

ACES - Advanced Civil Speed Enforcement System

Subsystems

Transponder to Train Transmission Subsystem

- Location, speed control and auxiliary data sent to train at regular intervals along the track.
- Simple, safe and accurate location determination system.
- Passive transponders powered by the antenna located under the train.
- Data from transponders stays available in case of radio unavailability.



Transponders

Vital On-Board Subsystem

- Acts upon the data received from the transponders, WIU's and safety TSR server.
- Determines precise location of train.
- Builds and enforces maximum speed envelope.
- Manages interfaces with customizable ACSES display unit, cab signaling system and other vehicle equipment.
- Can manage other miscellaneous functions such as propulsion voltage breaks.
- Embedded in Micro Cabmatic OBC platform with or without ATC.

Wayside Interface Units (Encoders)

- Used where an interface to signaling is required.
- Safely encodes and transmits to train signal status and route data.

Communications System

- An onboard to wayside radio system used to transmit TSR, signaling, and maintenance data to/from the train.
- Redundant communications equipment at a central location to control message routing and delivery between equipment.
- Radios and communications system are used for the NEC application. ACSES application messages are self-protecting and ACSES can use various types of communication subsystems depending on the communications services required by each application.

Safety Server

- A centralized server safely manages all temporary speed restriction data to/from train and to/from dispatchers
- The safety server is a standard Alstom product designed for use in the rail industry that can be utilized for various vital server applications

ACES offers a high level of service, proven safety along with reliability, availability, and maintainability.