



Telenor Satellite

Connecting you to what matters most.

November 2023

telenor | satellite

Agenda

- Telenor Group - at a glance
- Telenor Group - our business
- Telenor Satellite – overview
- Our THOR fleet
- Our business areas:
 - Broadcasting
 - Occasional Use
 - Data Services



Telenor Group - at a glance

- Telenor Group is an international provider of tele, data and media communication services.
- Connecting the world has been Telenor's domain for 166 years, and we operate across Europe and Asia.
- We connect our 172 million customers in 9 markets worldwide to what matters most.
- Our 16 000 employees are committed to responsible business conduct and driven by the ambition of empowering societies.
- Telenor Group is one of the world's major mobile operators, with revenues of NOK 98.953 billion in 2022.
- Telenor Group is listed at Oslo Stock Exchange under the ticker TEL.



Connecting you to what matters most.
Empowering societies.

Telenor Group - our business

- Mobile voice and broadband services
 - 186 million mobile customers across Nordics and Asia
- Fixed voice, broadband and satellite services
 - Primarily in Norway, Sweden and Finland
- Digital products and services
 - Internet of Things, Online Classifieds, mHealth, Mobile Financial Services



Telenor Satellite

- overview

- Leading European satellite operator and connectivity provider
- Premium satellite services from 1°West
- Business areas & coverage:
 - Broadcasting (Europe)
 - Occasional Use (global)
 - Data Services (EMEA)
- Teleport services (in Norway & Cyprus)
- Founded in 1986
- Revenue 2022: 916 MNOK
- Employees: 112



We serve over 18 million homes, nearly 1 800 vessels and close to 300 land terminals.



THOR fleet at 1°West



THOR 5

Launched: 2008
Orbital location: 0.75°W
Transponders: 15 FSS, 9 BSS
Coverage: Nordics, CEE
Operational state: active



THOR 7

Launched: 2015
Orbital location: 0.65°W
Transponders: 21 BSS, Ka payload
Coverage: Europe, Middle East
Operational state: active



THOR 6

Launched: 2009
Orbital location: 0.85°W
Transponders: 16 FSS, 20 BSS
Coverage: Nordics, CEE
Operational state: active



THOR 10-02 (IS 10-02)

Launched: 2004
Orbital location: 1.0°W
Transponders: 7 FSS
Coverage: Europe, Middle East
Operational state: active
Life-extension service: 2021 (MEV-2)



Our milestones

2021	THOR 10-02 docks with Northrop Grumman's MEV-2 for a ground-breaking on-orbit servicing to extend its lifespan by additional 5 years	2001	Introduction of Occasional Use coverage worldwide
2017	Certified by World Teleport Association at Tier 3 level	1998	THOR 3 launched
2016	Ka-band data services in commercial operation (on THOR 7)	1997	THOR 2 launched
2015	THOR 7 launched	1996	Introduction of digital distribution
2009	THOR 6 launched	1994	Broadcasting Olympic Winter games in Lillehammer. From 6 sites, 49 E/S, 16 satellites. 768,240 minutes of broadcasting with less than 4 minutes outage
2008	Release of IPTV platform	1992	THOR 1 (Marco Polo) launched
2008	THOR 5 launched	1990	First VSAT in operation with NTB network distribution
2007	First Digital Terrestrial Television services start broadcasting	1986	Nittedal earth station commences operation with transmission of Norwegian television to Svalbard and to oil production facilities in the North Sea
2006	MSNW start of operation and HDTV broadcasts		
2004	THOR 10-02 / IS 10-02 launched		
2002	Introduction of DVB-RCS shared VSAT services platform		

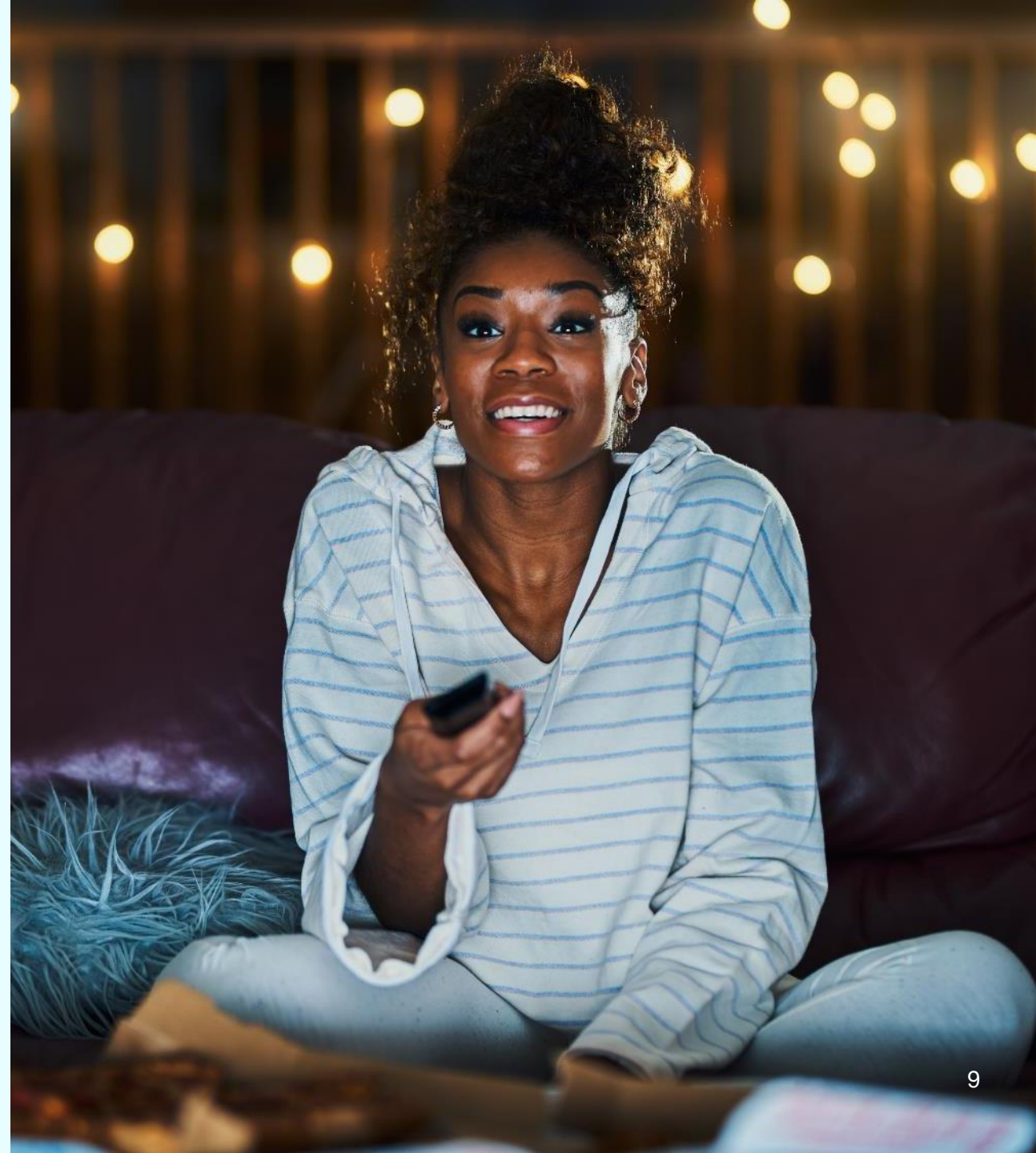


Broadcasting



Superior DTH footprints

- 1° West - satellite position of choice for broadcasting across CEE and the Nordics
- First-class DTH platforms for HD and UHD
- Contribution services via our terrestrial fiber network “Euro-Fibre”
- Comprehensive service for the entire distribution process:
 - encoding, transcoding
 - multiplexing
 - uplinking
 - satellite capacity
 - monitoring 24/7/365



Seamless fibre interconnections



- Designed to transport live broadcasting services between main PoP's:
 - London, Frankfurt, Amsterdam, Copenhagen, Helsinki, Stockholm, Oslo
- Media network solutions tailored to broadcasters
- Highly flexible, reliable and scalable

Multi-purpose head-end

- Centralised head-end for multiple transmission services
- Flexible IP- based platform at Nittedal Teleport with output to multiple distribution platforms
- Provide more than 400 IPTV services to FTTH, CATV and FWA networks
- 300 ABR services streamed to CDN and OTT platforms
- Contribution of TV services and radio channels to the Norwegian DTT play-out



Choice European broadcast provider

allente

DIGI

• • **T** Slovak
Telekom

sky news

CNN

FOCUS SAT

M7

DIRECT ONE

EUROSPORT 1

sport
ULTRAHD

animal planet

FILMBOX

nickjr

M TV
MUSIC TELEVISION

BOOMERANG

Discovery

**NATIONAL
GEOGRAPHIC**

NRK 1

N
TVNORGE

3

svt1

3

4

1
DR

T2 NEWS

3

5

yle TV1

4

mtv3

nova HD

DUNA

M1

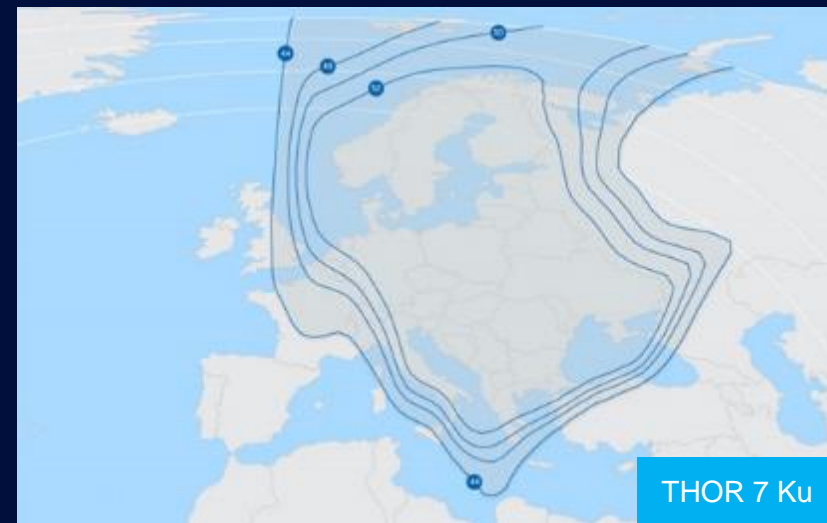
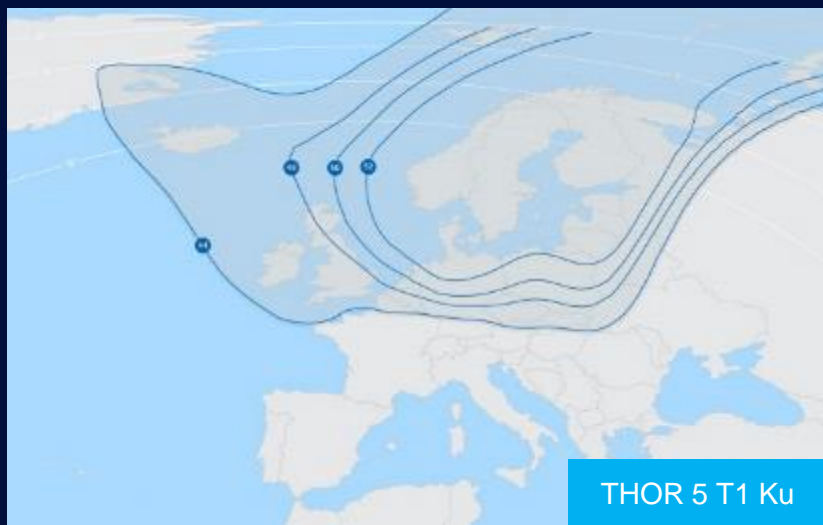
TVR1

E

1 HD



Broadcast coverage



Occasional Use



Occasional broadcast satellite services worldwide

- Global satellite capacity
- Global teleport facilities
- Capacity on THOR 10-02, SES, Eutelsat, Intelsat, AsiaSat and Hispasat
Source-suitable capacity for remote locations
- Live coverage: news, sports and special events



Any satellite, any bandwidth, any time.

No mission impossible



- 24/7/365 booking service
- 24/7 technical support
- 15-minute bookings to monthly leases
- 3 MHz up to 72 MHz slots
- Bespoke solutions and transmission plans
- Highly-skilled support engineers

Data Services



VSAT services across the EMEA

- C, Ka- and Ku-band payload
- Unique northerly coverage up to 79° North
- Anker Managed Services:
 - Maritime mobility & fixed installations
 - Land-based fixed & transportable solutions
- VNO, Wholesale / Space segment
- SCPC / P-to-P links
- Teleport services
- 24/7/365 Customer support



High-powered, reliable connectivity on land, at sea and offshore.

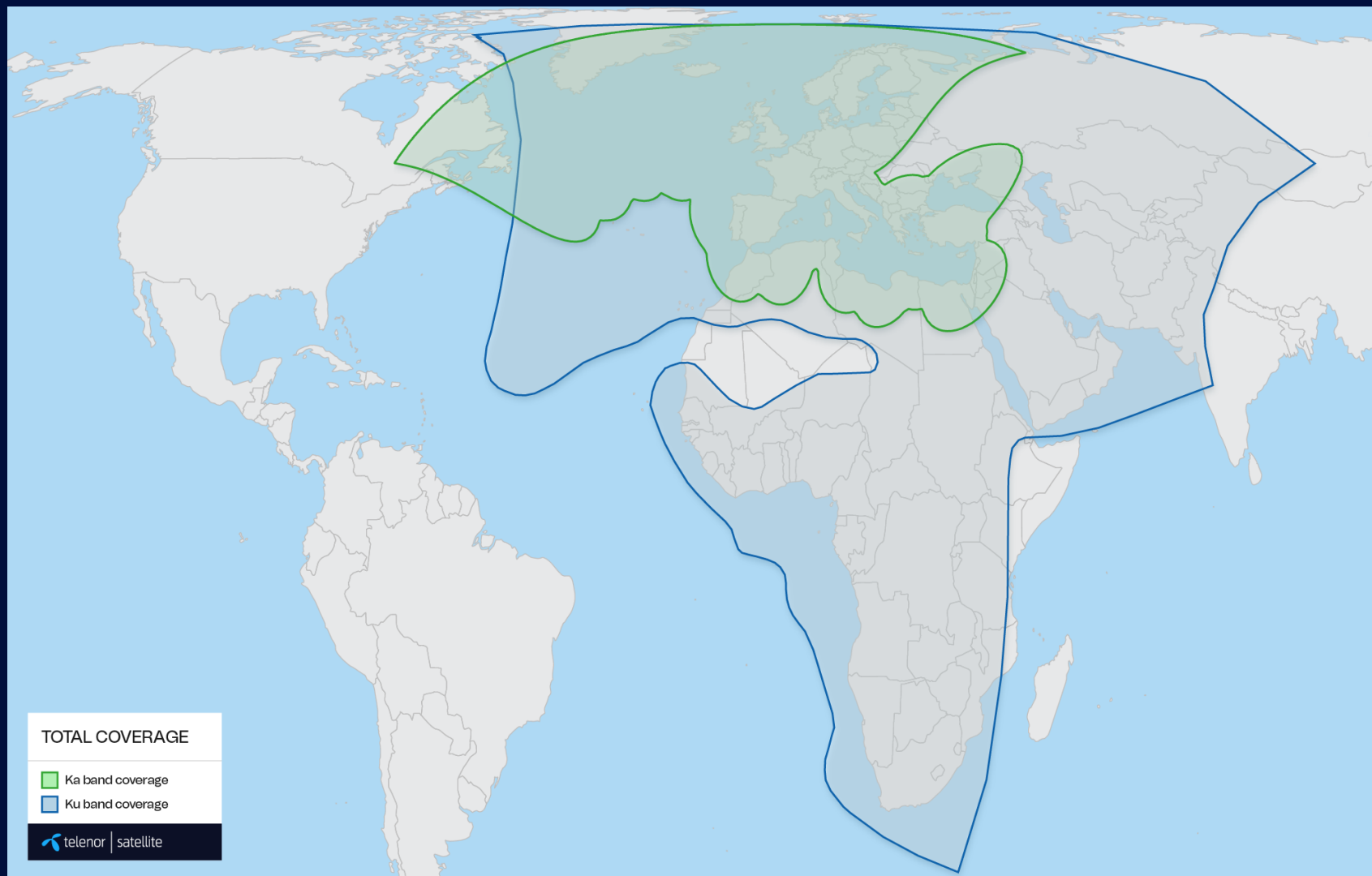


High-powered connectivity at sea



- Reliable VSAT connectivity for mobility and fixed installations
- All vessel types across maritime sectors:
 - Offshore, Merchant, Fishing, Passenger, Yachting
- Powerful spot-beam HTS technology on Ka-band
- iDirect® VSAT platforms:
 - Velocity, Evolution and Newtec Dialog®

Extended Ka and Ku-band coverage



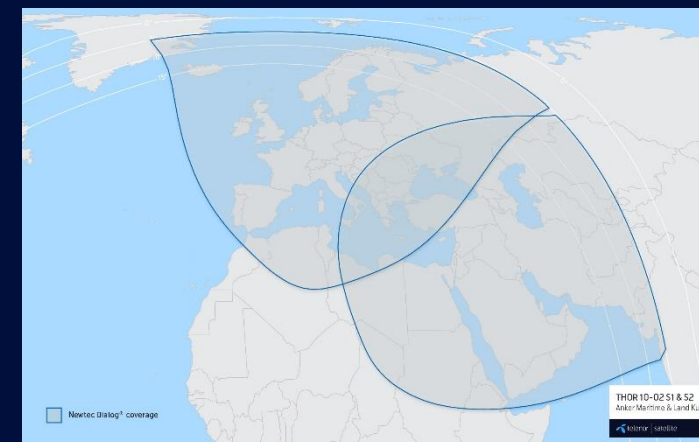
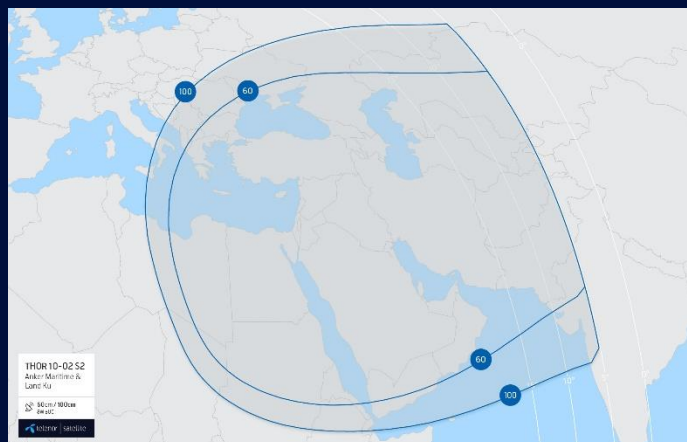
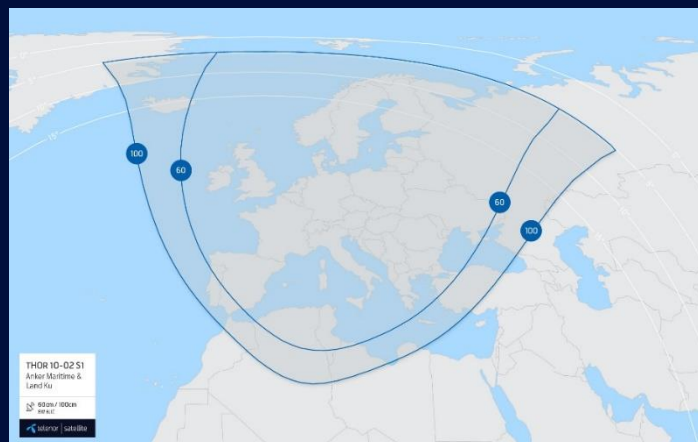
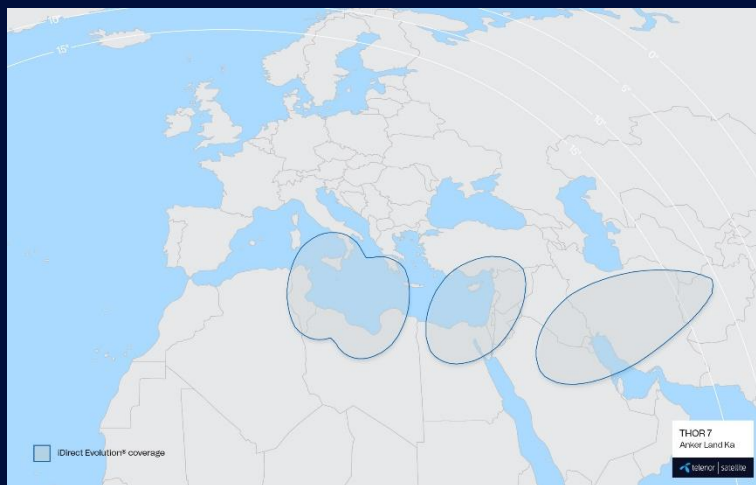
Extending terrestrial networks

- Fixed and transportable VSAT satellite solutions
- For voice carriers, large ISPs, government bodies, large corporations and small businesses
- Land-based sectors:
 - Energy
 - Community
 - Aid & emergency response
 - Government
 - Transport
- Powerful spot-beam HTS technology
- VSAT platforms: iDirect Evolution®, Newtec Dialog®



Robust communication links for critical operations in remote areas.

Land Ka & Ku-band coverage





Thank you.

visit telenorsat.com