Are you implementing a Positive Train Control (PTC) system?

If the Railway Safety Improvement Act of 2008 affects you and you would like help from the organization with the greatest number of staff members with direct PTC experience with the most PTC projects (who's not a PTC supplier), you may want to contact TTCI.

Here's a brief summary of TTCI's staff experience with PTC:

- ATCS - Advanced Train Control System - One of TTCI's scientists was co-inventor of ATCS (the original PTC system, conceived in 1982) and had continuous involvement throughout the life of the ATCS projects, including test beds. Two other TTCI system engineers were also involved with various ATCS projects.
- PTS - Positive Train Separation system - One of TTCI's system engineers was chief engineer of this pilot project (tested on UP and BN in the Pacific Northwest) while previously employed by the supplier.
- Integrated Train Control, Movement Planning and Driver Assist system - One of TTCI's system engineers was author and co-inventor of the patent (US patent # 5,828,979) and chief engineer of this conceptual project while previously employed by the supplier.
- ITCS - Incremental Train Control System - One of TTCI's system engineers was primary author of the patent (US patent # 6,459,965) for the virtual signal version of this Communication-Based Signaling system (now deployed in China), while previously employed by the supplier.
- Eastern PTC - One of TTCI's system engineers oversaw the interoperability test phase of this project while previously employed by a supplier.
- NAJPTC/IDOT PTC - One of TTCI's system engineers was the general manager (representing the customer stakeholders) of this project. Current TTCI employees comprised 2/3 of the system engineering team as well. Other TTCI employees were involved in various capacities.
- C&TC Test Bed - Communications and Train Control Test Bed - TTCI hosts the only communications and train control test bed in North America with 48 miles of test track on 52-square miles of land with several locomotives and many railcars. It includes every type of voice and data radio communications system commonly used by the Class I railroads with several antenna towers and access points, including the ability to support handoff/handover testing. The C&TC Test Bed also includes a PTC system with onboard computers/displays, standard object controllers, servers, instrumentation, simulators, and a computer-aided dispatch (CAD) system having a PTC interface. Being located within a secure, dedicated environment, this test bed allows highly instrumented, repeatable testing, no conflicts with revenue traffic, and no requirement for FRA waivers, accommodating testing at track speeds up to 165 mph.
- EIC PRT - Employee In Charge Portable Remote Terminal - On this FRA-funded project, TTCI is managing the development of and is testing a handheld terminal for safety-critical use by railroad EICs. It is currently being integrated with BNSF's ETMS (Electronic Train Management System).
- HPDR Project - Higher Performance Data Radio - On this FRA-funded project, TTCI is managing the development of and is testing a data/voice radio and open standard for use with PTC systems and crew communications.
- Vital PTC - On this project, TTCI is performing program management (on behalf of FRA), system engineering, and testing of a moving block PTC system development. This project is also addressing many technical issues common to most PTC systems, such as the braking problem discussed below, improved onboard location determination, and improved methods of testing PTC systems.

- AEA - Adaptive Enforcement Algorithm - TTCI is conducting this research project to develop, simulate, and test a real-time adaptive enforcement braking algorithm to solve what is considered by many to be the most significant technical problem currently facing virtually all PTC implementations, namely, premature or unnecessary stopping of trains by PTC.
- RSAC - Railroad Safety Advisory Committee - TTCI engineers have participated in FRA's RSAC process throughout the development of 49CFR236 Subpart H ("Standards for Development and Use of Processor-Based Signal and Train Control Systems"). TTCI is now involved with the RSAC that is developing Subpart I, which is being driven by the recently passed Rail Safety Improvement Act of 2008.
- PSP - Product Safety Plan - TTCI is performing fault tree analysis (FTA) risk assessment and general consulting for the development of Product Safety Plans in accordance with 49CFR236 Subpart H. TTCI employees had overall management responsibility and system engineering participation in the development of the first PSP generated per Subpart H, which had the added complexity of being for a vital PTC system.
- CBTC - Communications-Based Train Control - In addition to the above PTC projects, TTCI and its employees have also played various roles in several international CBTC projects, similar to PTC.

If you have interest in discussing this further, feel free to contact us:

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