

IFAR Press Release:

Visit of the IFAR Delegation to ICAO and Canadian research and industry facilities

The IFAR Community represents 34,000 researchers committed to developing innovative solutions to the challenges facing aviation in the 21st century for the public benefit. The IFAR-ICAO MoU signed in Montreal on April 5th, 2022 strengthens the partnership between the world's aviation research establishment network and the world's aviation standards body.

A delegation of [IFAR](#) (International Forum for Aviation Research) Principals, Steering Committee members and researchers from nine countries visited the [National Research Council Canada](#) (NRC) in April 2022. NRC is Canada's largest federal research and development organization.

Visit to NRC in Ottawa

NRC's President Iain Stewart welcomed the IFAR delegation to NRC's Aerospace Research Centre. Ibrahim Yimer, the current chair of IFAR and the Director-General of NRC's Aerospace Research Center, offered IFAR members insights into NRC's aeronautics research portfolio, particularly on hybrid electric aircraft, advanced air mobility, inflight integrated reality simulation and aerospace manufacturing.

The IFAR delegation was offered a unique opportunity to tour the NRC facilities and engage with NRC researchers across a diverse range of presentations and to see two live aircraft demonstrations: HEAT (Hybrid Electric Aircraft Testbed) and CVLAD (Canadian Vertical Lift Autonomy Demonstration). NRC highlighted its [Centre for Air Travel Research](#) in Ottawa.



@NRC

NRC has been working on converting a Cessna 337 aircraft to use a hybrid electric propulsion system. IFAR members had the opportunity to witness one of the first flights of NRC's HEAT (Hybrid Electric Aircraft Testbed) aircraft using hybrid electric propulsion.

NRC converted a Bell 412 helicopter into an in-flight laboratory allowing to flight test CVLAD (Canadian Vertical Lift Autonomy Demonstration) technologies. The CVLAD project aims to develop the capabilities for an autonomous take-off, route following, traffic avoidance, landing zone evaluation and selection, and safe landing. The sensors and technologies being applied, including artificial intelligence, could improve operational safety and reduce pilot workload on the path to full autonomy. The IFAR delegation witnessed the Bell 412 perform a take-off, fly a pre-set path, approach a landing zone, evaluate and select a safe landing spot, and perform a landing entirely autonomously.

Following the visit to NRC's facilities in Ottawa, the IFAR delegation traveled to Montreal where NRC showcased its [Aerospace manufacturing technologies centre](#) – a facility devoted to developing new manufacturing techniques for the aerospace industry.

IFAR-ICAO meeting

Since signing a Declaration of Intent (DoI) in November 2020, IFAR and ICAO have been collaborating to support innovation in aviation. The DoI led to the creation of a Joint Task Force with the goal to provide ICAO, the international standard-making body for international civil aviation, with a scientific global consensus from the perspective of IFAR, on the technical challenges in implementing Urban Air Mobility (UAM).

UAM Scientific Assessment

In 2021, the IFAR-ICAO Joint Task Force began drafting a UAM Scientific Assessment featuring inputs from 81 researchers from across IFAR with guidance from ICAO experts.

The ongoing IFAR Scientific Assessment of UAM is providing an international research perspective on technology & societal acceptance area priorities alongside operationalization, including industry and regulatory assessments. The Scientific Assessment is comprised of 17 collectively-identified and highly relevant sub-topics. During technical meetings in Montréal, two of the teams (Airspace Integration and Safety) discussed their preliminary findings with ICAO technical experts. These discussions were also an opportunity to identify the best format for working together: experts from both sides insisted on an informal approach that has helped reach a better understanding of the needs and the expectations of both parties more quickly. Some of the key questions under discussion were “How do the safety standards impact technology development (cost, time, and quality)?” and how to set standards/precedence with the widest possible usability- like “Harmonization in safety requirements for UAM at an international level”.

The IFAR-ICAO Joint Task Force enables IFAR members to provide their research expertise to ultimately help ICAO be better prepared for the coming innovation that will impact international civil aviation.

ICAO MoU

The centrepiece of the IFAR delegation's visit to Canada was the signing of the Memorandum of Understanding with the [International Civil Aviation Organization](#) (ICAO) on April 5th 2022 by IFAR Chair Ibrahim Yimer and ICAO Secretary General Juan Carlos Salazar.



The agreement marks a milestone in IFAR's external partnerships to date

The MoU lays the foundation for the next stage of the IFAR-ICAO Collaboration. The agreement aims to foster collaboration between ICAO and IFAR in support of each other's strategic objectives and activities, promote innovative and sustainable development of international civil aviation globally, collaborate on the formulation of scientific assessments pertaining to mutually-identified innovation driven areas through joint research activities and information sharing (picture left @DLR).

Meeting with the ICAO Council and Next Steps

The signing ceremony was followed by a visit to ICAO's headquarters in Montréal on the invitation of ICAO Council President Salvatore Sciacchitano. IFAR members introduced IFAR and presented on the progress of the UAM Scientific Assessment to the ICAO Council

The discussion with the ICAO Council President and ICAO Council members (both in person and online) offered IFAR and ICAO an opportunity to further explore the mutual benefits offered by the partnership.



The role of IFAR has been to coordinate the international research community to work with ICAO to support forward-looking standards. Ibrahim Yimer emphasised the important position of research organizations in making sure constant innovation in aviation is taking place. Since IFAR represents publicly-funded research organizations, its input is guided by a commitment to ensuring the public good (picture right @ INCAS).

Industry Visits

The IFAR event was concluded by a series of visits to the Canadian Aerospace industry in Montreal, including high-level meetings with [Aero Montreal](#) and [CRIAQ](#), and tours through [Bell Flight](#), [Airbus Canada](#) and [Bombardier](#).

Annex:

IFAR, the International Forum for Aviation Research, is the world's aviation research establishment network. IFAR is established on a voluntary, non-binding basis. IFAR aims to connect research organisations worldwide, to enable the information exchange and communication on aviation research activities and to develop among its members a shared understanding on challenges faced by the global aviation research community. ([About us - IFAR.AERO](#))

The International Civil Aviation Organization (ICAO) is funded and directed by 193 national governments to support their diplomacy and cooperation in air transport as signatory states to the Chicago Convention (1944). Its core function is to maintain an administrative and expert bureaucracy (the ICAO Secretariat) supporting these diplomatic interactions, and to research new air transport policy and standardization innovations as directed and endorsed by governments through the ICAO Assembly, or by the ICAO Council which the assembly elects. ([About ICAO](#))