

The Norwegian Space Centre role

Spaceport Norway 2017

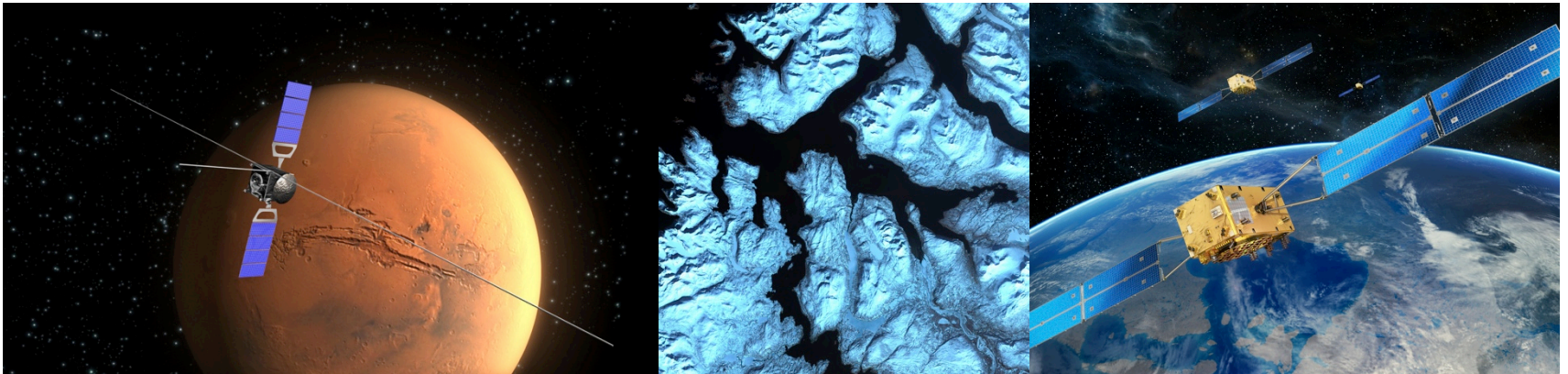


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Vision

Norway shall be the country benefiting the most
from space activities



NORWEGIAN PUBLIC SUPPORT TO SPACE ACTIVITIES

- Budget 2017: 1 034 000 000 NOK (≈ 105 million Euros)
 - 90 % international
 - 10 % national
- ESA: appr. 50%
- Galileo & Copernicus: appr. 35%
- National complementary funding: 3-4%
- Norwegian Space Centre: 6%
- Radarsat & other: 3%



Norwegian Space Centre - Facts:

Government agency (founded 1987)

Coordinates and finance space activities

Strategic advisers for the government

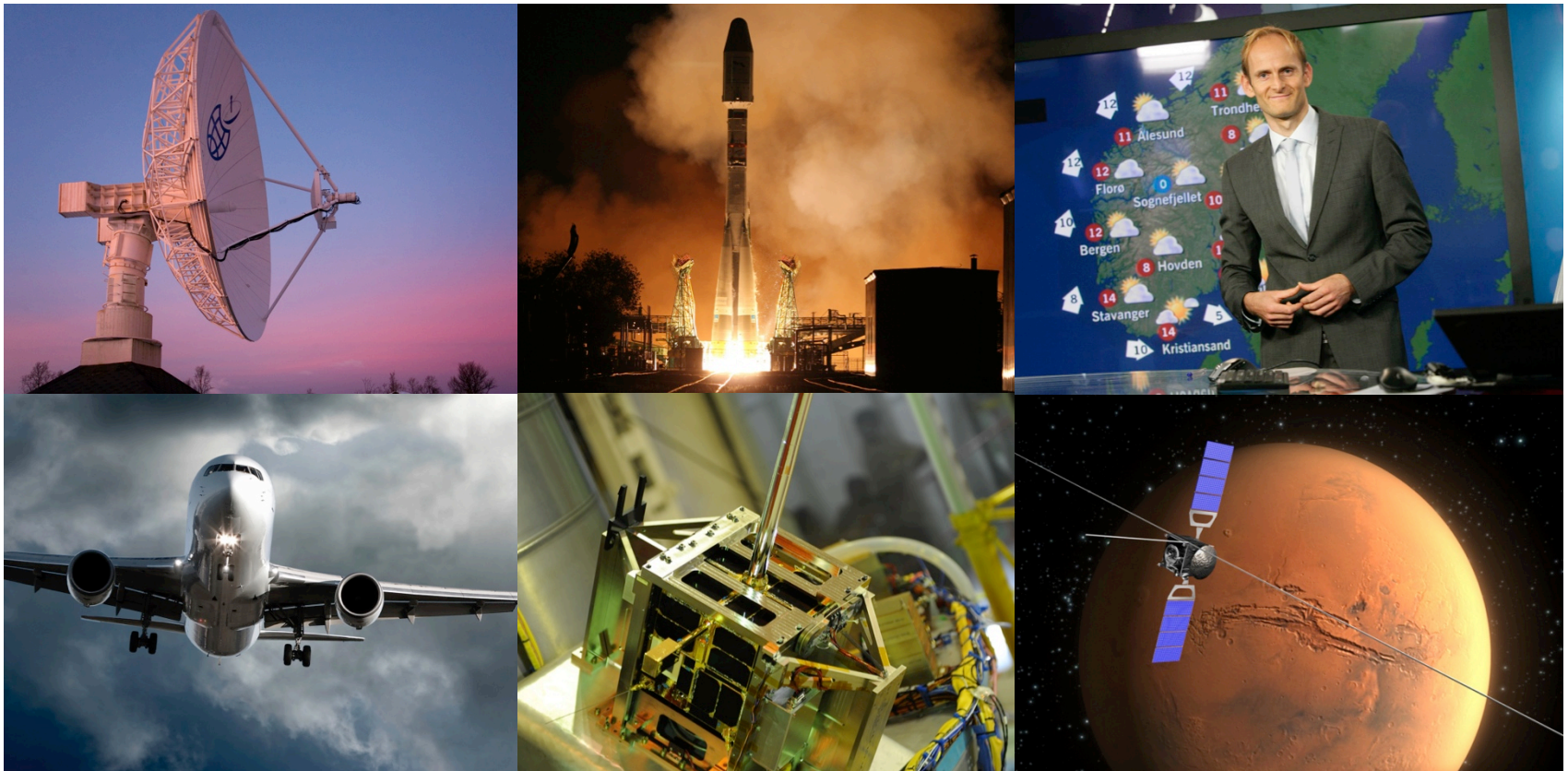
Support existing and potential new actors

40 employees at Skøyen, Oslo



Space activity

All activities connected to the use and exploration of space.



Space activity and key policy areas



The High North
Climate and environment
Civil protection, preparedness
and crisis response
Safe, efficient transport
Research

National strategic advantages

- Maritime and Energy activities
- Geographical location
- High-tech industrial basis
- Small country with good opportunities for efficient public-private partnership



Space activities in Norway

Troms

Dualog
Globesar
Kongsberg Satellite Services
Kongsberg Spacetec
Telespor AS

Senter for fjernmåling
Universitetet i Tromsø
Norut
Norsk Polarinstitutt
Værvarslinga for Nord-Norge

Svalbard

EISCAT Svalbard
Ny Ålesund
forskningslandsby
SvalSat (KSAT)
UNIS

Nordland

Andøya Space Center
HRS Nord-Norge
Høgskolen i Narvik
Forsvarets operative hovedkvarter
TasLobe Invest

Antarktis

TrollSat

Møre og Romsdal

Inmarsat Solutions
Høgskolen i Ålesund

Sør-Trøndelag

CIRiS / NTNU Samfunnsforskning
Findmysheep
Kongsberg Seatex
NTNU
SINTEF IKT
SINTEF Ocean
Trollhetta

Hordaland

CMR Prototech
Eurocom Sat. Systems
Havforskningsinstituttet
Nansensenteret NERSC
Sjøkrigsskolen
Universitetet i Bergen

Rogaland

Eik jordstasjon (Marlink)
Harris Norge
Mars Institute Stavanger
Prekubator TTO

Finnmark

Vardø trafikksentral/Kystverket
Globus 2

Akershus

AnsuR
DNV GL
EIDEL
Forsvarets forskningsinstitutt
Ideas
Kongsberg Defence Communications
Marlink
Norsk institutt for luftforskning
Norsk institutt for skog og landskap
Nittedal Teleport (Telenor)
Satlink Communications Norway
Telenor Satellite
Teleplan Globe
TSAT
Universitetet for miljø- og biovitenskap
VeriSat (Kratos)
WideNorth

Oppland

Nammo Raufoss

Buskerud

HTS Maskinteknikk
Høgskolen i Buskerud
Jotron
Kongsberg Defence & Aerospace
Norsk Titanium Components
Statens Kartverk

Vestfold

Jotron
Kongsberg Norspace
Memscap
OSI Optoelectronics
Sensoror

Telemark

Bandak Group

Aust-Agder

MCP / Telenor Maritime
UNEP/GRID Arendal
Nkom

Oslo

Fugro Seastar
Indra Navia
Jotne EPM
Meteorologisk institutt
Norsk Regnesentral
Norges vassdrags- og energidirektorat
Norsk institutt for vannforskning
Presens
Science [&] Technology
SINTEF Oslo
Space Norway
Statsat
Universitetet i Oslo

Telecommunication

Satellite communication makes up 70 % of the Norwegian space related turnover.

- › Telenor largest Norwegian participant
- › Mobile units, maritime needs
- › ARTES, ESAs telecommunication programme, is central to R&D
- › Norwegian AIS satellites
- › Telemedicine



Navigation

Satellite based positioning, navigation and precise time is of critical importance to society.

- Galileo – European civilian system from 2016
- Works with GPS
- Increased output in the north and new services
- Norwegian industry contracts
- The open EGNOS service is operative
- Growing market for new applications



Earth Observation

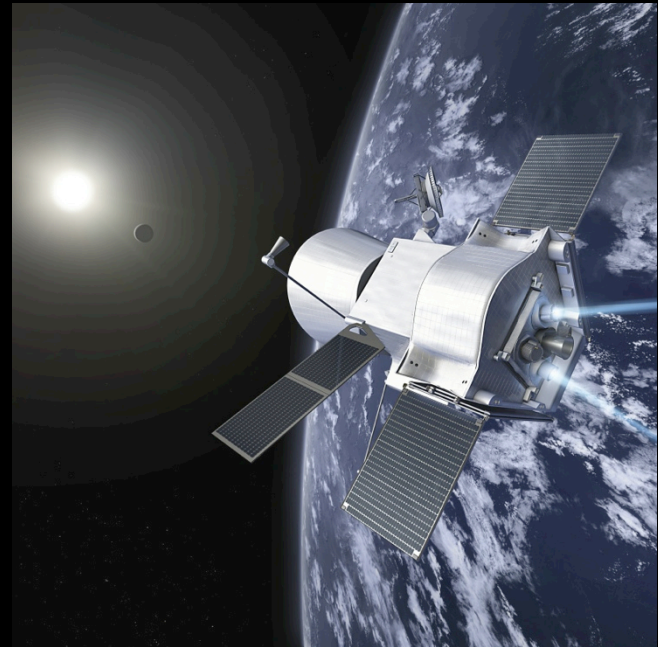
Earth Observation is one of the largest sectors in European space activity. Norway is a major consumer of Earth Observation data from sea, land and air.

- Weather & climate
- Ship detection
- Oil spills
- Algae bloom
- Snow, ice, glacier & permafrost
- Support of Norwegian sovereignty
- Nature management
- Air pollution
- Geohazards
-



Industrial development

- › 30-50 Norwegian participants per year
- › R&D in ESA's technology programme
- › National funding
- › Innovation and synergy
- › Deliveries to ESA and EU programmes





DOWNSTREAM STRATEGY: strengthen existing and mobilise new actors, in areas like **maritime sector**, **smarter societies**, climate/environment, energy, surveillance, societal security

NORWEGIAN AIS AND NORSAT SATELLITES



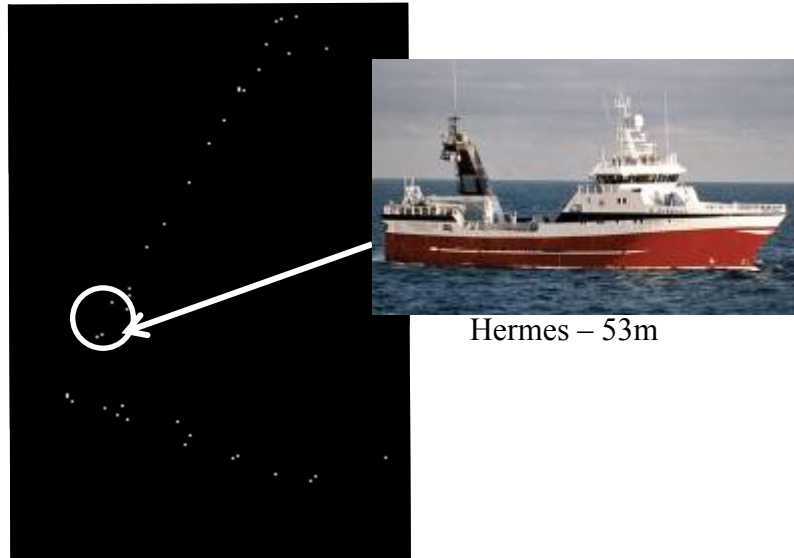
➤ AISSAT 1+2

- 6 KG NANO SATELLITE LAUNCHED FOR MARITIME SURVEILLANCE
- NORWEGIAN AIS RECEIVER
- USER FOCUS (COASTAL ADMINISTR.)
- OPERATIONAL
- FINANCED BY SPACE BUDGET

➤ AISSAT 3: NATIONAL TRANSPORT PLAN

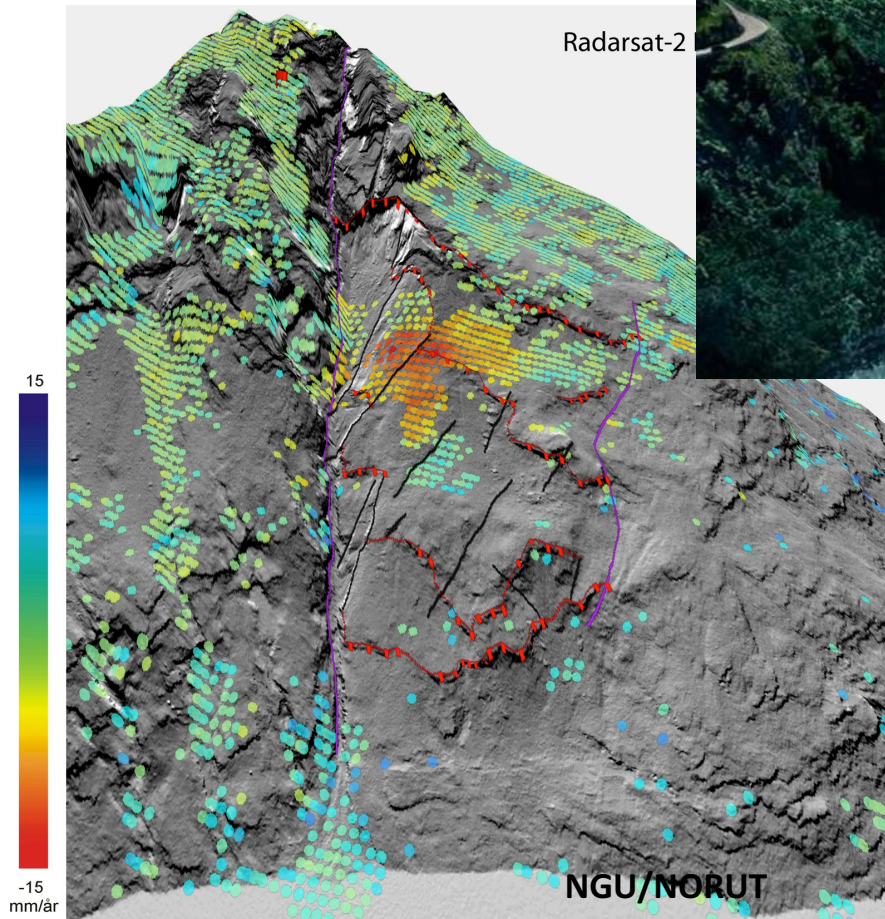
➤ NORSAT 1+2:

- TO BE LAUNCHED
- TWO WAY COMMUNICATION (VDES)

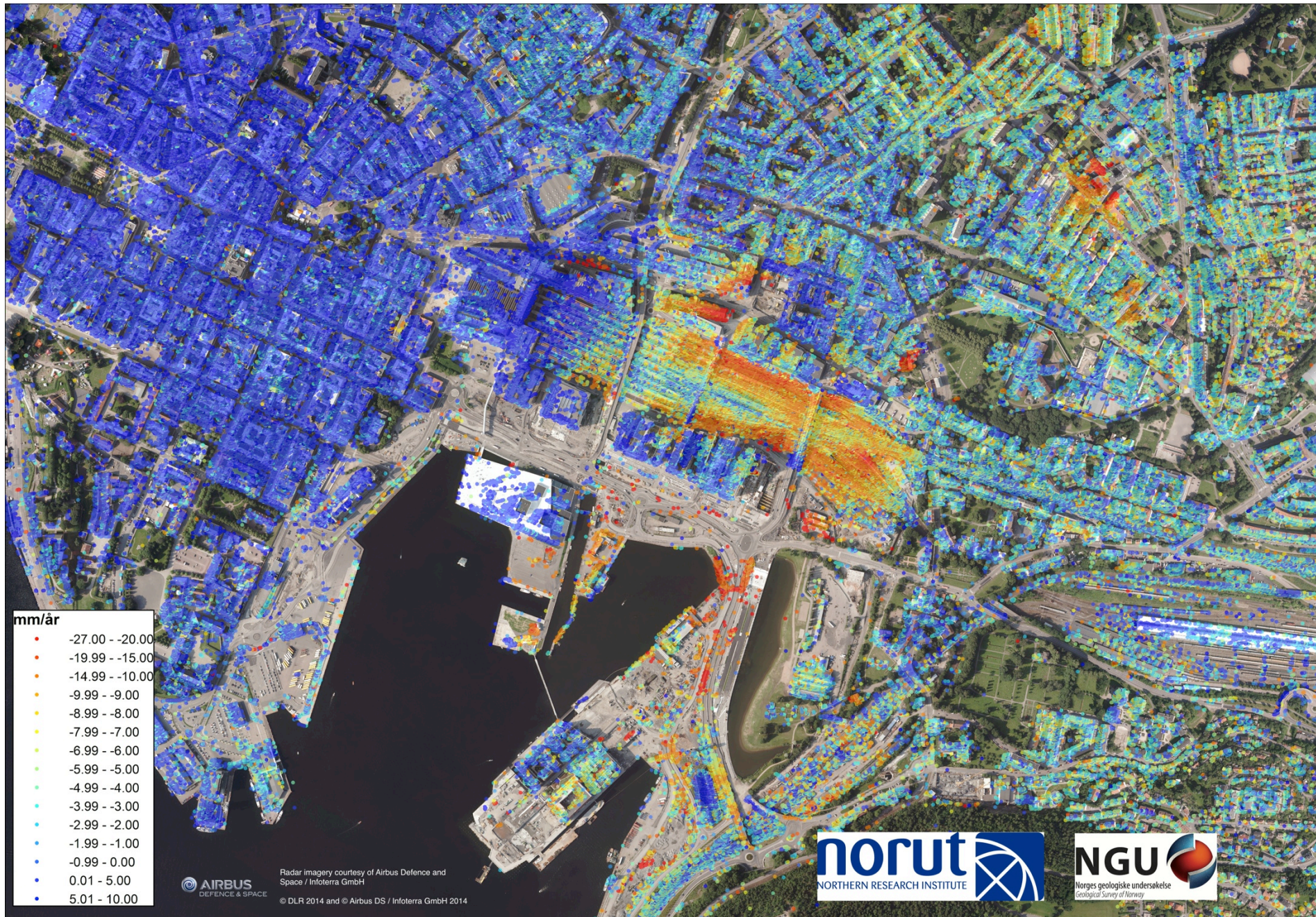


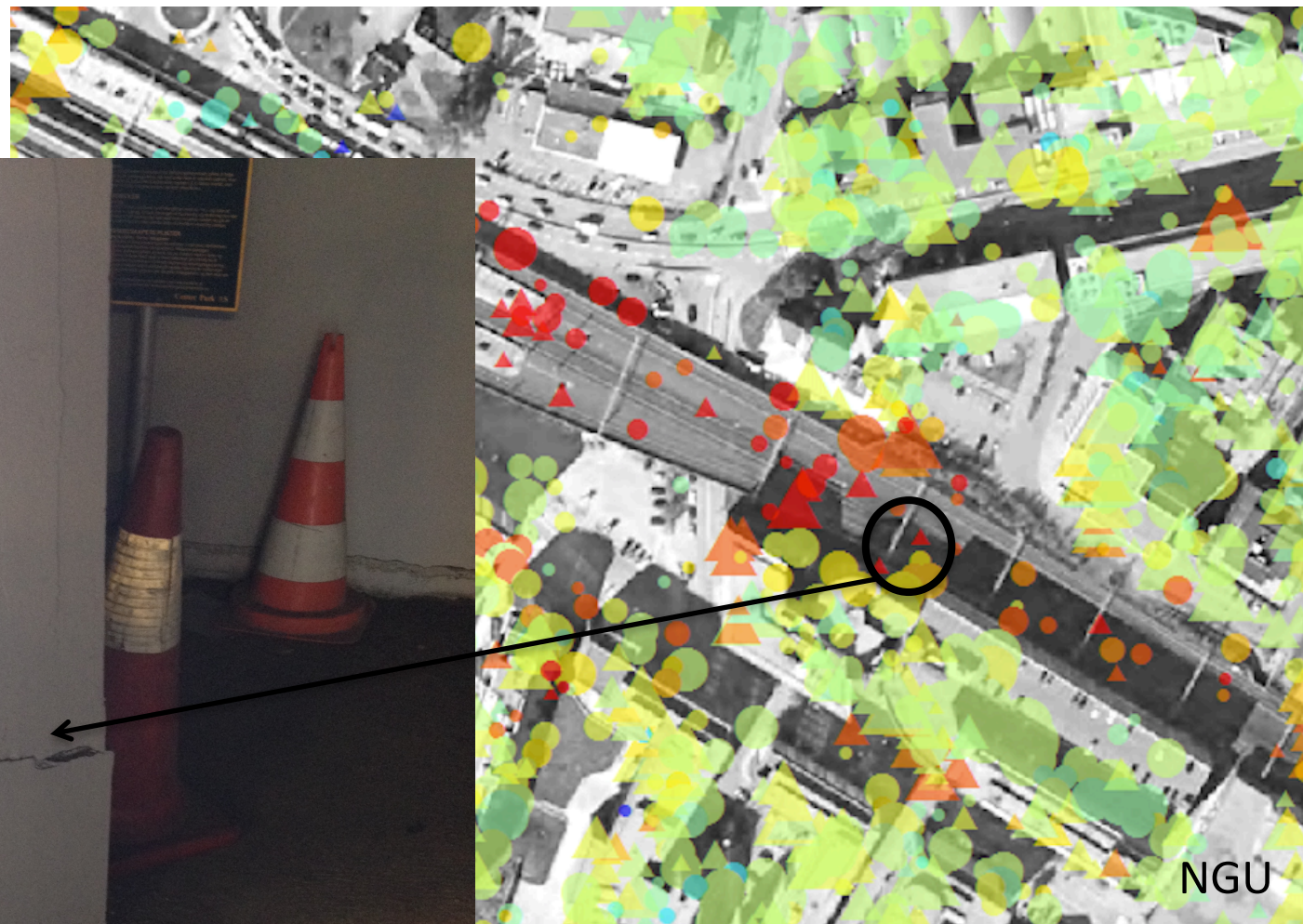
Hermes – 53m

ROCK SLIDE MAPPING BASED ON RADAR SATELLITES & InSAR

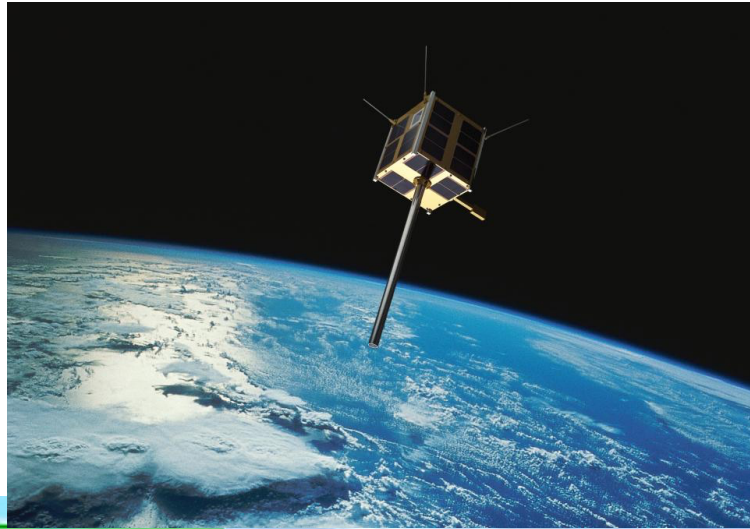


IS OSLO GOING UP OR DOWN?





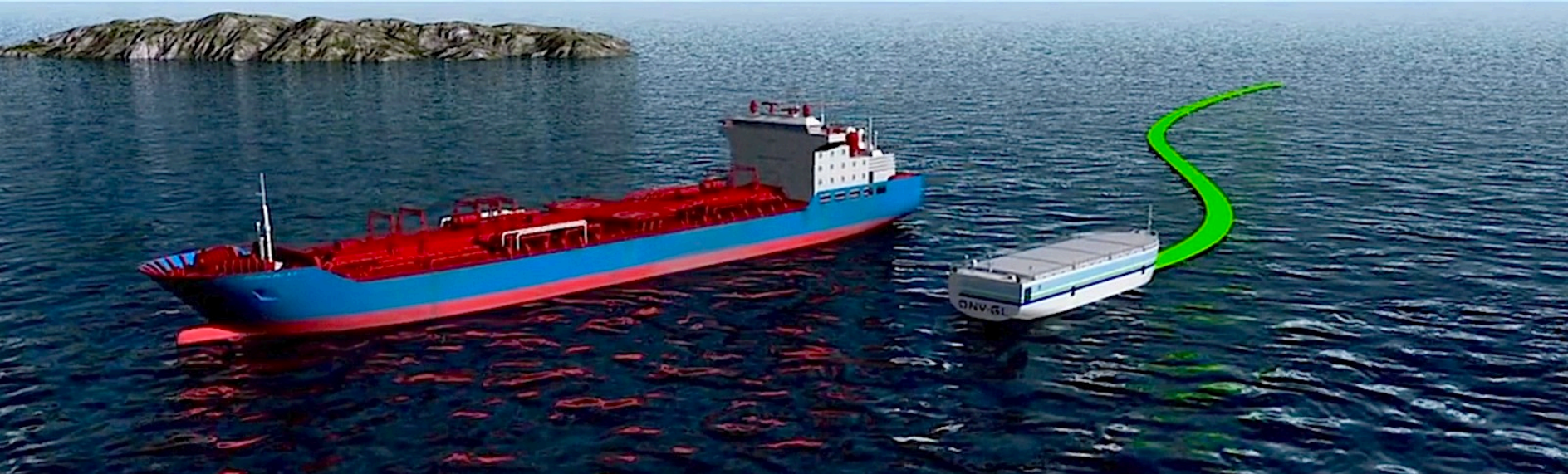
FROM FIND MY SHIP, TO INTELLIGENT SHIPS



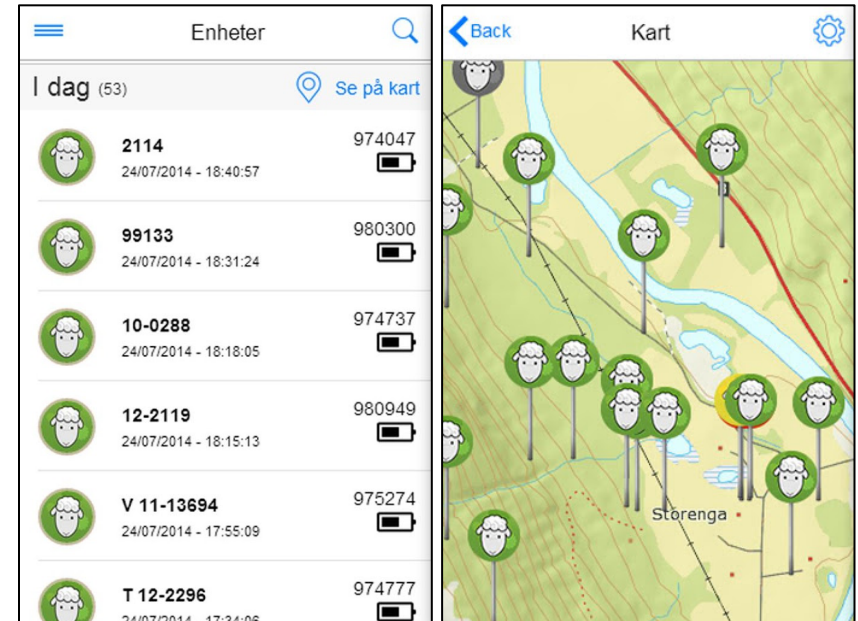
DNV·GL



Source: Maritime Robotics



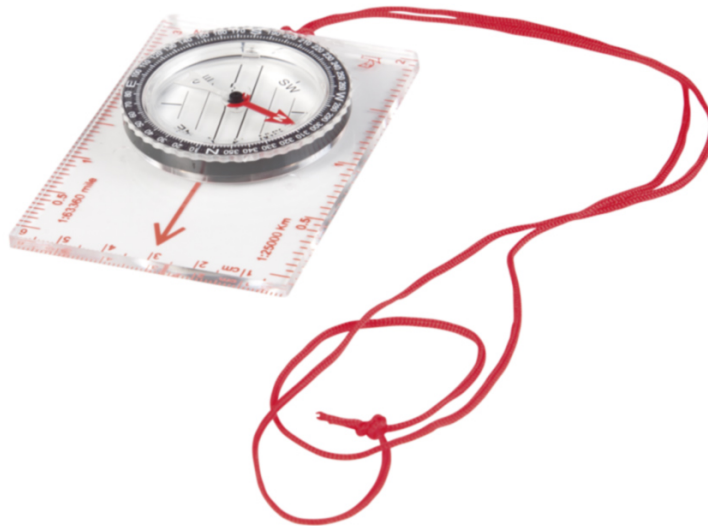
FIND MY SHEEP



Norwegian Space Related Funding

Norwegian
Research Council

Innovation Norway



Norwegian Space Centre

NFR/NRC

Advisory tools

Basic funding schemes

Main financial support schemes

Veiledning

NFR - PES

H2020 - Forskning

NORD

Søknadsskrivingskurs

H2020 –
Innovasjon/Næringsliv

FORNY2020

Prøve-eval.

H2020 –
Samfunnsutfordring

INNOFF

Brussel-netverk

Eurostars

BIA

Innovasjon Norge

Veiledning

IN- Forprosjekt

IN – IFU

Bedriftsnettverk / NIC

IN- Etablerertilskudd (1/2)

IN – OFU

NCE / GCE - kontakt

IN- Lån/Garanti

IN- Generell
prosjektstøtte

NRS/ NSC

Veiledning

Post 72 - Følgemidler

ESA – ARTES

ESA – GSP

Søknadsskrivingsstøtte

Post 74 – Ørem. midler

ESA – EOEP

ESA – GSTP

Evaluering av
romteknologi

SatNav competition

ESA – GNSS Evo

ESA – PRODEX

Workshops

Copernicus competition

ESA – TRP

ESA – FLPP

Just released from Innovation Norway!

– Funding supporting satellite data projects

Utlysning av midler til forprosjekter

Innovasjon Norge søker nye fremtidsrettede prosjekter hvor satellittbasert data utnyttes som del av løsningen. Utlysningen er åpen for alle bransjer og sektorer. Dersom søknaden skal komme i betraktning må den være oss i hende innen 15. september 2017.

satellittdata.no



FOTO: ESA/ATG medialab

ESA applications

Earth Observations (EOP)

EOEP

InCubed

New

Satellite Navigations (NAV)

NAVISP

New

Satellite Comms. (TIA)

Competitiveness & Growth applications

SAT-AIS applications

GOVSATCOM

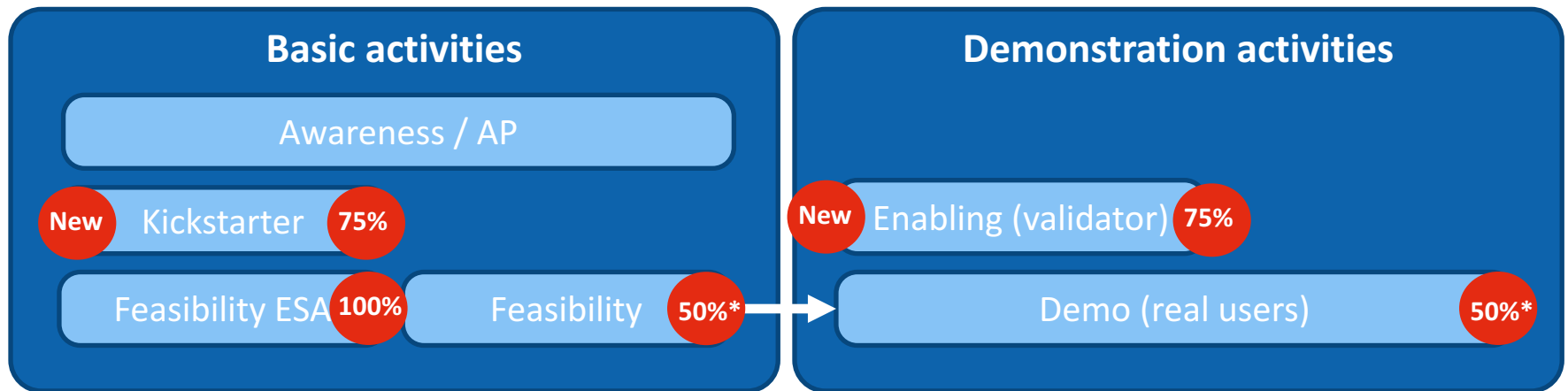
New

TIA

IAP (Integrated Applications Promotion)

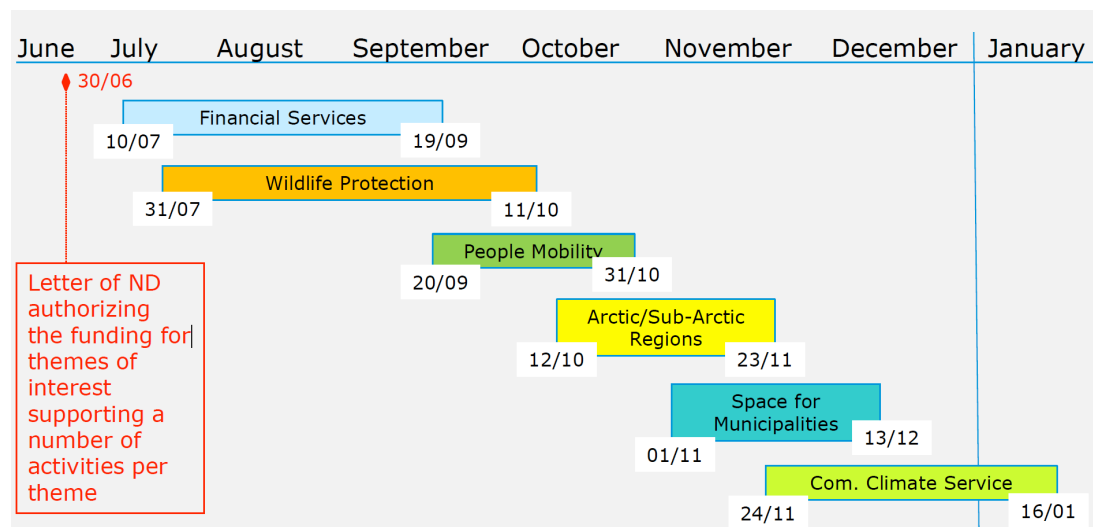
ARTES IAP (Integrated Applications Promotion)

- Space for Safety
- Space for Health
- Space for Development
- Space for Energy
- Space for Transport



ARTES IAP Kickstarter (New type of activity)

- › New/selected topics every half year
- › <60 kEuros/project, <75%
- › Topics for 2. half of 2017:
 - Space for Financial Services
 - Commercial Climate Services
 - Space for Municipalities
 - Arctic and sub-Arctic Regions
 - Wildlife Protection
 - People Mobility



Are you ready to launch your idea?

We need to be involved if you seek ESA funding!

- Lots of great opportunities in various areas also here in Norway!!
- We are here to finance and support good application projects
- Contact us (Rune Sandbakken) or Marintek as soon as possible if you
 - intend to place a bid for announced projects or
 - Intend to take part in a bid with other
 - plan to propose a project
- We need to be contacted as IAP activities require a **Letter of Support** (Authorisation of Funding) from the Norwegian Space Centre when you deliver the final proposal (min. 2 weeks)