



Profile

2018/19



TERMA[®]
ALLIES IN INNOVATION

Image: Lockheed Martin

Financial Highlights

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DKK million	2018/19	2017/18	2016/17	2015/16	2014/15
Key Figures:					
Order intake	1,726	1,728	1,411	1,671	1,394
Order backlog, year-end	2,297*	2,374*	2,431*	2,739*	2,567*
Revenue	1,803	1,785	1,719	1,499	1,308
EBITDA before special items	277	298	288	220	174
Depreciation, amortization, and write-downs	(165)	(149)	(147)	(107)	(74)
Operating profit before special items	112	149	141	113	100
Financial income and costs	(17)	(25)	(21)	(28)	(29)
Earnings before special items and tax	95	124	120	85	71
Special items**	(164)	(31)	0	0	0
Profit for the year	(66)	72	91	66	53
Non-current assets	995	935	899	839	796
Current assets	1,192	1,084	892	862	763
Total assets	2,186	2,019	1,791	1,701	1,559
Total equity	579	663	562	572	491
Subordinated loans	125	125	125	0	0
Capital base***	704	788	687	572	491
Provisions	290	165	146	149	127
NIBD (excl. subordinated loans)	357	489	306	418	389
Cash flows from operating activities	362	5	283	120	133
Cash flows for investing activities	(230)	(188)	(206)	(139)	(81)
hereof investments in property, plant, and equipment	(107)	(92)	(133)	(70)	(35)
Cash flows from financing activities	(36)	157	(36)	17	(67)
Total cash flows	95	(26)	41	(2)	(15)
Financial Ratios:					
EBITDA margin before special items	15.3	16.6	16.8	14.6	13.3
EBT margin before special items	5.2	7.0	7.0	5.7	5.4
Return on investments before special items	5.5	8.0	8.2	7.0	6.6
Liquidity ratio	149	161	135	135	139
Solvency ratio (capital base)	32.2	39.0	38.4	33.6	31.5
Return on equity	(10.7)	11.8	16.1	12.5	10.8
Leverage ratio	1.3	1.6	1.1	1.9	2.2
Average number of full-time employees	1,495	1,398	1,257	1,174	1,117

* Including framework agreements, e.g. the F-35 Joint Strike Fighter program.

** Accounting for the Polish court case influences Revenue, EBITDA, Operating profit, and Financial income and costs. Special items primarily relate to the Polish court case.

*** Capital base is defined as equity and subordinated loans.

Definitions of Financial Ratios:

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

Highlights of the year 2018/19

- Terma entered into a contract with the Center of Emergency Communication (CFB) for the delivery of a radio dispatch system including service and maintenance to the Danish National Police.
- Terma became part of the 42-member, EU-funded defense research project Ocean 2020, led by Leonardo.
- Five, four, three, two, one... Denmark's largest space project ASIM – The Atmosphere-Space Interactions Monitor – was launched successfully by a SpaceX Falcon 9 rocket from Cape Canaveral in Florida. Terma heads the technical part of the project and the industrial consortium which has built ASIM.
- The first modular Aircraft Survivability Equipment (MASE) equipped on Royal Netherlands Air Force (RNLAf) NH90 helicopters successfully passed a comprehensive test program consisting of ground, flight, and certification tests and is now awaiting operational use.
- Terma and UK-based MASS, a Cohort plc company, partnered to deliver a global Electronic Warfare Life Cycle Support (EWLS) solution.
- Terma and BAE Systems signed an F-35 Long-Term Price Agreement. The agreement covers the manufacture of Large Composite Skins for the Horizontal and Vertical Tail on all variants of the F-35.
- Terma was contracted to deliver the SCANTER 6002 radar for 12 Offshore Patrol Vessels for the Royal Australian Navy.
- The European satellite Aeolus was launched from the European Space Agency's Space Center in French Guiana with two Star Trackers from Terma on board.
- T&G Nordic and Terma signed a Memorandum of Understanding regarding Terma's C-Guard Decoy Launching System. T&G Nordic will support Terma in the design, development, and production of a new test cartridge for Terma's C-Guard Decoy Launching System.
- Terma's first Embedded Tracker (ET2) became operational in Madrid Barajas Airport's South Tower in a SCANTER 5502 Surface Movement Radar (SMR).
- Saturday, 20 October, the European mission to Mercury, BepiColombo, blasted off for a seven-year journey to the Solar System's innermost planet. Terma provided the biggest and most advanced Power Conditioning and Distribution Unit (PCDU) developed by Terma to date for one of two science orbiters.
- Terma and Chemring teamed up for step change in anti-ship missile defense. The combined system solution enhances soft-kill capabilities through refined and dynamic threat evaluation.
- Terma's naval radar solution was IMO certified. The certification applies to the joint Raytheon Anschutz/Terma naval radar solution selected for the Royal Navy's new Type 26 Global Combat Ships.
- The Eu:CROPIS satellite was successfully launched in December 2018. Eu:CROPIS is a German life science satellite developed to investigate the growing of plants (tomatoes) in different levels of gravity on Mars and the Moon. Terma has supplied the Eu:CROPIS Power Conditioning and Distribution Unit (PCDU).
- Terma announced a new President & CEO: Effective 1 June 2019, Jes Munk Hansen will become President & CEO of Terma A/S.
- Early January 2019, Terma for the fifth year in a row sent a group of 11 Danish students of engineering on an exciting and educational five-month internship at Lockheed Martin's aircraft factories in Ft. Worth, Texas, and Marietta, Georgia.
- Terma and Scandinavian Avionics secured the first F-35 sustainment contract. Avionics Test Center Denmark (ATCD), formed by Terma and Scandinavian Avionics in collaboration with the U.S., will be responsible for repair and maintenance globally of avionics components.
- On Saturday, 23 February 2019, it was exactly 20 years ago that Denmark's first satellite Ørsted was launched on a Delta II launcher from Vandenberg Air Force Base in California with the aim of measuring the Earth's magnetic fields.

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Terma at a Glance

2019/20 IN NUMBERS

Order intake
(DKK million)

1,726

Up from 1,575**

EBITDA* (DKK million)

277

Down from 298

Leverage ratio*

1.3

Down from 1.6

Revenue* (DKK million)

1,803

Up from 1,785

Cash flows from
operating activities (DKK
million)

362

Up from 5

Net interest bearing debt
(DKK million)

357

Down from 489

Earnings before tax (EBT)*
(DKK million)

95

Down from 124

Return on
investments (%)

5.5

Down from 8.0

* Revenue, operating profit, EBT, and EBITDA before special items

** Adjusted for a project of 153 MDKK subsequently cancelled in 2018/19

Letter from the CEO and Executive Management

The order intake for the fiscal year 2018/19 was 1,726 MDKK, resulting in an order backlog at year-end of 2,297 MDKK. This order backlog provides for a comfortable business base in 2019/20 and in following years.

Revenue for the fiscal year was 1,803 MDKK compared to 1,785 MDKK in 2017/18. 94% of the revenue was generated outside Denmark and the defense market constitutes 67% of Terma's revenue.

Earnings before tax (EBT) were 95 MDKK before special items in 2018/19 compared to 124 MDKK in 2017/18. EBT was (69) MDKK after special items in 2018/19. Special items comprise a Polish court case accrual as the major part.

The net interest-bearing debt (NIBD) decreased markedly compared to 2017/18, from 489 MDKK to 357 MDKK.

At year-end, total staff was 1,571 Full-Time Employees.

Jens Maaløe will retire at the end of May 2019 after 16 years as President & CEO of the Terma Group.

Jes Munk Hansen takes up the post as CEO of the Terma Group. He brings extensive experience within the establishment and development of global technology-based companies.

Outlook for 2019/20

In 2019/20, Terma expects a consolidated organic growth >10% in revenue. EBT is expected to increase accordingly whereas cash flows from operating and investing activities are expected to be on par with 2018/19.

Terma is predominantly a business-to-business supplier. The U.S. and Europe will continue to be important growth markets for Terma. From an end user perspective, Terma also foresees growth in the Middle East and Asia Pacific, including India.

Another significant growth driver for Terma will be the ongoing ramp-up in the F-35 program. Negotiations with Lockheed Martin Corporation and their major suppliers continue for future deliveries covering 2023-27. The expected

agreements will cover up to 1,100 aircraft through 2027 and are likely to be some of the largest frame contracts in Terma's history.

Business Activities

Terma provides mission-critical solutions for the aerospace, defense, and security industry. Terma is 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.

Terma consists of four Business Areas: Aeronautics, Space, Surveillance & Mission Systems, and Support & Services.

Aeronautics provides a full range of world-class complex composites and aerostructures, aircraft self-protection and audio management solutions, and Electronics Manufacturing Services.

Customers continue to appreciate and depend on the Aeronautics Business Area's timely delivery of complex composite aerostructures, aircraft self-protection and electronic warfare systems, 3D-Audio management solutions, and Electronics Manufacturing Services.

The F-35 program is set to deliver 150 aircraft in 2020. The F-35 program constitutes approximately 25% of Terma's revenue.

Our self-protection systems are increasingly becoming the standard for combat aircraft. Together with and for the U.S. Air Force, we are uniquely positioned to deliver a next-generation "Enterprise" system that meets new cyber security requirements and defends against new missile threats.

Terma's 3D-Audio/Active Noise Reduction solutions are growing beyond Danish, Dutch, and Belgian Air Forces and U.S. Air National Guard F-16s.

Surveillance & Mission Systems provides radar systems for coastal surveillance and traffic control in sea ports and airports, radars for naval vessels, as well as radars for wind turbine interference mitigation and obstruction light control. The activities also cover command, control, and communications solutions for naval vessels and air defense systems, self-protection

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From left:

Per Thiesen
Executive Vice President & CFO

Jens Maaløe
President & CEO

Steen M. Lyneskjold
Executive Vice President & CCO



systems for naval vessels, as well as systems for security surveillance of critical infrastructures.

For our radar products, the focus continues to create high performance radars for selected market segments, embedding new functions, while increasing support for digital services and lower life cycle costs.

Critical infrastructure protection (CIP) continues to improve sales. The solution protects facilities from intruders on land and on water, using a combination of sensors (including radar) and the Terma T.react CIP C2 system.

For our naval command and control (C2) products, focus continues on making our superior technology available in the 'Patrol' segment as well as the 'Combat' segment. The C2 products will benefit from new advanced functions, based on Artificial Intelligence (AI), derived from our first successful AI implementation to the NATO Alliance Ground Surveillance program.

Support & Services provides maintenance, support, and update of Terma products and solutions as well as third-party OEM equipment.

Terma focuses on activities expanding the service content of our products, enabling further through-life value propositions to our customers as well as end users.

Terma and Scandinavian Avionics teamed up and formed Avionics Test Center Denmark which was assigned as Product Support Provider for maintenance of F-35 avionics components and furthermore supporting the global F-35 fighter aircraft fleet. The components include electronic control units, power supplies, sensors, and electro-mechanical devices.

Space develops and supplies electronics, software, and services for satellites, space control centers, and for test and validation tasks related to development of new satellites and spacecraft.

Terma is the prime contractor for the ASIM project – the Atmosphere-Space Interactions Monitor – with the objective of measuring high altitude lightning in the upper atmosphere. The observatory was delivered to ESA and Kennedy Space Center in early 2018 and was launched on a SpaceX Falcon 9 launcher on 2 April 2018. After nearly a year in space, the observatory is performing excellently.

The current generation of Star Trackers, as well as a new generation of test and control systems, continues with customers both inside and outside Europe. The development of a new generation of Star Trackers is well underway, based on technology that reduces the size and weight of the system's camera and computer.

New power electronics product series have been successfully introduced and new contracts secured in the defense and the telecom markets.

Product development

Terma continues its efforts on building strong modular technology and product platforms.

An improved control suite and software platform for airborne electronic warfare applications will be ready for use during 2020. Furthermore, Terma has introduced its new innovative compact Digital Sequencer Switch (DSS) for the airborne market which provides increased flexibility and usability to our customers.

The development of the common command and control (C2) platform for naval vessels to ensure efficient reuse of key functionalities across C2 product families is a significant contributor to the new C-Flex Patrol product, featuring among others an enhanced user interface.

In the coming year, Terma will launch a new service concept, Terma Lifecare, adding further value to the usage of Terma's products. Lifecare will ensure investment protection through update and improvement services and will offer customers and end users a more predictable and lower total cost of ownership.

International Activities

The Market Development organization facilitates Terma's global infrastructure with the establishment and operation of regional offices and subsidiaries in the U.S., Singapore, India, UAE, and throughout Europe with facilities in the UK, Germany, the Netherlands, France, and Brussels, Belgium. Our regional footprint gives access to a wide network of customers, business partners, and new geographical markets.

High political attention on defense and security and rising budgets by European governments continues. These years, the European Union takes additional steps to creating instruments and programs to strengthen security and defense cooperation and capabilities among member states.

Terma is part of the first EU defense-related research project, OCEAN2020, with official start in March 2018. Our Brussels office closely monitors the evolution of future programs such as EDIDP and the European Defense Fund.

The U.S. remains the most important regional market for Terma due to large programs such as the F-35 Joint Strike Fighter and the presence of many of our key partners, including Lockheed Martin Corporation, Northrop Grumman Corporation, and Raytheon Company. U.S. Foreign Military Sales (FMS) continues to be a key sales channel for aircraft self-protection systems and coastal surveillance radar systems.

Corporate Social Responsibility

Terma actively works with Corporate Social Responsibility (CSR), as we believe it is important to have a positive impact on our surroundings as well as being responsible and accountable for the impacts of our business operations.

All our CSR efforts are described in an annual separate [Corporate Social Responsibility Report](#), which lives up to the requirements for CSR reporting as stated in the Danish Financial Statements Act, section 99a. The report also serves as our Communication on Progress to the UN Global Compact.

Yours sincerely,

Jens Maaløe
President & CEO

BUSINESS AREAS

AERONAUTICS

Aeronautics is a major supplier to the F-35 program and a global provider to the aerospace and defense industry for next generation aircraft self-protection and audio solutions, advanced composite aerostructures, and electronics manufacturing services.



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Steve Williams
President & CEO, Terma North America
Aeronautics

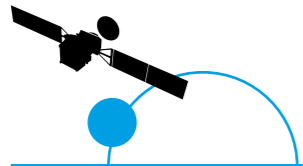
On the [F-35](#) global industry team since 2004, from development to production, Terma continues to provide complex [composite structures](#), pylons, and electronic systems to F-35 prime contractors. Since 2009, more than 50 MUSD has been invested in the Grenaa facility to upgrade manufacturing capabilities and infrastructure to meet the demanding tolerances and sophisticated requirements of the Joint Strike Fighter program.

Our well-recognized [Electronic Warfare Management System \(EWMS\) ALQ-213](#) family of controllers is capable of integrating any combination of EW subsystems into a coherent and complete systems solution on any type of military aircraft. The ALQ-213 EW integration platform includes high-level functions such as sensor integration, embedded training, advanced dispensing, and automatic threat response. Over 2,500 aircraft continue to operate with our systems, assuring safe return of pilots and crew and mission success. To allow systems to be used across the fleet and reduce the overall cost, sensor subsystems may be installed using advanced aerostructures, i.e. pylons or modular pods.

Chosen by the Danish, Belgian, and Dutch Air Forces and U.S. Air National Guard for their fighter aircraft, Terma's unique [3D-Audio Active Noise Reduction and Electrical Noise Cancelling System](#) reduces pilot stress and fatigue, includes missile warning location indication, and uniquely provides increased situational awareness.

Within our [Electronics Manufacturing Services](#) area, we deliver solutions to leading aerospace companies in the U.S. and Europe, including key components for the F-35 and major components for large defense contractors such as the Raytheon Company.





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BUSINESS AREAS

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.



Carsten Jørgensen
Senior Vice President, Space

Furthermore, Terma is under contract with ESA for the highly sophisticated manned-space [ASIM](#) mission. Terma is responsible for the international scientific and industrial team. The ASIM instrument is composed of a structure containing cameras and photo-meters which has been installed on 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. ASIM was launched in April 2018 and is performing perfectly, providing high quality science data.

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.

Terma contributes with mission-customized software (for onboard as well as ground applications) and hardware products as well as services to support a number of in-orbit pioneering European scientific, Earth observation, and navigation missions, such as Mars Express, Sentinel(s), Gaia, CryoSat-2, Lisa Path Finder, ExoMars 2016, Galileo, and BepiColombo.

Additionally, Terma is contracted for the development and delivery of software and hardware systems and services for numerous ongoing and future European, Asian, and U.S. satellite missions. Examples of these are: Jason and Solar Orbiter with expected launch in 2021; Euclid with expected launch in 2021, JUICE with expected launch in 2022, as well as U.S. and Asian missions.

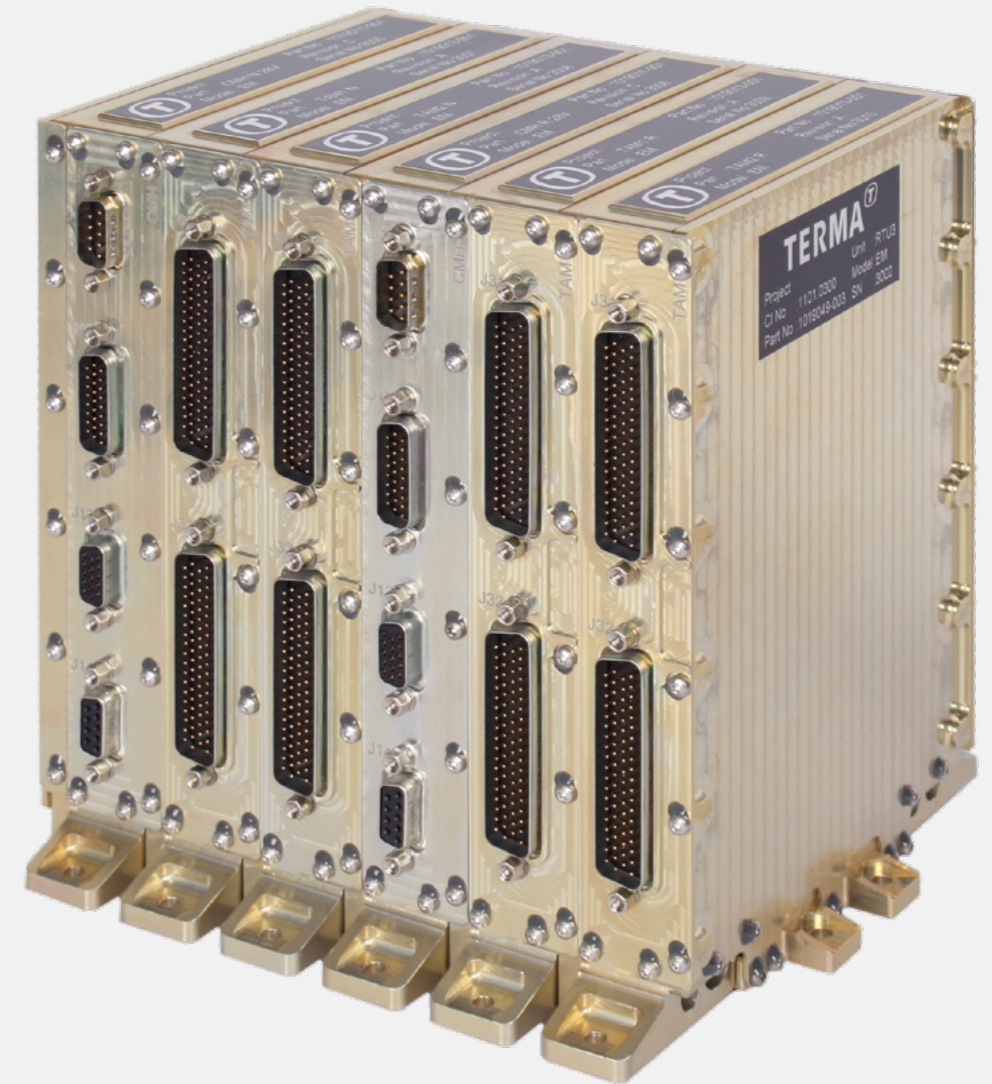
Also, Terma is under contract with OHB System AG for the SARah and the Electra missions together with military missions in areas of both power electronics and software.



Image: NASA

New Remote Terminal Units

The Micro Remote Terminal Unit (μ RTU) is a new business activity for Terma Space, started in 2016. It has been very successful in securing contracts for flight equipment and generating highly skilled jobs in engineering as well as in manufacturing.



The μ RTU is a multipurpose unit used for monitoring and controlling a satellite. Satellite temperatures, sensor signals, equipment status signals, and many other satellite signals are all monitored by the μ RTU. In parallel, the μ RTU is responsible for controlling reaction wheels, magnetic torques, thrusters, heater power, and deployment of solar arrays.

Configurable and Modular Design

Unlike a typical RTU that is tailored to a specific satellite, Terma's μ RTU is a highly configurable and modular design that can be adapted by the customer as late as the satellite's assembly phase. The design furthermore enables easy expansion of functionality required for science and exploration missions.

The compact unit can serve as a small, local RTU of which a number can be placed at strategic positions in the spacecraft, each one aimed to serve as a local RTU for functions within a distance of not more than one meter.

Our RTU customers have defined a common architecture for data handling which is used across all projects unless the satellite end customer requires otherwise. The common architecture was first designed for the Electra satellite platform. Terma has been selected as exclusive provider of RTU equipment and has on-going contracts to deliver RTUs for two telecommunication satellites and two military satellites.

Orders for supply to a further three satellites are expected to be signed in the first half of 2019 via present Long-Term Agreements.

The RTU was initially developed with the support of the ARTES 3-4 program.

Unique Insight into the Requirements

Based on early dialog with all primes and dialog regarding possible technical solutions, we have gained a unique insight into the requirements for RTUs for the projects. In general, we can say that the RTU architecture as it is matches the needs well, but there are three new functionalities (autonomous temperature control, new orbit control module, and solar array drive module) which are needed to fill the future requirements.

The continuous maintenance of the product portfolio is essential to maintain competitiveness. The on-going development of new modules/ functionality and new interfaces is seen as a necessary step to keep the product competitive.

BUSINESS AREAS



SURVEILLANCE & MISSION SYSTEMS

Surveillance & Mission Systems (SMS) has leading positions globally in selected markets for defense, security, and safety applications at sea, in the air, and on land.

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Thomas Blom
Senior Vice President, Surveillance & Mission Systems

The modular SCANTER radar product portfolio comprises three transceiver models.

The SCANTER 2000 series with a very attractive price/performance mainly for maritime surveillance and the high-end SCANTER 5000 and SCANTER 6000 series for long-range land-based coastal surveillance and for naval/coast guard applications on board ships.

The [SCANTER 4000 radar series](#) is for medium-range air surveillance and has undergone a significant technological upgrade, moving from tube to High-Power Solid State technology, increasing reliability, performance, and significant savings in cost of ownership. Primarily used for naval applications, the ability of the SCANTER 4000 radars to detect aircraft in the vicinity of wind turbines and over large wind turbine farms has been demonstrated. Terma has a growing number of radars in operation in airports close to large wind turbine farms to mitigate wind turbine disturbances, and Terma is the only company to have received government safety approval for this application.

The tall wind turbines in wind farms require powerful aircraft [obstruction lights](#), an unfortunate disturbance to their neighbors. However, this light pollution can be mitigated using a SCANTER radar to switch lights off when no aircraft are in the proximity. With multiple installations in operation and approvals in Germany and USA, Terma is in the forefront in this market.

The [T.react CIP](#) product provides critical infrastructure protection against intruders and security threats using the SCANTER 1002 advanced ground surveillance radar and advanced detection algorithms coupled with automated camera control. The system provides very effective area protection compared to traditional fixed camera installations.

Navies and coast guards worldwide are important to SMS, with market focus on Offshore Patrol Vessels, Patrol Vessels, Fast Attack Craft, and interceptors with the [C-Series](#) – where we combine our key command and control technologies to deliver a new level of integration and automated surveillance. 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.

Through our SCANTER radar and T-Core command and control technology platforms, we provide our customers with high performance solutions. The solutions remain cost effective through a high degree of reuse and scale of production.

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 by users worldwide.

Drone Detection



Protection against ever increasing drone threats is a key challenge for our Surveillance & Mission Systems customers. The ability to counter drones is a challenge for all industry companies, and our customers are facing the challenges of specifying their needs, facing a rapidly growing drone market where use cases, threats, and technology are emerging.

Terma is responding to this need by exploring opportunities for improved drone detection and classification with the existing SCANTER family radar products, using software and firmware updates only. This will add a similar radar signature-based drone classification capability which is commonly found in dedicated drone detection systems, but within a single general-purpose surveillance radar system.

A Key Sensor for Drone Detection

Technology trends for counter drone systems show that an active radar is a key sensor for drone detection, providing all-weather, day and night operations, and persistent, accurate, and automatic long-range detection, tracking, and classification of targets of interest. Terma's T.react CIP and C-Flex integrated C2 systems can combine the Terma SCANTER radar sensor with other third-party sensors and effectors to support situational awareness and

threat assessment for counter Unmanned Aerial Systems (UAS) capability: e.g. Electronic Support Measures receivers, Electro Optical / InfraRed (EO/IR) cameras, drone jammers, etc. Our market analysis shows that we have a clear advantage through use of our existing automated C2 systems: these are market proven and have already successfully integrated the various sensor types which are required for a robust, integrated solution. By combining existing radar technologies with third-party sensors, a system with the important balance of high classification rate and low false alarm rate can be obtained which will allow for autonomous operation and allow any operator to easily focus on the targets of interest.

Dialog with Customers and End Users

Terma has commenced work on producing a dedicated T.react CIP-based drone detection system with integrated Terma radar and third-party cameras: to better understand the current capabilities and gaps and also to provide a showcase and live system for discussions with potential customers and users. This will help to ensure we evolve both the C2 and radar lines to meet customer and market needs and can recommend the correct sensors and mix to suit different application areas.

As an outcome of a high-priority development program, a CIP counter drone solution will be launched at the end of 2019. The short timescale is simply needed to meet the immediate market needs and preserve and grow our market share against increasing competition.



BUSINESS AREAS

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.

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Thorbjørn Machholm
Senior Vice President, Support & Services

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

With a large, constantly growing, installed base, Terma supports more than 2,500 radar systems, 2,000 aircraft, and several navies worldwide. Furthermore, Support & Services has an extensive network of Service Partners supporting our ability to be agile and meet our customers with short response times.



Radars are supported globally by technical specialists, offering 24/7 tailor-made service solutions for our different market segments. This includes airports, ports, coastlines, wind turbine farms, special security locations, and naval vessels worldwide.

Centers for Maintenance, Repair & Overhaul (MRO) with a wide range of capabilities are situated in selected geographical locations around the world to support our customers. Currently, the MRO capabilities and capacities are expanding, and we sustain the worldwide fielded ALQ-213 aircraft self-protection system in close cooperation with Terma Aeronautics

from an optimized life cycle support perspective – always with our customers as the prime focus. In addition to supporting Terma products, we have strategic growth ambitions supporting other aeronautics platforms. The current introduction of the F-35 fighter aircraft in Europe is a significant driver in this.



Image: Royal Netherlands Air Force

Image: Royal Danish Navy



MARKET DEVELOPMENT

Market Development delivers on the Group's global and regional strategies and maintains and strengthens strategic customer and partner relationships.

Terma's international activities are headquartered in Denmark, with regional and local offices in Singapore, India, United Arab Emirates, the Netherlands, Belgium, France, the UK, and Germany.

Market Development's overall aim is to drive the internationalization and market development for Terma across the globe.

Market Development delivers on the Group's global and regional strategies and maintains and strengthens strategic customer and partner relationships. Market Development works closely with the Business Areas and Terma North America to deliver the entire Terma portfolio of products.



Jørn Henrik Levy Rasmussen
Senior Vice President, Market Development

Market Development facilitates the global infrastructure with the establishment and operation of the regional offices. Our regional footprint gives Terma access to a wide network of customers, business partners, and new geographical markets.

Terma continues its international expansion with the purpose of being closer to key customers and end users. In the coming years, we will continue our international focus.

Europe

Security concerns remain high throughout Europe, and Terma is working with customers and end users to ensure that we meet core operational and technical requirements as defense budgets rise.

In the area of providing safety, Terma is seeing an important European – and global – market in new niches such as mitigation radar and obstruction light control for wind farms, as well as well-established niches such as Surface Movement Radars in airports, Vessel Traffic Service, and coastal surveillance.

In Europe as a region, Terma is well established with local companies in Denmark, Germany, the Netherlands, and an office in Brussels close to key European and Transatlantic decision makers.

Denmark

In 2019, Denmark supplemented the current Danish Defense Agreement (2018-23) with an additional funding in order to reach 1.5 per cent of GDP in 2023. As the Danish market leader, Terma is in close dialog with defense and governmental representatives as well as civil society at all levels to provide optimum value to Denmark.

As an integrated element, Terma's Industrial Cooperation and Partnerships function works across Business Areas and hand in hand with Terma's regions. The unit is tasked with realizing industrial cooperation for technologies critical for safeguarding core Danish security interests and ensuring that Terma delivers on global commitments.



Anne Mette Mosekjær Søndergaard
Vice President, Europe

Artificial Intelligence



Artificial Intelligence is becoming a driver for new solutions across all business domains. At Terma, the technology is being utilized in many directions.

AI is enabling Automatic Target Recognition (ATR) for the NATO Alliance Ground Surveillance (AGS) system, the technology is also the key component in discriminating birds from planes in our Scanter ET2 Tracker, as well as failure forecasting in our radar systems enabling predictive maintenance, reducing the cost of ownership, and minimizing downtime due to failing parts. AI will also be a key component in augmenting our (radar) products with predictive analytics capabilities to detect and predict relevant patterns in large amounts of captured surveillance data and correlated with other relevant data, e.g. weather data, helping the user make decisions in an increasing complex world.

Initial ATR Capability

By the end of the 2018/19 fiscal year, Terma delivered the Initial ATR/Automated Target Identification (ATID) capability to NATO. The next development stage will focus on enabling user-driven modelling and simulation and integration to allow operational adaptation of the ATR/ATID capability when new types of targets arise. This will provide NATO personnel with an advanced AI modelling capability. As part of the NATO AGS ATR/ATID Capability work, Terma is establishing on-premise, secure high-performance computing facilities. This enables AI model training on classified data at scale.

AI as a Competence Area

Beyond enhancing our existing products, AI is also becoming a competence area. Capitalizing on the know-how built from earlier projects, we are currently developing a solution for mission-critical user-driven data analytics. This will give the end users access to train new machine learning models on available data and adapt to unforeseen challenges, such as detection of new types of target signatures with existing sensors.





Next Step after Market Breakthrough in 3D-Audio

LEARN MORE »

EU and NATO

Terma's office in Brussels, Belgium, is a key element in tracking new European Union initiatives and liaising with NATO stakeholders.

As Europe will be investing more in defense and security in the coming years, Terma is proud to offer our insight as a European medium-sized, high-tech defense, security, and space company with significant business throughout Europe, across the Atlantic Ocean, and worldwide.

Terma is involved in the first-ever EU-funded project of the Preparatory Action for Defence Research (PADR), OCEAN2020, a project aimed at improving European maritime surveillance.

Germany

Terma GmbH, our German subsidiary, is a cornerstone in the execution of Terma's European ambitions. During last year, we joined the German industry association, BDSV, as member.

Based on our strong position with ESA in Darmstadt for more than 25 years, Terma is increasingly positioning itself for additional defense and aerospace opportunities with German end users and customers.

Among other German partners, Terma's solutions are fielded with the German Air Force, and our SCANTER radars are in use across Germany for a variety of applications.



Nils Greir
Vice President, North & Central America

In the space domain, the solutions supplied by Terma GmbH ensure the validation of mission-critical spacecraft flight software.

The Netherlands

Terma B.V., the Dutch subsidiary, focuses on space activities, aircraft survivability equipment for Royal Netherlands Air Force (RNLAf), and the maritime sector for Royal Netherlands Navy and Damen Shipyards Group.

Terma B.V. forms a core part of Terma's business in Europe. The Dutch headquarters are located in Leiden. Also, Terma supports the RNLAf from our test and repair facility at Woensdrecht Air Base.

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 ESA's European Space Research and Technology Centre in Noordwijk, the Netherlands.

Terma B.V. is an active member of NIDV, the Dutch industry association.

North and Central America

Due to the size and reach of the U.S. defense market, North and Central America is a key region for Terma. More than 50% of Terma's revenue comes through the U.S., and in 2018/19, Terma North America Inc. continued to expand to be closer to our customers and end users in the region.

The region continues to represent a majority of Terma customers and revenue, either from U.S. exports or selling directly to primes or end customers in the U.S. The region executed plans for increased marketing and branding activities, supporting the Group objective of strengthening the U.S. home market. The region is hosting Terma's largest single program, F-35, and supported the aim of keeping the program sold and expanding our workshare. Accelerated F-35 orders were an important factor in meeting targets.

The aim to propel the Surveillance & Mission Systems area on a growth path in the U.S. was supported by the first radar sales to the U.S. Navy and first wind farm Aircraft Detection Light Systems in both the U.S. and Canada.



Last year, Terma succeeded with a market breakthrough for our 3D-Audio/ANR (Active Noise Reduction) solution for fighter aircraft. This includes both new European and U.S. customers by upgrading the intercom system of hundreds of F-16s and other fighter platforms. This market breakthrough shows who we are, as being Allies in Innovation, serving both an innovative home market and subsequently exporting military fielded solutions.

3D-Audio/ANR technologies are proven to provide a significant situational awareness and speech intelligibility enhancement through a natural and intuitive auditory interface.

Expanding to Multi-Crew Platforms

Terma will obtain a new leading role in the 3D-Audio/ANR defense market with an opportunity to serve more customers across aircraft plat-

forms such as transport aircraft and helicopters. Together with users and suppliers, Terma will re-think how intercom is currently designed and developed to reduce complexity of integration, making the overall system smarter and more intuitive without compromising safety. The system architecture provides a high degree of flexibility and modularity which allows adaptation to a wide range of aircraft types and customer needs, while maintaining simple and intuitive operations for the users. We are building close partnerships with suppliers in other fast-growing industries like communication and consumer electronics around matured technologies which can be tailored to the civil and military avionics platforms of our customers. The approach is agile by putting efforts into prototyping and experimenting together with our end users and thereby ensuring that our technologies are pulled in a direction our customers find valuable.

Light-Weight Active Noise Reduction

We experience that pilot and crew helmet systems become ever more advanced through adding more sensors, vision optics, and electronics to the helmet. This consequently adds more weight to the head-

supported mass, which can compromise safety and endurance of the aircrew. As headset providers, we are working against the laws of physics when providing light-weight headset solutions and at the same time improving the noise reduction abilities of our headsets in noisy cockpit and cargo environments of the aircraft. Terma is constantly exploring new materials like carbon, additive manufacturing, and emerging light-weight polymers to ensure we meet the weight and noise reduction requirements necessary to avoid long-term hearing loss and obtain crystal-clear 3D voice communication during operation.





Combined with solid financial performance and earnings, the region completed a successful 2018/19 fiscal year. The regional team also experienced an expansion to a total staff of 80 employees, investment in a Final Assembly & Checkout Facility (FACO) for U.S. versions of aircraft self-protection systems, and a strengthened team with new key hires in quality department, business development, supply chain management, and programs.

Asia Pacific

Terma Asia Pacific is responsible for developing a profitable footprint in Asia Pacific for the Group's Business Areas. The region is today comprised of two regional offices: one in Singapore, which serves as Terma Asia Pacific's regional headquarters, Terma Singapore Pte. Ltd., and one in India, Terma (India) Pvt. Ltd.

Terma Singapore provides the Asia Pacific market presence for the Aero-nautics, Surveillance & Mission Systems, and Support & Services Business Areas through sales, business development, project management, after-sales, and technical support. Terma India serves as a marketing, branding, and business development office for most of the Indian subcontinent.

The region is an energetic and active market place with a multitude of defense, security, and infrastructure opportunities ranging from upgrade and modernization programs to new build initiatives. An astonishing 60% of the global container traffic moves through Asia Pacific, requiring the countries in the region to maintain and expand their traffic management infrastructures and invest accordingly.

The passenger travel demand is increasing in countries and regions which is driving airport infrastructure expansions, thus giving Terma new opportunities in this niche market.

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 Asia Pacific markets.

The trend in the region is a growing ambition and demand to be self-reliant.



Anupam Narain Mathur
Vice President & General Manager, Asia Pacific

The markets expect local presence and expertise with an anticipation from end users and stakeholders that defense companies maintain local presence and create durable and growing relationships with local industrial actors.

Willingness to abide to Transfer of Technology and local production requirements is the key to unlock the marketplace, an ethos Terma has incorporated as the very basis of its product development and used successfully in the region.

The SCANTER radar family continues to be steering a significant interest and pull for applications ranging from surveillance of critical infrastructure and airport Surface Movement Radars over large Vessel Traffic Service systems to coastal and naval surveillance applications.

With many countries in the process to acquire and/or modernize their fleet of aircraft, there is also a large market potential for Terma's niche solutions in the domain of aircraft survivability solutions and 3D-Audio solutions.

Middle East and North Africa

Terma has done business in the Middle East and North Africa for many years, and we established a local office in the United Arab Emirates in 2014 to be closer to our customers and end users in the region.

The traditional market for Terma in the Middle East and North Africa region has been within the area of security and surveillance, which is exemplified by our steady sale of SCANTER radars for Vessel Traffic Service, coastal surveillance, and airport surface movement applications over the last two decades. As such, our radars are used to monitor an impressive 13,500 kilometers of coastline in the region and help protect more than 115 million airport passengers every year in the region.

Besides coast guards, ports, and airports, Terma is also proud to count multiple navies and air forces amongst our end users in the region. As such, our naval C-Flex command and control system is in use, and more than 175 aircraft rely on Terma's self-protection solutions in the region. All served from our team in Abu Dhabi.



David Adgill Larsen
Vice President & General Manager, Middle East & North Africa

Meet the new CEO

1 June 2019, Jes Munk Hansen took up the post as CEO & President of Terma A/S

“With Jes Munk Hansen, Terma will have a President & CEO with great experience within the establishment and development of global technology-based companies. Based on his commercial, technological, and management experience, he has the professional and personal background needed to secure Terma’s continued growth and development.”



Flemming H. Tomdrup,
Chairman of Terma's Board of Directors

Jes Munk Hansen joined Terma already in April 2019 to prepare for the post as CEO & President effective from 1 June 2019.

“I have followed Terma for many years and have always been impressed with the company and its approach to technology development. I see a significant growth potential and an exciting match between Terma's future and my professional experience,” says Jes Munk Hansen and continues:

“I had the opportunity to join Terma a couple of months before I formally took up my new post. I'm impressed with what I have experienced, and I really appreciate being part of Terma's future. Several meetings with global customers and partners only reinforced my impression of Terma as a recognized well reputed and reliable partner.”

Innovation and Partnership

“What makes Terma a successful business is to a very high degree based on our ability to combine innovation with partnerships. Everywhere in Terma, you encounter enthusiasm, curiosity, and passion for technology and innovation. And you meet professional skills that are so strong that Terma successfully can compete with much larger orga-

nizations, for example within self-protection of aircraft, radar technology, and space technology,” says Jes Munk Hansen and continues:

“But innovation doesn't do it alone, and this is where our partnerships come in. Terma has a unique ability to work with the leading global players in the aerospace, defense, and security industry. Our customers not only value our technical skills, they also value Terma's ability to create and maintain long-term relationships and participate in large, often complex, contexts.

“I look forward to continuing the development of our global organization and businesses – in the U.S., Asia, Europe, and the Middle East – where we see a great potential for our products and technologies,” says Terma's CEO & President Jes Munk Hansen.

Osram and Grundfos

Prior to joining Terma, Jes Munk Hansen held a row of executive roles in the Osram Group, including CEO for the Americas region. Osram is a global leader within semiconductor-based light solutions, primarily for the car and electronics industries.

During 2015-2017, he was CEO of Ledvance, an Osram spin-off which was established as an independent company as a consequence of the development within LED lighting.

Before joining Osram, Jes Munk Hansen served 13 years in Grundfos. In 2008, he became President and CEO of Grundfos North America where he led the establishment of a local R&D center and the acquisition of several companies.

Jes Munk Hansen holds a Master of Science in Forestry from Copenhagen University (1995) and an MBA from London Business School (1997). He holds a U.S. and Danish citizenship, and he and his family will relocate to Denmark during the summer of 2019.



Jes Munk Hansen (middle) and Terma employees from Asia Pacific with Director General Indian Coast Guard (left) and Danish Ambassador to Singapore Dorte Bech Vizard (right) at IMDEX 2019 in Singapore in May.

