Gripen update and Saab preparations for HX

Stockholm, February 6th 2019

Campaign Director, Magnus Skogberg
Our broad offer
More than 80 years of experience and over 5500 aircraft built
Company overview

17,000
Employees

Order backlog, MSEK 106,849
Sales, MSEK 31,394
Operating income*, MSEK 2,155
R&D, share of sales % 23

Figures for year end 2017
Growth of Saab’s operations in Finland

- Established since 1946, 110 employees at five locations
- Research Center initiated 2017, featuring a 10-year cooperation with the Aalto University.
- Saab Technology Center established in 2017, inaugurated in 2018 - A part of Saab’s global development organization.
- Contracts signed 2018: Hamina class Mid-life-upgrade (SQ2000) and new torpedoes.
- Present in both strategic projects (SQ2020 and HX) and strong offering in other FDF projects.
Gripen E-series

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

• True multi-role
• Designed for the purpose
• Most recent technology
• Future-proof design
• Maximizing operational effect for the money invested
High-end situational awareness
Sensor control and decision support

Gripen’s sensor suite identifies the enemy using a number of active and passive methods. The pilot defines a volume of interest (VOI) as a high-level command and the sensor-control system, data fusion and advanced decision support optimizes the use of the sensors:

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

A fully integrated tactical system
Weapons for all types of missions, from the best suppliers world-wide

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

• Within visual range air-to-air
• Beyond Visual Range air-to-air
• All weather Air-to-surface
• Reconnaissance / special missions

High flexibility for efficient integration of new weapon systems to affordable cost
Survival in the air

Gripen’s agility combined with an advanced EW system, provides an advantage in combat situations.

• Radar Warning Receivers, Missile Approach Warning System and internal jammer
• Active electronic countermeasures
• Chaffs, hot chaffs and flares

SPHERICAL COVERAGE
Offensive capabilities

Threats are changing. 
**Gripen** has offensive capabilities for increased survivability and mission success.

- SEAD / DEAD capability without need for specialised platforms.
- Electronic Attack capabilities with its highly advanced on-board Electronic Warfare System.
- Additional capabilities, pods and decoy systems can be used as a complement.
Designed for harsh conditions and easy maintenance

- Built for easy maintenance and conscript mechanics
- Optimized for harsh conditions
- Turn-around done within 10 minutes
  - 1 technician
  - 5 mechanics
- Engine change in less than 1 hour
Dispersed operations at road bases

- Totally mobile turn-around
- No fixed installations needed
- Gripen is self-sufficient with Auxiliary Power Unit
- Short take-off and landing capabilities
- Any straight high-way can be used
- All contributing to survivability on ground
Total operational effect
- a product of several factors

Mission execution
Availability
Survivability
Cost efficiency
Design supporting capability growth

GRIPEN E/F

Very fast and easy updates with its new avionics system

Legacy Gripen
continuous development

Traditional
mid-life upgrades
Architecture
- from multi-equipment to apps

- No dedicated hardware for specific functions…
- … instead one common platform for all applications
Architecture with the future in mind

Layered approach with separation of flight-critical and tactical functions

**Powerful applications**
- Software-defined system functions

**Hardware interface**
- Provides a manageable development environment

**Hardware**
- Upgradeable to meet future needs/possibilities
Adapt fast. stay relevant.

• Is the system upgradable, adaptable and reconfigurable?
• How hard is it to add more customer value?
• How fast can more computer power be added?
Programme status

- Sweden and Brazil contracts 2013 and 2014
- First flight June 2017, with fully qualified software
- The aircraft show expected performance and behaviour, with high availability and reliability
- Flight tests with weapons on-going
- Test a/c 39-7, -8 and -9 in the air and 39-10 soon to fly
- First serial a/c in production
- Deliveries from 2019
Flight tests with external stores
Test aircraft 39-8 on the apron and in the air
Flight test focus on mission system

Test aircraft 39-9 in the air

Current test objectives

- Envelope expansion
- Aircraft systems and engine
- System & weapon testing
- Mission system integration testing
Gripen is proven and mature

Flight hours >250,000

- Sweden
- Thailand
- South Africa
- Hungary
- Czech
- ETPS
- Brazil*

*Contracted in 2015
Our global footprint

= Gripen prospects
Supporting the HX programme

- Committed since several years back
- RFQ response submitted Jan 2019
- Continuous dialogue with customer and local industry
The basis for shaping our offering

- FDF scenarios and our CONOPS development
  - Substantial operational analysis effort conducted
- Expectations on min. 64 a/c
- The potential bi-lateral operational synergies and co-operative logic
- Requirements on Security of Supply
  - Shaping the Support solution and IP programme
- FDF HX programme design-to-cost approach (LCC)
  - To optimize (maximize) the operational capability to a budget of 7-10 BEUR
A COMPREHENSIVE PACKAGE

- Necessary equipment for operating Gripen
  - Initial training package
  - Simulators and Mission Support Systems
  - Ancillary systems (drop tanks, pylons, launchers, etc.)
- In-service support 2025-2030, including spares
- Integration support to connect Gripen to Finland’s networks and infrastructure
- Weapons and external stores
- Firm commitment on fixed price and delivery schedule
Security of Supply

A Support solution based on extensive national capabilities

High availability

A Gripen System Centre for in-country sustainment and development

Operational relevance over time

Extensive security of supply
Built on national capabilities
Security of Supply

A Support solution based on extensive national capabilities

High availability

A Gripen System Centre for in-country sustainment and development

ML1
A comprehensive logistics package, allowing FDF to support Gripen with full capability from the Main Operating Bases (MOB) and the dispersed bases (ROB/FOB).

ML2
Extensive avionics, mechanical systems and engine ML2 capability will be established in Finland. Eventually 80-90% of all ML2 activities can be performed in Finland.
Operational relevance over time

A Support solution based on extensive national capabilities

A Gripen System Centre for in-country sustainment and development

Operational capability

Gripen’s smart avionics design supports smooth capability growth through separation of flight-critical software from mission system functionality. This is a foundation and true enabler for the GSC.

Aim and Needs

National capabilities for sustained engineering and further development

Advanced MRO and sensor usage development

Time

Operational capability

Very fast and easy updates with its new avionics system

Legacy Gripen

Continuous development

Traditional mid-life upgrades

Gripen E/F

Security of Supply

Gripen Product Data

Software Development Tools

Mission System Rig

Training Simulator Lab

Mission Support System Lab

Gripen System Centre

GSC
Industrial Participation

We offer a support solution for fighter availability and Security of Supply.

We aim at close co-operation with local industry to build expected domestic capabilities for the life-cycle.

We are willing to involve domestic industry in Development - with a Gripen System Centre, Production and assembly… with a co-operative mindset, extensive experience and commitment.

In total over 100 IP projects have been defined.

- Support and MRO capability build-up to secure availability of Gripen
- Integration of Gripen into the FDF environment
- Parts production and assembly of engines and aircraft in Finland to build MRO capability
- Participation in development of Finnish-specific functionality
- Gripen System Center establishment to secure operational relevance over time
Price and its different elements

- Many figures out there - often based on different assumptions, taken out of context and without clear information about what is included
- Confusion of unit production cost vs. unit package price
- The total financial implication over the life-cycle should be in focus
- We are confident that the combination of operational capabilities and cost of Gripen cannot be matched by any competitor
Price and its different elements
Gripen for Finland - a perfect match

- Long-term commitment for Finland
- Gripen is designed for the task
- Latest available and future-proofed technology
  - on-board a proven and mature Gripen system
- Security of Supply in close cooperation with local industry
- Unbeaten cost efficiency
  - maximum operational effect for the budget