



## Job Description Print Report

### Position Review

|                          |                                 |                 |                                      |                      |   |               |    |
|--------------------------|---------------------------------|-----------------|--------------------------------------|----------------------|---|---------------|----|
| Position Number          |                                 | Position Type   | CFE                                  | Subject to Radiation |   | Subject to GD | No |
| Hyperion Position Number |                                 | Fund Type       | EBR                                  | Parent Position      | 007452   Team Leader (SGTS-Equipment Engineering) |               |    |
| Organization             | SGTS-Equipment Engineering Team | FTE             | 1                                    | CCOG 1               |   |               |    |
| Grade                    | P5                              | Duty Station    | Vienna, Austria                      | CCOG 2               |   |               |    |
| Classified Grade         |                                 | Position Title  | Senior Surveillance Systems Engineer | Proposed New Title   |   |               |    |
| Master Version           |                                 | Master Status   |                                      | Approval Date        |   |               |    |
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#### Organization Settings

The Department of Safeguards carries out the IAEA's duties and responsibilities as the world's nuclear inspectorate, supporting global efforts to stop the spread of nuclear weapons. The primary role of the Department is to develop and implement IAEA safeguards to ensure that there is no diversion of declared nuclear material from peaceful activities and no indications of undeclared nuclear material or activities in a State as a whole.

The Department comprises nuclear safeguards inspectors, responsible for carrying out inspections and verifications of all-safeguards relevant information for nuclear facilities in over 180 States; and technical staff responsible for a wide range of activities including: developing concepts and approaches for implementing safeguards; developing and maintaining safeguards equipment; providing analytical and laboratory services for sample analysis; collecting, evaluating and analyzing safeguards-relevant information; providing information and communication technology infrastructure and services; and providing programme coordination support.

The Division of Technical and Scientific Services ensures the provision of state-of-the-art equipment and related expertise for the accomplishment of the Department of Safeguards activities. Within this mandate, the Division is responsible for procurement, testing, provision, inventory control, performance monitoring and maintenance of safeguards equipment and supplies required by SGO Divisions; management of equipment development and engineering activities to meet quality and safeguards requirements; development and provision of documentation, procedures, instrumentation methods and techniques; provision of specialized technical and scientific support to inspectors and inspection activities in the field and at headquarters; and, radiation contamination monitoring of returned equipment and timely write-off of obsolete or contaminated equipment. The Division also coordinates departmental health and safety activities.

#### Main Purpose

Reporting to the Team Leader, the Senior Surveillance Systems Engineer provides professional expertise for the analysis, development, and deployment of future surveillance systems for safeguards purposes. She/he develops and evaluates surveillance technologies, methods and techniques for unattended and remote applications. She/he further provides expert advice and assistance to the Operations Divisions on the use of surveillance data review tools and associated equipment.

#### Role

The Senior Surveillance Systems Engineer is (1) an engineer, leading the design, development, and/or construction of new surveillance equipment and technologies; (2) a technical expert, exploring, evaluating and integrating hardware, designing and testing components suitable for challenging operational environments, planning and managing vulnerability and design reviews, and ensuring that the design of the equipment to be used is fit for purpose; (3) a project manager, initiating, planning, executing and controlling the development process while managing project teams; and (4) a senior advisor, ensuring that safeguards equipment meets stringent requirements to effectively and efficiently support the IAEA's safeguards mandate.

**Partnership**

The Senior Surveillance Systems Engineer establishes relationships with staff throughout the IAEA to provide expert advice and assistance in the development and implementation of surveillance systems and related data analysis techniques, and with other divisional and departmental specialists and customers to consult and coordinate on specific cases. Furthermore, she/he liaises with MSSPs, R&D laboratories/organizations and commercial partners on new developments, vulnerability reviews and assessments and validation/authorization of safeguards equipment.

**Functions / Key results Expected**

Lead and/or participate substantively in the planning, development, and authorization of new surveillance equipment and technologies, to support the needs of the Operations Divisions.

Evaluate and report on commercial off-the-shelf and custom-designed products to determine their compatibility for safeguards use.

Provide specialized expertise for the procurement, implementation and support of current and new equipment, including design reviews, laboratory evaluation, field trials, assessments of potential threats, and recommendations of mitigation strategies. Ensure quality control on all aspects of system video data for safeguards purposes.

Prepare quality controlled technical documents, including technology evaluation reports, technical and security specifications, testing procedures and technical project roadmaps.

Liaise with R&D specialists in Member States regarding technologies and equipment under development.

Organize and lead vulnerability reviews of IAEA equipment systems, elaborate solutions for the mitigation of newly identified vulnerabilities, and coordinate vulnerability assessments/reviews with third party experts and equipment manufacturers.

Provide expert support, technical guidance and advice to members of all SGTS teams and the Operations Divisions, and develop and provide training related to new equipment and technologies as needed.

**Generic JD Remarks**

**Competencies**

**Core Competencies**

| Competency              | Occupational Role      | Definition   |
|-------------------------|------------------------|--|
| Communication           | Individual Contributor | Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen to and understand the perspectives of others and proposes solutions.   |
| Achieving Results       | Individual Contributor | Takes initiative in defining realistic outputs and clarifying roles, responsibilities and expected results in the context of the Department/Division's programme. Evaluates his/her results realistically, drawing conclusions from lessons learned. |
| Teamwork                | Individual Contributor | Actively contributes to achieving team results. Supports team decisions.   |
| Planning and Organizing | Individual Contributor | Plans and organizes his/her own work in support of achieving the team or Section's priorities. Takes into account potential changes and proposes contingency plans.  |

| Functional Competencies                                  |   |   |
|--|---|---|
| Competency   | Occupational Role   | Definition  |
| Client orientation                                       | Specialist  | Helps clients to analyse their needs. Seeks to understand service needs from the client's perspective and ensure that the client's standards are met.   |
| Judgement/decision making                                | Specialist  | Consults with supervisor/manager and takes decisions in full compliance with the Agency's regulations and rules. Makes decisions reflecting best practice and professional theories and standards.      |
| Technical/scientific credibility                         | Specialist  | Ensures that work is in compliance with internationally accepted professional standards and scientific methods. Provides scientifically/technically accepted information that is credible and reliable. |
|  |   |   |
| Expertise  |   |   |
| Expertise  | Description   | Asset   |
| Safeguards   Containment and Surveillance                | Experience with the design and evaluation of new and emerging surveillance systems based on optical and non-optical sensor technology.  | N   |
| Management and Programme Analysis   Project Management   | Demonstrated expertise in Project Management (PM), and the use of PM tools. Familiarity with formal project management principles as described by PRINCE2, Agile, PMI or equivalent formal project management methodology required, and certification an asset. | N   |
| Safeguards   Quality Management                          | Experience in producing the technical documentation necessary to support the implementation of new engineering solutions and to support end-users in the use of new systems.  | N   |
| Other Technical Engineering   Engineering and Technology | Expert knowledge in the development and implementation of machine vision techniques for surveillance data analysis.   | Y   |
| Safeguards   Safeguards System, Basic                    | Familiarity with the concepts of IAEA safeguards.   | Y   |
| Other Technical Engineering   Electrical Engineering     | Knowledge of electronics pertinent to both analogue and digital technologies.   | Y   |
| Other Technical Engineering   Engineering and Technology | Knowledge of visual technologies and/or image processing software packages.   | Y   |
| Information Technology Information Security              | Experience in evaluating system designs in order to ensure that they meet specific standards for physical security and/or data confidentiality, authenticity, integrity and availability.   | Y   |
|  |   |   |
| Position Specific FC                                     | Occupational Role   | Definition  |
|  |   |   |
| Position Specific Expertise                              | Description   | Asset   |
|  |   |   |
| Languages  |   |   |
| Languages  | Asset Languages   |   |
| English  | Arabic<br>Chinese<br>French<br>Russian<br>Spanish   |   |

| Qualification   |  |
|---|--|
| Qualification Title   | Description  |
| Master's Degree   | Advanced university degree in physics, engineering, or a similar technical field.  |
| Bachelor's Degree   | University degree in a relevant field with two years of additional relevant work experience may be considered in lieu of an advanced degree. |
| <b>Experience</b>   |  |
| <p>Minimum of ten years of work experience in surveillance technologies, video signal processing, software engineering or other relevant field.</p> <p>Experience working in design, development, evaluation and/or implementation in one or more of the following areas: surveillance systems, image signal processing or analysis techniques.</p> <p>Experience with the application of surveillance for the specific purpose of nuclear safeguards an asset.</p> |  |