

From: TOM MCGOVERN

To: Behnam Ghaffari
Date: August 09, 2012

Subject: FCC File No. 0374-EX-PL-2012

Message:

Experimental license is needed for the purpose of testing Train Management Computer (TMC) positioning system. GPS data is used for TMC navigation and time calibration.

The TMC accepts movement authority information and applicable speed restrictions from the Central Office and continuously compares them against the train's location in real-time to insure compliance with authority and speed limits. To determine the locomotive's on-track location and for navigation, the TMC uses a complement of GPS technology and wheel tachometer information, along with an onboard geo-referenced track database. GPS data is provided by a pair of receivers connected to the TMC. The resulting combined output provides the GPS Speed, Latitude, Longitude, Altitude, and Heading signals.

A key requirement for safe train movement is time synchronization of various operating data. GPS time is utilized for calibration of system time of various onboard locomotive systems including the TMC.