

## Software Development for Train Protection and Warning System (TPWS)

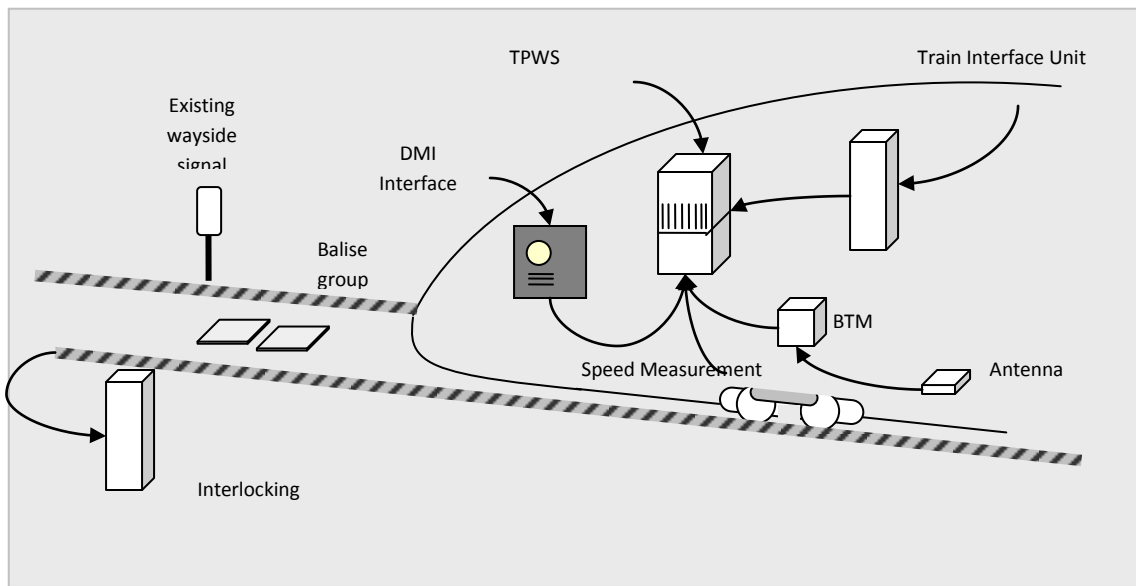
### System Overview

- An Automatic Train Protection System based on ERTMS (European Railway Traffic Management System)
- Uses European Train Control System (ETCS) existing components

### Business Problem

- Customization of ETCS onboard as per TPWS requirements
- The two principal functions of TPWS were implemented are:
  - Speed Control function, which calculates the permitted speed
  - Cab Signaling function, which informs to the driver

### Diagram





## Solution Overview

### Technology

- European Train Control System (ETCS)
- Structured System Analysis and Design (SSADs)
- CENELEC 50128

## Development Platform & Tools

### Platform

- Motorola ColdFire based hardware on VME backplane
- HP9000-HP UNIX
- Windows PC
- GNAT & Alsys Ada Compiler

### Tools

- Telelogic TAU
- Rational RTRT
- Andromede for configuration
- Custom simulator for functional testing on HP9000

## Salient Features

- Full Life Cycle Development Project as per CENELEC 50128 standards
- Porting Application layer to ColdFire platform
- Integrating application layer with new ETCS kernel
- Software integration testing using client's host simulator