PED)	Cooling Systems Engineering Division Cryogenic System Section	Cryoplant Responsible Officer	PED-134	P4
②	토카막 엔지니어링 (TED)	Heating & Current Drive Division Neutral Beam Section	Neutral Beam Coordination Officer	TED-079	P3
③	과학·운전 (SCOD)	Control System Division CODAC Section	Control System Technician	SCOD-030	G4

# IO1851 Cryoplant Responsible Officer - PED-134

## General information

Job category	Standard
Status	Published
Department	PED / Plant Engineering Department
Division	PED / Cooling Systems Engineering Division
Section	PED / CSED / Cryogenic System Section

## Job description

Main job	Engineering - Cryogenics
Title of the position	Cryoplant Responsible Officer - PED-134
Job family	Coordinating Engineer
Grade	P4
Direct employment	Not required
Purpose	<p>To lead the technical surveillance activity of the cryoplant facility design, construction, installation, test, commissioning and operation.</p> <p>To assist the system design authority to fulfill the functions of design, installation and commissioning of the cryoplant facility, comprising the LHe and LN2 cryoplants, the 80 K helium loop units, the helium and nitrogen storage system, the dryer and the gas recovery and purification systems.</p>
Main duties / Responsibilities	<ul style="list-style-type: none"><li>-Coordinates the cryoplant facility design, construction and operation in close collaboration with the users, the Building, the services and the involved Domestic Agencies (DA's);</li><li>-Is responsible for the Cryoplant facility integration activities;</li><li>-Implements the Quality Control (QC) activities for the cryoplant systems;</li><li>-Is responsible for the definition and execution of the technical surveillance program to build, test and commission the cryoplant facility;</li><li>-Is responsible for the analysis and specification of spare parts and maintenance requirements for the cryoplants and auxiliary systems;</li><li>-Is responsible for configuration management for the cryogenic system;</li><li>-Coordinates the assembly-integration &amp; tests and planning for the cryogenic system;</li><li>-Acts as an interface with cryoplant manufacturer; with building and utilities required for the cryoplant operation; with Tokamak operation; with other system for the definition of the requirements and operating modes of the cryoplants;</li><li>-May be required to work outside normal working hours, including nights, weekends and public holidays;</li><li>-Performs other duties in support of the project schedule;</li><li>-May be requested to be part of any of the project/construction teams and to perform other duties;</li><li>-Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.</li></ul>
Measures of effectiveness	<ul style="list-style-type: none"><li>-Reports to the Cryogenic System Section Leader;</li><li>-In response to requests from the Director-General and/or Department Head PED, or proactively, informs the DG/ Department Head, PED 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.</li><li>-Implements and follows the technical surveillance plan during installation and commissioning phase of the cryoplant;</li><li>-Coordinates and integrates the systems in the cryoplant facility;</li><li>-Manages interfaces between cryoplant systems, the cryogenic users and the required utilities;</li><li>-Manages plans for installation, test and commissioning;</li><li>-Maintains effective communication with all parties delivering subsystems.</li></ul>
	<p>Project Construction Phase</p> <p>ID SAP 50000805</p>

## Applicant criteria

Level of study	Master or equivalent degree
Diploma	Mechanical, process engineering or equivalent
Level of experience	At least 10 years
Technical experience/knowledge	<ul style="list-style-type: none"> <li>-At least 10 years' experience in the development, testing and commissioning cryogenic plant systems</li> <li>-Significant experience and knowledge in engineering of cryoplant    process plant design, manufacturing, testing and operation;</li> <li>-Experience in industrially proven cryogenic and large rotating machinery equipment in world market, including liquid helium and nitrogen plants, purification /dryer systems, gas storage and compressors;</li> <li>-Experience in designing code and standards of experimental cryogenic equipment;</li> <li>-Experience in process engineering and analysis of operating modes for cryoplants and large cryogenic distribution system;</li> <li>-Extensive experience in technical staff supervision and coordination;</li> <li>-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;</li> <li>-Project Management experience is required.</li> </ul>
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit, Ability to communicate effectively
Languages	English (Fluent)
Specific skills	CATIA, Computer Aided Design, ENOVIA, MS Office standard (Word, Excel, PowerPoint, Outlook)
Others	-Excellent computer and IT skills, consistent with a complex developmental project, are mandatory.

# IO1852 Neutral Beam Coordination Officer - TED-079

## General information

Job category	Standard
Status	Published
Department	TED / Tokamak Engineering Department
Division	TED / Heating & Current Drive Division
Section	TED / HCD / Neutral Beam Section

## Job description

Main job	Science - Nuclear physics
Title of the position	Neutral Beam Coordination Officer - TED-079
Job family	Scientist-2
Grade	P3
Direct employment	Not required
Purpose	<p>To be responsible for the coordination of the R&amp;D activities related to the Neutral Beam (NB) development and to conduct physics analysis of the experiments at the NBTF(Neutral Beam Test Facility) which lead to the procurement of the NB heating and current drive injectors and the diagnostic NB injector for ITER; This post includes participation in the NBTF team at Padua during the commissioning and experimental phases of the test facilities, under the management of the NBTF Program manager, including translation of experimental outcomes from the test facilities into the design and procurement of the ITER injectors.</p> <p>The post also conducts the analysis of the physical loads leading to the design of the components which are outside the scope of the Neutral beam test facility design, i.e the Heating neutral beam components and Diagnostic neutral beam components. Once design analysis of changes occurred during the manufacturing phase, it needs to be analyzed in order to assess impact on functionality of the systems. This post also requires physics analysis leading to loads on interfacing components.</p> <p>To work closely with the Heating current drive division head, to ensure that the Research and Development (R&amp;D) necessary for the successful realization of the ITER NB injection system is carried out in particular on the neutral beam test facility</p> <p>-Keeps abreast of worldwide developments in NB injection technology and also gains and sustains thorough knowledge of the ITER NB system including all the associated technology and interfaces;</p> <p>-Works with the NBTF team in order to ensure that the NBTF experimental program meets the ITER NB needs in the definition of the commissioning program and the experimental program</p> <p>-Works for extensive periods at the NBTF facility in Padua during the operation of the NBTF as part of the NBTF team.</p> <p>-Manages the documentation for procurement arrangements for the ITER NB system ensuring consistency with the experimental outputs from the test facility ;</p> <p>-Interacts with ITER or the Domestic Agency (DA) staffs responsible for NB system interfaces;</p> <p>-Provides feedback to the NB team and DAs about issues faced and solutions found during SPIDER(Source for Production of Ion of Deuterium Extracted from Radio Frequency (RF); -Plasma) and MITICA (Megavolt ITER Injector &amp; Concept Advancement) commissioning and operations.</p> <p>-Support the NB team throughout the design and manufacturing phases of the NB components to ensure the systems meet the ITER specifications.</p> <p>-May be required to work outside normal working hours, including nights, weekends and public holidays;</p> <p>-Performs other duties in support of the project schedule;</p> <p>-May be requested to be part of any of the project/construction teams and to perform other duties</p> <p>-Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.</p> <p>-Reports to the Neutral Beam section leader;</p> <p>-Acts as an interface between the NBTF procuring Das, F4E and INDA and the NB section</p>
Main duties / Responsibilities	

Measures of effectiveness	<p>ensuring that manufacturing changes posing functional changes are analyzed in a timely manner.</p> <p>-In response to requests from the Director-General and/or Head of Tokamak Engineering Department or proactively, informs the DG/ Head of Tokamak Engineering Department 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.</p> <p>-Effectively participates in the commissioning and experimental phases of the NBTf as part of the NBTf team;</p> <p>-Effectively carries out the physics analysis in line with the needs for design and manufacturing of the NB systems;</p> <p>-Effectively carries out the R&amp;D or design work done by him/herself or others under his/her coordination; Ensures process efficiency and quality of end solution;</p> <p>-Successfully supports the NB team during procurement phases of the components;</p> <p>-Completes missions within cost, schedule and safety, including integration issues (systems and interfaces) and specification.</p>
	<p>Project Construction Phase</p> <p>SAP Id: 00010308</p>

## Applicant criteria

Level of study	PhD or equivalent degree
Diploma	Physics or Eng. field or other relevant discipline
Level of experience	At least 6 years
Technical experience/knowledge	<p>-At least 6 years' experience with High Power Neutral Beam Systems, especially in their design and operation at the international level dependent on academic qualifications;</p> <p>-Several publications in recognized scientific journals;</p> <p>-Extensive knowledge of NB Injector Physics and Engineering;</p> <p>-Experience of using the beam codes: SLACCAD, BTR, OPERA or equivalent;</p> <p>-Thorough knowledge of negative ion beam production (preferred);</p> <p>-Knowledge of project management tools and basic Project Management experience is required.</p> <p>-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.</p>
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
General skills	-Ability to communicate in French or Italian is an advantage.
Languages	English (Fluent)
Specific skills	MS Office standard (Word, Excel, PowerPoint, Outlook)

# IO1850 Control System Technician - SCOD-030

## General information

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

## Job description

Main job	Computer Science - Generalist
Title of the position	Control System Technician - SCOD-030
Job family	Technician - 3
Grade	G4
Direct employment	Required
Purpose	<p>To take an active part in the development of a software tool kit, entitled CODAC Core System, which is used by the plant control system developers. This tool kit, based on Experimental Physics and Industrial Control System (EPICS) which includes configuration tools, communication middleware, device drivers and human machine interface tools, is to be continuously developed, and released at regular intervals.</p> <p>To take an active part in the testing and support with emphasis on EPICS device drivers and PLC (Programmable Logic Controller) interface.</p> <p>To support the design and development of ITER plant systems Instrumentation and Control (I&amp;C) in compliance with ITER standards.</p> <p>To integrate third party supplied plant system I&amp;C with the ITER central control system.</p>
Main duties / Responsibilities	<ul style="list-style-type: none"><li>-Develops and maintains EPICS device drivers for ITER standardized Input/Output (I/O) boards as part of CODAC Core System distribution;</li><li>-Develops other control software in the area of PLC and Human Machine Interface (HMI);</li><li>-Implements, executes and documents test procedures to ensure quality of all software products in the CODAC Core System distribution;</li><li>-Supervises and monitors similar work delivered by external contractors and take over maintenance after delivery;</li><li>-Contributes to external plant control system developers' activity by use of the CODAC Core System distribution;</li><li>-Provides technical supports in PLC engineering and its interfaces with ITER central control system;</li><li>-Supports the plant system I&amp;C integration with ITER central control system based on the staged approach;</li><li>-Supports plant system I&amp;Cs through the lifecycle in design, manufacturing and testing;</li><li>-Develops interface documents with plant systems and procedures for integration with Central I&amp;C systems;</li><li>-May be required to work outside normal working hours, including nights, weekends and public holidays;</li><li>-May be requested to be part of any of the project/construction teams and to perform other duties;</li><li>-Performs other duties in support of the project schedule;</li><li>-Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.</li></ul> <p>-Reports to the CODAC Section Leader.</p> <p>-Acts as an interface between assigned plant systems;</p> <p>-In response to requests from the Director-General and/ Head of the Science &amp; 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.</p> <p>-Develops the assigned device drivers and other software products;</p> <p>-Implements the test and quality assurance procedures for those products and ensures a first</p>

Measures of effectiveness	<p>level of maintenance and quality control;</p> <p>-Maintains the assigned products in the CODAC Core System distribution; contributes to process improvement;</p> <p>-Supports the external users of those products;</p> <p>-Successfully supports assigned plant system I&amp;Cs and its integrations with Central I&amp;Cs;</p> <p>-Ensures the above mentioned tasks are well executed according to work timeline with safety and quality.</p> <p>Project Construction Phase SAP ID : 50001978</p>
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## Applicant criteria

Level of study	Bachelor or equivalent degree
Diploma	Computer Science, electronics field
Level of experience	At least 5 years
Technical experience/knowledge	<p>-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.</p> <p>-At least 5 years' experience in in developing device drivers; testing and integration of control systems; and using oscilloscopes and other measurement instruments;</p> <p>-Good experience in PLC programming;</p> <p>-Good experience in digital electronics;</p> <p>-Good experience in using Linux and real-time operating systems;</p> <p>-Some experience in software engineering and quality assurance;</p> <p>-Some experience in using EPICS considered an advantage;</p> <p>-Some experience in large scale control system development and operation considered an advantage;</p> <p>-Basic Project Management experience is required.</p>
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit, Ability to communicate effectively
General skills	-Ability to work effectively in a multi-disciplinary environment;
Languages	English (Fluent)
Specific skills	MS Office standard (Word, Excel, PowerPoint, Outlook)
Others	-Excellent computer and IT skills, consistent with a complex developmental project, are mandatory.