TrellisWare Waveforms

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TSM Waveform
The TSM waveform provides mobility and scalability across one network, and robust communication in harsh RF environments

Designed To Thrive

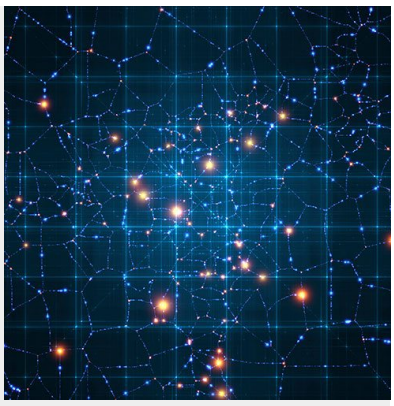
TrellisWare's TSM™ waveform is the most suitable mobile ad-hoc network (MANET) to support uninterrupted real-time communications. The TSM waveform is designed to thrive in real tactical dynamic environments full of radio frequency (RF) volatility, high mobility of operators, and signa interference.

The TSM waveform has proven deployment urban, subterranean, cave and tunnel, and ir building settings with harsh RF propagation. This is because TrellisWare's core technolog called Barrage Relay™ networking is designed with a robust physical layer that incorporates receive-side collaborative combining techniques to handle extreme RF multipath fading and enable simultaneous relaying of all transmissions, including: voice, data, video, and position location information (PLI). Barrage Relay eliminates routing and minimizes network overhead, enabling much more reliable performance versus traditional MANET solutions.

Reliable Networking

TSM is a true waveform designed to run on a host of Software Defined Radios (SDR). It provides high throughput, range, scalability, and mobility. TSM is not based on technologies such as Wi-Fi (802.11), DECT, WiMax (802.16) or LTE chips, and it is not dependent on internet-driven routing protocols. Instead,

TrellisWare's Barrage Relay technology is advanced digital signal processing. The TSM waveform is engineered to solve tactical MANET challenges, resulting in reliable operations for tactical environments.



Robust Network Coverage

Mission-critical situations do not take place in controlled, static, and pre-planned environments. TSM's strength is delivering reliable connections to critical situations in highly mobile, dynamic environments. TSM's tactical networking is infrastructure-less, self-forming and self-healing, with a network join time of less than 1 second and a network merge time of less than 5 seconds.

AT Communication ©

TSM-X Waveform
The MANET for Real Tactical Environments

Real Tactical MANET

The TSM-X™ waveform is the latest version of TSM that provides even higher data throughput and new operational capabilities. Because of this, the TSM-X waveform was chosen as the primary tactical mobile ad-hoc networking (MANET) technology for the U.S. Special Operations next generation handheld and next generation manpack radios. The waveform delivers robust, reliable, and scalable networking to 200+ nodes in a single RF channel, especially for tactical operations in challenging RF environments.

- ☑ Robust – immune to network volatility in highly dynamic networks
- ☑ Reliable – consistent throughput with voice and data services you can count on
- ☑ Scalable – to address small to large and complex networks

Better Performance

Tactical radios with the TSM-X waveform feature dedicated network resources for cellular quality voice and position location information (PLI), and are capable of up to 16 voice channels, and multiple HD video

streams. With expanded frequency and bandwidth support, and even highe throughput, The TSM waveform offers a highly capable MANET to address real tactical communications challenges in harsh RF environments.

TSM-X waveform key capabilities are:

- Up to 16 Mbps of user throughput for single hop traffic, and up to 7.5 Mbps multi-hop multi-cast user traffic
- Higher throughput supports multi-cast streaming of multiple High Definition (HD) videos over multiple network hops
- Wide frequency coverage (UHF, L-band, S-band) in a single radio platform for better penetration (no user level maintenance required)
- Configurable bandwidth from 1.2 to 40 MHz supports a broad range of network capacities and spectrum availability
- Customization of voice, PLI, and data access to meet demands of different mission profiles
- Portable to a variety of Software Defined Radio (SDR) platforms

TrellisWare's Barrage Relay™ technology is the core of the waveform, equipped with a robust physical layer and collaborative combining techniques for simultaneously relaying voice, data, and PLI transmissions. Barrage Relay enables massive scalability and extremely fast network adaptability.

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