

## IRIS-T SL

### Highly efficient against a broad threat spectrum

The heart of the air defence system is the IRIS-T SL guided missile. The further development of the IRIS-T air-to-air guided missile was specifically designed for ground-based air defence. Selective adaptations in aerodynamics and rocket motor allow an extraordinary range of 40 km and an altitude coverage of 20 km.

Thrust-vector control enables maximum lateral acceleration directly after launch, thus allowing the engagement of targets at very short range. The proven, imaging IR seeker permits a high-precision terminal approach with extraordinary direct hit probability

#### Features

- 360° protection
- 40 km effective range
- 20 km altitude coverage
- Small inner dead zone due to thrust-vector control
- High direct hit capability
- High firing rate and quick response capability
- All-weather capability
- Imaging, interference-resistant IR seeker
- Smokeless & insensitive solid propulsion system
- Target data transmission and mission abort via uplink



## GROUND-BASED AIR DEFENCE SYSTEM IRIS-T SLM / IRIS-T SLS



Diehl's modular IRIS-T SLM and IRIS-T SLS air defence systems offer economically attractive solutions for reliable protection against a wide range of air threats. Moreover, this air defence system is ideally suited for modernization of existing or implementation of new systems.

Diehl Defence GmbH & Co. KG  
Alte Nussdorfer Strasse 13  
88662 Ueberlingen

Phone: +49 7551 89-01  
E-Mail: [pr@diehl-defence.com](mailto:pr@diehl-defence.com)  
[www.diehl.com/defence](http://www.diehl.com/defence)

## IRIS-T SLM

### Effective protection against air threats

With its unique integration philosophy, Diehl Defence offers its customers a state-of-the-art air defence system. The possibility of integrating a variety of different sensors and effectors provides the basis for customer-specific solutions. Thanks to the flexibility in selecting different components, such as carrier vehicle or radio equipment, material already introduced into service can be used, or national industry can be involved.

The use of standardized interfaces provides the optimum basis for future upgrades or expansions. Whether it is a matter of reconfiguration or modernization of existing air defence systems, Diehl Defence finds suitable solutions for its customers' needs. This has already been proven in projects for international customers and in numerous test firings with different radars and command and control systems.

#### Features:

- 360° protection
- High effectiveness
- Minimum personnel requirements thanks to high degree of automation
- Flexible system architecture
- Network capability
- High tactical and strategic mobility
- All-weather capability
- High sustainability
- Individual logistic concept
- 20-foot ISO frame

#### Wide range of targets:

- Strategic bombers
- Fighter aircraft
- Attack helicopters
- Anti-radiation missiles (ARMs)
- Cruise missiles
- Guided bombs
- Drones
- Large caliber rockets

#### Multifunction radar

- AESA technology
- 360° protection
- Range of 250 km
- Elevation angle up to 90°
- Integrated IFF

#### IRIS-T SLM launcher

- 20 km deployability
- High firing power, effectiveness and multiple-target engagement
- 360° protection
- Up to 40 km effective range and 20 km altitude coverage
- Small inner dead zone

#### Command and control system

- Airspace surveillance
- Threat evaluation and weapon assignment
- Fire control
- Mission planning
- Multi-datalink capability (realtime and non-realtime)



## IRIS-T SLS

### IRIS-T surface-to-air application

Using the IRIS-T air-to-air guided missile in the surface-to-air version represents an effective and cost favorable solution for the implementation of a short and very-short range air defence system. For this purpose, an adapted software is installed automatically on the IRIS-T guided

missile when loaded onto the launcher. By this approach, the use of missiles already procured and introduced into service can be significantly expanded. In some Northern European countries, IRIS-T SLS versions for mobile and stationary deployment are already under contract.

#### Features:

- 360° protection
- 12 km effective range
- 8 km altitude coverage
- Small inner dead zone due to thrust-vector control
- High direct hit capability
- High firing rate and quick response capability
- All-weather capability
- Imaging, interference-resistant IR seeker
- 10-foot ISO frame



## IRIS-T SLS Mk III

### High-mobility air defence system

The protection of troops in motion against threats from the air is a challenging task. Diehl Defence has taken up this challenge and developed a highly mobile air defence system with fire-on-the-move capability. The proven IRIS-T guided missile is used in the surface-to-air version, thus providing effective protection against a broad range of targets. For IRIS-T SLS Mk III, radar, command and control system and launcher with effectors are integrated into one vehicle.

In order to ensure a wide mission spectrum, the radar can be elevated which allows the system to be used under cover or for asset protection. Of course, Diehl Defence remains true to its unique integration philosophy for IRIS-T SLS Mk III and offers the possibility to combine different command and control systems, radars and communication solutions into one powerful system.

#### Feature:

- 360° protection
- Fire-on-the-move
- 12 km effective range
- 8 km altitude coverage
- Small inner dead zone due to thrust-vector control
- High direct hit capability
- High firing rate and quick response capability
- All-weather capability
- Imaging, interference-resistant IR seeker
- Flexible system architecture
- Network capability
- 10-foot ISO frame

#### Wide range of targets:

- Fighter aircraft
- Attack helicopters
- Anti-radiation missiles (ARMs)
- Cruise Missiles
- Guided bombs
- Drones
- Large caliber rockets



# IRIS-T

European Short Range Air-to-Air Missile



# IRIS-T - far-sighted, highly agile and resistant to countermeasures

## Major Performance Increase Over Present Generation Missiles

## Unmatched Missile Performance

The highly agile IRIS-T is the only totally newly developed short range air-to-air missile with an imaging IR seeker, dogfight optimised rocket motor, wings, and a combined aerodynamic and thrust vector control. The seeker assisted radar proximity fuze and the large warhead give the missile a remarkable anti-missile capability. Predictive flight path tracking and lock-on-after-launch features enable the missile to engage targets in the rear hemisphere as well. The IRCCM and DIRCCM capabilities of IRIS-T are unmatched and the missile literally needs no maintenance. IRIS-T is a state-of-the art fire-and-forget short range air-to-air missile with unrivalled close-in-combat and intercept performance. IRIS-T's outstanding capabilities and performance will totally change the nature of future air warfare.

## Performance Summary:

- Seeker acquisition range matching with missile kinematic range
- Seeker cueing by radar, helmet mounted display, infrared search and track device, missile approach warner and data link
- High resistance to IRCM and DIRCM
- Precise aim-point selection
- Direct hit missile with pinpoint accuracy
- High  $p_k$  against a variety of targets
- Lock-on before and after launch operations
- Destruction of targets in the rear hemisphere
- Anti-missile capability against incoming A/A and S/A missiles





### **IRIS-T Main Features**

- Roll-pitch imaging infrared seeker with a large look angle, most modern signal processing and high target tracking rate
- Seeker assisted radar proximity fuze
- Large warhead
- Motor optimized for dogfight
- Tail controlled, winged airframe with combined aerodynamic and thrust vector control
- Mass, length, diameter and center of gravity similar to AIM-9L/M Sidewinder
- Fully compliant with existing analog Sidewinder and digital aircraft interfaces
- All-up round / certified round logistic concept

### **Successful Multi-national Program**

IRIS-T was developed by a six-nation consortium with Germany as lead nation. In addition Greece, Italy, Norway, Spain and Sweden are participating in the series production program. The industrial prime contractor Diehl Defence and the partner companies started series production missile deliveries in 2005.

IRIS-T was officially introduced into service in the six program partners' Air Forces at the end of 2005. In addition to the six participating IRIS-T program nations, the Typhoon users Austria and Saudi Arabia procured the IRIS-T missile. Moreover South Africa and Thailand selected the IRIS-T missile for their Gripen combat aircraft. The Royal Thai Air Force is operating IRIS-T on their F-16 fleet, too.





### Aircraft Integration

Work on integration of IRIS-T into a number of aircraft already started during the development phase. Meanwhile the method of achieving full compatibility of IRIS-T with the widely used Sidewinder missile turned out to be very prudent and forward-looking. This enables easy utilization of the IRIS-T missile on both analog and the latest digital interfaces. As a result, the integration effort is reduced drastically for all aircraft manufacturers.

- IRIS-T is integrated into the Eurofighter/Typhoon. Five out of six Eurofighter users have chosen IRIS-T as their standard IR air-to-air armament.
- Integration of IRIS-T into the F-16 in close cooperation with the aircraft manufacturer Lockheed-Martin is completed. The test pilots involved in the flight trials were very impressed by the excellent seeker performance.
- The Spanish Air Force also integrated IRIS-T into their EF-18, thus providing another modern fighter aircraft with this missile's outstanding capabilities.
- Sweden has completed IRIS-T integration into the JAS 39 Gripen.
- Digital integration of IRIS-T in all above mentioned fighter aircraft is including the use of Helmet Mounted Cueing systems.
- With IRIS-T, the self-defence capability of fighter bombers can be improved considerably. The German Air Force takes advantage of this and has integrated IRIS-T into their Tornados.



Diehl Defence GmbH & Co. KG



Northrop Grumman Italia S.p.A.



Hellenic Aerospace Industry S.A.



Nammo Raufoss AS



Internacional de Composites S.A.



Saab Dynamics AB

Magnaghi Aeronautica S.p.A.

Hellenic Defence Systems S.A.

SENER Ingenieria y Sistemas, S.A.

MBDA Italia S.p.A.

INTRACOM Defense Electronics S.A.

Simmel Difesa S.p.A.

Diehl Defence GmbH & Co. KG  
 Alte Nussdorfer Strasse 13  
 88662 Ueberlingen; Germany  
 Tel. +49 7551 89-01  
 E-Mail: [pr@diehl-defence.com](mailto:pr@diehl-defence.com)  
[www.diehl.com](http://www.diehl.com)