Incremental Train Control System

Incremental Train Control System (ITCS)

The Incremental Train Control System (ITCS) can increase the safety and throughput of your railroad's operations, increasing protection of roadway workers and leads to lower overall maintenance costs versus other train control solutions.

KB SIGNALING™

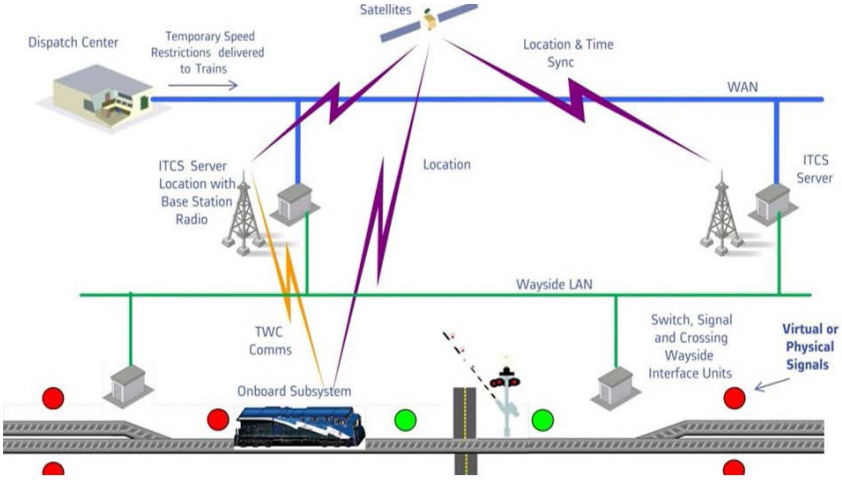
Incremental Train Control System

Highlights

- Over 25 years of revenue service operation and 2.1 million operation hours of service world-wide with no accidents occurring.
- Global customers in freight and mining (Colombia, Australia) and passenger operations (USA).

General Description

The ITCS is a virtual block based signaling system that uses GPS for location determination. ITCS is modular, requiring very little wayside infrastructure and can be deployed as either an overlay to an existing signaling system or as a standalone virtual signaling system. This creates a flexibility that can be configured to just about any type of project requirements and easily expanded to grow as the railroad expands its operations. ITCS meets all of the US Federal Railway Administration's regulations for Positive Train Control (PTC) and has a world-wide customer base. ITCS has been certified for operation on non-grade separated track at speeds up to 177kph featuring its wireless advanced crossing activation feature.



Customer Benefits

Safety

The ITCS is a vital train control system. Location, speed, and signal aspect determination, all factors going into vital enforcement, are vitally determined. Vital positive stop and speed enforcement ensures that a train will never go past a boundary or exceed safe limits of operation.

Ultra-Low Infrastructure

With its virtual signaling technology, (no physical signals or track circuits) and reliance on GPS for location determination, ITCS has an ultra-low wayside equipment footprint which minimizes maintenance costs, maximizes reliability, and minimizes the opportunities for vandalism and theft.

Throughput Performance

With virtual signaling comes virtual blocks which can be made to be almost any size. Where there used to be only one or two track circuited blocks between passing loops can now be many virtual blocks. This allows railroads to increase throughput by moving more trains into the same space as before.

Suited for Harsh Environments

The ITCS has been proven in some of the harshest environments in the world; the frozen Tibetan Plateau, the scorching Australian Outback, and the withering Colombian Jungle. All our equipment is shock, vibration, and temperature tested to extreme conditions to ensure it will hold up for years to come.

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System Architecture

Onboard Subsystem

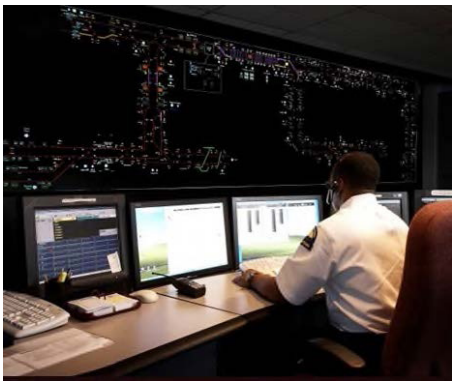
The onboard computer used in ITCS is the Ultra-Cab II, a vital platform, with millions of reliable, safe hours deployed worldwide. It performs speed control and location determination and displays applicable speed limits to the driver. It uses a vital location determination system, based on GPS to locate the train in an onboard database and to determine the relative location of all features of the railroad, such as signals, switches, and crossings. ITCS and existing cab signaling can use the same onboard platform, seamlessly transferring between territories.

Wayside Servers

The wayside component of ITCS (called a Server) communicates the status of the railroad (switches, signals, crossings, and track circuits) to the trains. As an overlay on existing signaling, it reports on the status of the signals as read from their controllers. In territories with virtual signaling, the server determines all the aspects vitally from train occupancies and other statuses read from track equipment such as switches and crossings and then sends the train the appropriate status. The server hardware is the vital ElectrologIXS® platform, which has logged millions of hours of reliable, safe service. Any given ElectrologIXS in the field can double as an ITCS Server.

Communication Network

The communications used in ITCS can be adapted for any frequency or local radio supplier. Implementations in the US utilize 220 Mhz radios and the installation in Australia a 450Mz radio, and the installation in Colombia, SA uses TETRA. Typically, any radio network with at least 4800 bps capacity can be used to talk to trains for the operational data. High bandwidth networks such as WIFI is often specified in the yard areas where data loading is increased.



Contact your KB Signaling Business Development Manager
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