Sweden's aerospace capability

Sweden is one of very few nations in the world with the capability to design aerospace systems. For a country of our population, our capability is totally unique. Why is this important?

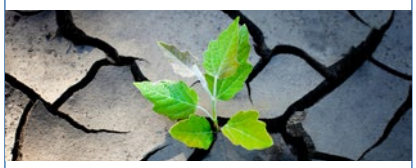
A highly innovative sector

Aerospace is a forward-thinking, innovative and adaptable sector in Sweden that exploits our well-regarded reputation for world-class knowledge, skills and investment in research for product development. The aerospace sector provides benefits in a number of areas, all of which might not be obvious at a first glance, and strong Swedish innovation is prominent in all these areas.

Benefit: Strategic resilience

Indigenous capability provides strategic resilience. One of the primary sectors providing this for Sweden is aerospace technology, making our nation capable of maintaining a strong position in relation to the surrounding world, be it civil competition or military independence.

In civil life, the most important advantage of maintaining a national



aerospace capability is to secure a national skill, which will lead to a strong position governing international demand for national innovation. This results in opportunities for all stages of the innovation chain, from basic research to market.

On the military side, a national aerospace capability provides the self-made ability to recognise and anticipate emerging threats and to respond in an appropriate timescale. This is crucial for our small nation's chances of maintaining national sovereignty.

The Swedish aerospace sector is instrumental for both these aspects. Both air and space parts of the sector contain highly competitive industry with extensive knowledge and technical expertise, with tight and efficient connections to Sweden's internationally acclaimed academic research.

Benefit: Mobility and communication

Aeroplanes and aviation create prerequisites for distant parts of civilisation to partake on equal terms, which is of crucial importance, both for homogenous economic growth and for social sustainability. Globalisation would not work without the fast transportation provided by aeroplanes and aviation.

At the same time, society is getting more and more dependent on space technology to function. We use satellites and space-based services for efficient traffic management on ground,

at sea, in air and in cyberspace, for providing remote places with internet and telephony, and for synchronising time-critical systems, enabling almost any societal benefit one can think of.

Air and space innovation is of great priority for economic growth, innovation and commercial applications.

Swedish innovation contains players that develop aeroplanes and their surrounding systems in whole and in part. On the space side, Swedish players develop space systems, complete or parts thereof and adherent space services. In all areas, Swedish innovation is at the forefront of international competition.

Benefit: State of the Earth

We use air- and spaceborne technology to monitor climate changes and phenomena in nature, enabling us to understand what is happening in, and to, our world.

Space technology is key in climate monitoring, climate research and climate mitigation but is also highly important in responding to natural disasters and to provide humanitarian assistance. Early warnings and continuous monitoring of the climate from space give aid to the political system to understand and evaluate the situation and take necessary actions.

Airborne systems provide a necessary complement to spaceborne monitoring. Whereas spaceborne technology provides the overview,

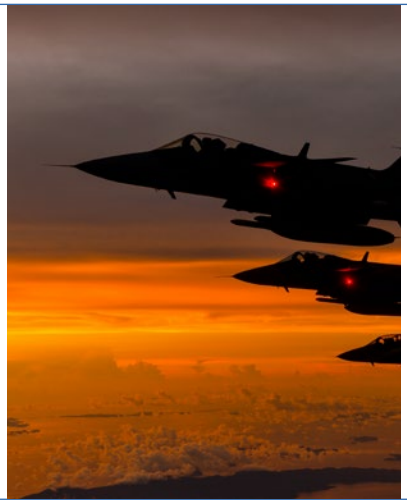
albeit with high resolution, airborne technology offers the possibility to inspect for instance regarding sea and coastal aeras at closer range.

In Sweden, innovation players deal with the development of instruments as well as vehicles. We provide the world's leading OEMs with core competences and unique solutions.

Benefit: Defence

Airspace control, which is a major enabler of national sovereignty, requires tactical operations, emergency response, and policy surveillance. Air-combat capability is crucial, both regarding air-attack missions and close-air-support operations, as well as air-enabled intelligence, surveillance and reconnaissance for situational awareness.

Also, our armed forces depend on first-class, reliable satellite navigation and communication. Space infrastructure provides an open and transparent global situational awareness that can help to prevent armed conflicts. Space activities have significant foreign-, security- and defense-policy dimensions. The capability to act in space is a powerful force.



The Swedish competences in the defence area are widely distributed across the field, highly competitive on the international arena. Swedish innovation provides high-end fighter aircraft equipped with the most advanced radar and missiles, as well as drone technology and other unmanned technology. On the space side, Swedish innovation provides for instance small satellites, propulsion and GIS services. In addition, we are also seeing an increase in the use of cloud computing platforms and integrated solutions.

The point of partaking

There is always the option of not partaking in innovation, the option to purchase solutions developed elsewhere. But there are a number of reasons against this.

Primarily, partaking in aerospace innovation makes Sweden capable of understanding the complex mechanisms involved, which makes us able to participate in determining and designing prerequisites for future research and requirements on future systems to be developed.

Also, Swedish innovation is often at the environmental forefront, meaning that our participation helps speeding up solutions to environmental and climate challenges.

Moreover, apart from the direct societal benefits described above, aerospace innovation contributes in large numbers to Swedish export revenue and employment. One must also remember that aerospace technology is an advanced area, which has the effect that technology transfer to other areas has been prominent during the years. Aerospace innovation creates necessary prerequisites for inovation in other areas, which contributes with a multiplier effect to the benefits described.

In an increasingly troublesome world, independent access to space and the capability of delivering space systems and services are a necessity.

Innovation support and coordination

The majority of innovation activity is undertaken in the private sector but government has a pivotal role to play in stimulating innovation. For Swedish aerospace innovation to function effectively and to be internationally competitive, support and coordination is necessary – to create the right prerequisites and not least to build the necessary bridge between policymaking and innovation.

Innovair is Sweden's national strategic innovation programme for aeronautics. Its aim is to coordinate and support stakeholders from industry, universities, institutes, associations and government agencies active in the aeronautics sector. Its main objective is to promote favorable conditions for a strong aeronautics industry in Sweden and to strengthen this sector through increased collaboration, research and information dissemination.

Aerospace Cluster Sweden is the network and unifying force for all SMEs engaged in the aerospace industry. The cluster provides opportunities for business, innovation and growth as well as a natural ground for the necessary interaction between SMEs and large industries. Small and medium-sized enterprises (SMEs) are an important resource in Sweden for the realization of new technology and innovations.

Swedish Security and Defence Industry Association (SOFF) acts as a bridge between developing industry and national interest. SOFF's main goal is to promote the common interests of the security and defence industry in order to achieve the best possible preconditions for future business. Striving for increased understanding of industries importance to Swedish security and defence policy is a part of that.

Swedish Aerospace Industries (SAI) is a nonprofit association representing the Swedish aerospace industry on common issues. The association works to increase knowledge about the industry's prospects and activities and promotes collaboration between particular universities, government agencies, small and large companies, institutions and decision-makers.

Aerospace technology is an important enabler of modern society. But it is not enough to maintain Sweden's aerospace capabilities on the current level. To keep our position in an ever-changing surrounding world, we need to increase our efforts. We need to stay ahead to be in the game.

innovair.org aerospaceclustersweden.com soff.se aerospace.se