Request for Special Temporary Authority

Transportation Technology Center, Inc (TTCI), a wholly owned subsidiary of the Association of American Railroads is a world-class transportation research and testing organization, providing emerging technology solutions for the railway industry throughout North America and the world.

TTCI manages the Federal Railroad Administration's (FRA) Transportation Technology Center (TTC), located 21 miles northeast of Pueblo Colorado. TTC is operated under a care, custody, and control contract with the FRA. This 52-square mile, secure and remote site operates with a vast array of specialized laboratories, rolling stock, and track. TTC provides a unique test bed for isolated testing for all categories of freight and passenger rolling stock, vehicle and track components, train control systems, and safety devices.

The requested Special Temporary Authorization will be used to test for potential interference and de-sense issues between two different Positive Train Control (PTC) systems, both operating in the 220 MHz band in the same area. PTC is a system that enforces permanent speed restrictions, temporary speed restrictions, and positive train stops. This is done by the combination of onboard, wayside, and back office equipment which communicates by data radio at 220 MHz. In addition to testing for interference and de-sense between the two PTC systems, the STA will test the 220 MHz radios in a real world environment at TTC. The STA is requested for a period of one year.

One of the two PTC systems was jointly created by PTC-220 LLC, a consortium of major railroads, and MeteorComm, (MCC) a radio manufacturer. The other is an existing system under the name of ACSES which uses General Electric (GE) radios.

The testing will consist of one or potentially two locomotives, travelling along an 8.5 mile length of track, one base station, equipped with an ITC (PTC-220) and an ACSES radio and one fixed temporary base station. The radios in all stations will conform to the specifications below. The requested frequencies will cover the bandwidth of the radios in order to test the radios over their entire operating range.

In addition to lab tests, the testing will involve using one MeteorComm radio on a PTC-220 channel, which consists of the five contiguous channels 151-155, for which TTCI already has a lease. This channel will be the only channel used with the MeteorComm radios. TTCI will test co-channel and adjacent channel de-sense, and signal blocking between the MeteorComm and GE radios. The testing will include frequency separation testing between the MCC radio and GE radio, by using the single PTC 220 channel for the MCC radio, and varying the channel for the GE radio. One base/mobile pair of each type of radio will be used. The results of this testing will enable PTC-220 LLC and the users of the ACSES, primarily AMTRAK, system to better deploy their radios without causing interference to each other.

Radio	GE	MCC
Base		
FCC ID	E5MDS-TD220	BIB63030 and/or BIB 63010
Model No.	TD220	63030 and/or 63010
Base Station Structure / Height	Lattice Tower	Lattice Tower
Base Radio Antenna Height	30 m	30 m
Base Radio Antenna Gain	5.0 dBd	5.0 dBd
Base Radio Transmit Power	30 watts PEP	75 watts PEP
Tower Latitude	38-26-04.0 N	38-26-04.0 N
Tower Longitude	104-17-03.0 W	104-17-03.0 W
Mobile		
FCC ID	E5MDS-TD220	BIB 63020
Model No.	TD220	63020
Mobile Radio Antenna Height	5 m	5 m
Mobile Radio Antenna Gain	0 dBd	0 dBd
Mobile Radio Transmit Power	30 Watts PEP	51 Watts PEP

The frequencies we are requesting for these tests are:

ACSES 3 downlink 217.8675
ACSES 2 downlink 219.3675
ACSES 1 downlink 220.6750
PTC220 Frequency 220.7625

Contacts:

Jennifer Baker
Project Engineer
Jennifer_baker@aar.com
Phone/Fax: 719-584-0550

James G. Reimer
AAR Frequency Coordinator
james_reimer@aar.com
Phone/Fax: 719-584-0578