



telenor
satellite
broadcasting

Broadcasting from 1°West

The leading position in the Nordic region and a hotspot location for broadcasting in Central and Eastern Europe



BROADCAST

CAPTURING DIGITAL GROWTH

Prime location

Telenor Satellite Broadcasting (TSBc) prides itself on being at the cutting edge of innovation in European satellite broadcasting. We provide high-quality satellite capacity and broadcast services from the prime orbital location of 1° West, long established as the leading position for the Nordic countries and one of Europe's "hot-spot" locations, with a specific focus on Central and Eastern Europe.

Why satellite works

Satellite offers immediately available spectrum and unrivalled potential for broadcasters to launch portfolios of channels. Its ubiquity of coverage for direct-to-home (DTH) satellite and cable networks and its 100% reach in chosen markets provide quality and scalability with minimal costs – thus creating the perfect solution for TV and radio transmissions.

First class platform for video applications

In a fast-changing communications environment, satellite continues to play an important role in the distribution of content. Satellite is a first class platform for delivering new bandwidth-hungry TV applications including HDTV, 3DTV, Mobile TV, pay per view and NVOD.

Over the years, HDTV has seen much success, driven mainly by continued consumer demand. This has resulted in a marked increase of available HDTV channels which are now well established in all regions served by TSBc. Looking ahead Ultra HD will provide an additional dimension to broadcast's ever-changing landscape, as increased availability provides the technological momentum to gain mass-market appeal.

OPTIMISED COVERAGE FOR DTH PLATFORMS

Telenor Satellite Broadcasting provides secure, flexible and reliable distribution of direct-to-home (DTH) satellite television, delivering content to audiences throughout Europe.

Our comprehensive portfolio of services covers the entire distribution process – encoding, multiplexing, uplinking, satellite capacity and monitoring during transmission – as well as contribution services via our own video terrestrial media network, called Multi Service Network (MSNW).

The No.1 spot for broadcasters

Our satellites at 1°West already reach about 17 million TV households, offering one of the fastest-growing platforms for video distribution in Europe.

From our satellite home at 1°West, which transmits more than 700 TV channels and hundreds of radio channels, TSBC broadcasts more than 265 digital TV channels across the Nordic region and throughout Central and Eastern Europe.

Our expertise and our expansive ground infrastructure – which comprises teleports and a terrestrial media network that spans Europe and interconnects with the USA – offer broadcasters a complete turnkey solution for channel distribution and contribution via satellite and fibre links.

From transmitting content via one of our satellites to providing point-to-point distribution services via our video terrestrial network (MSNW), TSBC is the provider of choice for broadcasting services.

Established position at 1°West

Telenor Satellite Broadcasting is uniquely placed to serve the broadcasting needs of our customers thanks to the combination of our extensive ground-based systems – operated from our main teleport in Norway and our UK teleport – and our high-powered satellite coverage across Europe from 1°West. We combine the broad reach of our satellite capacity with end-to-end broadcast services, adapting our solutions to address your chosen markets.



OCCASIONAL SOLUTIONS FOR ALL BROADCASTING EVENTS



From pre-planned to last-minute bookings for live events and sports, Telenor Satellite Broadcasting has built a reputation for providing the best capacity to fit our customers' requirements. Our space-segment service for occasional use (on our own and on third-party satellites) can provide short-term capacity to distribute content via satellite

for breaking news events, regular part-time broadcasts across the globe and other services.

We can also provide reliable and convenient ground-based services, including uplink, turnaround and terrestrial fibre for the distribution of media services.

Support from the ground

Telenor Satellite Broadcasting's (TSBc) extensive investment in uplink facilities and associated infrastructure means that we are well equipped to offer our customers excellent ground-based satellite services from our various teleport locations.

TSBc has one main teleport in Norway as well as a large teleport in the UK. Nittedal teleport, near Oslo in Norway, is our largest teleport site, with more than 40 antennas that can operate satellites in the viewable arc from 45°West to 66°East (one third of the world's communication satellites). Our central London teleport has 10 antennas which look at satellites from 30°West to 50°East. These two 24-hour teleport facilities – combined with the baseband capabilities for broadcast services

offered by our facility at Chiswick Park in London – complement TSBc's extensive broad-reach satellite capacity.

TSBc's teleport facilities offer a large portfolio of services including encoding and multiplexing, IP streaming and full turnaround solutions. From our prime 1°West orbital position TSBc delivers more than 265 standard definition (SD) and high definition (HD) channels via direct-to-home (DTH) satellite television and about 45 digital radio stations, using DVB technologies.

Within Norway, TSBc provides technical services for the delivery of cable networks, IPTV, live Web TV transmissions and can also provide technical capability for hybrid VOD (video on demand) service platforms for both cable and DTH networks.

Seamless interconnections

TSBc's own multi-service network (MSNW) is a core video terrestrial network that is interconnected to all our satellite uplink stations in Europe and designed to provide enhanced scalability and redundancy, including TV, radio and data.

Customers can connect to the MSNW at a location of their choice to distribute their services over the 1°West platform. Customers can also connect to other providers through MSNW. All content is protected as it travels through individual virtual tunnels.

The MSNW also provides possibilities for the restoration of services via our teleports, which are connected to the network, thereby enhancing the already excellent reliability of TSBc's 1°West platform.

INVESTING IN THE FUTURE

With the successful launch of THOR 6 in October 2009 and the completion of our replacement programme, Telenor Satellite Broadcasting has increased the satellite capacity at 1° West to 71 transponders, facilitating both organic growth and the provision of additional DTH capability.

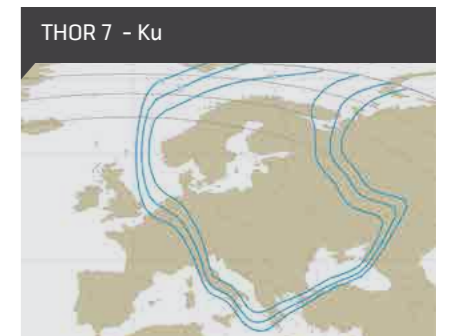
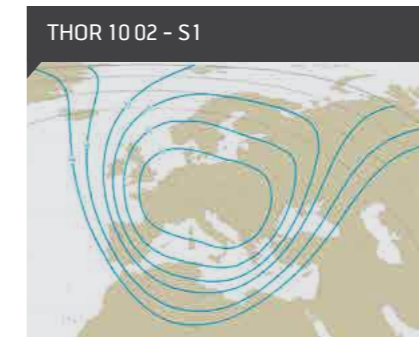
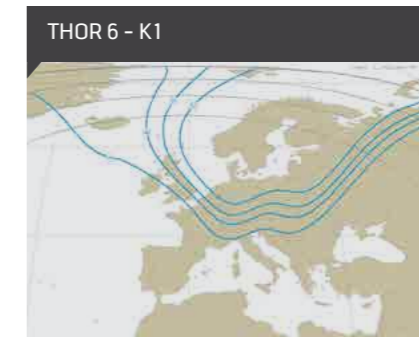
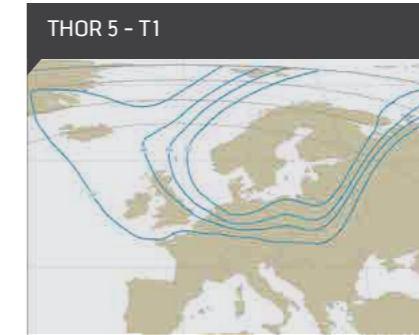
TSBc continues to seek ways to innovate and expand our satellite-services portfolio, providing our customers with greater reliability and security to enable future growth. As we are committed to maintaining 1° West as the leading position in the Nordic region and as a primary DTH position in Central and Eastern Europe, TSBc has invested in THOR 7, a satellite that will provide additional Ku-band capacity throughout Europe and will be available for commercial operation in 2015.



Our satellite fleet

Our satellite fleet offers attractive coverage for broadcasting and data services throughout the Nordic region, Europe and the Middle East. TSBc operates from the orbital locations of 1° West and 4° West.

SATELLITE	ORBITAL POSITION	COVERAGE
THOR 5 T1	1° West	Nordic region
THOR 5 T2	1° West	Pan European
THOR 6 K1	1° West	Nordic region
THOR 6 K2	1° West	Central and Eastern Europe
THOR 10 02 S1	1° West	Europe
THOR 10 02 S2	1° West	Middle East
THOR III	4° West	Middle East (inclined orbit)
FUTURE SATELLITES (IN SERVICE 2015)		
THOR 7	1° West	Pan European and Nordic region



About us

Operating from the prime orbital location 1° West, Telenor Satellite Broadcasting (TSBc) provides extensive television broadcasting services for distribution and contribution applications to DTH operators and broadcasters throughout Europe, utilising a hybrid network that comprises terrestrial circuits, teleports and our satellite fleet. TSBc delivers end-user connectivity and application services via satellites throughout Europe, the Middle East and Africa, and has also established inclined-satellite operations, located at 4° West.

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