CMRE CIVILIAN JOB DESCRIPTION

<table>
<thead>
<tr>
<th>Post Title</th>
<th>DATA STEWARD</th>
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<tbody>
<tr>
<td>Post Number</td>
<td>DRDA CT20, DRDM CT20, DRDE KT35, DRDD KT25, DRDP AT20</td>
</tr>
<tr>
<td>NATO Grade</td>
<td>B3/4</td>
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<tr>
<td>Security Clearance level</td>
<td>NATO SECRET</td>
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<tr>
<td>Reports to</td>
<td>Section Head</td>
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<tr>
<td>Manages/Supervises (No. of staff directly/indirectly)</td>
<td>0</td>
</tr>
<tr>
<td>Directorate</td>
<td>/</td>
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<tr>
<td>Division/Department</td>
<td>Research Division</td>
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<tr>
<td>Branch</td>
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<tr>
<td>Job Family</td>
<td>TECH</td>
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1. **POST CONTEXT**

This is a position within the Centre for Maritime Research and Experimentation (CMRE), an organization of the North Atlantic Treaty Organization (NATO).

CMRE is an established, world-class scientific research and experimentation facility that organizes and conducts scientific research and technology development, centred on the maritime domain, delivering innovative and field tested Science & Technology (S&T) solutions to address defence and security needs of the Alliance.

The position is within the Research Division (RD) which is responsible for identifying, developing and delivering Science & Technology (S&T) solutions to the needs of the Alliance in the maritime domain. The Division leads the development of CMRE’s scientific strategy and through its capability in ocean sensing, numerical modelling, big data analytics, artificial intelligence and autonomy, delivers the Centre’s S&T goals while maintaining CMRE’s reputation within the scientific community.

The Research Division is comprised of the five following sections:

- Antisubmarine Warfare (ASW)
- Mine Countermeasures (MCM)
- Environmental Knowledge and Operational Effectiveness (EKOE)
- Data Knowledge and Operational Effectiveness (DKOE)
- Maritime Unmanned Systems Engineering (MUSE)

2. **PRINCIPAL DUTIES**

- Enforce data and analytics governance policies created by the CMRE data and analytics governance structure;
- Responsible for implementing data and analytics auditing activities, to control data and data-generating processes, according to governance policies;
- Resolve issues when deviations from policy are detected and when not resolved automatically;
Provide the technical support for the long-term curation of scientific data, ensuring the harmonization of CMRE data management practices (e.g. data management plan for projects and sea trials, harmonizing data/metadata formats, enforcing the use of standards, streamlining data processing) and the compliance with NATO data management policies, which establish data as an Enterprise Resource.

Maintain the CMRE data services, focusing on data ingestion and identifying emerging requirements, and supporting the development and optimization of data management processes (e.g. workflow automation).

Assess the current state of data fidelity, security, privacy and retention within their scope of responsibility. Interpret and enforce activities to ensure target goals for data fidelity improvement and adherence with all other types of data governance policies.

Work within and beyond their immediate area to implement change in support of the adoption of data governance policies. Act as liaison between:
- Research Division/Engineering and Information Technology Division – Software Development & Data Management Section;
- CMRE Data Management ecosystem and external initiatives and industrial/scientific best practices.

Contribute to the CMRE business objectives with regard to data visibility, accessibility, interoperability, quality control, assurance and security management, data KPIs measurement and reporting, alignment of IT Data Management infrastructure. Provide input into the data and analytics governance structure for improvements in the work of governance and stewardship. Participate in regular stewards council meetings.

Report into the data governance structure as a team (a data stewards group, for example, where the need for stewards spans data domains and business functions), or individually (per their direct responsibility).

Take guidance from policies and provide relevant reporting/metrics.

Collaborate on stewardship activities at organization touchpoints, where stewards have overlapping or adjacent scope/purview; work with other data stewards to propose and recommend to the data and analytics governance structure process improvements for how the work of data stewardship is undertaken.

Provide expert technical guidance and expertise, to both internal and external stakeholders, on the usage of and best practices surrounding the CMRE data management ecosystem.

3. SPECIAL REQUIREMENTS AND ADDITIONAL DUTIES

a. Flexibility Clause

The incumbent may be required to perform other related duties as directed. The incumbent can be asked to work in any of the sections under the supervision and the expert guidance of the concerned section head.

As required by the Program of Work, the incumbent may be asked to participate in working groups or project teams and to coordinate and organize the work of other data stewards.

All other related duties should correspond with the required competencies for the job.

b. Deployment/Travel

The incumbent may be required to perform his/her duties onboard Centre or chartered vessels. The incumbent may be required to undertake TDY assignments within and outside NATO boundaries.

4. ESSENTIAL QUALIFICATIONS

a. Professional/Experience
• Professional experience in scientific data management or professional experience as data steward.
• Understanding of how data is used within scientific processes and its impact on desired scientific process outcomes.
• Professional experience in one or more among data analysis, visualisation and reporting;
• Awareness of the security and quality requirements for critical data entities.
• Deep and comprehensive understanding of the importance and impact of data (or bad data) on the ability of projects to meet their own objectives
• Background in modern software development and scripting languages with a focus on data applications and databases.
• Professional experience with:
  ▪ scientific data and metadata formats;
  ▪ interoperability standards, conventions and best practices for scientific data;
  ▪ storage systems, DBMS technologies and data APIs usage;
  ▪ data curation, data quality, cataloguing, tagging best practices and techniques;
  ▪ data pipeline/workflow and ETL techniques.
• Understanding of data modelling concepts and related notations.
• See Par. 4.b.

b. Education/Training

• A minimum requirement of a Bachelor’s degree at a nationally recognised/certified University in a related discipline (e.g.: software engineering, computer science, data science, earth science) and minimum 2 years post-related experience.

c. Language Requirements

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

English SLP 3333

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

5. DESIRABLE QUALIFICATIONS

• A Master’s Degree in a relevant discipline (Information Technology, Computer Science).
• Professional experience in scientific computing in one or more among oceanography and environmental applications, image processing, signal processing and statistics.
• Professional experience with one or more of the following programming languages: Python, MATLAB, R, Linux Bash, SQL.
• Professional experience with code versioning tools
• Professional experience with Linux-based operating systems.
• Professional experience with Agile methodologies such as Scrum, Kanban, etc.
• Professional experience with configuration management tools and knowledge of ‘infrastructure as code’ concepts.
• Professional experience with requirements tracking and creation of technical documentation using tools such as JIRA, wiki and/or Confluence.
• Professional experience with scientific data/metadata formats such as NetCDF, GRIB, Geo-TIFF, HDF, Flac, NMEA, GML, NATO AML, S-57, ESRI Shape File, ISO 19115, ISO 19119, NATO Geo-spatial Metadata Profile, etc.

• Professional experience with data sharing protocols and services such as (OPeNDAP, OGC WMS, OGC WFS, OGC WCS, OGC CSW, etc.) and related software implementations.

• Professional experience with one or more of the following data domain:
  ▪ Oceanography and/or Meteorology models, ocean in-situ observations
  ▪ Earth observation data
  ▪ Active/passive sonar and/or underwater acoustic communication
  ▪ Underwater sonar bottom images e.g. generated by Side Scan Sonar
  ▪ Moving objects and tracking

• Professional experience with open GIS software.

• Professional experience as DBA and/or developing database applications.

• Professional experience with object storage and/or file system storage and RBAC.

• Experience with NATO Data Management, Data formats, Interoperability and Security Policies.

• Knowledge of UML and/or NAF for data modelling.

• Knowledge of big data architectures.

• The following certifications and experience will be considered as an asset:
  ▪ DAMA Certified Data Manager
  ▪ Any DBA certification

6. **COMPETENCIES**

a. **Integrating**

Synthetically integrating and linking various data into a coherent whole, formulating alternatives, and transforming this information and alternative into a valuable and correct conclusion.

b. **Analyzing**

Gaining insights into cause and effect relations by assessing the available information in a critical and rational manner and by differentiating the essential from the incidental.

c. **Structuring work**

Adding structure to a multitude of different tasks by making a priority list and completing this list efficiently within the given timeframe.

d. **Problem solving**

Responding to and controlling unexpected situations by evaluating possible solutions based on experience and knowledge and by taking the initiative to implement the best solution.

e. **Providing support**

Supporting others by accepting a formal role as mentor, by acting as an example and by helping others with their activities.

f. **Adopting a customer-oriented attitude**
Guiding clients by giving targeted advice in their decision process. Always putting clients first by providing personal service and by maintaining constructive contacts.

g. **Advising**

Giving targeted advice to others within or outside the organization and establishing trusting relationships based on one’s own credibility and expertise.

h. **Coping/Controlling negative emotions**

Responding calmly to frustrations, obstacles and opposition, controlling one’s emotions and responding criticism in a constructive way, while keeping the objectives in mind.

i. **Engaging**

Fully dedicating oneself to one’s work by always giving the best of oneself and by striving for quality. Showing perseverance even when confronted with frustration, opposition, pressure or the need for attention to detail.

7. **REMARKS**

The duties are performed indoor and outdoor subject to changing conditions and involves physical labor. Undesirable working conditions may apply.

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**VALIDATION:**

Validated by: Wouter BENOIT

Position: Head Human Resources

Validation date: Digitally signed by Wouter Benoit

Date: 2020.06.30

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