**Long-Range and Blindspot Rail Visibility**

A “safety envelope” created by our sensors provides optimal visibility in detecting blindspots along rail lines.

- Onboard Relayer-Controller geo-tags each rail line with a specific speed limit that is monitored from the train and commander center. Audio and visual notifications within the command module alert the engineer when the train is speeding. After a defined period of time, the breaking system is automatically activated.

- An integrated Blind Spot Visibility System is embedded with trains and tracks to reduce collisions. High resolution and long-range optical infrared radar imaging provides up to 5 kilometers visibility, as well as automatic alerts and control onto the onboard computer.

- AVANTE’s track integrity and switch-point sensor network provides timely monitoring of rail distortion to alert oncoming trains. The Switch Point Monitoring Sensor Device reports data on switch point positions independently to trains as well as control centers.

Severe Weather Visibility

AVANTE’s patent-pending Long Range Imaging System uses a combination of optical, infrared and Doppler radars to track and create images in all forms of severe weather. Digital images of any direct track path obstruction provide advanced alerts when trains operate in weather and darkness.

- Long Range Optical-IR-Radar (Doppler) Imaging System onboard the train interfaces with the Track Side Imaging System. Forward-facing cameras with long range visibility up to 5 kilometers enhance the images displayed on the onboard command module. This module also handles monitoring through all weather conditions.

- Rail-side Optical-IR-Radar visibility system helps detect blind spots around sharp corners to enhance visibility.