(Emergency) Communication Services Enhancement by advanced Long-Range LTE (5G) antenna, fabricated in support of maritime, offshore, land mobile and fixed mobile applications

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One Werkz Engineering

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Drivers:

- More app’s rely on strong mobile broadband connectivity
- Difficult business case to have a 100% country wide 4G/5G coverage
- Big problem for countries with big rural and maritime areas
- Governmental and military applications also benefit from high availability.
- Applications choose dynamically between the best transmission paths (routers)

Challenge:

- In emergency situations having a functional, widespread network that is able to bring communications to emergency service, government and the population is critical for fast response and helping those in need
New High Performance 4G/5G Antenna & Mobile can help!

Extends the range of mobile internet connectivity to new dimension with Patented design for extra long range!

- Up to 40 nautical miles (72km) reach
- High gain & ultra wide broadband (5G ready)
- High Quality, designed & made in Germany
- Easy internet access, use your local (own) SIM card or full package

- Designed for maritime and desert proof application
- Easy to install, single cable (either coaxial or LAN)
- Light weight Diversity-and MIMO-Antenna
- Low power consumption
- Top Speed up to 150 Mbps down & 50 Mbps up (depending on operator)

- Terminal Build in partnership between DCT-DELTA & Sputnik24
Typical Terminal Installation setup

**LAN Cable**

**Coaxial Cable**

**POE**  
(Power over Ethernet)
Maritime Application:

- Normally 4G Data services can only be received 5 NM (8km) from the shore. With the Antenna this can be extended up to 40NM (70km)
- Most ship routes are in international waters (outside 12NM), however as close as possible to the shore
- The antenna and the integrated LTE Modem (incl SIM card) are receiving the signal and convert it into IP-Data.
- With standard WLAN hotspots, the IP signal is transmitted within the ship/train/truck/…
- Any WLAN device (PAD/mobile/ etc.) can use this and benefit from relatively inexpensive services
- The alternative satellite services are significantly more expensive (factor 10-50)
Application: Examples (> 100 pcs now in service)

- North Sea / Baltic Sea
- Caribbean
- Sailors
Application: Sea and inland waterways!

The routes along the rivers form the water side are not the focus of the network operators -> incomplete coverage

Oil rigs are often outside the normal coverage area, but not really far away for the shore lien. Nevertheless 100s of workers want to be connected to their families for reasonable costs.
Application example: fix-mobile Islands connection

- The normal commercially available fix mobile products are good for bridging the time gap until fixed line services are available.

- This solution is meant for **extreme case**, due to its long range performance.

- It can replace a wireless microwave connection between remote sites without erecting extra towers.

- It can possibly also replace satellite links that are expensive and complex.
### 4G/5G range extender Applications

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