

FLAWLESS COMMUNICATION FOR CAB SIGNALING SYSTEM

Datasheet

Project objective

Modernize cab-to-wayside communication technology by enabling message transmission across all system components via the TCP protocol. The upgraded system would ensure full compliance with PTC standards and FRA requirements.

The screenshot shows the 'Device Configuration' window with the 'ACSES Encoder' tab selected in the left sidebar. The main area displays the 'ACSES Encoder Parameters' section. The 'Encoder Address' is set to '7.AAA.AA1.AA1.A4.A1'. The 'RRR - Railroad' dropdown is set to 'GGG - Initials (Company Name)'. The 'LLL - Line' is set to '1'. The 'GGG - BCP Address' is '1', 'SS - Encoder' is '4', and 'DD' is '01'. A 'Select protocol (UDP or TCP)' dropdown is set to 'UDP'. Under 'UDP Parameters', the 'Multicast Address' is '239.255.0.9' and 'Port' is '49001'. The 'Unicast UDP Port' is '49002'. Under 'TCP Parameters', the 'Mode' is 'Bidirectional', 'TCP Role' is 'Client', 'Remote Address (AG)' is '10.255.255.210', 'Remote Port (AG)' is '3001', 'Connection Attempts Timeout' is '30', 'Connection Retry Limit' is '30', and 'TCP Connection Max Messages' is '-1'. At the bottom, there are 'Import...', 'Export...', 'Device Configuration Status: Saved', 'Cancel', and 'Save' buttons.

Parameter	Value
Encoder Address	7.AAA.AA1.AA1.A4.A1
RRR - Railroad	GGG - Initials (Company Name)
LLL - Line	1
GGG - BCP Address	1
SS - Encoder	4
DD	01
Select protocol (UDP or TCP)	UDP
Multicast Address	239.255.0.9
Port	49001
Unicast UDP Port	49002
Mode	Bidirectional
TCP Role	Client
Remote Address (AG)	10.255.255.210
Remote Port (AG)	3001
Connection Attempts Timeout	30
Connection Retry Limit	30
TCP Connection Max Messages	-1

Result

The enhanced cab-to-wayside communication service provides instant and error-free data transfer using TCP protocol. This allows train crews to receive instant alerts on speed restrictions and enabling automatic penalty stops. The upgraded signaling system fully meets the definition of a PTC system.

Scope of work

- ❖ Modifications to message structure and attributes
- ❖ Updates to WIU application builder and UI for TCP command execution
- ❖ Enhancements to WIU web interface: web pages, schema, and parameter handling for remote control
- ❖ CPU firmware updates, including vital code and event log improvements

Activities

- ❖ Requirement clarification
- ❖ Software updates
- ❖ Firmware updates
- ❖ Testing & Bug fixing

About the project

Technologies

- ❖ C++
- ❖ Eclipse
- ❖ SVN



Project size

- ❖ 2 Software Engineers
- ❖ 2 QA Engineers

Duration



Platform

- ❖ Linux