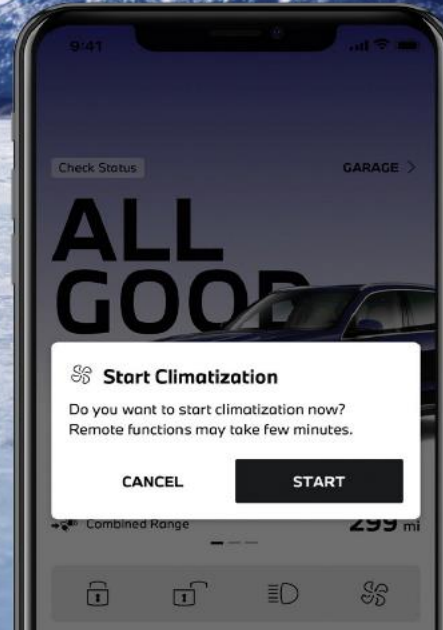


UBIQUITOUS CONNECTIVITY A MUST FOR THE FUTURE CAR? - YES!

YOUR WORLD.
My BMW.

ALWAYS CONNECTED. The new My BMW App.



Narrow Band

- Safety / Reliability
 - Remote Services
 - Connected Navigation and Charging
- Maintenance / Convenience
 - State of Health Monitoring
 - Car Surveillance
 - Music Streaming

UBIQUITOUS CONNECTIVITY A MUST FOR THE FUTURE CAR? - YES!



Example: New 7 series

Broad Band

- Entertainment
 - Video Streaming
 - Gaming
 - Video Conferencing
 - Metaverse
- Maintenance / Convenience
 - Remote Software Update
 - Map Update
- Autonomous Driving

WHY DO WE HAVE TO ACT ON NTN NOW?

DRIVERS FOR THE EMERGENCE OF NON-TERRESTRIAL NETWORKS (NTN).



1 Technology.

New space approaches enable Low Earth Orbit Mega Constellations at comparable low costs.

Following the example of Starlink, several Mega-Constellations of thousands of satellites in low earth orbits are about to be launched and will enable broadband internet access at comparable low cost .



2 Existing Market Gaps

Terrestrial Networks still have connectivity gaps, especially in rural areas.

Connectivity of 3-,4- and 5G Networks is still limited in non-urban areas. Non-Terrestrial networks can provide a low cost alternative to extend high connectivity to rural areas at comparable low cost.



3 Standardization.

Upcoming releases of 5G and 6G Networks offer the chance to integrate NTN.

Key factor for the success of terrestrial networks was the global standardisation of xG Networks. This success can now be extended to Non Terrestrial Networks if we take the chance to integrate NTN in the next releases.



4 Customer & Product.

Ubiquitous connectivity is a game changer for mobile digital services.

New digital services like Online Shopping, 4k Video streaming, AAA Online Gaming, upcoming Metaverse and autonomous driving applications drive the demand for ubiquitous connectivity.



5 Business Approach. Chances/Risks.

Digital services are disrupting traditional business models.

The revenue share by digital services like on demand services will grow significantly. OEMs which do not explore the new business opportunities risk to be out of business until the end of the decade.