



## JOB DESCRIPTION

### Post Details:

Post Title:	<b>Senior Software Development Engineer</b>	Organisational Element:	JISR
Military/Civilian:	Civilian	Location:	The Hague, NDL

### Organisational context:

This is a position within the NATO Communications and Information Agency (NCIA), an organization of the North Atlantic Treaty Organization (NATO).

To strengthen the Alliance through connecting its forces, the NCIA delivers secure, coherent, cost effective and interoperable communications and information systems in support of consultation, command & control and enabling intelligence, surveillance and reconnaissance capabilities, for NATO, where and when required. It includes IT support to the Alliances' business processes (to include provision of IT shared services) to the NATO HQ, the Command Structure and NATO Agencies.

### Organisational Element Statement of Functions:

This post is assigned to the Joint Intelligence, Surveillance and Reconnaissance (JISR) Centre, where the responsibility rests for accomplishing the full life cycle of assigned services. The JISR Centre's Vision is to assure information superiority for NATO. Our Mission is to deliver, support and protect valued Intelligence, Surveillance and Reconnaissance (ISR) capabilities, expertise and services, to maximise operational effectiveness for NATO.

In the function of Senior Electromagnetic Warfare Software Engineer, the successful individual will play a leading role in JISRC Software Engineering efforts in the Electromagnetic Warfare (EW) domain.

### Job role description:

Software development engineers are technical experts that develop specific software artefacts in support of solution development. They perform software development, integration and version control. They produce detailed solution designs, manage and evolve engineering environments and maintain software artefacts. They orchestrate and implement software development activities in a DevSecOps manner. In this role these core skills should be complemented by a rich experience and passion for developing software for Electromagnetic Warfare solutions to ensure that the candidate is familiar with some of these domain specific concepts and complexities and is able to deliver the required software artefacts.

**Duties and Responsibilities:****Methods and tools**

- Provides advice, guidance and expertise to promote adoption of methods and tools and adherence to policies and standards.
- Evaluates and selects appropriate methods and tools in line with agreed policies and standards.
- Contributes to organisational policies, standards, and guidelines for methods and tools.
- Implements methods and tools at programme, project and team levels including selection and tailoring in line with agreed standards.
- Manages reviews of the benefits and value of methods and tools.
- Identifies and recommends improvements.

**Systems design**

- Designs large or complex systems and undertakes impact analysis on major design options and trade-offs.
- Designs interoperability solutions between existing systems such as mediation services which connect non-compatible interfaces.
- Ensures that the system design balances functional and non-functional requirements.
- Reviews systems designs and ensures that appropriate methods, tools and techniques are applied effectively.
- Makes recommendations and assesses and manages associated risks.
- Adopts and adapts system design methods, tools and techniques.
- Contributes to development of system design policies, standards and selection of architecture components.

**Software design**

- Specifies and designs large or complex software applications, components and modules.
- Adopts and adapts software design methods, tools and techniques.
- Undertakes impact analysis on major design options, makes recommendations and assesses and manages associated risks.
- Specifies prototypes/simulations to enable informed decision-making.
- Evaluates software designs to ensure adherence to standards and identifies corrective action.
- Ensures that the software design balances functional, quality, security and systems management requirements.
- Contributes to the development of organisational software design and architecture policies and standards.

**Programming/software development**

- Takes technical responsibility across all stages and iterations of software development.
- Plans and drives software construction activities.
- Adopts and adapts appropriate software development methods, tools and techniques.
- Measures and monitors applications of project/team standards for software construction, including software security.
- Contributes to the development of organisational policies, standards, and guidelines for software development.

**Data modelling and design**

- Investigates enterprise data requirements where there is some complexity and ambiguity.

- Plans own data modelling and design activities, selecting appropriate techniques and the correct level of detail for meeting assigned objectives.
- Provides advice and guidance to others using the data structures and associated components.

**Additional duties for this post:**

**Requirements definition and management:**

- Follows agreed standards and applies appropriate techniques to elicit and document detailed requirements.
- Develops recommendations for current and future Electromagnetic Warfare capabilities/services, to include requirements capture, implementation (design, testing, release) and operational and maintenance approach.
- Assists NATO stakeholders and nations in the development of relevant, forward leaning operational Electromagnetic Warfare processes, procedures, doctrine, training and policy. This can include participation in relevant technical and operational Electromagnetic Warfare working groups.

**Systems development and management:**

- Investigates/facilitates the use of big data management techniques, automation and Artificial Intelligence (AI) and Machine Learning (ML) capabilities to enable NATO to efficiently process, analyse and classify vast amounts of data.

**Sourcing:**

- Supports the development of Invitation for Bid by providing the Electromagnetic Warfare System Requirement Specifications and assessing Bidders' proposals.
- Supports projects' implementation by reviewing contractual technical documentation, performing tests and validations.
- Facilitates the delivery Electromagnetic Warfare capabilities to NATO.
- Supports the planning and execution of the Electromagnetic Warfare aspects in NATO trials or exercises.
- Consults with NATO Commands and NCIA subject matter experts to assist in resolving issues and managing processes.

**Team management:**

- Provides personal, scientific, technical and professional guidance to staff and support the development and tutoring of junior (G15 and below) team members to enable their contribution to the development team and as an integral part of their career development.
- Deputize for higher-grade staff, as required.
- Performing other duties, as required.

**Education, Experience and Training (essential):****Education:**

A minimum requirement of a Bachelor's degree at a nationally recognised/certified University in a related discipline and 3 years post-related experience.

Or exceptionally, the lack of a university degree may be compensated by the demonstration of a candidate's particular abilities or experience that is/are of interest to NCIA, that is, at least 10 years extensive and progressive expertise in duties related to the function of the post.

**Experience:**

- Recent extensive Software Engineering experience (at least three years) in the development of software at NATO or a comparable multinational or national position.
- 3 years of experience and familiarity with electromagnetic warfare concepts, such as RF Propagation and Signal Characteristics, Electromagnetic Support, Attack and Protection, Emitter Libraries for Electromagnetic Support systems.
- Experience with planning and execution of Electromagnetic Warfare Aspects of NATO trials and exercises (or similar and comparable ones).
- Experience (within the past five years) in the development of policies, standard operating procedures, and/or capturing user requirements related to capability development.
- Experience and knowledge of some or preferably all of the following technologies used in the Software Development process:
  - C#
  - .NET Core/.NET Framework
  - SQL with some database server knowledge (SQL Server or PostgreSQL)
  - EntityFramework
  - Git

**Education, Experience and Training (desirable):****Experience:**

- Deep knowledge of relevant NATO data formats commonly used in NATO Electromagnetic Warfare domains
- Experience in big data management and preferably knowledge of automated and AI/ML-based capabilities.
- Prior experience of working in an international environment comprising both military and civilian elements.
- Knowledge of NATO responsibilities and organization, including Allied Command Operations (ACO) and Allied Command Transformation (ACT).
- Java / JavaScript
- DevOps technologies (TeamCity, Nexus, GitHub, GitLab, Azure DevOps)
- Python
- Geographical Information System libraries such as ArcGIS, Caesium or equivalent.

- Machine Learning/Artificial Intelligence related libraries for data processing: Pandas, NumPy, SciKitLearn, PyTorch, TensorFlow, Keras

**Training/Certifications:**

**Behavioural competencies:**

- *Adhering to Principles and Values* - Upholds ethics and values; demonstrates integrity; promotes and defends equal opportunities, builds diverse teams; encourages organisational and individual responsibility towards the community and the environment.
- *Deciding and Initiating Action* - Takes responsibility for actions, projects and people; takes initiative and works under own direction; initiates and generates activity and introduces changes into work processes; makes quick, clear decisions which may include tough choices or considered risks.
- *Relating and Networking* - Easily establishes good relationships with customers and staff; relates well to people at all levels; builds wide and effective networks of contacts; uses humour appropriately to bring warmth to relationships with others.
- *Delivering Results and Meeting Customer Expectations* - Focuses on customer needs and satisfaction; sets high standards for quality and quantity; monitors and maintains quality and productivity; works in a systematic, methodical and orderly way; consistently achieves project goals.

**Language:**

A thorough knowledge of one of the two NATO languages, both written and spoken, is essential and some knowledge of the other is desirable.

**NOTE:** Most of the work of the NCIA is conducted in the English language.