













PRESIDENT'S MESSAGE

It all started 50 years ago. The Tromsø Telemetry Station was proposed and then established. That brought Norway into the satellite age. From the very beginning, the space community in Tromsø has been the country's strongest.

Leading edge technology used in delivering premium services to end users has been the norm since the first day. The SAM-2 computer, the second ever built in Norway, was installed at the station. Its design also became the basis of Norsk Data, a world leading computer company in its time. The SAM-2 computer made TTS one of the most efficient VHF stations in the world. It paved way for the highly automated station of today.

Fifty years later, KSAT operates the largest ground station network in the world. In 2016 more than 28,000 satellite passes were collected from more than 100 antennas worldwide every month, and about 2400 scenes were processed from radar satellites, three times as many as a year ago. I'm pleased to note continued growth in both revenue and profit for KSAT, despite the downturn in the oil and gas market. KSAT is a global company; 97% of its activity is exported. Local commitment has been essential in making this happen, and the dedicated service of KSAT staff has once again made the positive development possible.

I'm also pleased to report that the spacerelated technology base continues to expand in Tromsø. When the European Space Agency and the European Union awarded KSAT the contract for the polar portion of the Sentinel core ground segment, we sought to leverage the fact that most of the data from the European Copernicus ground segment flows through Svalbard. We are still working on several initiatives to further strengthen Tromsø's role as Norway's space capital. The design of a new multi-mission service hub has started, and I look forward to its completion in early 2017. When operational, it will speed and ease KSAT's provision of multi-mission, near real time data from a burgeoning number of satellites. Together with the state of the art system for image analyses, KSAT services will be supplied to our customers in less than 20 minutes.

Improving the multi-mission near realtime maritime surveillance service is a key element in the ongoing evolution of KSAT. The focus has been on oil and gas as well as on the detection of ships and ice, a service designed for situational awareness of the maritime domain in the Arctic. Satellite based radar technology has been the backbone of KSAT service development, and we have initiated internal development activities to expand the services of it in new sectors. That's why KSAT now is expanding its services in new areas, and reaching out globally to curtail illegal fisheries is a key focus area. We have also taken into account the increased focus on big data, machine learning and analytics. To us, these are more than just buzz-words. Satellites generate an enormous amount of data, far too

much to analyze manually. I'm a strong believer in new technology and am aware that it should be used smart.

In 2016 KSAT also reinvented ground station services. The development of KSAT^{LITE}, a ground network dedicated to and designed for the small sat industry was unveiled. In its modular design, the network can easily be adopted for single spacecraft systems as well as for large constellations. KSAT has also embarked on the road toward optimized scheduling of satellite operation. Machine-to-machine interfaces as well as automated scheduling are being applied to optimize antenna loading, and thereby reduce operational costs. Personally, I think this is the way to go. The industry must adopt innovative new technologies.

At KSAT we call it the new school. The old school with proprietary, fixed systems will continue to play a role in some sectors, but it's evident that changes must be made to support new services. Flexibility and open source systems are here to stay. And you either blend in or disappear.

Technology is fascinating. It's astonishing what you can achieve today that was unthinkable 50 years ago. Optimized operation and efficient collection of data is mandatory for increased use of satellite information. New technologies allow us to open new arenas and create new services. I'm committed to continued development of KSAT services to new sectors. However, we must always maintain a strong customer focus. The end user community decides where we should introduce new services.

Table of contents

Presidents message02	KSAT Goes Global12
The noble Art of LEOP-ing04	Events June - December
Events January - May	Annual Report
Environmental Monitoring of offshore activities in Norway	Numbers and figures18

Five decades are but an instant in the chronology of the universe, a long time compared to the lifespan of a human. The first satellite sent down a blurred black and white image of the planet. Today, a petabyte of data is collected from a swarm of new satellites, each the size of a shoebox. Likewise, the large antennas Tromsø Telemetry Station once used have been replaced by efficient small systems. The development will continue, and KSAT will continue to be a part of it.

In retrospect, I look back and lament that the year started with the death of singer David Bowie in early January. His first big hit, Space Oddity, was released on 11 July 1969. The lyrics of it center on the words and thoughts of astronaut Major Tom in a radio conversation with Ground Control, as he looks down at the blue Earth. It was and still is the prescient song of the space age, as ten days later Neil Armstrong became the first person to set his foot on the Moon. It's often said that art predates science and technology, as Space Oddity certainly did. So like Bowie's Major Tom, I know what's going on, but nonetheless am astonished by the place of humans in space.

Rolf Skatteboe President



OF LEOP-ING

Traditionally, you start planning. Then you design. Then you build, and then you launch your satellite. From the initial concept to the operation of a satellite in orbit involves a sequence of phases that together may take as long as a decade. Along the way you meet many challenges and invest much time and money in the project. Not to mention the obstacles you have to go through. Funding is one aspect. Technological and operational challenge is another. Not to mention the launch phase of the project.

Getting an affordable ride into space, is and always has been, a challenge. Launch vehicles are a sparse commodity these days, and hitching a ride

KSAT LAUNCH SUPPORT 2016

KSAT ANTENNAS USED	CUSTOMER	LAUNCH DATE
SG6, TG2, TG6, TR1	Satellite(s)	2016-12-07
SG3, TR3, TG2	Satellite(s)	2016-12-05
SI1	Satellite(s)	2016-11-19
TGR, TR1, TR2, HA1, MA1, DU1, SI1	Satellite(s)	2016-11-11
TR1, TR2, SG3, SG6, SG25, TG2, TG6	Satellite(s)	2016-09-26
SG23, SG22, TR1, TR3	Satellite(s)	2016-09-26
SG42	Satellite(s)	2016-09-26
TG8, SG70, FB1	Satellite(s)	2016-09-15
SI1	Satellite(s)	2016-09-08
HA1, MA1, DU1, SI1	Launcher	2016-08-14
HA1, MA1, DU1, SI1	Launcher	2016-07-18
SG6, SG3	Satellite(s)	2016-06-20
SG25, TG2/SG6, TR1	Satellite(s)	2016-06-20
TG8, SG70, FB1	Satellite(s)	2016-06-20
SG22, SG23, TR1, TR3	Launcher+satellite	2016-06-20
HA1, MA1	Launcher	2016-06-15
HA1, MA1	Launcher	2016-05-27
SI1	Launcher	2016-05-11
HA1, MA1	Launcher	2016-05-05
SG3, SG24, TR1, TR3	Satellite(s)	2016-04-22
HA1, MA1	Launcher	2016-03-04
SG3, SG24, TR1, TR3	Satellite(s)	2016-02-16
TR3, HA1, MA1	Launcher	2016-01-17

KSAT has both polar and mid latitude ground segments for LEOP support. Hence geostationary launches are also supported. The table on the left lists the KSAT antennas and the dates of support. Svalbard. Troll (Antarctica), Singapore, South-Africa, Dubai and Mauritius are all used.





The noble art of LEOP-ing has been brought to perfection by KSAT. During the critical phase where the satellite is brought into orbit, KSAT engineers monitor it and ensure that the essential information is rapidly sent back to the satellite owner and operator.

is expensive and often results in significant delays. But with luck, you'll finally be sitting there anxiously watching the blast off. The next phase in your endeavor towards space then begins. It's the launch and early operation (LEOP) phase. This is the critical time window in which your satellite is deployed, checked out and tested. It's the phase in which the most things may go wrong, so it's important to be able to contact your satellite whenever a need arises, as in case of an emergency.

In the LEOP phase, the satellite is readied for operation. First, the satellite is separated from the launch vehicle. Then its solar panels are deployed, power turned on and subsystems are checked out.





An extensive set of ground stations, strategically located under the launch trajectory is a prerequisite for reliable LEOP service.

Communications between the satellite and the ground are carried out several times per orbit as the satellite transmits its housekeeping information to the ground station. The Mission Operation Centre (MOC) collects information from the station and initiates necessary actions to correct their behavior if needed. At the ground station, the diligent attention of skilled engineers is mandatory. It's a totally different game than for a routine operation where most of the communication nowadays are machinemachine interactions under human supervision.

An extensive set of ground stations, strategically located under the launch trajectory is a pre-requisite for reliable LEOP service. For polar launches, ground stations close to the poles obviously are important. Kongsberg Satellite Services (KSAT) now offers LEOP services as an integrated part of the overall service offerings to its customers.

During a LEOP, both the antenna recourses and the engineering support often are duplicated to provide real time troubleshooting in case of an emergency. KSAT has dedicated a team of skilled engineers complementing the operation staff during LEOPs. Several antennas in the KSAT ground network will be dedicated to the launch support.

In the beginning 10 years ago, KSATs conducted just one LEOP a year. Now LEOP supports have become a routine activity in the KSAT portfolio. In the summer months of 2016 alone, 22 satellites were supported during their LEOPs. A total of 23 LEOP campaigns where supported last year. This





steady growth, reflects the benefits of the KSAT services.

LEOP activities are complex. As an example, a support from KSAT Svalbard a few years ago involved three individual data streams coming down at the same time for two independent customers. The launch vehicle provider was supported with telemetry from the launch vehicle itself, including information about the separation. It was a challenging task, as the vehicle is constantly rotated. In parallel, the satellite owner had two individual links to the spacecraft, since separation took place over Svalbard.

Recently KSAT supported a world record, when the Indian PSLV delivered a total of 104 satellites During a LEOP, both the antenna recourses and the engineering support often are duplicated to provide real time troubleshooting in case of an emergency. KSAT has dedicated a team of skilled engineers complementing the operation staff during LEOPs.

into orbit. It is the first time 88 satellites from the same family have been launched on a single launch vehicle. It illustrates the complexity of a sophisticated LEOP and the logistical challenges associated with multiple satellite launches. It, in turn underscores the necessity of having a sufficient number of antennas and systems ready. In Svalbard alone, KSAT operates nearly 40 antenna systems.

The noble art of LEOP-ing has been brought to perfection by KSAT. During the critical phase where the satellite is brought into orbit, KSAT engineers monitor it and ensure that the essential information is rapidly sent back to the owner and operator.

January

- TG-5 installed and tested in Antarctica
- Supported SpaceX launch with the NASA satellite JASON-3



February

- Sentinel 3A launch and LEOP
- Successful 10 years anniversary celebration and site survey at Troll, Antarctica



March

- SAT deliveries of TerrasarX radar images to EMSA
- New passrecord 24.000 contact pr. month
- Opening of our new Boresight, Svalbard



April

- Preparing the summer season at KSAT Svalbard, 14 antennas shall be installed
- KSAT @Svalbard Ski Marathon
- Sentinel-1B launch & LEOP support
- FB3 antenna in Fairbanks, Alaska installed
- Avalanche course for the employees at KSAT Svalbard
- Participated at National Space Symposium with booth and our new "Taste of Norway" event







May

- Our President meet KARi's President
- KSAT reception and celebration of our national day at SpaceOps in South Korea
- Two of our KSATLITE antennas SG43 and SG16 supported Argentina's Satellogic as they launched their first two satellites
- NOFO agrees on full daily oil-spill detection coverage of Norwegian Shelf
- Our annual participation at Holmenkollen relay was successful
- KSAT focus on @Living Planet Symposium, Praha

<section-header><section-header><section-header><section-header><section-header><section-header><section-header><section-header><text>

New prospects have been delayed or put on hold indefinitely. Moreover, the industry now is under pressure from environmental entities focusing on green and renewable energy, rather than developing fossil fuel prospects especially in new, environmentally sensitive areas. One of the environmental entity arguments concerns the potential environmental impact and damages if an accident occurs.

The offshore oil and gas activities around Norway have always focused on safe and environmentally protective operations. The industry invests considerable resources in meeting the requirements for operational and environmental standards. In addition, oil and gas companies are obliged to monitor and report their operational performance, including any accidental spills. The offshore industry in Norway has been proactive towards the Norwegian Environment Agency in recent years, to obtain acceptance for new remote sensing monitoring requirements and to use satellite remote sensing as the primary tool for detection of illegal oil spills at the offshore oil fields.

In 2016, the industry got approval from the authorities to use satellite based monitoring as the primary tool for regular monitoring and detection of illegal oil spills. KSAT was awarded the contract and has since October 2016 been using satellite radar data for daily monitoring and reporting of any potentially illegal outlets from the offshore oil and gas activities on the Norwegian continental shelf.

KSAT has for many years had a contract with the Norwegian Clean Seas Association for Operating Companies, NOFO, for monitoring and detection of illegal oil spills at some of the offshore oil fields in the Norwegian sector. Because of the new environmental authority guidelines, this agreement now has been scaled up to include the entire Norwegian continental shelf. It is a challenge to ensure a timely monitoring of such a big area. But KSAT is applying its unbiased multi-mission near real time service to provide the coverage, using all available satellites.

Through its agreements with the major radar satellite operators, KSAT has access to the data from all operational radar missions, including Sentinel-1, Radarsat-2, TerraSAR X, Cosmo-Skymed and RISAT-1. Together with NOFO, KSAT has defined a monitoring service for the Norwegian Waters compliant with the strong Norwegian environmental requirements. The overall objective is to provide daily coverage of the offshore oil and gas activities and to deliver near real-time reports on possible spills to NOFO. KSAT has agreed with NOFO on the repetitive coverage pattern for the offshore areas, and hence is responsible for meeting this through combining the use of the available radar satellites. Data are received and analyzed at the KSAT operations center in Tromsø, and any detected possible spill is reported to NOFO within one hour after acquisition. NOFO is then responsible for the follow-up actions.





This contract is a result of a long-term effort from the offshore industry and KSAT combined with the authorities. It supports satellite based service as the most appropriate tool for serving the operational needs for near-real time detection and reporting of illegal oil spills at sea. The close KSAT-NOFO cooperation over many years has proven its suitability and reliability. The recent approval from the Norwegian Environment Agency represents an acceptance of this position, and the offshore industry now implements the tool for daily monitoring.

Even though the current position of the offshore industry is challenging, it is expected that during the coming two to three years exploration activities will expand into new areas. The expansion into new ar-





Example of a service report from KSAT's oil spill detection and reporting service for NOFO.

eas will create an increasing demand for improved satellite data access. KSAT now works continuously to assure access to data from new satellites. KSAT is confident that the coming generations of new satellites will meet the future demand for improved coverage in Norwegian areas of interest. This new service contract is evidence that the Norwegian authorities and the offshore oil and gas industry are leaders that together focus on safe operations and environmental protection. KSAT expects that the NOFO monitoring and reporting model also may be adopted by other countries. The new contract has brought KSAT in a lead position to serve the global offshore oil and gas industry for monitoring and reporting on the operational field exploration and exploitation activities.

Oseberg A © Harald Pettersen/State

GOES GOBAL

A polar orbiting satellite is met by a satellite ground station when it passes over the Pole. It's time to get new instructions and to downlink the information captured.

The KSAT Pole-to-Pole concept has been designed to support such satellites and to make sure that their data are collected efficiently. With ground stations strategically located at the Poles, full coverage of all daily 14 passes is offered from a single ground station. Data can also be downloaded twice pr. orbit allowing efficient data reception every 50th minute. This is especially important for Earth observation or meteorological satellites where the data are vital for environmental monitoring and control and must be collected and distributed efficiently.

However, sometimes the polar focus needs augmentation. A global set of ground stations is needed for various reasons. So KSAT has gone Global. The KSAT mid-latitude network was introduced in 2007 and has been a success. The core stations in Dubai, Mauritius, South Africa and in Singapore keep busy supporting a variety of missions and launch campaigns. In 2016 the global coverage was further enhanced by introducing KSAT^{LITE} network. Through KSAT^{LITE} ground network services was reinvented. It is a dedicated service for the growing number of small satellites in general and small satellite constellation in particular. The business concept is to maximize operational flexibility using a nimble business model. Machine-machine interfaces and dynamic scheduling are key parameters that have gone into the design and implementation.

End-customer satisfaction and timely and reliable delivery of data to the end customers are cornerstones in KSAT operation. A ground segment consisting of uncommitted antennas, cannot ensure the proficiency that our customers require because it cannot guarantee satellite access when needed; the communications back hole will be sub optimal and expensive.



One of our antennas at the Canadian Satellite Ground Station.



KSAT^{LITE} ground network services is a dedicated service for the growing numbers of small satellites in general and small satellites constellation in particular.

At KSAT, the more than 120 antennas worldwide comprise a complex structure designed to be interoperable at minimum cost. However, operating in many different countries has led to internal KSAT organizational changes. Hence, KSAT has gone Global for the second time. In 2016, KSAT Global AS was established as an wholly-owned Norwegian subsidiary of KSAT. It aims to own the KSAT global infrastructure, and it will be active in the countries where KSAT has presence on the ground, i.e. permanent establishments. Today it covers more than 10 countries, and it continues to expand as the KSAT global footprint increases. Due to local regulations, even separate companies are required to comply with local laws. In Canada and Chile for example, KSAT Global has established subsidiaries to optimize the service to the end customer. The Canadian Satellite Ground Station (CSGSI) in Inuvik, North West Territories, Canada and the Chilean Satellite Ground Station (CSGSP), in Punta Arenas, Terra del Fuego, Chile are two examples.

At the CSGSI in Canada, KSAT Global and the KSAT Antenna, Infrastructure and Site (AISS) team joined with local partners in a green field development to build a seven-antenna ground station in about six months. The CSGSI hosts equipment for Planet Inc. and Google/Terra Bella as well as a 13meter S/X system dedicated for the European Union Copernicus program. Together with the antennas located at the KSAT Svalbard ground station, these antennas are the polar core ground segment for the Sentinel series of satellites. Being the European Flagship project for Earth observation for the next three decades, it is essential to optimize data collection and dissemination from these satellites. Their timely delivery is crucial in environmental monitoring and control.

Going Global is something you normally do if you are a traveler and globetrotter. KSAT goes Global to optimize ground network operation and control of satellite. You have to do what you have to do.

2016

June

- NASA/NOAA agreement on long term support from Svalbard and Troll
- KSAT Global AS, a limited company is established
- 4 satellite LEOP support from the same rocket! New record!

July

- 22 satellite LEOPs this summer
- KSAT develops a new site in Canada, Canadian Satellite Ground Station Inuvik, CSGSI Inc is a KSAT subsidiary.

Start Mål

August

- First ever spacerun up to Svalbard ground station
- New passrecord, 26.800 passes
- Implemented new multi-mission delivery tool for KSAT EES services
- With the Norwegian Foreign Minister Mr. Børge Brende present, KSAT signed an agreement with Veng in Argentina
- @ the Small Satellite Conference in Logan, Utah

September

November

• Our CEO held a

• KISMA project: Baseline for new KSAT services

presentation for the

• Worldview-4 launch.

Norwegian crownprince and princess in Canada

All KSAT systems involved

in the first two orbits

- KSAT Svalbard running for charity
- Two antennas installed at our Inuvik ground station
- Annual Internal seminar, Sommarøya

October

• A new and stylish reception now greets our visitors at the HQ in Tromsø





December



 KSAT annual Christmas party with aurora and antennas

• Supported ISRO's Resourcesat-2A launch from Troll and Svalbard, and this was our 3rd ISRO launch and LEOP in 2016, and also supported two of their rocket launches



ANNUAL REPORT

ABOUT KSAT

Kongsberg Satellite Services AS (KSAT) supplies services for the operation of and acquisition of data from satellites in polar orbits as well as for the applications of satellite-based information in global monitoring services.

KSAT is a world leader in its markets and has two business segments. Station services (SOP) comprise about 80% of turnover and services based on satellite information about 20%. The activities of these segments comprise operation ground stations for communication with satellites, near real-time reception and processing of Earth Observation data and services in the operational uses of such data. The company has focused particularly on marine applications of satellite-based Earth Observation information particularly for the oil and gas sector and for public sector users.

The company headquarters are in Tromsø. KSAT operates ground stations in various countries, and controls operations at the Tromsø Network Operations Center (TNOC), which in turn is connected to the company headquarters. KSAT has local offices on Svalbard, in Oslo and in Stockholm.

At the end of 2016, KSAT had a staff of 153, an increase of 7 during the year.

KSAT is owned 50/50 by Space Norway AS, a state-owned enterprise (SOE) of the Ministry of Trade, Industry and Fisheries, and by Kongsberg Defence & Aerospace AS (KDA), part of the Kongsberg Group ASA.

STATUS

Company income increased by 4.4%, and the operating margin went down 2% to 31%. Positive development was anticipated and continued in 2016, even though the year was difficult for its Energy, Environment and Security (EES) Division. The decline was due to considerably lower oil prices. Nonetheless, total turnover increased, both in number of clients and in their geographic distribution. The increase was due to positive development of Satellite Operations (SOP). KSAT routinely supplies operative, near real-time marine services and products associated with ships, ice(bergs), oil spill detection and other services. Monitoring of fishing is a growth segment. KSAT is the only company supplying ground station services from both Polar regions and its Pole-to-Pole concept is optimized for effective satellite control and data downloading. KSAT services have been expanded by mid-Latitude stations and a dedicated KSAT Lite ground segment aimed to fulfil the needs of new customer groups.

The company has long-term contracts with most leading space agencies as well as with key commercial actors. This stable client base ensures a long-term operational ability. Consequently, the company can focus on continued growth, innovative improvements and establishing new business segments. KSAT is the world's largest supplier of services for the control of and data acquisition from polar orbit satellites. Antenna capacity went up in 2016, and by the end of the year, the company operated about 120 antennas and conducted about 28,000 satellite contacts per month involving communications with more than 100 satellites. KSAT supplies ground station services to the ESA/EU funded Galileo and Copernicus satellite systems. Some 93% of company turnover is outside Norway.

Activities focus on the expansion of the ground network with several integrated ground stations and the establishment of global multimission, near real-time monitoring. KSAT's international leading position builds on its operating experience, technical expertise and cost-effective infrastructure combined with unique geographic locations. Moreover, the company draws upon 20 years of experience in developing and supplying satellite-based services focused on maritime applications.

Work continues to improve the accessibility of data from KSAT ground stations. KSAT now is the world's only company with internal processing capabilities for all operational radar satellites. KSAT seeks innovative solutions for establishing new services, focusing on the High North in general and on environmental monitoring in particular. KSAT works together with UnoSat, the United Nations satellite agency and contributes to improve the use of satellite data in disaster and emergency aid activities.

FINANCIAL RISK

A significant part of KSAT's revenue is in US Dollars and Euros, which incurs exposure to exchange risk in ordinary business activities. Safeguarding contracted turnover through hedging is used through contractual forward exchange agreements.

KSAT has little interest risk, because the greater part of company debt is non-interest bearing, and because it has a corporate account arrangement that incurs only net interest for the company. This gives the company ample liquidity and freedom of action.

The company evaluates the credit rating of each new client and takes precautions if necessary. The credit risk is small for KSAT's larger clients. Customers and suppliers are evaluated to ensure that all activities are in accordance with applicable rules for business ethics, anti-corruption, and general social responsibility.

OPERATIONAL RISK

KSAT is a service provider that depends on operational satellites and other technological equipment to download and process data from satellites. Failed launches, malfunctions in orbiting satellites, or faults in KSAT antennas or other equipment may affect development. The operational income from TrollSat in the Antarctic is vulnerable to equipment breakdown and the like.

BUSINESS RISK

Business risk is associated with changes in the primary market, escalating competition and competitive access to data from various satellites.

CONTINUED OPERATION

Continued operation is a presupposition for the Annual Accounts.

EVALUATION OF CASH FLOW

In the cash flow analysis, cash and cash equivalents are entered as the net of bank deposits and short-term debt to credit institutions in that these accounts are included in the corporate accounting system.

In 2016, the net cash flow from operational activities was NOK 196 million, compared to NOK 200 million in 2015. The net change in cash and cash equivalents went down NOK 143.6 million in 2016. Cash and cash equivalents together amounted to NOK 51.7 million as at 31 December 2016. The company's cash flow and liquidity are deemed to be good, and the net capital ratio is 71%.

RESEARCH AND DEVELOPMENT

About 5% of annual turnover is invested in internally and externallyfinanced development of services.

FUTURE DEVELOPMENT

There's a strong demand for the company's services, but the acquisition of new contracts in the EES market declined. Organizational adjustments have been made and operating costs have been cut. Growth in this market is expected henceforward. However, in 2016 there was growth with good results in SOP. The company strives to secure existing and new data sources and to expand access to its own ground stations and to other ground stations.

The Board anticipates continued company growth. Focus will be on globalized services and activities in the High North. Competition is increasing from large European companies, from other companies that own and operate ground stations and from low-cost satellite systems.

WORKING ENVIRONMENT

The company working environment is deemed good. Management and staff are represented in the six-member Working Environment Committee, respectively with three management and three safety deputy members. Two meetings were held in 2016. There were no incidents of staff personal injuries in 2016. Sick leave amounted to 2.36%. Absenteeism was less than 2% the last half year.

SOCIAL RESPONSIBILITY

KSAT emphasizes that values and ethical guidelines shall be integral in its activities. The staff and collaborating partners shall have high ethical standards and live up to prevailing rules. The company focuses on its anti-corruption work and is concerned with its social responsibility. The company will unfailingly live up to prevailing laws and regulations in all its activities. The company contributes with its acquisition of satellite-based earth observation data that is considerably important in resource monitoring and climate research in general.

GENDER EQUALITY

Company management comprises six men and one woman. The Board and its deputies consist of six men and two women. The employees have two representatives on the Board. The Board and management are aware of the social expectations and measures for furthering gender equality within the company and on the Board. The company wishes to be seen as an attractive workplace and aims for arrangements that increase the proportion of women in technical positions and in management. In 2016, 20.6% of KSAT employees were women.

MEASURES AGAINST DISCRIMINATION

KSAT's personnel policy shall ensure equal possibilities and rights and hinder discrimination based on ethnic background, national origin, skin colour, language, religion, beliefs, age, and gender. The company's head office is arranged to support disabled people.

EXTERNAL ENVIRONMENT

The company's activities have no external environmental impact.

STATEMENT OF ANNUAL ACCOUNTS:

The Board believes that the Annual Accounts satisfactorily describe the company's position at the end of the year. The company's financial position and liquidity are sound, and the Board assesses company equity to be satisfactory. The Board is not aware of any situations not included in the Annual Accounts that may affect appraisal of company position.

ALLOCATION OF PROFIT

In 2016, the company profit after tax was NOK 155,763 thousand (TNOK). The Board recommends the following allocation of profit for KSAT AS:

	NOK thousand
Dividend to owners	
To other equity	
Total allocation of profit	

31 December 2016

20 April 2017

THE BOARD OF DIRECTORS OF KONGSBERG SATELLITE SERVICES AS

Asbjørn Birkeland Chairperson

Trond Dybdal Depudy member

Amund Nylund Member

Rolf Skatteboe President Even Aas Deputy chairperson

Jostein Rønneberg Member

Stein Halvard Støver Member

NUMBERS AND FIGURES

ABOUT KSAT

	1000 NOK	1000 NOK	Exch. rate 8,62 1000 USD	Exch. rate 8,62 1000 USD
	2016	2015	2016	2015
Operating revenue	618 029	592 132	71 697	68 693
Raw materials and consumables	101 146	100 066	11 734	11 609
Personnel expenses	136 915	128 147	15 883	14 866
Other operating expences	132 219	111 486	15 339	12 933
Depreciations	57 142	55 054	6 629	6 387
Operating profit	190 607	197 379	22 112	22 898
Net financial items	(1 369)	(1 853)	(159)	(215)
Earnings before tax	191 976	199 232	22 271	23 113
Tax expense	36 213	35 565	4 201	4 126
Net profit for the year	155 763	163 667	18 070	18 987

STATEMENT OF CASH FLOW

	1000 NOK	1000 NOK	Exch. rate 8,62 1000 USD	Exch. rate 8,62 1000 USD
	2016	2015	2016	2015
Earnings before tax	191 976	199 232	22 271	23 113
Taxes paid	(35 561)	(32 806)	(4 125)	(3 806)
Profitt/loss sale of fixed assets	0	0	0	0
Depreciation and amortisation	57 142	55 054	6 629	6 387
Change in accounts payable/receivables	6 351	(6 320)	737	(733)
Change in pension plan liabilities	221	(4 010)	26	(465)
Change in other accrual items	(24 422)	(10 955)	(2 833)	(1 271)
Net cash flow from operations	195 707	200 195	22 704	23 224

Payments for aquisition of fixed assets	(192 342)	(72 674)	(22 313)	(8 431)
Purchase of investments in shares and joint ventures	(1 000)		(116)	0
Loan to Group Company	(26 000)		(3 016)	0
Net increase/decrease in interest bearing debt	0	0	0	0
Paid dividend	(120 000)	(60 000)	(13 921)	(6 961)
Cash and cash equivalents at 1 January	195 341	127 821	22 661	14 828
Cash and cash equivalents at 31 December	51 705	195 341	5 998	22 661

BALANCE SHEET AT 31 DECEMBER

	1000 NOK	1000 NOK	Exch. rate 8,62 1000 USD	Exch. rate 8,62 1000 USD
	2016	2015	2016	2015
Assets				
Deffered tax asset	13 432	16 384	1 558	1 901
Goodwill	0	0	0	0
Tangible fixed assets	0	0	0	0
Operating Assets	527 379	392 177	61 181	45 496
Financial Fixed assets	66 628	43 230	7 729	5 015
Total fixed assets	607 439	451 791	70 469	52 412
Receivables	173 638	128 157	20 144	14 867
Bank deposits and cash equivalents	51 705	195 343	5 998	22 662
Total current assets	225 343	323 500	26 142	37 529
Total assets	832 782	775 291	96 610	89 941

BALANCE SHEET AT 31 DECEMBER

	1000 NOK	1000 NOK	Exch. rate 8,62 1000 USD	Exch. rate 8,62 1000 USD
	2016	2015	2016	2015
Equity and Liabilities				
Share capital	2 000	2 000	232	232
Other equity	587 014	521 251	68 099	60 470
Total equity	589 014	523 251	68331	60702
Deffered tax liabilities				
Long-term interest bearing liabilities				
Other long-term liabilities	23 755	20 534	2 756	2 382
Other short term liabilities	220 013	231 506	25 524	26 857
Total liablities	243 768	252 040	28 279	29 239
Total equity and liablities	832 782	775 291	96 610	89 941

SHAREHOLDERS 31 DECEMBER 2016

Kongsberg Defence and Aerospace AS	50
Space Norway AS	50
	100



KEY FIGURES











Visitors address: Prestvannveien 38, 9011 Tromsø, Norway Postal address: PO. Box 6180 Langnes, NO 9291 Tromsø, Norway Phone: +47 77 60 02 50 / Fax: +47 77 60 02 99

SVALBARD OFFICE

P.O. Box 458, NO-9171 Longyearbyen, Norway Phone: +47 79 02 25 55 / Fax: +47 79 02 37 81/84



