



International Civil Aviation Organization

Job Description [Applicable solely to secondment]

POSITION INFORMATION

Post Title:	Air Navigation Cyber Resilience Expert	Duration of Secondment:	2 years
Grade Level:	P-4	Deadline for applications:	Until filled
Duty Station:	Montreal, Canada	Date for entry on duty:	As soon as possible
Special Notice: The ICAO Assembly recently reaffirmed its commitment to enhancing gender equality and the advancement of women by supporting UN Sustainable Development Goal 5 “Achieve gender equality and empower all women and girls.”			

THE ORGANIZATIONAL SETTING

The Air Navigation Bureau (ANB) is responsible for providing technical guidance to the Air Navigation Commission (ANC), the Council, and the Assembly. The Air Navigation Bureau provides technical expertise in aviation-related disciplines to States, industry and all elements of the Organization. The Bureau is also responsible for maintaining and supporting implementing the Global Aviation Safety Plan (GASP) and Global Air Navigation Plan (GANP), including its aviation system block upgrades as well as producing yearly safety and air navigation status reports. The Bureau develops technical studies and proposals for Standards and Recommended Practices (SARPs), and Procedures for Air Navigation Services (PANS) for further processing by the governing bodies of ICAO. The Bureau also develops related procedures and guidance material. The Bureau also manages the Universal Safety Oversight Audit Programme (USOAP) and Continuous Monitoring Approach that monitors all States on a continuous basis.

The Global Interoperable Systems (GIS) Section delivers ICAO provisions on information management and cyber resilience matters and supports States, air navigation service providers, aerodrome operators and airspace users in the safe and secure evolution and integration of air navigation systems through its multi-disciplinary work programme and technical expertise. The section advises States, ICAO Council and the Air Navigation Commission on information management and cyber resilience matters with overall responsibility for Annex 15 – Aeronautical Information Services and Annex 4 – Aeronautical Charts, and related documents. It maintains a primary coordination role with the industry to guarantee the evolution and integration of air navigation systems for seamless and secure services provision.

Cyber resilience has become a high priority for the safe development of international civil aviation and this is reflected in the air navigation work programme as it is critical for the evolution of the methods for exchange of data and information supporting aircraft operations and air traffic management on a system wide basis. Recent reports in the media and other sources of information highlighted the possible vulnerabilities of the aircraft and air navigation systems to cyber-attacks. In order to have a proper and timely response, ICAO is increasing efforts on cyber resilience studies and development including expertise on cross cutting disciplines of safety, air navigation and security. As a result, a system to enable exchange of data and information between ground systems and on-board systems on a global basis was initiated. The expert support in the area of internet infrastructure, operations and vulnerabilities is now necessary to progress with the next phases of the development and implementation of the defined platform to support international civil aviation and particularly the necessary cyber resilience aspects of the internet when used to support air operations.

The incumbent will report to the Chief, Global Interoperable Systems Section, and is expected to work independently, consulting with other Staff and external parties as required.

MAJOR DUTIES AND RESPONSIBILITIES

Function 1 (incl. Expected results)

- **Identifies and evaluates vulnerabilities of the air navigation systems when connected to internet**, achieving results such as:
- Support the development of cyber resilience aspects of the Global Air Navigation Plan (GANP).
- Participate in and support the developments of the Trust Framework Panel.
- Support the efforts to develop, maintain and share comprehensive cyber resilience strategies on ICAO public and secure websites.
- Analyse air navigation systems-related cyber incidents in coordination with related stakeholders to determine potential safety and resilience impacts to the air navigation system.
- Develop potential process for identification of air navigation systems cyber vulnerabilities.

Function 2 (incl. Expected results)

Provides technical knowledge on cyber resilience matters to the Council, Air Navigation Commission and Secretariat, achieving results such as:

- Act as subject matter expert on cyber resilience matters, providing recommendations for mitigating potential risks to aviation safety issues.
- Identify issues related to potential vulnerabilities with regards to Air Traffic Management (ATM), Remotely Piloted Aircraft System (RPAS) and airworthiness.
- Develop and present technical briefings and prepare and update presentations for the Assembly, Council, ANC as well as panels and technical groups.
- Coordinate with relevant panel secretaries related to cyber resilience issues, working closely with other technical officers in ANB and throughout ICAO, as needed.
- Develop technical solutions to questions and concerns raised by various ICAO panels and technical groups for submissions to the ANC and Council.
- Provide cyber resilience technical-level input to the overall ANB work programme.

Function 3 (incl. Expected results)

Contributes to the development of working papers and other documentation for the ICAO Council, Air Navigation Commission, and international meetings and symposia on matters related to air navigation systems cyber resilience, achieving results such as:

- Draft and/or present working/information papers for Assembly, Council and other governing and/or technical bodies as required.
- Develop, contribute to, and review ICAO publications such as technical manuals and circulars related to cyber resilience.
- Coordinate with other technical officers throughout the Bureau to ensure correctness and appropriateness of cyber resilience aspects of working papers and develop and/or assist with presenting documentation on cyber resilience activities to the Council, Air Navigation Commission and meetings involving States, industry and international organizations.
- Prepare working papers, technical materials or other inputs for external events and expert group meetings.

Function 4 (incl. Expected results)

Keeps abreast of, and coordinates cyber resilience concepts to both internal and external stakeholders, achieving results such as:

- Promote awareness and understanding by all stakeholders of cyber resilience issues in civil aviation.
- Raise awareness and disseminate cyber resilience related best practices and cyber protection strategies from established expert bodies within the United Nations system and external groups such as the International Standardization Organization (ISO), National Institute of Standards and Technology (NIST) and other relevant organizations.
- Provide input to, and support when necessary, for the organization of various ICAO events, meetings and symposia involving cyber resilience topics, including development of content, agendas, documentation and selection of appropriate moderators and speakers for workshops/seminars and other events related to cyber safety and resilience.
- Deliver technical training, internal or external, as required.
- Develop tools and other means to promote cyber resilience concepts.

Function 5 (incl. Expected results)

Performs other related duties, as assigned.

QUALIFICATIONS AND EXPERIENCE

Education

Essential

A first-level university degree in computer science, aeronautical engineering, or in a related field.

Desirable

An advanced-level university degree (Master's degree or academic equivalent) in information assurance.

Professional experience

Essential

- A minimum of ten (10) years of progressively responsible professional experience in aviation in a State or in a large international organization.
- Experience in developing secure aviation information exchange platforms and technical solutions for wide use at the international level in aviation sectors.
- Experience serving and participating at all levels in international meetings and industry working groups.
- Experience in safety management systems (SMS) concepts, methods and practices.
- Experience in designing and developing applications with XML, XSLT, HTML, JavaScript, JQuery.

Desirable

- Experience in managing technical groups, symposia, workshops, etc.

Languages

Essential

- Fluent reading, writing and speaking abilities in English.

Desirable

- A working knowledge of any other language of the Organization (Arabic, Chinese, French, Russian, Spanish).

Competencies

Core Competencies:

Professionalism: Shows pride in work and in achievements; demonstrates professional competence and mastery of subject matter; is conscientious and efficient in meeting commitments, observing deadlines and achieving results; is motivated by professional rather than personal concerns; shows persistence when faced with difficult problems or challenges; remains calm in stressful situations. Takes responsibility for incorporating gender perspectives and ensuring the equal participation of women and men in all areas of work.

Teamwork: Works collaboratively with colleagues to achieve organizational goals; solicits input by genuinely valuing others' ideas and expertise; is willing to learn from others; places team agenda before personal agenda; supports and acts in accordance with final group decision, even when such decisions may not entirely reflect own position; shares credit for team accomplishments and accepts joint responsibility for team shortcomings.

Planning and Organizing: Develops clear goals that are consistent with agreed strategies; identifies priority activities and assignments; adjusts priorities as required; allocates appropriate amount of time and resources for completing work; foresees risks and allows for contingencies when planning; monitors and adjusts plans and actions as necessary; uses time efficiently.

Technological Awareness: Keeps abreast of available technology; understands applicability and limitations of technology to the work of the office; actively seeks to apply technology to appropriate tasks; shows willingness to learn new technology.

Managerial Competencies:

Building Trust: Provides an environment in which others can talk and act without fear of repercussion; manages in a deliberate and predictable way; operates with transparency; has no hidden agenda; places confidence in colleagues, staff members and clients; gives proper credit to others; follows through on agreed upon actions; treats sensitive or confidential information appropriately.

MODE OF SECONDMENT

The duration of the secondment is 2 years, which can be extended for an additional 2 years and thereafter, depending on need for the subject matter expert. The secondee is expected to work five days per week.

ICAO may avail itself of the services of personnel seconded by governments, other international agencies or educational, scientific, research or other institutions. Seconded personnel are engaged under a Trust Funded or Gratis (detached expert) arrangement, in accordance with terms and conditions stipulated in a Memorandum of Understanding between ICAO and sponsor of the seconded person. During the period of assignment with ICAO the seconded individual will be considered an "Official" of ICAO.

Once engaged by ICAO the seconded individual will be under the sole authority of the Secretary General of ICAO and all relationship with the releasing Government/Agency will be held in abeyance during the period of employment with ICAO.

As detached expert: The individual is detached from the releasing government/Agency but is assigned to work for ICAO.

Trust Fund arrangement: Funds are deposited by the Government/Agency with ICAO for the purpose of engaging personnel normally subject to the stipulations of a Memorandum of Understanding.

NOTICE TO CANDIDATES

ICAO does NOT charge any fees or request money from candidates at any stage of the selection process, nor does it concern itself with bank account details of applicants. Requests of this nature allegedly made on behalf of ICAO are fraudulent and should be disregarded.