

# On-Board Performance Optimizer

Real-time Performance Optimization of Trip Time, Reduction of Fuel Consumption, and Reduced Wear and Tear on Components.

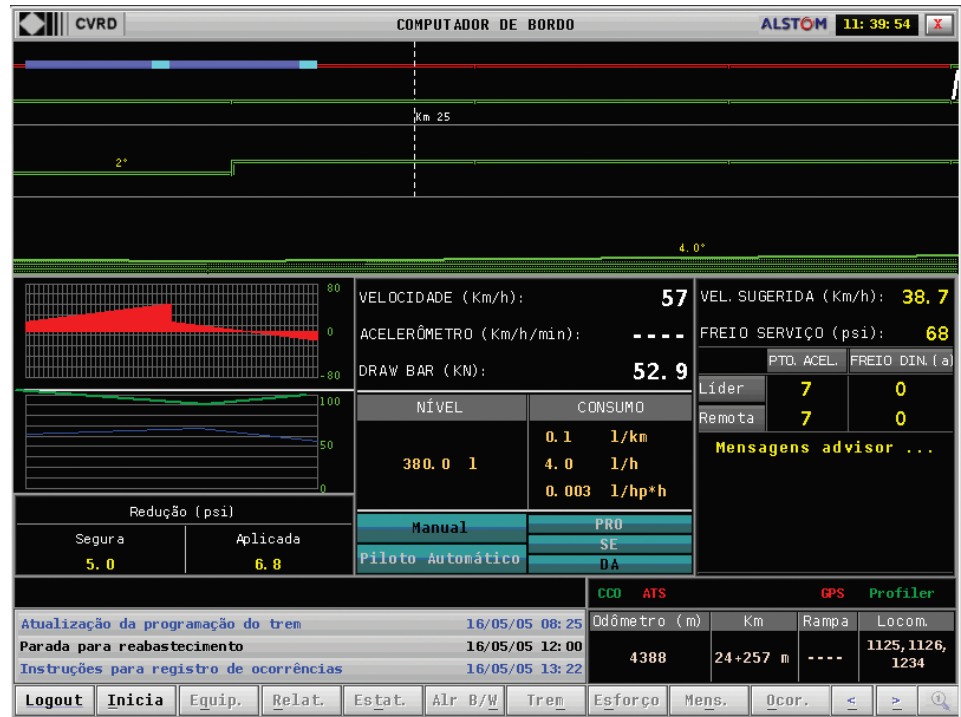
## Overview

ALSTOM's new On-Board Performance Optimizer calculates the optimum speed and acceleration at any given instant for reduction of fuel consumption, optimization of arrival time (according to a defined strategy) and reduction of in-train forces that results in reduction of wear-and-tear on couplers, knuckles, and other train components. To perform the optimization, the system utilizes:

- Real-time status of signaling system, showing track occupancy for trains ahead and behind, and track profile
- GPS for current position of train
- Current trip strategy

## On-Board Equipment

- Ruggedized user interface to display the current train and track conditions
- On-board computers gather data from the central dispatch system and the train sub-systems, and perform the calculations
- Maximum allowable speed from the train's ATC sub-system, the predicted speed for the tracks ahead, and future conflicts and restrictions are applied to calculate the optimum speed and acceleration for the optimized trip
- GPS antenna



## Interface to ICONIS Dispatch System

- **Wayside radio data communications provides dynamic download of updated track profile, current signaling conditions, and the trip strategy (to define the performance) that the ICONIS Central Dispatch System maintains for each train**
- **Conflict detection and trip schedule validation is performed by the dispatch system**
- **Train events are uploaded to the ICONIS System for maintenance records**