

# **GRIPEN NG FOR THE NETHERLANDS**

## **THE GRIPEN NG OFFER**

**Breakdown and description  
of the different items**

## Gripen NG Overview

### 85 Gripen NG Aircraft (1 Flight Test Aircraft)

- Engine
- Radar
- Flight Test Instrumentation Equipment
- Display System

### Training and training aids

- Full Mission Simulator
- Mission Trainer
- Virtual Maintenance Trainer
- Desktop Training System
- Computer Based Training System
- Pilot Training
- Maintenance Training
- Training for Operation & Maintenance of Mission Support Equipment and Training Devices

### Other

- Role equipment (Aircrew Equipment, Helmet Mounted Display Systems, IRST Systems, Electronic Warfare Systems, Fuel Drop Tanks, Pylon Sets)
- Mission support equipment (Mission Support Systems, Digital Map Generating System, Threat Library Support System, Maintenance Ground Support Systems, Radio Frequency Planning System)
- Logistic Support (Ground Support Equipment, technical publications, facility requirements, Consumable Spare Parts, Field Service Representatives, Pilot Support)

### Total Price

**EUR 4792 Million**

Prices are in Euro: 1 EUR = 9.4 SEK (conditions April 2008).

## Gripen NG

Quantity

Item

## General Electric F414G Engine

85

*The F414G engine for Gripen NG is a low bypass ratio (generates higher exhaust speed, which is needed to sustain higher, usually supersonic, airspeeds) afterburning turbofan in the 98kN (22.000lb) thrust class. The F414G is an updated version of the engine currently used in the F/A-18 Super Hornet. With over 750.000 flight-hours, it has proven itself to be an extremely reliable aircraft engine. The engine weighs 1148 kg, the length is 4.04m and the maximum diameter is 0.89m.*

## Selex AESA Radar

85

*The SELEX AESA radar comes from a proven family of AESA systems sold across the world including the US. The SELEX AESA radar for Gripen NG is a high performance fire control radar designed to complement the multirole/swingrole capability of Gripen NG. It provides unrivalled operational benefits through its unique wide-field of view “Swashplate” concept. This concept has proved to outperform traditional fixed positioned AESA radars. This totally European solution can easily be adapted to Dutch operational concepts.*

## Flight Test Instrumentation Equipment

1

*One Gripen NG aircraft will be equipped with Flight Test Instrumentation. The test aircraft can be used for operational testing and evaluation (OT&E) of the aircraft capabilities, as well as for future development. The test aircraft is fully operational and capable in combat situations.*

## Quantity

## Item

## Display System

85

*The display system in the Saab Gripen NG includes a number of displays which serves as the main interface for communication between the pilot and the avionic- and weapon systems. It also supports the pilot by giving maximum visual information and situational awareness. The display system includes:*

- ◆ *A Head-Up Display (HUD) which provides a wide field of view, with the availability to project vector information, raster images and radar information.*
- ◆ *Large, leading edge multi-function full colour Head-Down Displays (HDD) provides the pilot with total situational awareness. The display information can be accessed by pre-programmed soft keys. The use of soft-keys means that the pilot won't have to let go of the throttle or control stick.*
- ◆ *The display system also includes a Helmet Mounted Display (HMD) system. The Helmet-Mounted Display gives the Gripen pilot the ability to impose computer generated images as well as target information on real-life view giving the pilot a tactical advantage.*
- ◆ *The data provided in the displays is programmed to be intuitive, to reduce the workload for the pilot and to prevent information overload - don't need, don't show.*

## Role Equipment

Quantity

Item

### Aircrew Equipment

85

*This equipment includes the following items: Helmet, Flight Suit, Immersion Suit, Oxygen Mask, CSAR (Combat Search and Rescue) Jacket, Anti-G Suit, Air Ventilated Garment, Gloves, Boots & Underwear. The CSAR jacket can locate pilots in cases of emergency (e.g. if the pilot has ejected).*

### Aircrew Equipment (NBC protection)

85

*Includes the same items as above, but with added protection for NBC (Nuclear Biological and Chemical) threats.*

### Helmet Mounted Display (HMD) System

85

*The HMD system includes the following items: Helmet assembly, Electronic Unit, Helmet Tracker System Detachable Day Camera, Detachable Night Camera, Laser Protection Visor and Helmet Camera Release Unit. The Helmet-Mounted Display gives the Gripen pilot the ability to impose computer generated images and target information on real-life view (augmented reality, giving the pilot a tactical advantage. The Gripen pilot is also able to direct a missile or designate a target by using the HMD. The HMD is completely integrated in the helmet, and can be used in addition to night-vision goggles, protective visors or other equipment such as a day/night camera.*

## Quantity

## Item

## Infra-Red Search and Track (IRST) System

85

*The IRST system includes the following items: Sensor Head Unit & Processing Unit.*

*The IRST is an alternative search, track and guidance system.*

*The IRST is a passive sensor and is used if the pilot for detection risks decides not to use Radar or any of the other sensors integrated in the Gripen NG.*

## Electronic Warfare (EW) Systems

85

*The Electronic Warfare System includes the following items: Radar Warning Receivers, Missile Approach Warning System, Laser Warning System, Counter Measure Dispensers, Internal Jammer, Jammer Pod & Towed Decoy.*

*The Electronic Warfare System is an integrated, modular and automatic system that provides functions for:*

- ◆ *Detection and localization of threats*
- ◆ *Identification of threats*
- ◆ *Automatic selection of the most appropriate countermeasures reaction*

*The modular approach makes it very easy to implement new functionality or upgrades and allows the customer to choose parts of the system.*

## Fuel Drop Tanks (450 gal)

85

*External fuel tank for long-range flights. Designed to be discarded when empty or in the event of combat or emergency in order to reduce drag and weight. One drop tank gives the Gripen NG an extra range of approximately 1000 km.*

## Quantity

## Item

## Pylon Sets

85

*The Pylon Set includes two of each of the following: Pylon 2, Pylon 3 & Pylon 5  
The Pylons are suspension points externally installed under the wing or fuselage of the aircraft. The pylons are used to attach missiles, drop tanks and bombs on the aircraft.  
Pylon 2 and 3 are the pylons situated under the wings, and Pylon 5 is situated under the fuselage.*

## Pylon 4

40

*Used for external equipment such as the Lightning III Targeting Pod, RecceLite or External Jammer Pod.  
Pylon 4 is situated on the front right hand side of the fuselage.*

## Mission Support Equipment

Quantity

Item

### Mission Support Systems (MSS)

20

*The mission support system (MSS) is a ground based system, essential for the successful execution of missions. Its role is to support the user in planning, rehearsing and preparation of a mission with the Gripen NG. It also analyzes and manages the electronic warfare threats, and prepares the necessary counter-actions. The support system is also part of the briefing and debriefing of missions. The information gathered by the system is in turn used for education and training of new personnel. Information is also stored in databases and “threat libraries”. The support system is placed in a stand-alone station. A single MSS station can be used for multiple tasks. The stations can work autonomously, as well as integrated in a network with other MSS and systems.*

### Digital Map Generating System (DMGS)

1

*The Digital Map Generating System provides the aircraft and its pilot with databases containing geographical and navigational information, as well as additional meta-information (source, reliability data etc. about the information). The System uses, among other things, vector data, digital models, satellite and photographic imagery to produce an integrated, complete and detailed information set.*

### Threat Library Support System (TLSS)

1

*The Threat Library Support System is used for management, reprogramming and analysis of threat data and techniques. The TLSS facilitates in-country reprogramming of the Electronic Warfare (EW) system (mainly threat warning and countermeasures), advanced technical analysis, intelligence EW data recorded during missions, flight tests and mission simulations.*

## Quantity

## Item

## Maintenance Ground Support Systems (MGSS)

- 6 *The Gripen NG is equipped with an on-board Health and Usage Monitoring System (HUMS) to allow the pilot and ground crew to monitor flight critical functions.*
- The system monitors and records approximately 4000 different parameters. These parameters are transferred after flight via a data transfer unit into the Maintenance Ground Support System (MGSS).*
- The MGSS provides the figures for detailed analysis of recorded events, successes and faults. It also keeps track of usage information, such as flight hours, heights and speeds, and pressures and temperatures. This provides for the most efficient maintenance system.*
- The MGSS is prepared as a Gripen specific system and will interface with the customer's own Fleet Management System. It can be adapted to incorporate further features and functions, if required by the customer.*
- The System communicates not only with the aircraft, but also incorporates data from the Map Generator and the Logistic Information System.*
- The MGSS is useable through a normal desktop client, in connection with a server.*

## Radio Frequency Planning (RFPS) System

- 4 *The Radio Frequency Planning System generates and stores radio channels, used for encrypted communication between aircraft and between aircraft and ground personnel. It also stores the keys, needed for decryption of the messages. Encryption is done by using the Secure ECCM (Electronic Counter-Counter Measures) Communication System (SECOS). The purpose of RFPS is to generate and store channel definitions and keys for the encrypted SECOS radio communication.*

## Training of Operational and Support Personnel

Quantity

Item

### Full Mission Simulator (FMS)

1

*The Full Mission Simulator is a real life experience to practice realistic and various trainings from the early type conversion up to advanced tactical training. Cockpit and visual systems are selected to provide best practice. The Simulator is networked to other simulators via wide or local area networks.*

### Mission Trainer (MT)

5

*Shares computer hardware and software solution with the FMS but is provided with a lower cost visual system and cockpit. A smaller footprint than the FMS makes it appropriate for placement close to the squadron and training while on deployment.*

### Virtual Maintenance Trainer (VMT)

2

*Based on the Gripen Core Simulation Software (a simulation component). Used mainly for education and training of maintenance personnel and pilots in understanding and handling of the technical systems.*

### Desktop Training System (DTS)

2

*The DTS complements the more advanced devices and adds the capability of advanced mission training and theoretical system training.*

**Quantity****Item**

2

**Computer Based Training System (CBTS)**

*Designed for Gripen Pilots and Gripen Maintenance personnel. The CBTS covers theory based training requirements through Self Paced Learning (SPL) and Computer Aided Instruction (CAI). The CBTS is installed on the DTS and VMT simulators.*

**Pilot Training**

*The Training package for the pilots covers conversion & operational training of 80 (10x8) pilots in Sweden. Squadron fighter pilots receive a 22 week long course; instructor pilots receive a 26 week course.*

**Maintenance Training**

*The package includes Type Conversion Courses in Sweden for 197 technicians, including Flight Line Operations. The technicians receive a 15 week course including 2 weeks practice on the flight line. The main objective for ground crew training is to give the customers' personnel the type-specific knowledge and skills required for operation and maintenance of Gripen NG and its support equipment. As a result of the Gripens' simplified maintenance requirements, it is assumed that a multi-skilled technician will perform all on-aircraft maintenance activities.*

**Training for Operation & Maintenance of Mission Support Equipment and Training Devices**

*Training of 16 operators and maintenance personnel for the Mission Support Equipment and Training Devices. The operators will receive a 2 week course on operating the different systems and the maintainers will receive a 1 week course on maintaining the equipment.*

## Logistics Support

Quantity

Item

### Ground Support Equipment (GSE)

*Special to Type GSE to support the aircraft for two years of operation. The Gripen NG requires a minimal amount of GSE due to extensive use of Built-In-Test (BIT). The BIT provides a fast and efficient user-friendly indication of fault occurrences and also the ability to locate the fault unit. Further minimal amount of GSE is due to multipurpose tools and easy access panels.*

### Technical Publications

*All the necessary publications including amendment service for two years. The document provided in electronic formats and on electronic media is viewable at different operating- and maintenance locations, during both peacetime and deployed operations. All documentation is accessible through the logistic information system and is updated electronically to ensure correct configuration at all times and all locations.*

### Facility Requirements

*A data package with facility requirements designed with the use of a facility survey to ease the transition to Gripen, covering detailed recommendations for each facility, including relevant service provision and specific requirements (for example, refurbishment or modification)*

### Consumable Spare Parts

*Consumable Spare Parts, such as oil, lubricants and seals, to support two years of operation. The two year time frame is due to the fact that Saab estimates that RNLAf (Royal Netherlands Air Force) will have its own capability after the initial two years.*

## Field Service Representatives (FSR)

2

*Two Saab FSR's and Two General Electric FSR's to support two years of operation.*

*After the two initial years of support Saab estimate that RNLAf will have acquired the necessary knowledge to be able to be self sufficient with regards to technical support.*

## Pilot Support

*Two Swedish Air Force Pilots to support the conversion/operational training for two years.*

*After the initial two years of training the RNLAf will have the ability to train their own pilots, and will have their first squadron of combat ready pilots.*