

# SAAB HX UPDATE

IN CONJUNCTION TO  
THE KAUHAVA AIRSHOW

**MEDIA BRIEF, KAUHAVA, FINLAND**

On site and live broadcast, August 28<sup>th</sup> 2020 11:30-12:30 (GMT+2)



**SAAB**

# Welcome and introductions



Anders Gardberg  
Country Manager, Finland

# Agenda

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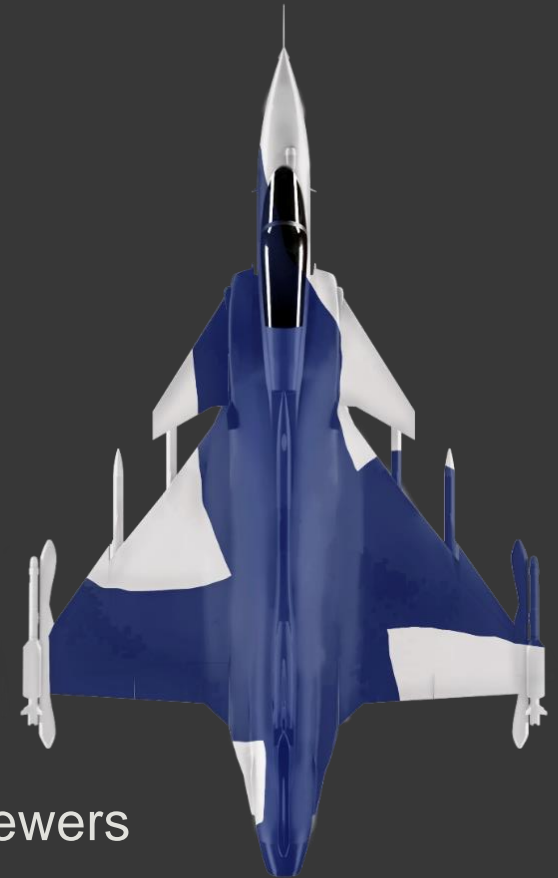
- Welcome and introduction
- CEO perspectives
- Saab and the HX programme
  - Gripen and GlobalEye for Finland
- A Swedish Air Force perspective
  - on Gripen and Finnish-Swedish cooperation
- Concluding words and questions
- End of press briefing at 12:30

*Anders Gardberg, Country Manager Finland*

*Micael Johansson, President and CEO of Saab*

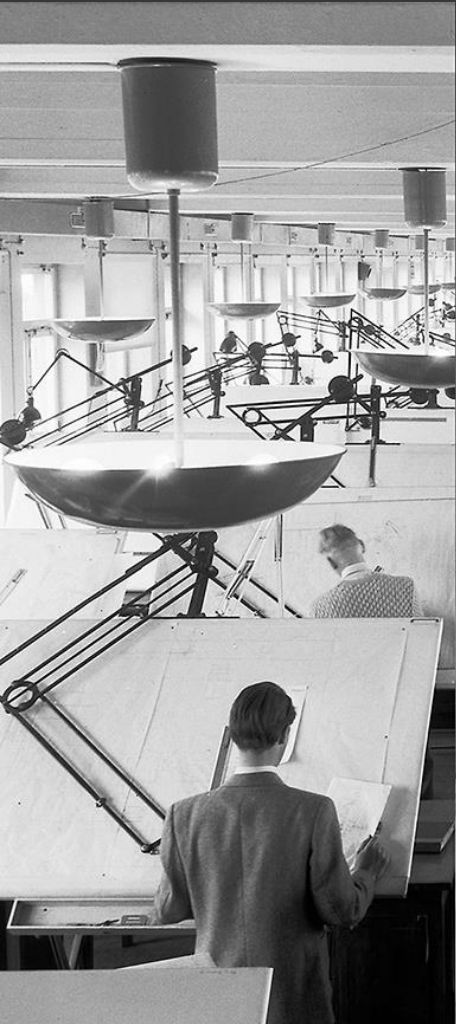
*Magnus Skogberg, Campaign Director HX*

*Col. Carl-Fredrik Edström, Chief Operations, Swedish Air Force*



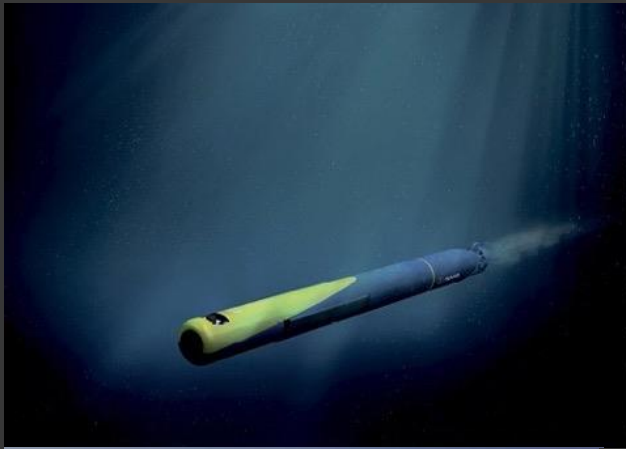
After-talk and guided live-tour at Kauhava Airshow offered to our on-line viewers

Saab started in 1937 with the aim to ensure Security of Supply...



...also supporting Finland in the Winter War **with the assembly of Brewster and Fiat fighters...**





Saab's broad **portfolio**



Continuing from 1946, supporting Finnish Defence Forces **with high-tech products for all services ...**



# Saab in Finland **today**

- Growing from 70 to 130 employees since 2015, recruitments ongoing
  - Saab Finland Oy **Helsinki, Tampere, Turku** 40 employees
  - Combitech Oy, **Tampere, Espoo, Jyväskylä, Säkyä** 90 employees
- Strategic research co-operation with Aalto University since 2017
  - Long term research - advanced electronics, microwave technology, AI, hydro-acoustics
- Technology Centre, Tampere – part of Saab's global R&D organization
  - Competence centre for advanced EW capabilities
  - C2/9LV System Centre being established as part of SQ2020 program
- Recent contracts: SQ2020, new torpedoes, advanced simulators
- Large installed product base within Navy, Army and Air Force







# Saab CEO speech

## Live from Saab HQ in Stockholm



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Micael Johansson  
President and CEO of Saab

# Saab and the HX programme



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Magnus Skogberg  
Campaign Director, HX programme

# Supporting the HX programme

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- Committed since several years back
- In January conducted the HX challenge and submitted an updated offer
- Continuous dialogue with FDF HX programme and local industry



# Gripen E/F

Designed to counter and defeat today's and tomorrow's most advanced threats in a very complex environment.

- **True multi-role**
- **Designed for the operational context**
- **Most recent technology**
- **Future-proof design**
- **Maximizing operational effect for the budget**





## Gripen E/F

- Sweden and Brazil contracts 2013-2014
- First flight 2017, with fully qualified software
- The aircraft show expected performance and behaviour, with high availability and reliability
- We fly 9G and max supersonic speed and currently eight aircraft are in use for testing
- **Flight tests now focus on sensors, weapons and tactical functions**
- This year flight test operations are increased to three sites, two in Sweden and one in Brazil
- **First deliveries to Brazil and Sweden in 2019**
- Deliveries are speeding up and a production plant in Brazil is now also in operation
- **Assembly of Gripen F to start this year** with First flight planned to 2023. The development is performed in both Sweden and Brazil.



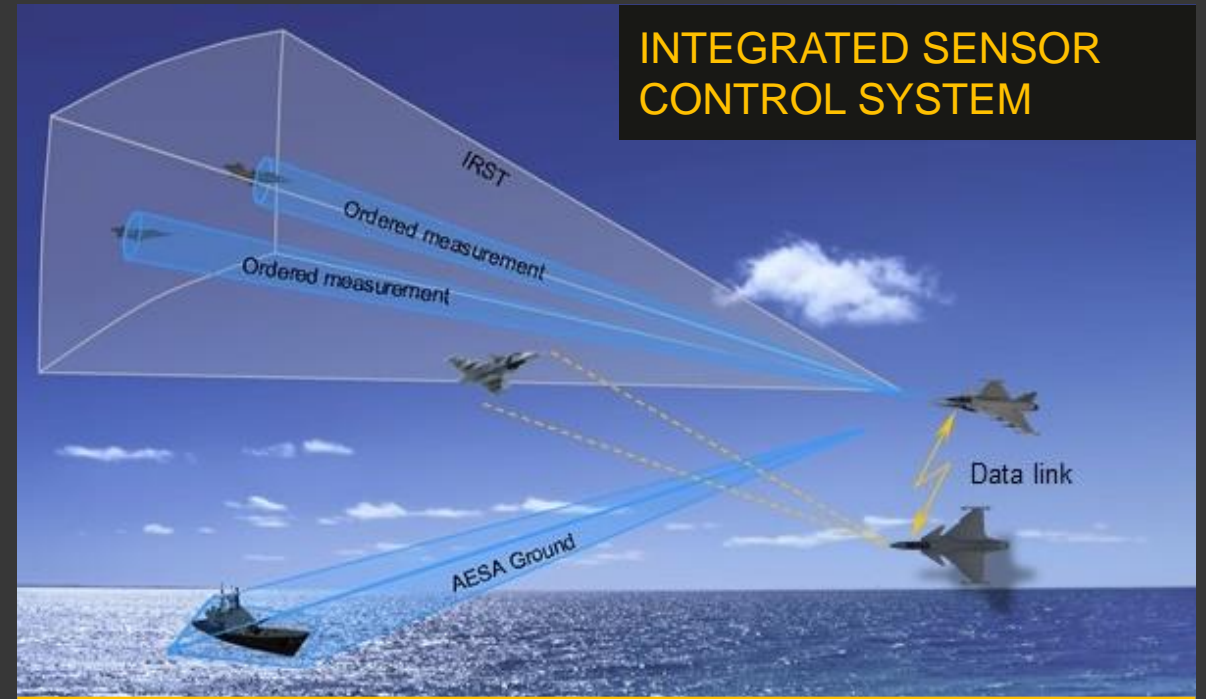
## Sensor control and decision support

Gripen optimizes the use of on-board sensors and all domains are handled simultaneously

The pilot can use high-level commands to define specific Volumes of Interest (VOI)

**A fully integrated tactical system, combining;**

- Long-range multi-mode AESA radar
- Passive Infra-Red Search and Track
- Advanced Electronic warfare system
- Reconnaissance and targeting pods
- Tactical data link information



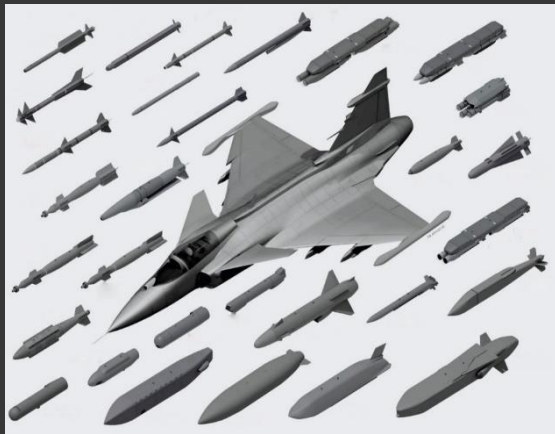
## HIGH-END SITUATIONAL AWARENESS



## Weapons for all types of missions, from the best suppliers world-wide

From guided bombs for precision engagement, to long-range air-to-air and heavy anti-ship missiles.

**High flexibility for efficient integration of new weapon systems to affordable cost**



## Flexible weapon system

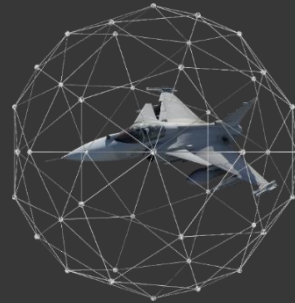




## Survivability and offensive EW capabilities

### World-class 360° self-protection

- Radar Warning Receivers, Missile Approach Warning System and internal jammer
- Active electronic countermeasures
- Chaff, hot chaff and flares



SPHERICAL  
COVERAGE

### Powerful Electronic Attack

- Suppression of Enemy Air Defence (SEAD) systems, **without specialised platforms**
- Electronic Attack with on-board EW system
- Extensive Electronic Attack with jammer pods and decoy systems



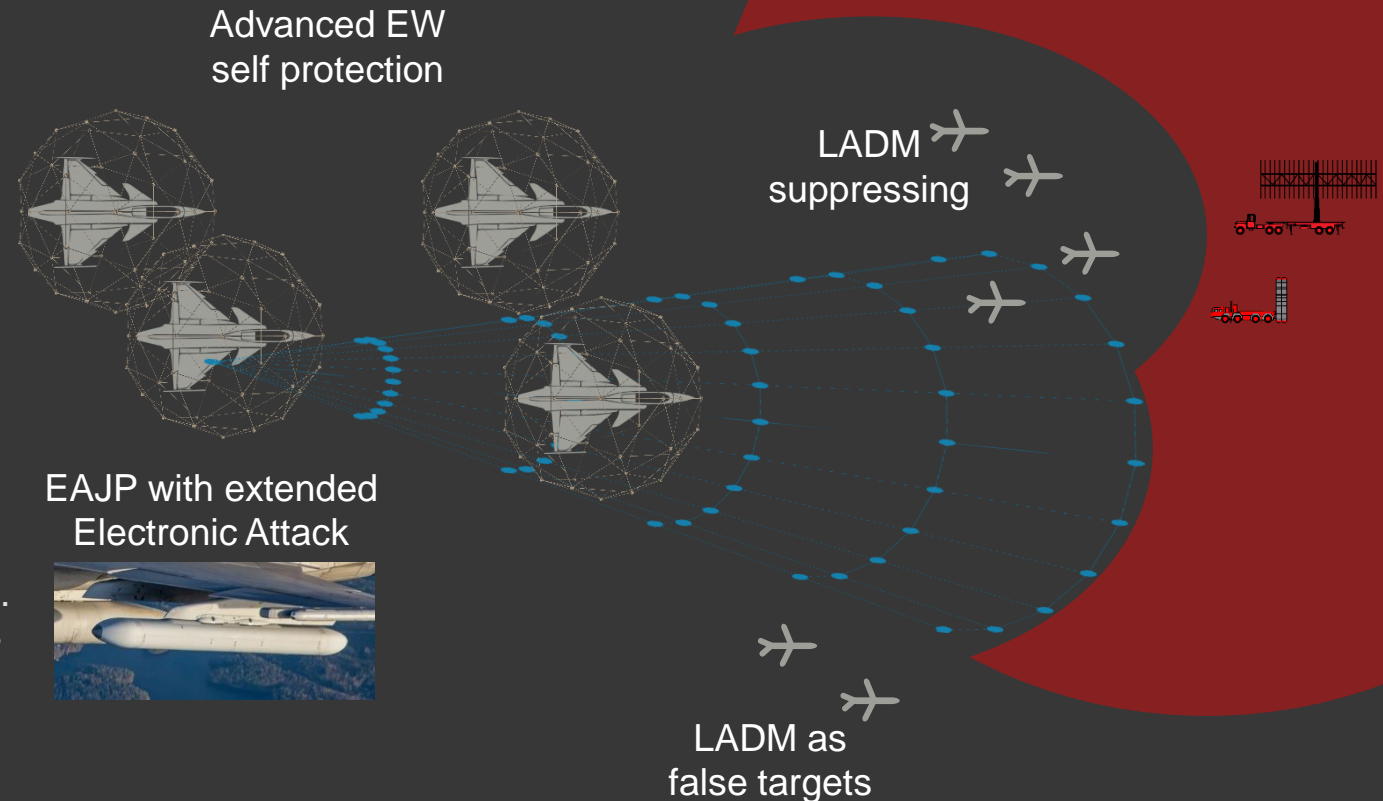


# Extensive EW capability offered to Finland

We continuously sharpen our electronic attack capabilities and our HX offering is substantial:

- **A new Air-Launched Decoy Missile system, LADM**
  - A highly capable stand-in jammer
    - **Suppressing hostile Air Defence Systems**
      - Preventing them to detect and/or to track our operations
      - Increasing both our survivability and supports our missions
    - **Protecting own aircraft and increases missile hit probability**
    - Leverages on the miniaturization within communication technology
    - **The EW payload is to large extent developed in Finland**, combining Finnish and Swedish world-leading microwave technology knowhow
- **Saab's new Electronic Attack Jammer Pod, EAJP**
  - A highly capable escort jammer
    - Additional jamming capability to the on-board EW system - increased frequency range and higher output power
    - Officially launched in 2017 and flight tests started in 2019

Both the EAJP and LADM use the latest technologies available. They build on existing and proven capabilities such as Gripen's on-board EW system – thus enabling a seamless integration of the aggregated EW/EA capability.





## Designed for harsh conditions, easy maintenance and road bases

- Built for easy maintenance and conscript mechanics
- Optimized for harsh conditions
- Turn-around done within 10 minutes
  - 1 technician, 5 mechanics
- Engine change in < 1 hour
- Designed for road-base operations
  - Short take-off and landing
  - No fixed installations needed



# Design supporting capability growth



# Saab's HX offer

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GRIPEN E



GRIPEN F

## Included is;

- Everything necessary to start operations
  - Initial training and simulators
  - Mission and Ground Support Equipment
  - Mission equipment (drop tanks, pylons, launchers, etc.)
- Substantial weapons package
- In-service support 2025-2030
- Industrial Participation and System Centre establishment

SECURITY OF SUPPLY ENSURED IN ALL ASPECTS

# HX offering content

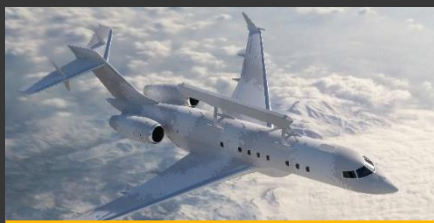
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GRIPEN E



GRIPEN F



GLOBAL EYE



## **THE MOST ADVANCED AIRBORNE EARLY WARNING & CONTROL**

- Strategic asset for 24/7 airspace, land and sea surveillance
- Enhances Finland's situational awareness for the protection of the nation's territorial integrity
- With Gripen E/F fighters, GlobalEye provides a substantial contribution to the joint operational capability of the Finnish Defence Forces

# GlobalEye

Fully integrated with and complementing Gripen

- Provides vital intelligence for FDF in all domains
- Increased coverage vs. ground-based radars
- Provides extensive pre-warning time
- Off-loads the HX fighters for max fighter fleet availability at the start of crisis or war
- Mission time well above 11 hours





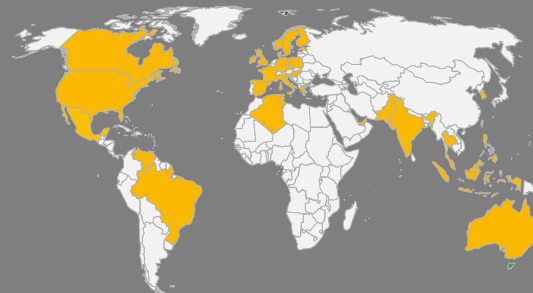
# Surveillance aircraft experience

Saab specializes in converting commercial aircraft into airborne multi-role surveillance aircraft, combining knowledge of

- Aircraft development
- Radar technology
- Command & Control Systems

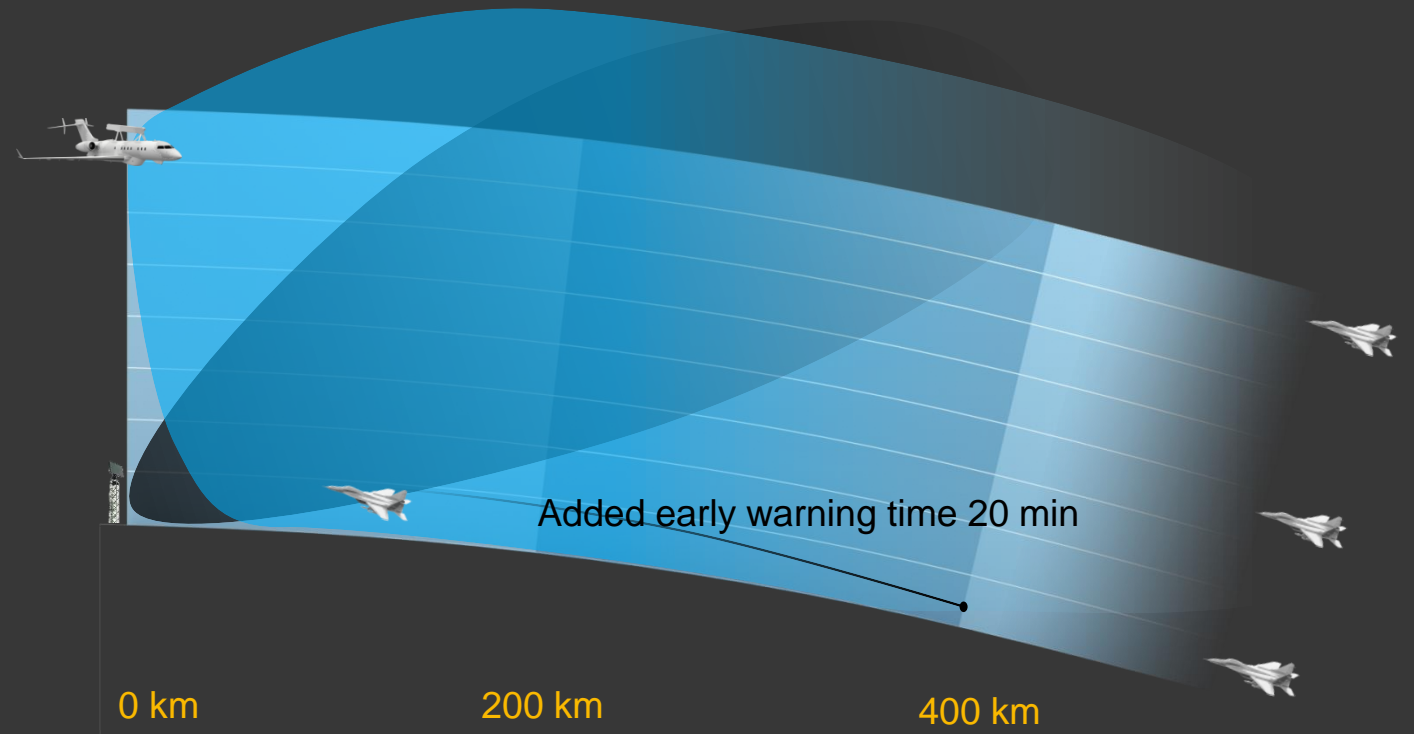
GlobalEye is the latest version and customer deliveries have been initiated

Large customer-base for radars / AEW&C



# Influence of the Earth's curvature

- Ground based radars cannot detect low-level targets at long distances
- AEW&C extends the low level coverage 10 times
- Early warning time is thus increased by 20 min with AEW&C





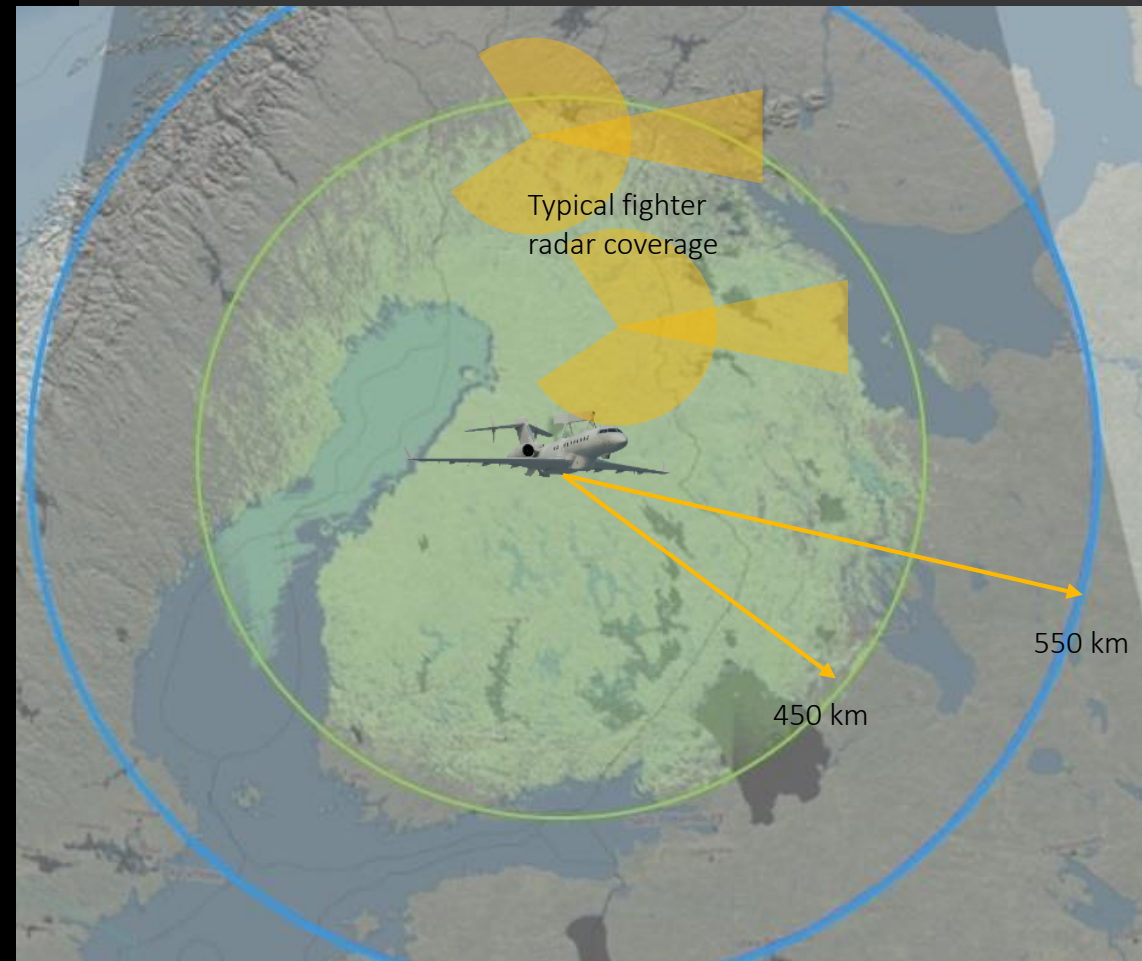
# GlobalEye

## Coverage beyond comparison

Instrumented range and low altitude coverage in relation to typical fighter radars

*Sensor coverage when operating at 37 000 feet*

- **Instrumented range of >550 km**
  - Detecting targets flying at > 9 000 feet
- **Low altitude coverage out to ~ 450 km**
  - Limited by radar horizon (Line-of-Sight)



# GlobalEye - a strategic asset for Finland

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- Strategic asset maximizing Finland's national defence from peace to war
  - Multi-role for air, maritime and land domains
  - Ultra long range ISTAR for FDF joint effect
  - Balancing potential adversary capability
  - Extended pre-warning for first-strike survivability
  - Detecting, identifying and tracking what otherwise cannot be seen
  - Secures optimal use of all assets



# Easy integration to FDF infrastructure

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Thorough site surveys conducted

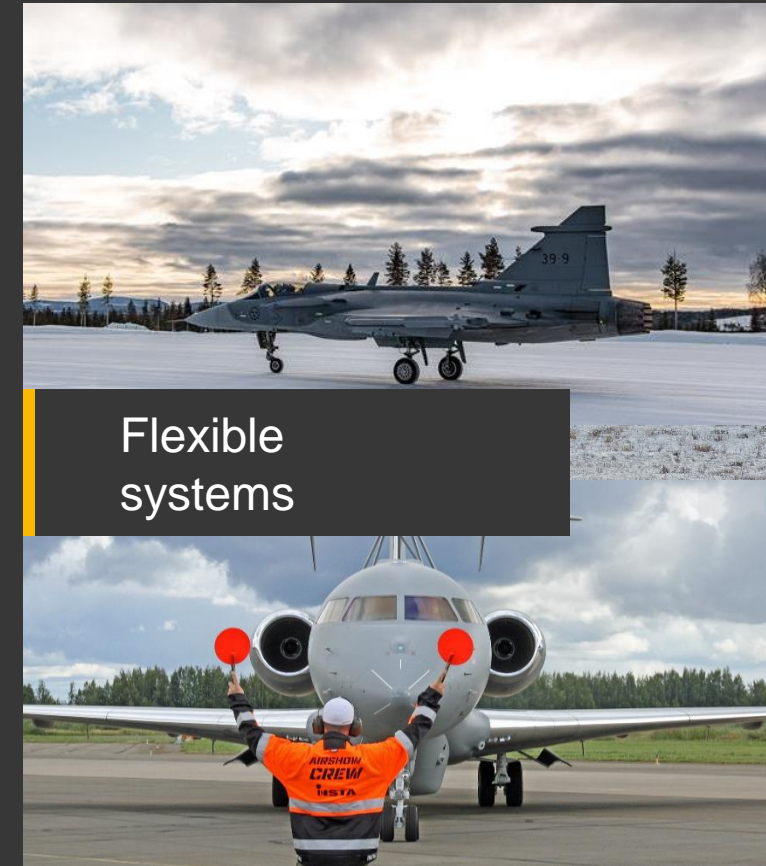
Smooth introduction of Gripen and GlobalEye in Finland

Existing maintenance facilities can be used with minor adaptations

No additional burden w.r.t. noise levels or environmental conditions

Existing road-bases can be used

Full interoperability with Finnish and NATO networks



# Security of Supply

**A Support solution**  
based on extensive national capabilities



**High availability**

**A Gripen and GlobalEye  
System Centre**  
for in-country sustainment and development



**Operational  
relevance over  
time**

THROUGH THE ESTABLISHMENT OF **EXTENSIVE NATIONAL CAPABILITIES**

# Industrial participation

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## for availability

### Establishment of Support and MRO capability

- Education and on-the-job training
- Parts production and assembly of engines and aircraft in Finland
- Performance of maintenance activities 2025-2030



## for operational relevance

### Establishment of capabilities for in-country adaptations

- Participation in adaptations for Finnish-specific needs
- Integration of Gripen and GlobalEye into the FDF environment
- System Centre establishment and operation
- Indirect IP for key technologies

### Strengthening the Finnish defence industrial base



# Price and affordability

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- Approach to maximize operational capability  
Design-to-cost at 10 BEUR (incl. FDF internal cost)
- **Within expressed acquisition budget**
- **Meets target for yearly operation/sustainment cost**
- A design that maximizes the cost-efficiency for future capability growth



# HX Challenge and data substantiation

- Participated with Gripen and GlobalEye in HX Challenge activities in January
  - Extensive test programme conducted with FDF
- Data substantiation in a larger sense
  - Extensive simulator sessions in the fall of 2019
  - Flight evaluations weeks 5-6 2020
  - Additional, complementing activities during 2020





FÖRSVARSMAKTEN



# Finnish-Swedish Cooperation

KAUHAVA AIR SHOW

– Colonel Carl-Fredrik Edström, Chief Operations Swedish Air Force

# Gripen – Designed for the highly demanding requirements of Sweden and our region





# Finnish Air Force as a strategic partner

# Areas of cooperation

- Capability and system development
- Operational capability
- Enhanced training and logistics



# Roadmap for cooperation



# Extensive joint training

# Long-term cooperation throughout HX life-cycle



FÖRSVARSMAKTEN





# Concluding words and questions



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**Magnus Skogberg**  
Campaign Director, HX programme



## | Gripen and GlobalEye for Finland - a perfect match

- ▶ Gripen meets the operational needs - designed for the threats
  - GlobalEye is a strong force multiplier
- ▶ Unbeaten cost efficiency
  - providing maximum operational effect for the Finnish budget
- ▶ Extensive Security of Supply
  - in close co-operation with local industry
- ▶ Timing is perfect
  - the most advanced technology on-board proven and future-proof platforms
- ▶ Long-term commitment for Finland



**GLOBALEYE**  
THE FORCE MULTIPLIER

**GRIPEN**  
THE SMART FIGHTER



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