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Profile  
2015/16



**TERMA<sup>®</sup>**  
ALLIES IN INNOVATION

# Financial Highlights

CONSOLIDATED

DKK million	2015/16	2014/15	2013/14	2012/13	2011/12
Order intake	1,671	1,394	1,455 *	2,037 *	1,026
Order book, year-end	2,752 *	2,567 *	2,507 *	2,188 *	1,291
Revenue	1,486	1,308	1,137	1,140	1,338
EBITDA	207	174	159	130	182
Depreciation and amortization	107	74	75	57	76
Operating profit	100	100	84	73	106
Financial income and costs	(15)	(29)	(30)	(30)	(37)
Earnings before tax (EBT)	85	71	54	43	69
<b>Profit for the year</b>	<b>66</b>	<b>53</b>	<b>53</b>	<b>29</b>	<b>52</b>
Non-current assets	839	796	788	785	785
Current assets	846	742	698	747	724
<b>Total assets</b>	<b>1,685</b>	<b>1,538</b>	<b>1,486</b>	<b>1,532</b>	<b>1,509</b>
<b>Equity</b>	<b>572</b>	<b>491</b>	<b>490</b>	<b>440</b>	<b>422</b>
Provisions	149	127	123	137	135
Non-current liabilities other than provisions	344	394	440	399	487
Current liabilities other than provisions	620	526	433	557	464
NIBD	418	389	431	393	459
Cash flows from operating activities	120	133	50	128	153
Cash flows from investing activities	(139)	(81)	(77)	(52)	(80)
hereof investments in property, plant, and equipment	(66)	(35)	(28)	(12)	(42)
Cash flows from financing activities	17	(67)	(47)	(13)	24
<b>Total cash flows</b>	<b>(2)</b>	<b>(15)</b>	<b>(75)</b>	<b>63</b>	<b>97</b>
<b>Financial Ratios:</b>					
EBITDA margin	13.9	13.3	14.0	9.3	10.2
EBT margin	5.7	5.4	4.7	3.8	5.2
Return on investments	6.2	6.7	5.9	5.3	7.2
Liquidity ratio	136	141	161	134	156
Solvency ratio	33.9	31.9	33.0	28.7	28.0
Return on equity	12.5	10.8	11.4	6.8	12.9
Leverage ratio	2.0	2.2	2.7	3.7	3.3
<b>Average number of full-time employees</b>	<b>1,174</b>	<b>1,117</b>	<b>1,065</b>	<b>1,080</b>	<b>1,195</b>

\* including five-year framework agreements relating to the F-35 Joint Strike Fighter program.

Financial ratios are calculated in accordance with "Recommendations and financial ratios 2015" of the Danish Finance Society.

## Definitions

EBITDA margin:	$\frac{\text{EBITDA} \times 100}{\text{Revenue}}$	EBT margin:	$\frac{\text{Earnings before tax} \times 100}{\text{Revenue}}$
Return on investments:	$\frac{\text{Operating profit} \times 100}{\text{Average operating assets}}$	Operating assets:	Total assets less cash at bank and in hand, other interest-bearing assets (including stock), and equity interest in affiliated companies
Liquidity ratio:	$\frac{\text{Current assets} \times 100}{\text{Current liabilities other than provisions}}$	Solvency ratio:	$\frac{\text{Equity at year-end} \times 100}{\text{Total liabilities at year-end}}$
Return on equity:	$\frac{\text{Profit for the year} \times 100}{\text{Average equity}}$	Leverage ratio:	$\frac{\text{NIBD} \times 100}{\text{EBITDA}}$

Images: European Space Agency, Lockheed Martin Corporation, Royal Danish Navy, Henning Staun Nielsen, David Bering, and Terma

# Highlights of the year 2015/16

- Groundbreaking for 3,130 m<sup>2</sup> of new buildings for the production of carbon fiber and composite parts for the F-35 and other contracts took place at Terma's facility in Grenaa. The buildings will house a clean room for layup of composite parts, new offices, materials rack, autoclave, and a tool storage building.
- Terma was contracted to deliver the very first Anti-Icing Antenna to operate with the SCANTER Surface Movement Radar at Sofia Airport, Bulgaria.
- Terma Aerostructures A/S has obtained a key role in a project aiming at developing technology which can automatically produce carbon fiber and composite parts by use of robots. This could result in a significant reduction in the total production time.
- Terma and TATA Advanced Systems Ltd. were selected for a prestigious naval radar program in India. As a result, the team will be supplying radars for the Surface Surveillance Radar (SSR) project in a program that is categorized under the "Buy & Make (Indian)" category of the Indian Defence Procurement Procedure, which entails a substantial Transfer of Technology with a requirement of local production and support in India.
- A new Danish research project, Free the Drones, was launched. The objective is to further develop the drones to fly freely in a safe way. Terma participates in the project that is supported by the Innovation Fund Denmark.
- Terma Aerostructures A/S signed its second Long-Term Agreement with Sikorsky Aircraft in support of the S-92 helicopter.
- In the fall 2015, Terma secured the first contracts with the British provider of air navigation services, National Air Traffic Service (NATS), for radar surveillance of wind farms. Additional contracts are in the pipeline.
- Terma opened a new office in Brussels, Belgium.
- Terma B.V. along with four Dutch companies signed a Letter Of Intent with the Royal Netherlands Air Force to establish a Center of Excellence at Woensdrecht Logistics Centre. The center will support the F-35 program with specific focus on the so-called LM-STAR test capabilities and Maintenance, Repair, and Overhaul.
- Terma introduced C-Flex COMPACT – a tactical system designed to support maritime vessels in carrying out operational tasks. It provides situational awareness, efficient planning and decision making, and contains tools for intelligence and legal evidence collection.
- Terma introduced the SCANTER 2600 naval surveillance radar which is well-suited as sensor in systems for medium-range surface surveillance and meets the requirements for professional navigation applications.
- Terma and Lockheed Martin Corporation entered into a contract for the integration of directed infrared countermeasures (DIRCM) on C-130J Super Hercules aircraft.
- A Memorandum Of Understanding was signed at the Paris Air Show between Terma and Lockheed Martin Corporation confirming future opportunities for Terma to pursue additional component production beyond our current contracted agreements for the F-35 Lightning II Joint Strike Fighter.
- Terma entered into the first contract with Boeing Commercial Aircraft for delivery of composite parts for the tail section of the Boeing 777-200/300 commercial aircraft.
- Terma entered into a contract with BAE Systems which covers an offset funded project for the development of a next-generation Terma 3D-Audio/Active Noise Reduction capable headset.
- Terma demonstrated the Obstruction Light Control solution for the U.S. Federal Aviation Administration in Tehachapi, CA. The system will ensure that aviation obstruction lights on wind turbines are switched on only when airplanes are in the vicinity.
- Terma has secured an additional contract for a Power Conditioning and Distribution Unit (PCDU) for the European scientific space mission Euclid, the European Space Agency's (ESA) next cornerstone mission.

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## Terma at a Glance

2015/16 IN NUMBERS

Order intake  
(DKK million)

**1,671**

Up from 1,394



Order book, year-end  
(DKK million)

**2,752**

Up from 2,567



Earnings before tax (EBT)  
(DKK million)

**85**

Up from 71



Revenue (DKK million)

**1,486**

Up from 1,308



EBITDA (DKK million)

**207**

Up from 174



Return on investments (%)

**6.2**

Down from 6.7



Leverage ratio

**2.0**

Down from 2.2



Equity (DKK million)

**572**

Up from 491





# Letter from the CEO

**As President & CEO, it is a pleasure for me to introduce you to Terma. At the end of February 2016, we concluded a fiscal year that showed a positive development in all Terma business activities in the Aerospace, Defense, and Security markets and formed the basis for yet another satisfactory financial result.**

We secured an order intake of MDKK 1,671, resulting in an order backlog of MDKK 2,752 that provides for a comfortable business base in the years to come. Revenue was MDKK 1,486 with a year-over-year growth of 14% – a strong growth for the second year in a row. The profit before tax increased to MDKK 85.4 from MDKK 71.2 in the previous year.

At year-end, total staff was 1,189 full-time employees, and total staff is projected to increase by 100 full-time employees in the 2016/17 fiscal year. See page 6-7.

The outlook for 2016/17 is positive as we expect a consolidated organic growth of more than 10% in revenue with a derived growth in earnings.

A significant growth driver for Terma will be the ramp-up in the F-35 program, especially at our facility in Grenaa. In the fall 2015, the Board of Directors approved an investment program comprising a new bonding facility with tool warehouse.

**LEARN MORE >>**

From left:

**Jens Maaløe**  
President & CEO

**Per Thiesen**  
Executive Vice President & CFO

**Steen M. Lyneskjold**  
Executive Vice President & CCO



After a long and very thorough evaluation, the Danish Government in May 2016 announced its recommendation that Denmark acquires 27 F-35 aircraft. At present, this recommendation is subject to negotiations among the parties behind the Defense Agreement.

At Terma, we have been looking forward to this announcement. I am very satisfied with the Government's recommendation. It is no secret that Terma from a very early point estimated the F-35 as the favorite and the natural replacement for the F-16s. On this basis, we have made targeted investments in F-35 production technology and capacity, primarily at our Grenaa facility.

Developments within our Business Areas were also successful during the 2015/16 fiscal year.

Within Command, Control & Sensor Systems, our core radar markets, vessel traffic service (VTS) and coastal surveillance applications, continue to maintain a significant market position, and we witnessed a considerable growth in this segment. Development of the new SCANTER 2200 radar, including redesigned compact antenna, was completed successfully.

The windfarm market is a new market for Terma's radar solutions where the objective is to detect small aircraft flying over large windfarms. The Windfarm Obstruction Light Control (OLC) solution addresses another new radar market for Terma, where we were officially type approved in 2016 by DFS Deutsche Flugsicherung GmbH. [See page 20.](#)

Terma has launched T.react CIP for critical infrastructure protection of airports, ports, and oil/gas installations. T.react CIP is based on advanced radar surveillance and detection algorithms coupled with automated camera control.

During the 2015/16 fiscal year, Airborne Systems, supplying complete aircraft self-protection solutions to large systems integrators and aircraft owners, secured a large contract for self-protection of a special mission aircraft. In addition, Terma is the preferred partner for similar solutions on the C-130J transport aircraft to the international market.

Terma's trusted and combat-proven Advanced Countermeasures Dispenser System (ACMDS) was released in a new re-engineered and upgraded version with advanced operational capabilities. The ACMDS is designed to coordinate, integrate, and operate mixed expendable countermeasures payloads on fixed-wing, transport, and large-body aircraft as well as rotary-wing platforms. [See page 11.](#)

Established in 2015 as a separate Business Area, Global Support & Services is growing and expanding the service business in all defense and security product areas. Our Maintenance, Repair & Overhaul (MRO) capabilities are expanding in both The Netherlands and in the U.S.

The worldwide Space market is developing positively, and our product development over the last years has placed Terma in a comfortable position for a number of new opportunities in Europe, the U.S., and in the Far East. This applies to electronics as well as software solutions. Furthermore, our Space Engineering Services is evolving positively, highlighted by a high

activity level for the European Space Research and Technology Centre (ESTEC), the European Space Operations Centre (ESOC), the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), and the European Southern Observatory (ESO).

Terma is the prime contractor in the ASIM project – The Atmospheric Space Interactions Monitor – with the objective of measuring high altitude lightning in the upper atmosphere. The observatory will be launched to the International Space Station in 2017. Major future space missions with Terma technology on board include Euclid, ExoMars 2020, Electra, and Solar Orbiter.

Terma and in particular our facility in Grenaa has a special interest in the Danish fighter replacement program and the market opportunities provided by this competition. As mentioned, the down-selection is finally in progress, initiated by the governmental recommendation that Denmark acquires the F-35 Lightning II, produced by Lockheed Martin Corporation.

The production of parts for the F-35 Lightning II progresses as planned, and further capacity expansions in the Grenaa facility have been initiated to match the ramp-up of F-35 aircraft to be manufactured. [See page 17.](#)

In 2015, Terma was awarded a contract for Boeing 777-200/300 structural empennage parts. This is regarded a stepping stone into the commercial aerostructures segment.

Another milestone in our partnership with Sikorsky Aircraft Corporation was a project that includes design and production of a component for the S-92 helicopter. Due to our design and production capabilities, a solution for conversion into carbon fiber composite was awarded, confirming our strategy and capability of striving for continuous cost reduction for our customers.

Starting our journey in 1949, Terma has deep and proud roots in Denmark. This is our center as we do business around the world. We continue our international expansion with the purpose of being closer to key customers and end users. Recently, Terma opened an office in Brussels, Belgium, to work more closely with key partners and policy-makers within NATO, the EU institutions, industry organizations, and international partners.

The new Brussels office is the latest addition to our continuous global expansion. With the headquarters in Denmark, Terma now has subsidiaries and operations in the U.S., The Netherlands, Germany, United Kingdom, Belgium, Singapore, India, and the United Arab Emirates.

However, the Danish market will remain a key foundation for Terma's continued international success.

Yours sincerely,

**Jens Maaløe**  
President & CEO



## AN ATTRACTIVE WORKPLACE WITH A GLOBAL OUTREACH

2016/17

Staff increase:  
**100**  
new colleagues on top of the expected normal replacement at a level of 5%

# EMPLOYER BRANDING

A recent survey in the Danish trade journal "Ingeniøren" ranks Terma as no. 2 in the top 5 of the most professionally challenging companies.



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In 2014, the Executive Management of Terma redefined the role of the Human Resources function in a more strategic direction.

The decision was based on the strategy of strengthening our presence in the global market place combined with an expectation of increased scarcity of qualified employees. As a result, Group HR has evaluated and reformulated the recruitment and sourcing strategies and found alternative ways to ensure that we always have the right talent and competencies available.

During the past 1½ years, Group HR has developed new concepts to fulfill the roles in the areas of Compensation & Benefits, Mobility, Learning & Development, as well as Talent Acquisition. Examples of new offerings that have been prepared are position evaluations, development of new career paths, workforce management, and a strong knowledge base related to expatriations. Work is currently being implemented to create a Leadership Role Model to support the Business Areas.

In concert with growing activities in Denmark and abroad, our staff is increasing year by year, and over the next 12 months, we envisage to welcome up to 100 new colleagues on top of the expected normal replacement at a level of 5%. The competition to attract the best qualified employees will be fierce and will call for a clear and visible employer brand.

In short terms, the success and plan for the growth of Terma depend on our ability to attract, retain, and develop staff with the right competencies globally.

However, Terma is a desirable organization, capable of attracting and retaining high-performing staff.

Terma attends the major Danish job fairs relevant to our recruitment efforts. Our impressive stand always attracts a lot of students, and we enjoy a huge interest from the audience to learn about job and career opportunities at Terma. Our awareness among students is good, but as always, there is room for improvement as we are aiming high.

Each year, the Danish trade journal "Ingeniøren" takes the pulse of the Danish business community and the university students within a number of parameters, which include the companies' image and ability to navigate professionally in a highly competitive environment within the engineering segment.



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In the 2015 survey, Terma's image among engineers was measured, and it proved a significant increase compared to 2014. Thus, Terma is now ranked among the top 20 companies. The study included questions about knowledge of Terma, career opportunities, professional development, and management. Thereby, our strategic Employer Branding goal to obtain an image position among the top 25 in Denmark among engineers has been achieved. This strong position is among others achieved through a comprehensive effort to communicate and brand Terma via social media, on our website, in national and international media, and at job fairs and trade shows.

The engineers were also asked to evaluate the companies' profile, which manifested itself in a number of value words. The latest survey ranks Terma as no. 2 in the top 5 of the most professionally challenging companies.

We wish to improve this ranking and have therefore launched new initiatives towards this target group, including increased use of new media platforms.

Among these initiatives is our collaboration with Danish educational institutions. For years, Terma has collaborated with universities and schools of engineering. In Aarhus, near our company headquarters, there has been a natural dialog with a number of programs at the local school of engineering. Terma also has close relations with the Technical University of Denmark (DTU) and Aalborg University.

Recently, we entered into a five-year strategic collaboration agreement with Aarhus University (AU), aiming to contribute to innovation, increased competitiveness, and competence development by actively translating AU's knowledge for the benefit of Terma and vice versa.

The aim is also for Terma to actively support the research environment at the university and be more visible in relation to the students. The collaboration should result in the research environments gaining more knowledge about the technologies and competencies which Terma targets now and in future.

A very concrete example of the collaboration with AU and DTU in Copenhagen is the internship program at Lockheed Martin Corporation, where selected students obtain a five-month internship at Lockheed in Fort Worth, Texas. During the first year under this arrangement, two students from AU went to Fort Worth, and this year, five students from DTU utilize this unique opportunity. In 2017, the number of students is expected to increase even further.

In recent years, Terma has also increased the number of students from universities, both at bachelor level, master level, and industrial PhDs in three-year, business-oriented research projects.

Currently, we have 10 students from the university working on study projects and two industrial PhDs employed at Terma. The ambition is to increase these university collaborations even further.

At Terma, we have high expectations for the collaboration with AU, and we are preparing similar agreements with DTU and other universities in Denmark as well as universities in The Netherlands, Germany, and the U.S.

Only by ensuring bench strength by means of talented staff will Terma be capable of growing the business.



2015/16

2,500+  
worldwide  
radar installations

↑  
**BUSINESS AREAS**

**COMMAND, CONTROL & SENSOR SYSTEMS**

The Command, Control & Sensors (CCS) business delivers products and solutions based on the SCANTER radar and T-Core command and control (C2) technology.



**Thomas Blom**  
Senior Vice President, Command, Control & Sensor Systems

The SCANTER surveillance radars address the global markets for security and safety applications at sea, in the air, and on land. The T-Core C2 technology provides solutions in the naval, air, and missile defense markets as well as protection of critical infrastructure in the security market.

The recently launched T.react CIP product provides critical infrastructure protection against intruders and security threats using the SCANTER 1002 advanced ground surveillance radar and detection algorithms coupled with automated camera control. It provides very effective area protection compared to traditional fixed camera installations. The first system is installed in collaboration with Lockheed Martin Mission Systems and Training in Owego, New York, performing flawlessly and with high user satisfaction.

Navies and coast guards worldwide are important to CCS, with market focus on Offshore Patrol Vessels (OPV), Patrol Vessels, and interceptors with the C-Series – a turnkey mission system solution. C-Series includes C-Flex command and control (C2), SCANTER radars for surveillance, and C-Fire Electro Optics for surveillance and fire control. All systems are designed for vital day-to-day missions such as territorial and Economic Exclusive Zone (EEZ) patrolling, counter piracy/terrorism, Search & Rescue operations, and peacekeeping missions.

The SCANTER radar systems are renowned for their unique capability to detect small and maneuvering targets at long distances and under all weather conditions. Terma is the preferred choice for maritime surveillance, mission critical border security, and traffic safety applications to users worldwide. The SCANTER radar product portfolio comprises the SCANTER 5000 for land-based surveillance, the SCANTER 6000 for naval and coast guard applications on board ships, and the new SCANTER 2000 series.

The SCANTER 2000 series provides an attractive, unprecedented price/performance in the surveillance and safety market and has already enjoyed a strong market acceptance with more than 50 units in operation.

The SCANTER 4000/4100 radar for medium-range air surveillance has undergone a significant technological upgrade and has been delivered to the Royal Danish Navy, Royal Navy, and the Indonesian Navy. The ability of the SCANTER 4000 radars to detect aircraft in the vicinity of wind turbines has been demonstrated in multiple tests, and the first radar system has now been delivered, including government safety approval to mitigate wind turbine disturbances.

The tall wind turbines in wind farms require powerful aircraft obstruction lights. This is an unfortunate disturbance to neighbors. However, this can be mitigated with a SCANTER radar only turning on the lights when aircraft are in the proximity. With the first installation in operation and approvals in Germany and USA, Terma is in the forefront in this market.

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**More than 50 units in operation**



The SCANTER 2000 series provides an attractive, unprecedented price/performance in the **surveillance and safety market** and has already enjoyed a strong market acceptance with **more than 50 units in operation**.



3000

Today, more than **3,000 military aircraft worldwide** are equipped with **Terma's airborne solutions.**

### Airborne Systems

Terma Airborne Systems is a global provider of advanced [electronic warfare \(EW\) self-protection solutions](#), [tactical audio technology](#), [applied aerostructures](#), and [Electronics Manufacturing Services](#) for the aerospace and defense industry. Terma's well-recognized Electronic Warfare Management System, EWMS ALQ-213, is capable of integrating any combination of EW subsystems into a coherent and complete systems solution on any type of aircraft.

The system includes high-level functions such as sensor fusion, embedded training, and electronic countermeasures adaptive processing. The Advanced Threat Display and 3D-Audio Warning Systems provide maximum situational awareness for crews. An Active Noise Reduction and Electrical Noise System is incorporated to reduce pilot stress and fatigue.



**Dan Ulrich**  
Senior Vice President, Airborne Systems

EW subsystems are typically installed using applied aerostructures, i.e. pods, pylons, or other external fixtures, in order to avoid interfering with the aircraft structure and to allow systems to be used across the fleet, thereby significantly reducing the overall cost.

In addition to producing electronics for our own products, we offer our competencies for development and subsequent production of electronics solutions for customers in the aerospace and defense industry. Within our Electronics Manufacturing Services area, we deliver solutions to leading aerospace companies in the U.S. and Europe.

Today, more than 3,000 military aircraft worldwide are equipped with Terma's airborne solutions.



## Airborne



# TERMA RAISES THE BAR WITHIN POD SOLUTIONS AND ADVANCED COUNTERMEASURES SYSTEMS

The continuing threat of terrorism around the globe and the ever-changing technology of surface-to-air missiles have created a greater demand for directed infrared countermeasures (DIRCM) systems and the flexibility to protect all aircraft.

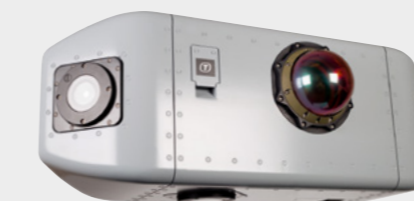
[LEARN MORE >>](#)

Terma's Universal DIRCM pod provides operators with the flexibility to transfer infrared countermeasures systems and missile warning systems across aircraft and among fleet and hence greatly reduces equipment costs.

A proven leader in airborne structures and with over 40 years of experience, Terma has worked with rotary-wing and fixed-wing aircraft operators and OEMs to develop and certify modular airborne structures, e.g. Apache AH-64, Chinook CH-47, IOMAX Archangel, NH-90, and C-130 to include a few.

The universal DIRCM pod comes from a long history and pedigree of structures internationally recognized, such as the Apache Modular Aircraft Survivability Equipment (AMASE) pod and the Chinook Aircraft Survivability Equipment (CHASE) pod.

This pod structure houses the complete DIRCM suite, including laser turret, electronics, and missile warning system sensors in a small, lightweight and rigid structure – just under 40 lbs. per structure.



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### ADVANCED COUNTERMEASURES DISPENSER SYSTEM

As proven by Terma on several platforms and programs, the pod implementation minimizes the aircraft installation and certification by e.g. utilizing existing hardpoints and is therefore ideal for low-cost and rapid fielding of missionized roll-on/roll-off capabilities such as DIRCM/sensors.

When it comes to the trusted and combat-proven Advanced Countermeasures Dispenser System (ACMDS), a new re-engineered and upgraded version is now available. The ACMDS is designed to coordinate, integrate, and operate expendable countermeasures payloads on fixed-wing, transport, and large-body aircraft as well as rotary-wing platforms.

The dispenser suite is controlled via Terma's AN/ALQ-213 EW Management Unit or Defensive Aids Controller, which among other advantages provides a reprogramming interface and automatic decision support for the pilot in a threat environment.

The ACMDS system has been combat proven through operational service for more than 30 years, with a demonstrated mean time between failure value of >18,000 hours. More than 4,000 units have been delivered to customers worldwide.

The first version of this successful sub-system was delivered in 1984 when Terma delivered its first order of EW equipment, 28 Digital Solid State Sequencers, to the Royal Danish Air Force (RDAF).



Terma supports more than 2,000 radar systems, 2,000 aircraft, and several navies worldwide.



# BUSINESS AREAS

## GLOBAL SUPPORT & SERVICES

Global Support & Services maintains, supports, and provides updates of Terma products in the global defense and security markets.



**Lars Hedemann Jensen**  
Senior Vice President, Global Support & Services

The [support and services](#) include discrete spare parts sales, on-call services, and off-the-shelf service concepts as well as more complex availability solutions, which can be tailored to fulfill any operational profile required by the customers. MRO centers with a wide range of capabilities are situated in selected geographical locations around the world to support our customers.

Sustainability is essential in a market where the demand for component availability increases and where customers' requirements for long product lifecycles increase. Based on decades of experience, Global Support & Services' staff understands the importance of through-life support in order to meet customers' operational requirements.

With a large, constantly growing, installed base, Terma supports more than 2,000 radar systems, 2,000 aircraft, and several navies worldwide.



## Space

The knowledge and technology of Danish space research and Danish companies within this market are world-class. In recent years, an increasing scientific, commercial, and educational interest has manifested itself.

Terma contributes with mission-customized software and hardware products as well as services to support a number of in-orbit pioneering European scientific, Earth observation, and navigation missions, such as Rosetta, Mars Express, Sentinel(s), Gaia, Cryosat-2, Lisa Path Finder, ExoMars, and Galileo.

Terma contributes with **mission-customized software and hardware products** as well as services to a number of **ongoing and future satellite missions**.



Additionally, Terma is contracted for the development and delivery of software and hardware systems and services for numerous ongoing and future European, Russian, Asian, and U.S. satellite missions. Examples of these are: BepiColombo with expected launch in 2017; Solar Orbiter with expected launch in 2018, Euclid with expected launch in 2020, and MTG scheduled for its first launch in 2017, as well as U.S. and Asian missions.

Also, Terma is under contract with OHB System AG for the [Sarah mission](#) in areas of both power electronics and software.

Furthermore, Terma is under contract with ESA for the highly sophisticated man-space [ASIM mission](#). Terma is responsible for the international scientific and industrial team developing a structure containing cameras and photometers to be placed outside the International Space Station. The purpose of the mission is to contribute to the study and understanding of how thunderstorms affect the atmosphere and the climate. The launch is expected to take place in 2017.

The Engineering Services area of Space has continued to grow as a result of a number of new framework contracts at ESTEC, ESOC, EUMETSAT, and ESO together with on-site support activities at prime premises.



**Carsten Jørgensen**  
Senior Vice President, Space

## Space

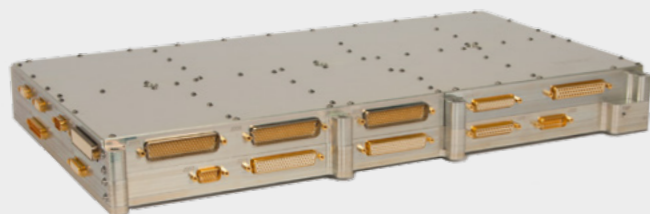


# TERMA HEADING FOR MARS

On 14 March 2016, the ESA spacecraft ExoMars lifted off with mission critical equipment from Terma on board. Terma has developed the "Remote Terminal and Power Unit" (RTPU) for the landing module Schiaparelli. We have also supplied critical software for the Mission Control System, which monitors and controls the mission, and we developed a simulator to prepare procedures and test systems for the actual operation.

The ExoMars 2016 mission consists of two spacecraft. The Trace Gas Orbiter (TGO) which will orbit Mars and the lander Schiaparelli, named after the Italian astronomer and Mars expert, Giovanni Schiaparelli (1835-1910).

After seven months of travel, the two spacecraft will arrive to Mars in October 2016. Here, Schiaparelli will be released from the Trace Gas Orbiter and will land on the Martian surface. After three days of travel, Schiaparelli will test a number of key technologies ahead of the 2020 mission and future landing missions during its decent and landing.



The RTPU from Terma is both a "traditional" power supply with technology derived from power systems for such missions as Rosetta, Mars Express, and BepiColombo as well as an advanced, newly developed sensor package.

The unit from Terma will implement a wide range of control maneuvers and measurements of temperature, pressure, and the landing vehicle's orientation during the descent to Mars' surface. The RTPU will also contribute to the release of the heatshield and parachute and control of the small rocket engines used during the final landing process.

The 2016 mission's two spacecraft Schiaparelli and Trace Gas Orbiter will look for traces of methane and other atmospheric gases that could be signs of active biological or geological processes.

ExoMars consists of two missions, the current 2016 mission and the subsequent 2020 mission, which will deliver a rover to the surface of Mars.

For the 2020 mission, Terma is contracted to develop software for the rover vehicle. Our deliveries are related to the critical system, platform, and payload software for the rover vehicle and include implementation of part of the Guidance and Navigation Control (GNC) elements driving the rover on the Mars surface.

ExoMars is a continuation of the European Mars Express mission, launched in February 2003 and still in orbit. This mission also has a Terma Power Conditioning Unit (PCU) on board, developed and produced in concert with the PCU for Rosetta.

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## 2015-2020

As a result of Terma Aerostructures' involvement in the F-35 program, it is expected necessary to hire up to

**200**  
new employees within the next 3-4 years.



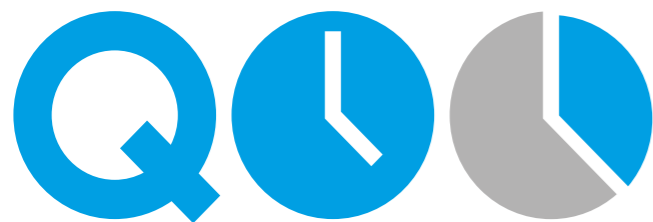
# BUSINESS AREAS

## TERMA AEROSTRUCTURES

The Aerostructures Business Area, headquartered in Grenaa, Denmark, has 300+ employees and provides world-class design and manufacture of advanced metal and composite aerostructures to the global aerospace and defense markets.



The F-35 production environment keeps maturing with introduction of even more affordable solutions.



During 2015/16, Terma Aerostructures met quality, delivery, and cost targets.

#### Terma Aerostructures A/S

The Business Area has a constant focus on continuous improvements and a unique approach to affordability that yields maximum value for the customers year after year.

A broad range of structures are provided for the F-35, F-16, Gulfstream business jets, Boeing Commercial, and Sikorsky Helicopters as well as missionized pods and pylons for various fixed- and rotary-wing aircraft. These products include pods for EW and aircraft survivability equipment, reconnaissance pods, data acquisition pods for flight testing, fuel pylons, and enhanced weapon pylons.



**Ole Graversen**  
Senior Vice President & General Manager, Terma Aerostructures

Terma Aerostructures has been participating in the F-35 development since 2004 to provide complex composite structures to the program's prime contractors as well as pods and pylons to tier 1 companies. Significant investments have been made at the Grenaa facility to upgrade manufacturing capabilities and infrastructure to meet the demanding tolerances and sophisticated technologies of the Joint Strike Fighter program. The capability to provide advanced composites with pre-impregnated carbon fiber with extraordinary high tolerances is a core competency area. During 2015, considerable expansions have been initiated including a new layup room, tool warehouse, and autoclave area in order to prepare for full-rate production of the F-35.

The Aerostructures Business Area's journey to become a world-class facility for design and manufacturing of advanced composite structures has been successful. Affordability requirements and a lean thinking philosophy are the cornerstones of the manufacturing model, and every employee is committed to delivering the promise. The F-35 production environment keeps maturing with introduction of even more affordable solutions, and during 2015/16, Terma Aerostructures met quality, delivery, and cost targets.

In 2015, Terma Aerostructures reached a milestone of utilizing redesign for affordability purposes as a competitive tool. Sikorsky Helicopters was impressed by a new design, and Terma Aerostructures was awarded a contract for a new main fairing.

Another milestone in the establishment of the new strategic business area that focuses on commercial structures was reached with the contract award from [Boeing Commercial for Boeing 777-200/300 structural empennage parts](#).

To enhance agility and increase cash flow, reduction of working capital has been a main focus during 2015/16. The journey has been successful with 12% points reduction, and the journey for more savings continues.

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## Aerostructures



**On 12 May 2016, the Danish Prime Minister Lars Løkke Rasmussen and Minister of Defence Peter Christensen announced the Danish Government's recommendation that Denmark acquires 27 F-35 fighter aircraft.**

At Terma, we have long awaited the announcement of the Government's recommendation about the replacement of Denmark's F-16s. Since 2004, we have been involved in the F-35 program starting with a design contract from General Dynamics Corporation to develop the gun pod for the F-35B and -C versions.

To meet the demanding requirements for quality and delivery, Terma has invested heavily in production facilities, technology, advanced machinery, and education at the Grenaa facility.

During 2012 and 2013, we entered into long-term agreements with Lockheed Martin Corporation, Northrop Grumman Corporation, BAE Systems, and General Dynamics for production of advanced metal, carbon fiber, and composite parts for the aircraft.

In the coming years, Terma Aerostructures' involvement in the F-35 program will require additional staff to fulfill the increased demand. In 2015/16, we have welcomed net 30 new employees. To fulfill our obligations towards Lockheed Martin Corporation and their tier 1 suppliers, it is expected necessary to hire up to net 200 new employees within the next 3-4 years.



Presently, the production capability increases from the current level of 57 aircraft annually to 94 aircraft in 2017 and to a forecast of 136 aircraft annually in 2018. Full-rate is expected to have a steady pace which exceeds 150 aircraft per year. Today, the production capacity is approx. 70 aircraft.

The rapidly growing number of aircraft is a major reason for the launch of a construction project in Grenaa. In October 2015, groundbreaking for a new bonding facility including tool warehouse took place. The project includes a new 1,610 m<sup>2</sup> composite layup center, including office space and technical rooms, and a 1,330 m<sup>2</sup> tool building where layup moulds and tools can be stored under ideal conditions. The autoclave area will be expanded by 450 m<sup>2</sup>, and the current composite center will be renovated.

Mayor Jan Petersen attended the groundbreaking ceremony and expressed his satisfaction with the branding value that Terma provides to the Northern Djursland region: "A few years ago, prospects of production jobs in Denmark were gloomy. This is certainly not the case in Terma, where the company's success ensures valuable, high-tech jobs in the Northern Djursland region."

As planned, the building was handed over in May 2016, and after installation and qualification of the technical equipment, the new facilities will be operational in August 2016.

When fully equipped with advanced production equipment, Terma has one of most sophisticated and advanced production facilities in Europe for composite structural parts for civil and military aircraft.

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2015/16

No. of facilities abroad:  
**12**  
Up from 11

Employees abroad:  
**184**

INTERNATIONAL



Terma The Netherlands has signed a Letter Of Intent with the Royal Netherlands Air Force to establish a Center of Excellence at Woensdrecht Logistics Centre to support the F-35 program.



**Jørn Henrik Levy Rasmussen**  
Senior Vice President, Market Development

**Market Development**

Market Development is responsible for marketing and strategic partnerships with key customers and end users and manages Terma's global market development.

Terma continues its international expansion with the purpose of being closer to key customers and end users. In 2015, Terma opened an office in Brussels, Belgium, to work more closely with key partners and policy-makers within NATO, the EU institutions, industry organizations, and international partners.

The new Brussels office is the latest addition to Terma's continuous global expansion. In addition to the headquarters in Denmark, Terma now has operations in the U.S., The Netherlands, Germany, United Kingdom, Belgium, Singapore, India, and the United Arab Emirates.

In the coming years, the Danish market will remain a key foundation for Terma's continued international success.

**Europe**

In addition to Denmark, Terma has European subsidiaries in The Netherlands, Germany, United Kingdom, and Belgium.

Terma B.V., the Dutch subsidiary, focuses primarily on space activities and aircraft survivability equipment.



**Kristoffer Groth Jakobsen**  
Vice President, Market Development Denmark

Terma and Woensdrecht Logistics Centre have worked together for many years to support the Royal Netherlands Air Force (RNLAf) fleet through development and supply of advanced integrated self-protection systems currently installed on almost all RNLAf aircraft. The airborne EW service and support facility established at the Woensdrecht Air Base is fully operational and processes an expanding range of equipment from the Terma EW product lines.

Terma The Netherlands is one of the five Dutch enterprises that signed a Letter Of Intent with the Royal Netherlands Air Force to establish a Center of Excellence at Woensdrecht Logistics Centre to support the F-35 program with specific focus on the so-called LM-STAR test capabilities and MRO.

Space activities in The Netherlands include in-house turnkey system integration and development, specializing in spacecraft test, simulation, and in-orbit management systems together with the provisioning of highly specialized engineering consultants to ESTEC in Noordwijk, The Netherlands.

Terma GmbH, the German subsidiary has emphasis on support and services.

For the spacecraft prime contractors, Terma Germany supplies key components for the facilities they use for validating their mission critical spacecraft flight software. This includes providing software models of key elements – including the increasingly sophisticated onboard computers – the most important element of such a facility.

Within ESA, we have provided the ExoMars, BepiColombo, and Solar Orbiter Mission Control Systems and the ExoMars Operational Simulator, and we have secured a leading role in providing ESOC with both systems and services. We have an increased presence in EUMETSAT, providing services including IT Support Services.

Terma United Kingdom primarily focuses on space activities and is still in the start-up phase located at Harwell Oxford, initially established with the purpose of supplying engineering services to the UK space industry and ECSAT, the European Centre for Space Applications and Telecommunications.



**Matthijs de Haan**  
Vice President & General Manager, Terma The Netherlands

# Windfarms

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## RADAR TECHNOLOGY IN SUPPORT OF RENEWABLE ENERGY

Wind turbines are major contributors in harvesting renewable energy. However, when grouped in large wind farms, they can have a significant effect on radars, specifically long-range Air Traffic Control Radars (ATC radars) used for aviation purposes. This impacts a safe and reliable radar surveillance.

With Terma's SCANTER radar solutions for wind farms, developers can benefit from our vast experience in airport surface movement radar, vessel traffic services, and coastal surveillance radar applications.

Late 2015, several years of continued efforts in the British and U.S. markets resulted in Terma's initial contracts with the National Air Traffic Service (NATS) for radar surveillance of wind farms in the vicinity of Liverpool. Here, a SCANTER 4002 radar will monitor a wind farm with 19 land-based wind turbines and reduce the challenges created for the radar systems in the two nearby airports Liverpool John Lennon and Chester Hawarden.

Wind farms pose a security challenge compared to traditional ATC radar systems that monitor air traffic around airports. The wings can generate false targets, and real targets may disappear from the radar screen. This can be used by people with evil intentions, but it can also pose a safety risk, especially for small aircraft.

In 2007, Terma was approached by the wind industry to make a theoretical assessment of radar interference caused by wind turbines. This work led to other activities, and in 2011, Terma made the first test of SCANTER radars against wind turbines. Since then, we have conducted a series of tests in Denmark and abroad, including collaboration with Copenhagen Airports where a radar was installed for long-term trials.

Similar live tests have been implemented in England and the U.S., all with convincing results.

At the end of 2015, [Terma and NATS](#) agreed to ensure effective surveillance of wind farms located near Newcastle International Airport and at Edinburgh Airport to eliminate the consequences of planned wind farms on the airports' current ATC radars.

Although several technologies are on trial these years, the only convincing technology so far is Terma's advanced SCANTER 4002 radar.

### OBSTRUCTION LIGHT CONTROL

On the national test center for large wind turbines in Østerild in Thy, Denmark, wind turbine manufacturers and research institutions are completing the development and testing of new wind turbines. The turbines are flanked by two 250 meters high masts with advanced measuring equipment, calibration, and light as a warning to air traffic.

The aircraft warning lights are turned on 24/7. According to a survey from the University of Aalborg, the constant lighting bothers many of the residents in the area.

The Technical University of Denmark – who is responsible for the test center – has contracted Terma to install a SCANTER 5202 radar optimized for air surveillance.

With the growing number of land-based large wind turbines in Denmark as well as abroad, there is an increasing need for reliable equipment that can minimize light pollution in the surrounding area by only turning on the light when needed, i.e. when an aircraft is detected in the area.

Terma has conducted exhaustive tests with aircraft on the site in [Østerild](#). A similar test was conducted successfully in December 2015 near Husum in Germany with the participation of the German air safety service, DFS Deutsche Flugsicherung GmbH. Terma received the type approval in 2016, and a similar approval is expected from the U.S. public aviation authorities later this year.

Residents of Østerild are looking forward to the approval of Terma's Obstruction Light Control (OLC) solution.



**Larry Hungerford**  
President & CEO, Terma North America

### North and Middle America

Terma North America Inc., the U.S. subsidiary, is well established as the interface to North American customers for all Terma Business Areas. Terma North America (TNA) facilitates the growth of Terma's business in the U.S. through a local presence near to important customers and partners. Headquartered in the Washington D.C. area, TNA leads the interface with senior executives in the Department of Defense, the Department of State, the Danish Embassy, the Federal Aviation Administration (FAA), the Department of Homeland Security, as well as the defense industry's prime contractors and many other companies relevant to our business.

A major business development and operations facility is located in Warner Robins, Georgia. It maintains business with the U.S. Air Force, providing EW systems for the Air National Guard and Foreign Military Sales, including maintenance and procurement. Activities in 2016 initiated the first steps to allow the TNA team to develop specialty products for the U.S. market.

In Fort Worth, Texas, TNA's facility is strategically located in close proximity to Lockheed Martin Corporation and the program headquarters for the F-35 and F-16. The Fort Worth office expertise provides vital customer insight and program management support.

TNA's new office in Suffolk, Virginia, near the U.S. Coast Guard headquarters, provides support for surveillance sensors. Business development, technical,

Terma North America leads the interface with

- Department of Defense
- Department of State
- The Danish Embassy
- Federal Aviation Administration (FAA)
- Department of Homeland Security
- The defense industry's prime contractors
- And many more...

and logistical support personnel have been assigned to provide maximum support and customer interface.

Terma Airborne Systems in Warner Robins successfully expanded its traditional customer base by closing negotiations for key Foreign Military Sales contracts for flare-up and airborne survivability equipment for strategic customers at Hill Air Force Base and in South East Asia. The relationship with Northrop Grumman Corporation and The Boeing Company remains strong with follow-on P-8 Poseidon and CH-47 Chinook program opportunities. Additionally, the collaboration with Lockheed Martin Corporation continued strong with business in the C-130J military transport aircraft and the F-16 fighter programs. TNA continued its U.S. expansion by selling Raytheon Company a new sensor suite for its international customers. Towards the end of the fiscal year, TNA added new leadership to expand its international marketing efforts.

The Aerostructures Business Area is strongly represented at the Fort Worth facility. The team has worked closely with Lockheed Martin Corporation, Northrop Grumman Corporation, General Dynamics, Marvin Engineering, and BAE Systems to sustain long-term supplier agreements for the F-35. A key contract with Sikorsky Aircraft Corporation set the stage for "second-leg" composite activity to fully utilize capacity in the factory in Grenaa.

The Command, Control & Sensor Systems Business Area under new TNA leadership tightens its focus on the U.S., Canadian, and Mexican naval markets. The long-term prospects for solid growth in these areas look very promising. Maintenance and service contracts continue including Canada and the U.S. Coast Guard, supporting our Global Support & Services Business Area. Recent certification of our [SCANTER 4000 radar by the Federal Aviation Administration \(FAA\)](#) has opened up new markets for Wind Farm Interference Patterns and Obstruction Light Control, specifically with wind energy developers and municipal energy companies. The first SCANTER 1000 radar was delivered to [Port Canaveral](#), Florida, opening up the critical infrastructure protection market in the U.S.



### Asia Pacific

Currently, Terma Asia Pacific covers the Asia Pacific region by means of two regional offices, one in Singapore – Terma Singapore Pte. Ltd. – and one in India – Terma (India) Pvt. Ltd.

The two offices serve two very different purposes. Whilst Terma Singapore Pte. Ltd. is a full-fledged office, providing the Asia Pacific market presence for the Airborne Systems; Command, Control & Sensor Systems; and Global Support & Services Business Areas through business development, project management, post-sales, and support, the office in India serves as a mere marketing and branding office.

Terma is further cementing its position in the Asia Pacific region by means of strengthening and increasing its network of regional partners whilst strategic partnerships are being even further nurtured and developed to encompass more. Terma is established as a respected and reliable regional partner and supplier of high performance and reliable defense and security solutions in the expanding and developing Asian markets.



**Anupam Narain Mathur**

Vice President & General Manager, Terma Asia Pacific

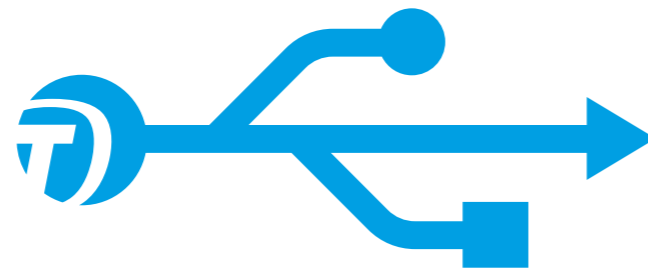
There is a very positive regional outlook for expanded collaboration with regional partners in the security and naval domains.

In partnership with Tata Advanced Systems Ltd. (TASL)'s subsidiary Tata Nova, Terma has been selected for India's first "Buy & Make (India)" naval radar program, Surface Surveillance Radar (SSR). Under this program, Terma will, by means of Transfer of Technology, be setting up a production plant for the SCANTER radar with Tata Nova in India to support this Indian Navy program.

With India's increasing defense budget and ambition to improve the country's self-reliance on defense, including the "Buy & Make (India)" campaign, the key to this market is the ability to transfer technology and to establish strategic partnerships with Indian industry.

Generally, there is a significant interest in the SCANTER radar family of products in the entire region, ranging from surveillance of critical infrastructure over large vessel traffic management systems to coastal and naval surveillance applications. Also, we experience a great interest in Terma's C2 products in the market place.

**The key to the Indian market is the ability to transfer technology and to establish strategic partnerships with Indian industry.**



**David Adgill Larsen**

Regional Director, Terma Middle East

### Middle East and North Africa

Terma established a presence in the capital city of the United Arab Emirates, Abu Dhabi, in the spring of 2014. The local office supports Terma's growing business in the Middle East region.

The traditional market for Terma in the region has been in the area of security and surveillance, which is exemplified by our steady sale of radars for vessel traffic service and coastal surveillance applications over the last decade.

In the past year, we have experienced continuous sales of our radar products as well as our solutions for aircraft self-protection, and we expect this trend to continue alongside increased sales of T.react.CIP for the protection of critical infrastructure.

## The Terma Narrative

Terma is on a growth journey, and in times of change, we need to reflect on our existence in a broader context. This is why CEO Jens Maaløe decided that Terma needs a corporate Narrative to describe our unique identity and compile the company's most important messages and values.

Our business complexity and international diversity is increasing year by year, which makes it even more important to have a common

foundation. In this context, the Narrative will not only bring Terma employees across the organization even closer together, it will also help us to articulate who we are and thereby sharpen our brand and reputation externally.

The complete Terma Narrative is presented below, and on our website, you will find a video with Jens Maaløe presenting Terma according to the Narrative: [www.terma.com/narrative](http://www.terma.com/narrative).



Terma provides mission critical solutions for the defense and aerospace industry. We are guided by one overall purpose: to deliver security for countries, alliances, and individuals. Security is a means to maintaining and developing prosperity and protecting human lives and sovereignty.

We operate in a variety of areas, but security is always the key. We deliver advanced technologies to keep people safe, both in peaceful times and in times of conflict. Our systems provide security for people on land, at sea, and in the air. In space, we are engaged in reaching new frontiers and enabling people on our planet to deal with new and future challenges.

Starting our journey in 1949, Terma has deep and proud roots in Denmark. This is our center as we do business around the world.

Terma believes in international partnerships and strong strategic alliances. Rooted in a small country, we depend on our ability to reach out to partners – and create solutions together.

Terma puts emphasis on diversity, and brings passionate people together with different cultural and professional backgrounds. Security ultimately depends on cooperating across borders and different backgrounds.

Agility is crucial when you operate with innovative technology. We are known for developing unique products and sustainable solutions. With global and local challenges changing more and more rapidly, Terma has a strong focus on adapting to a changing market and exceeding customer expectations.



**TERMA<sup>®</sup>**  
ALLIES IN INNOVATION

    
[www.terma.com](http://www.terma.com)