

**33rd Congress of the
International Council of
the Aeronautical Sciences**



**Stockholm, Sweden
4 - 9 September 2022**

**The Swedish Aeronautics
Community welcomes ICAS 2022
to Stockholm**



Welcome by FTF & Innovair

Welcome to the ICAS 2022 Congress in Stockholm, Sweden



Dr. Roland Karlsson
President, The Swedish Society
of Aeronautics and Astronautics



Dr. Anders Blom
Program Director, Innovair

On behalf of FTF - the Swedish Society of Aeronautics and Astronautics - and Innovair - the Swedish Strategic Programme for Aeronautics, we are proud to invite professionals from academia and industry, as well as governmental representatives, to attend the 33rd Congress of the International Council of the Aeronautical Sciences (ICAS).

ICAS 2022 shall be held at the Stockholm Waterfront Congress Centre in Sweden, on 4-9 September 2022, and FTF and Innovair host the event.

ICAS was established in 1957 as a non-government, non-profit scientific organisation with the mission to advance knowledge and facilitate collaboration in aeronautics. Today ICAS gather members from 30 countries from five continents. One of the essential activities of ICAS is the biennial international Congress. Since the first ICAS Congress in Madrid 1958, this has grown to be the world's primary forum for aeronautical technology. The Congress attracts leading experts and leaders of top aerospace research centres, industries, universities, and representatives from governments. The topics of the Congress include the most recent scientific achievements in aeronautics and top priorities in the design of future generation aircraft, engines, and systems to cater for the greening of sustainable aviation. Moreover, the Congress is a unique platform for companies to showcase products and services, and to network with professionals from all over the world. An essential part of the gathering is also to introduce and encourage young people to enter the aeronautics sector via higher education and research activities.

Sweden has a long and successful tradition of design and production of aircraft and propulsion systems, both for the civil and military markets which is unique for a small country. Furthermore, the Swedish industry, and society, are well-known for efficient, innovative and non-hierarchical organisations. Besides our big companies, there is a structured innovation system including academia, research institutes, and an increasing number of sub-contractors available in Sweden.

We envisage that the ICAS 2022 Congress in Stockholm will attract an unprecedented number of papers for presentation and discussion, and we anticipate more than 800 delegates from some 40 countries. When the ICAS congress now is back in Europe after South Korea 2018, Brazil 2018 and China 2020/2021 we expect an increasing number of European participants. However, in the case that the world still struggles with effects from the covid-19 pandemic, we also prepare for other alternatives than a traditional full-scale physical meeting of people.

We very much look forward to welcoming you to ICAS 2022 in Stockholm.

www.icas2022.com

www.ftfsweden.se

www.innovair.org

Welcome by ICAS

Welcome Message from ICAS President



Dr. Joao Luiz Azevedo
President, International Council
of the Aeronautical Sciences

It is with great pleasure that we would like to invite you to the 33rd Congress of the International Council of the Aeronautical Sciences (ICAS) which will take place in Stockholm in 4–9 September 2022. The ICAS Congress is returning to Stockholm after 32 years. Our Swedish colleagues are striving to uphold the ICAS tradition of bringing together a global array of topics and participants as the only true international forum that covers the world of aeronautics. The scientific portion of the congress will take place at the Stockholm Waterfront Congress Centre, which is a world-class facility, extremely conveniently located and that affords beautiful views of the Stockholm waterfront.

As you are certainly aware, the Covid-19 pandemic has been creating havoc in our industry and it is a life-and-death threat to aviation and the aeronautical industrial complex worldwide. We would like the 33rd ICAS Congress to be a celebration of the resilience of our industry as we, the global aeronautical community, are finding ways to continue to deliver the systems and the value that our customers expect despite the considerably shrunk market, at least for commercial aviation. We hope that the moment of pause, which was necessarily inflicted upon us by this pandemic, will serve as a way of focusing our objectives, improving the technical quality of our work and reminding us that we are part of a global system that requires cooperation and understanding. Therefore, once again, the ideals that guided Theodore von Kármán and all the ICAS pioneers are certainly relevant for us at this difficult time.

As it is usual with the ICAS Congress technical program, we are planning to cover the core aeronautical disciplines such as Aircraft Design, Aerodynamics, Propulsion, Materials and Structures, Systems and Subsystems, and Controls. Moreover, as ICAS has been doing for the last congresses, current topics that address emerging technologies that lead to improved performance, a cleaner or quieter environment, or more agile development processes are also planned for the technical program. However, consistent with the unprecedented times that we are living through, the program will also address technical aspects associated with healthier and safer air circulation conditions inside airplanes, airport procedures and other issues that became relevant throughout the current pandemic. Therefore, you should expect the same usual breadth in the technical program as in all ICAS Congresses, but with some special sessions to address Covid-19 consequences to our aeronautical industry.

We hope to see you in Stockholm in 2022, we encourage you to submit your work for a technical presentation at the congress and we are looking forward to the opportunity of, once again, welcoming our ICAS friends and colleagues to our biannual gathering of the aeronautical sciences, technology and industry.

www.icas.org

Welcome to Stockholm



Photo: H.Trygg/Visit Stockholm

Getting here

With direct flight connections from more than 160 destinations, getting to Stockholm Arlanda Airport couldn't be easier. From there, it's just a short hop into the city center. And public transport is excellent, so getting around the city is easy.

Everything within easy reach

Stockholm is a metropolitan city of some 2,3 million inhabitants, yet nothing is never far away. You'll find world-class conference venues and a wide selection of hotels, cultural sites, shops, restaurants, cafés and bars within easy walking distance. Not to mention water, forests and unspoilt nature.

Extracurricular activities

The 30,000 islands of the Stockholm archipelago are irresistible. And there are many ways to explore them. Join a guided group or get away from it all on your own. Choose from sailboats of all sizes, or hire a kayak, canoe or seaplane. Dine onboard a turn-of-the-century steamer and marvel at the scenery. If you like adventure, experience the G-forces of a thrilling RIB boat ride.

Stockholm City is built on 14 islands, with glittering water in every direction.



Photo: Visit Stockholm

The water is clean, good enough to drink and for salmon to swim in! You can swim a stone's throw from the city center. It's a harmonic blend of old and new, ultramodern and medieval. Take a walk among the narrow, cobblestoned streets of the Old Town and feel the presence of history all around you.

City of Science

Stockholm is one of the most knowledge-intensive and innovative regions in the world and home to two of Europe’s most important technology and life sciences communities. Prestigious universities like the Royal Institute of Technology (KTH) and Karolinska Institutet attract students from all over the world. Moreover, the Nobel Prizes are awarded in Stockholm every year in December.



Photo: Nobel Media/Alex Ljungdahl

The Unicorn factory

Spotify No. 1 music streaming service	Minecraft 100+ million users, sold for \$2.5 Bn
Toca Boca 70+ million downloads	Skype 300+ million users, sold for \$8.5 Bn
Lifesum Top health/fitness app in App Store	Truecaller 100+ million users, raised \$80 million
Candy Crush 500+ million users, IPO \$7.5 Bn	Fishbrain No. 1 app for No. 1 hobby: fishing
The Green Call Eutlon Designed 1979 by Lala Chigren from Stockholm	Ericsson 40% of global mobile traffic runs through Ericsson networks

Thanks to successful startups like Spotify, Skype, King, Klarna and Izettle, Stockholm has become a global tech and startup hub. Dubbed the “Unicorn factory” by the Financial Times, Stockholm has the most unicorns per capita in the world after Silicon Valley.

The birthplace of music tech

Stockholm is famous for ranking among the world’s top exporters of music as well as being the number-one hub for the music tech industry. Ever since the 90s, a lot of the world’s biggest pop acts come to Stockholm to produce their music in cooperation with the city’s many music creators. Discover the city where some of the defining moments within music and tech took place.



Photo: Visit Stockholm

For more information about Stockholm download the [Stockholm official guide](#) and check out this [Stockholm video](#).

Stockholm Waterfront Congress Centre

The venue for the ICAS 2022 congress will be **Stockholm Waterfront Congress Centre**, which is the newest and most versatile large-scale venue in Stockholm.



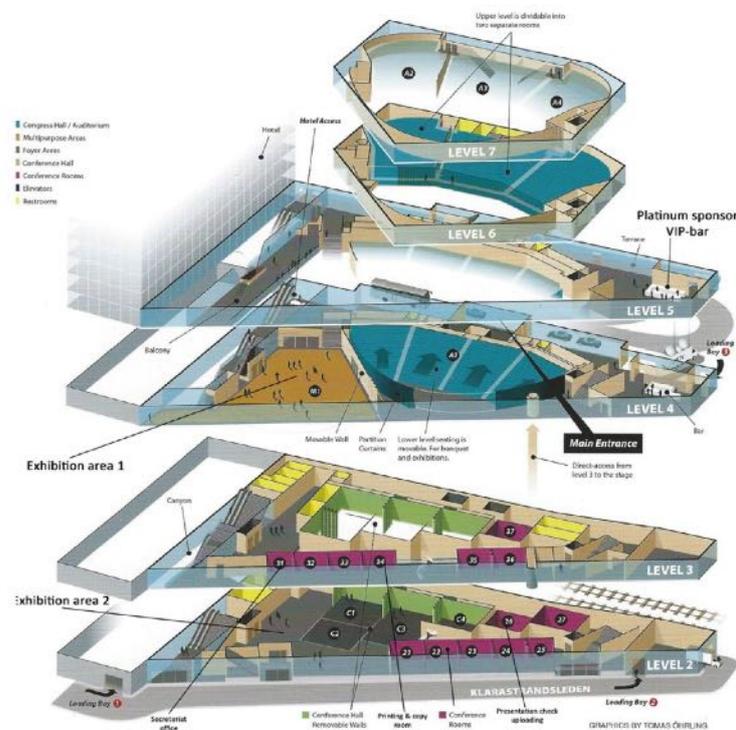
Photo: Waterfront

Stockholm Waterfront Congress Centre in front of the Radisson Blue Waterfront Hotel

Located at **the very heart of Stockholm**, the venue offers convenient access to all that Stockholm has to offer. The finest shopping, culture and entertainment experiences are just minutes away. The three-story building offers **stunning views** of the City Hall and the surrounding waters.

The congress centre is only an escalator away from the Central Station! The location is just a two-minute walk from the Central Station, the arrival point for intercity trains, buses, subway links and the Arlanda Express airport shuttle.

Stockholm Waterfront facilities consist of a large congress hall with capacity for the **largest international events** as well as **smaller work-group meetings**.



Read more about the venue at: www.stockholmwaterfront.com and make a **video tour** around the Stockholm Waterfront Congress Centre.

ICAS 2022 Accommodation

We have reserved hotel rooms at very competitive rates in various hotels in different price categories. Prices will be made available on the website www.icas2022.com closer to the time of the congress. You are encouraged to book your hotel room through our online booking.

A. [Radisson Blu Waterfront Hotel](#) – adjacent to the Congress Centre and Central Station
Nils Ericsons Plan 4 111 64 Stockholm.



Photo: Waterfront

Several other hotels are located within a few minutes' walk. Two examples are listed below, and more alternatives will be presented on our website.

B. [Scandic Continental](#)

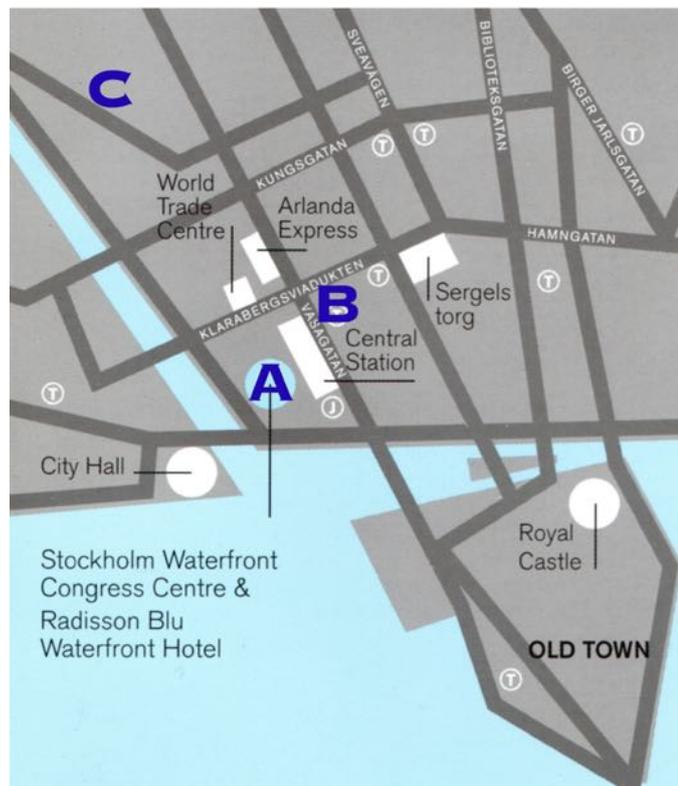
Vasagatan 22, Stockholm



C. [Generator Hostel](#)

(an inexpensive alternative for students)

Torsgatan 10, 111 23 Stockholm



ICAS 2022 Technical Tours

Technical tours will be arranged on Friday September 9th as outlined below.

Read more about aeronautics in Sweden on the congress website www.icas2022.com

Saab in Linköping including a visit to the Air Force Museum

This will be a full day tour with bus (2 hours from Stockholm) to visit the Saab facilities in Linköping. Saab is well known for the development of many generations of military aircraft as well as its commuter aircraft Saab 340 and Saab 2000. Saab has together with Boeing developed the new T-7A Red Hawk trainer. Saab Aeronautics today offers advanced airborne systems, related subsystems, Unmanned Aerial Systems (UAS), aerostructures, and services to defence customers and commercial aerospace industries worldwide.



A visit to the Air Force Museum located near Linköping will be included.
The aircraft below and many more are on display.

A FEW ACCOMPLISHMENTS IN THE PAST



- First swept-wing fighter in Europe
– **J29 Flying Barrel** (1948)
- First Saab supersonic aircraft
– **J32 Lance** (1952)
- First double-delta-wing aircraft
– **J35 Dragon** (1955)
- First canard-wing fighter
– **AJ37 Thunderbolt** (1967)
- First JAA/FAA jointly certified airliner
– **Saab 340** (1984)
- First fourth generation fighter
– **JAS39 Gripen** (1988)



GKN Aerospace Engine Systems in Trollhättan

Trollhättan is located 400 km west of Stockholm at the lake Vänern. This is also a full day tour but by a 50 min flight from Bromma airport (10 km from downtown Stockholm).

GKN Aerospace Engine Systems, located in Trollhättan, Sweden (formerly Volvo Aero) develops and manufactures components for aircraft, gas turbines and rocket engines with high technology content in cooperation with the world's leading producers.

The visit will comprise presentations of aerospace activities at GKN Aerospace Engine Systems as well as a visit to PTC Innovatum, a research arena for industrial production processes R&D on metal-based aerospace products.



PS

Trollhättan is also the city where the Saab cars were produced from 1946-2011. If you are interested in Saab cars, we recommend a visit to the Saab car museum in Trollhättan.

www.saabmuseum.se/en/

ATC Arlanda – Remote Tower Centre

This is a half-day tour to Arlanda – the Stockholm main airport – located 40 km north of downtown Stockholm. The Swedish Air Navigation Service Provider (LFV) and Saab were the first in the world to put remote air traffic control towers into operation. The company *Saab Digital Air Traffic Solutions* is jointly owned by Saab and LFV. From the Remote Tower Centre Stockholm, a number of Swedish airports are remotely controlled.



ICAS 2022 Social Events

Welcome Reception Sunday September 4th

The Welcome Reception on **Sunday evening 18:00-20:00** will be held at the Stockholm Waterfront Congress Centre, where **registration will be opened from 16:00 to 19:00**.

Congress Reception Monday September 5th

The Congress Reception on Monday will be held at the Stockholm City Hall, which is the seat of the Stockholm City Council. The Blue and Golden Halls, among the world's finest banquet premises, are what people most frequently associate with City Hall, where the Nobel Banquet is held every year in December.



Photo: H.Trygg/Visit Stockholm

Student Party Tuesday September 6th

The student party on Tuesday evening will be held at KTH – the Royal Institute of Technology – in the student's union house.

Congress Banquet Thursday September 8th

The ICAS 2022 Congress Banquet will be held at the **Vasa museum**, which is a magnificent setting for a banquet with dinner tables set up under the prow of the old ship. A truly unique experience – leaving you with everlasting memories.

About the Vasa Museum

In 1961, the Vasa was raised from the depths of Stockholm harbour where she had lain for 333 years. Now housed in an award-winning museum, seeing this Royal flagship up close is a never-to-be-forgotten experience. Vasa is a real treasure from the 17th century that offers us a rich history, from the work at the shipyard to life on board a warship. This is the most visited museum in Sweden.



Photo: Vasa Museum

ICAS 2022 Accompanying Persons Programme

Stockholm with surroundings has a lot to offer visitors. Magnificent art, dynamic culture, ornate palaces, medieval history and unspoilt nature. Some accompanying persons may wish to visit attractions on their own but different organized tours will be offered on Monday through Thursday. A selection of possibilities is listed below.

Old Town walkabout

Gamla Stan (the Old Town) is one of the best preserved in Europe. This is where Stockholm was originally founded in the 13th century and the medieval atmosphere is still evident, with narrow cobbled streets, low-rise old-style houses, squares, workshops, and boutiques.



Photo: J. Wikström/Visit Stockholm

Drottningholm Palace by boat (include. lunch)



Photo: J. Wikström/Visit Stockholm

The Drottningholm Palace, situated on Lake Mälaren just 15 km from Stockholm, dates from the 17th century. The palace, which is Sweden's Royal Residence, was built along the lines of Versailles in breath-taking grounds. The 18th century Royal Court Theatre is the world's oldest playhouse still in use and its original scene-changing machinery is still intact. The palace - along with the court theatre, park and Chinese Pavilion - is one of the UNESCO cultural heritage sites in Sweden.

Archipelago Tours

The Stockholm archipelago has about 30.000 islands! Different tours are offered like the 2.5 h long guided lunch cruise on the old steamer M/S Östanå I, built 1906 a classic pearl and well-known element in the archipelago. Another option is a tour to Vaxholm, a picturesque town in the archipelago, with the S/S Stockholm.



Photo: J. Wikström/Visit Stockholm



Photo: ABBA – The museum

ABBA The Museum

ABBA The Museum is no ordinary museum. It's not just about the original costumes, gold records and so many other wonderful items of memorabilia – it's about you! Feel what it's like to be on stage with ABBA, to sing at the famous Polar Studio or to dress up in those legendary costumes (virtual). An interactive journey through one of the greatest success stories in music.



Photo: J. Wikström/Visit Stockholm (above and front page)

**Plan to attend ICAS 2022 Congress in Stockholm, Sweden 4-9 September 2022.
For updated information visit the websites: www.icas2022.com or www.icas.org.
Call for Papers will be published in July 2021.**

Photo: H. Trygg/Visit Stockholm

