Internationalisation

An excerpt from

NRIA Flyg 2020

innovair

Perspective: Internationalisation

We are moving towards an increasingly internationalised world, particularly with regard to innovation. Here we present our collaboration with other countries.

NEED FOR PARTNERSHIP

Sweden's unique conditions with probably the largest export-reliant economy after Germany, most large companies per capita and only ten million inhabitants – less than many major cities – place it in a vulnerable position in the light of ongoing globalisation.

Innovair's view is that the aeronautics sector, and probably other high-technology activities in Sweden, must commence with the internationalisation of their operations immediately, whilst we still have a position of strength to negotiate from. Of course, international contacts have existed for a long time. But here we refer to strategic structured partnerships with selected countries, which facilitate participation of Swedish innovation actors in international contexts, which in turn leads to increased competitiveness for all parties. These bilateral or multilateral partnerships should be seen as a strategic complement to the major EU programmes in which, naturally, Sweden will continue to participate.

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It is not just for a small country like Sweden that this is important. For example, Germany believes this type of collaboration is necessary to meet the future competition from China, and later, India and other highly populated nations. Increased competition is also to be expected within industrial sectors that were previously the preserve of Western industry. Consequently, Germany has been very positive about the bilateral collaboration with Sweden within the aeronautical area, which was initiated in 2019. Other countries with which we prioritise collaboration today – and who have good reasons for co-operation with us – are Brazil, as a result of the Gripen export and the

12 **RESULT: OFFICIAL BILATERAL COLLABORATION** Sweden has created bilateral strategic innovation collaboration with three selected countries.

In 2014, concluding 17 years of negotiation, Saab won the contract to deliver – in the first stage – 36 of the latest version of the Gripen aircraft to Brazil. The order is valued at SEK 39.3 billion, which probably made it Sweden's largest ever export order. This represented the formal starting point for a host of technical collaborations between Sweden and Brazil.

The Swedish Government offices also co-operate with the country's aeronautical actors to promote innovation collaboration and future exports for other industrial sectors. At government level, a "high-level group" (HLG) for aeronautics collaboration has been established, where Innovair participates together with secretaries of state from both countries. Innovair also participates in the executive committee and in various technical subgroups, where the activities have initially focused on low TRLs in order for the parties to get to know each other and for these activities to be carried out with relatively limited resources. Programme calls for tender have been made between Vinnova and the corresponding funding agencies in Brazil and Innovair has also financed a number of strategic projects.

During the course of 2019, collaboration has been focused on joint development of and decisions on a so-called air-domain study focused on co-operation between civil and military aviation technology. In the long term, Innovair wants to raise the TRL level of collaboration because it is not until the very expensive demonstrator phases that the countries really benefit from sharing costs and technical expertise. However, this requires that the countries first identify a technical direction and goal, for example, a technical demonstrator – physical or virtual – that both countries share an interest in

RESULTS AND CHALLENGES DESCRIBED IN SUMMARY ON PAGES 38–41

On the civil side, Great Britain has large and important OEMs in the form of Rolls-Royce on the engine side and Airbus wing development on the aircraft side. Great Britain has also for a long time invested in advanced manufacturing technologies, via various so-called catapult centres, to re-industrialise the country.

On the military side, Great Britain is now investing heavily in re-establishing a comprehensive capability for fighter aircraft systems. Sweden and Great Britain have determined that the countries have many similarities and common interests. In July, 2019, a bilateral memorandum of understanding was signed between the British and Swedish governments for collaboration on future fighter-aircraft systems. The agreement will explore the possibility of joint technology development and future procurement of materiel as well as continuous further development of existing fighter-aircraft systems.

Research collaboration between Sweden and Great Britain has so far been primarily civil as the organisation in Great Britain that co-ordinates, funds and evaluates innovation within the aviation sector, Aerospace Technology Institute (ATI), was solely mandated to manage the country's civil aerospace activities. But the recently signed agreement is expected to increase the total Swedish collaboration with Great Britain significantly.

Intense bilateral collaboration was delayed until 2018 when the countries jointly announced funding for co-operation within civil aviation technology with the help of the Eureka mechanism in Europe, a new activity for both Vinnova and its British counterpart Innovate UK. The newly started projects are financed by ATI and Innovair for each country's participants. Both industry and universities from both countries must participate. The suitable/ appropriate areas for joint projects are discussed in specific collaboration between Innovair, ATI and the major industries, including Rolls-Royce, GKN Aerospace and Airbus with their Swedish partners.

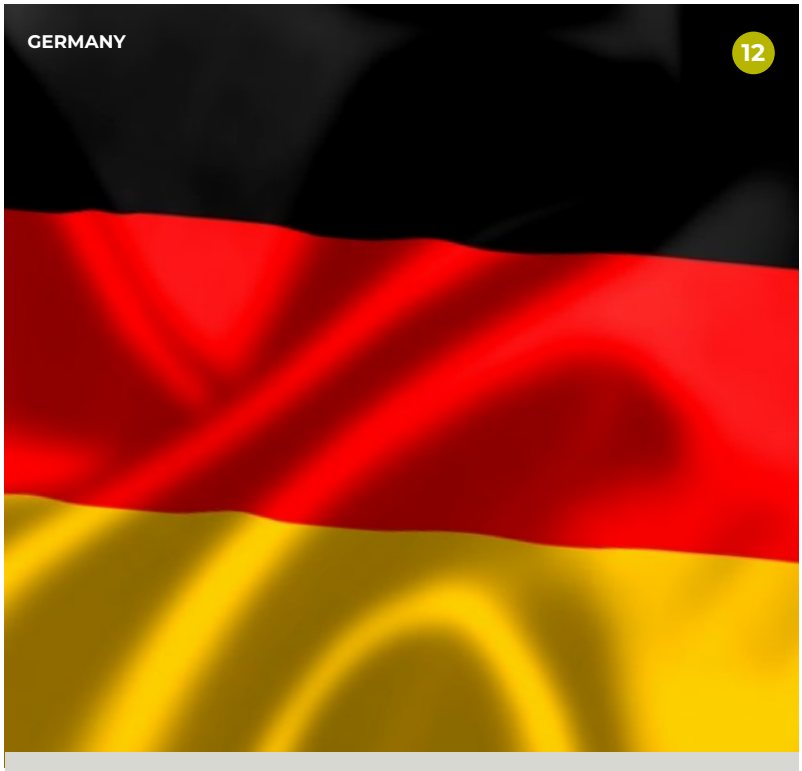
IFFP
The National Aeronautics Research Programme NFFP (see page 13) contains from, and including, 2017 a section for international research collaboration, the International Aeronautics Research Programme (IFFP). Initially, the total funding is approximately SEK 15 million per year, distributed among the prioritised countries Brazil, Great Britain and Germany.

Government's willingness to use this as a catalyst for the promotion of collaboration in other areas, as well as Great Britain where we have already had joint calls within the existing Eureka mechanism in Europe.

In the long term, we want to extend collaboration to include the USA and France (where we have ongoing collaborations with certain stakeholders, but no funding for a systematic structure on national level), and additional countries may become relevant in association with other major export deals.

STRONGER TOGETHER

The aforementioned collaborations are not just about carrying out joint technical projects. To the same extent, we can use these contacts to jointly respond to different types of European fora, regarding both direction and calls for tender within, for example, the EU's framework programme and the major joint technology initiatives such as Clean Sky and SESAR, as well as to the European Defence Fund (EDF) programme. Of course, each



Innovair initiated a meeting with the German Ministry for Economic Affairs and Energy (Bundesministerium für Wirtschaft und Energie) spring, 2017. The reception was very positive and technical bilateral collaboration has already commenced. This is done with simpler administrative procedures than the UK collaboration as a result of Innovair's actors having gained access to participation in the German Luftfahrtforschungsprogramm (LuFo), which currently is by far the largest national aviation technology programme in Europe.

We have devised a system whereby parties in the two countries can apply for funding together in connection with LuFo open calls. When both countries want to finance an activity, LuFo and Innovair contribute funding to each country's party. Prior to the first round of open calls, German industrial delegation visited Sweden with participants from Airbus, Rockwell-Collins, MTU and BDLI, the German organisation for the aerospace industry with over 230 member companies. Sweden participated with a similar group of actors and the two countries held industry-specific talks to find common project orientations.

Innovair has continued to have regular contacts with both the German Ministry and the technical management for LuFo with a view to gradually intensifying the collaboration now initiated.

country provides its own response, but for Sweden, the chances of being heard are significantly greater if larger countries such as Germany and Great Britain (until recently, at last) advance the same argument.

It should be noted that the partner countries we are interested in invest more in the aeronautical area per capita than Sweden, and bearing in mind their higher populations it is easy to see that we have difficulty matching their investments. Hence, collaboration must be selective and have long-term stability.

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D **CHALLENGE: NEED FOR INCREASED PARTICIPATION IN INTERNATIONAL PROGRAMMES** Swedish innovation actors need to significantly increase their participation in European development programmes, for environmental and export-related reasons, which will require a corresponding technological capability in the whole innovation system.

E **CHALLENGE: NEED FOR CONTINUITY** The whole innovation system needs to be interlinked, in TRL chains and over time, which means that continuity and long-term considerations are critical for Sweden's innovation capability.

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EXCERPT FROM NRIA FLYG 2020

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