International Civil Aviation Organization
Job Description <mark>[Applicable solely to secondment]</mark>

POSITION INFORMATION

Post Title:	Forecasting and Statistical Modelling Analyst (2 posts)	Duration of Secondment:	Three (3) years
Grade Level:	P2	Deadline for applications:	
Duty Station:	Montreal	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) in ICAO is responsible for providing technical guidance to the Air Navigation Commission (ANC), the Council and the Assembly. ANB provides technical expertise in aviation-related disciplines to States, industry and all elements of the Organization. The Bureau is also responsible for maintaining and 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 and develops related procedures and guidance material. The Bureau also manages the Universal Safety Oversight Audit Programme Continuous Monitoring Approach (USOAP CMA).

The Multidisciplinary Priorities Section (MDP) within ANB is responsible for the development, deployment, and maintenance of iSTARS. The Integrated Safety Trend Analysis and Reporting System (iSTARS) is a web-based Modern Analytical Platform providing a quick and convenient interface to a collection of safety and efficiency datasets and web applications to make safety, efficiency, and risk analyses. MDP also works on Commercial Space, as well as other emerging modes of air transport across the safety and air navigation programmes. MDP is also the focal point for innovation for ANB.

Reporting to the Aviation Analysis Officer, the incumbent will support analytical and forecasting activities within the iSTARS environment. The incumbent will collaborate with internal and external data suppliers to process, cleanse, and verify data integrity to ensure high-quality analytical inputs and outputs. Using strong expertise in Python-based statistical modelling, data science, and machine learning, the incumbent will assist in enhancing existing iSTARS analytical models, tools, and methodologies to improve automation, analytical precision, and usability. The role will also support strategic foresight activities on Artificial intelligence (AI) in aviation, contributing to the identification and analysis of emerging trends, technologies, and their potential implications for aviation safety and operational efficiency.

MAJOR DUTIES AND RESPONSIBILITIES

Function 1 (incl. Expected results)

Assists in the development and maintenance of innovation and safety forecasting models, achieving results such as:

- Contribute to the design, implementation, and refinement of statistical, machine learning, and time series models to predict trends in aviation innovation, operational performance, and safety.
- Support iSTARS by enhancing analytical models and tools to generate accurate, actionable forecasts.
- Continuously monitor model performance, incorporating innovation and aviation data and adjusting for evolving operational conditions.
- Integrate strategic foresight principles to anticipate emerging technological, operational, and safety risks in aviation.

Function 2 (incl. Expected results)

Assists in the analyses and interpretations of the innovation and safety data, achieving results such as:

- Collect, clean, and process large innovation and safety datasets from various sources to ensure accuracy and completeness.

- Perform exploratory data analysis (EDA) to identify patterns, correlations, and anomalies in aviation data.
- Conduct analysis aimed at understanding underlying factors contributing to safety incidents and near misses.
- Translate complex statistical findings into recommendations for decision-makers and non-technical stakeholders to consider.
- Support ICAO's work on AI in aviation by applying strategic foresight techniques such as horizon scanning, scenario building, and trend analysis to identify emerging opportunities and challenges.

Function 3 (incl. Expected results)

Prepares reports and visualizations to communicate analytical and forecasting results related to innovation and safety data, achieving results such as:

- Perform upkeep of dashboards and other analytical tools to provide ongoing tracking of key aviation performance metrics.
- Present findings and strategic insights during meetings and presentations.
- Generate periodic and ad-hoc innovation and foresight reports to inform organizational planning and policy adjustments.

Function 4 (incl. Expected results)

Contributes to the alignment of analytical outputs with ICAO's innovation and safety objectives, achieving results such as:

- Work closely with other sections of ANB and other offices of the Organization to understand their forecasting needs and suggest solutions.
- Provide technical support to team members on statistical methods and forecasting tools related to aviation.
- Stay current with industry trends, best practices, and emerging technologies in statistical modelling and forecasting for aviation safety.
- Collaborate with regulatory bodies and industry groups to ensure compliance with safety standards.

Function 5 (incl. Expected results)

Performs other related duties, as assigned.

IMPACT OF THE OUTCOME OF THE POSITION

This is a key supporting role in strengthening ICAO's analytical and forecasting capabilities. By supporting the development and implementation of advanced statistical models, enhancing the analytical functions of iSTARS, and applying strategic foresight principles within analytical and planning processes, the work generates actionable insights on innovation in aviation, safety, and operational performance. Expected outcomes include improved analytical precision, more informed and forward-looking decision-making, and a proactive approach to anticipating and managing future aviation system challenges. In addition, this position will contribute to ICAO's continued evolution toward a modern, data-driven, and foresight-informed analytical environment.

WORK RELATIONS AND CONTACTS

Title and level	
a) Inside the Organization	
• ANB Sections	Coordinating forecasting and statistical modelling activities, as well as ensuring data accuracy and performing data analysis.
• Regional Offices, Technical Officers from different ICAO bureaus	Coordinating forecasting and statistical modelling activities, as well as ensuring data accuracy and performing data analysis.
b) Outside the Organization	
• Contracting States, International Organizations	Coordination as needed to ensure robust forecasting and statistical models are established
• State Regulatory Bodies, other UN agencies, and industry	Collaborate and guide on matters related to statistical modelling and forecasting

QUALIFICATIONS AND EXPERIENCE

Education

Essential

An advanced-level university degree (Master's degree or academic equivalent) in Mathematics, Statistics, Engineering, Economics, or related field, is required. A first-level university degree in combination with two additional years of qualifying experience in Mathematics, Statistics, Engineering, Economics, or related field, may be acceptable in lieu of the advanced university. degree.

Professional experience

Essential

A minimum of two (2) years qualifying experience in X Statistical Forecasting, Modelling, data analysis, and data visualization.

Desirable

Experience with Python or R.

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

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.

Communication: Speaks and writes clearly and effectively; listens to others, correctly interprets messages from others and responds appropriately; asks questions to clarify, and exhibits interest in having two-way communication; tailors language, tone, style, and format to match the audience; demonstrates openness in sharing information and keeping people informed.

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.

Accountability: Takes ownership of all responsibilities and honours commitments; delivers outputs for which one has responsibility within prescribed time, cost and quality standards; operates in compliance with organizational regulations and rules; supports subordinates, provides oversight and takes responsibility for delegated assignments; takes personal responsibility for his/her own shortcomings and those of the work unit, where applicable.

MODE OF SECONDMENT

The duration of the secondment is three (3) years, which can be extended for an additional two (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 Trusted 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.