

## QUESTION 5: PURPOSE OF OPERATION

As stated in response to Question 4, applicant is developing communications equipment to be used for Positive Train Control (“PTC”) applications. The applicant proposes to conduct analysis and tests of PTC equipment in the Seattle, Washington area. Applicant’s objective is to facilitate the deployment of PTC technology on a nationwide basis.

A PTC system is comprised of four segments:

**Office Segment** – Consists of software functions distributed on hardware platforms.

**Locomotive Segment** - Resides on-board the locomotive and interfaces with cab equipment such as air brakes, train line etc., and provides a graphic display for crew interaction.

**Wayside Segment** - Interfaces with wayside devices, including switch, signals, and track integrity to provide status to the other system segments.

**Communication Segment** - Provides the means of communications amongst the other three segments. The communication segment provides the means to deliver these authorities and restrictions from the train dispatch system and also convey wayside device status. Process control mechanisms are implemented to guarantee data integrity and authentic receipt of this information from the office and the wayside. If testing is successful, eventually the communications segment will extend system-wide using a nation-wide licensed frequency. This approach provides a homogenous wireless network to support interoperability among foreign roads, thus allowing wireless connectivity to any PTC equipped locomotive from the train dispatch office and from the wayside devices.

Applicant is requesting authority to confirm certain performance requirements of the communications segment.

Specifically, the purpose of the proposed operation is three-fold. This test will be used to ensure that the PTC equipped locomotive can maintain communication throughout the tunnel using the 220 MHz radios. Once inside the tunnel, the test locomotive shall traverse the tunnel accurately using dead reckoning. Upon exiting the tunnel, the locomotive shall reacquire a signal without incident.