

## **Operational Narrative for STA**

File Number: **1059-EX-ST-2013**

FRN: **0022975338**

Antenna Locations: Mobile

Area of Operation:

01-07 December 2013 - Utah Olympic Park, Park City, UT

09-15 December 2103 - Lake Placid Olympic Sports Complex, Lake Placid, NY

### Summary

ST SPORTSERVICE GmbH (STS) is the timing and scoring provider for 2013-14 World Cup Bobsleigh events. Between the dates of 01-15 December 2013, STS will be operating at Bobsleigh & Skeleton events in Park City, UT and Lake Placid, NY. As a test of telemetry data gathering, we are planning to deploy low-power radio transmitters during these events in each of the bobsleds. The transmitters have been custom-built in the STS factories in Germany, and at this point in time they are not certified for use by the FCC. The testing is to be sure that the equipment provides accurate telemetry data under competition conditions. These deployments will be short-term (only one week per location).

### Equipment

Each sled to be equipped with a low-power transmitter, each operating at the same frequency. The ideal frequency would be at 902 Mhz. Signals to be received by antennas placed along the track [see Attachment 1]. There may be up to six transmitters operating at a given time.

Transmitters [attachment 1a]:

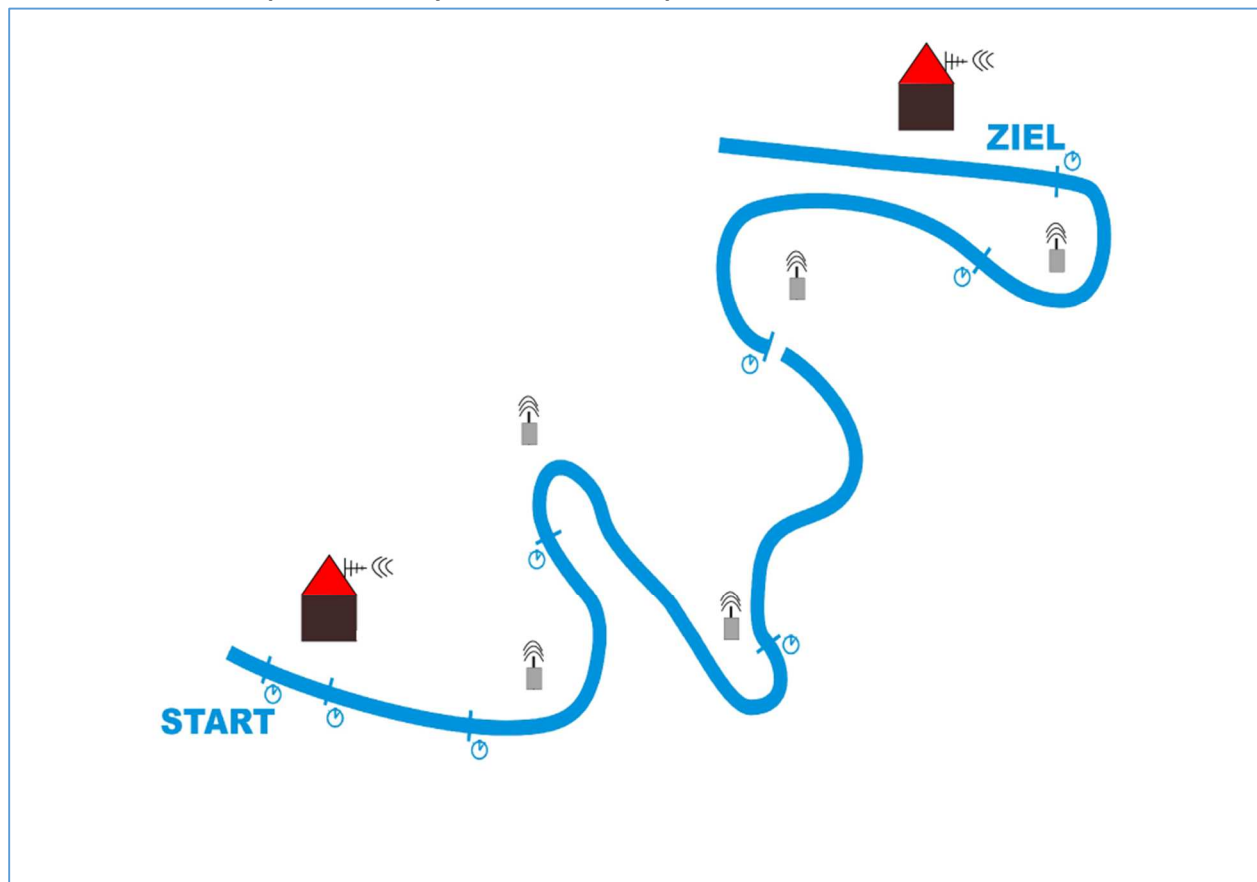
- Maximum output power is 10 dBm + 10 dBm PA = 20 dBm (Technical Specification is 25 dBm or 0.316 Watts).
- Frequencies: Adjustable 824-920 MHz (in 1 Mhz steps)
- Bandwidth: 1 MHz
- Channel spacing: 2 Mhz
- Modulation: O-QPSK, 1000 kbit/s
- ERP: Maximum of 3.1 Watts (note: measuring at 0.316 Watts, and using the Yagi-antenna, ERP will be lower)
- Frequency tolerance: Lower than 0,1% (lower than 0,8 Mhz)

Receiving Antennas (3 different types of antennas may be used) [Attachment 1b]:

- Flexible antenna FLX 900: 820 – 960 MHz, 5dBi
- Dipole antenna WA 30875: 824 – 894 MHz, +7dBi
- Yagi antenne CA860Y++++ : 830 – 890 MHz, +12dBi

Thank you. We are at your disposal for any questions.

**Attachment 1 – Example of track layout with antenna placements:**



**Attachment 2a - Transmitter image:**



**Attachment 2b – Antenna image:**

