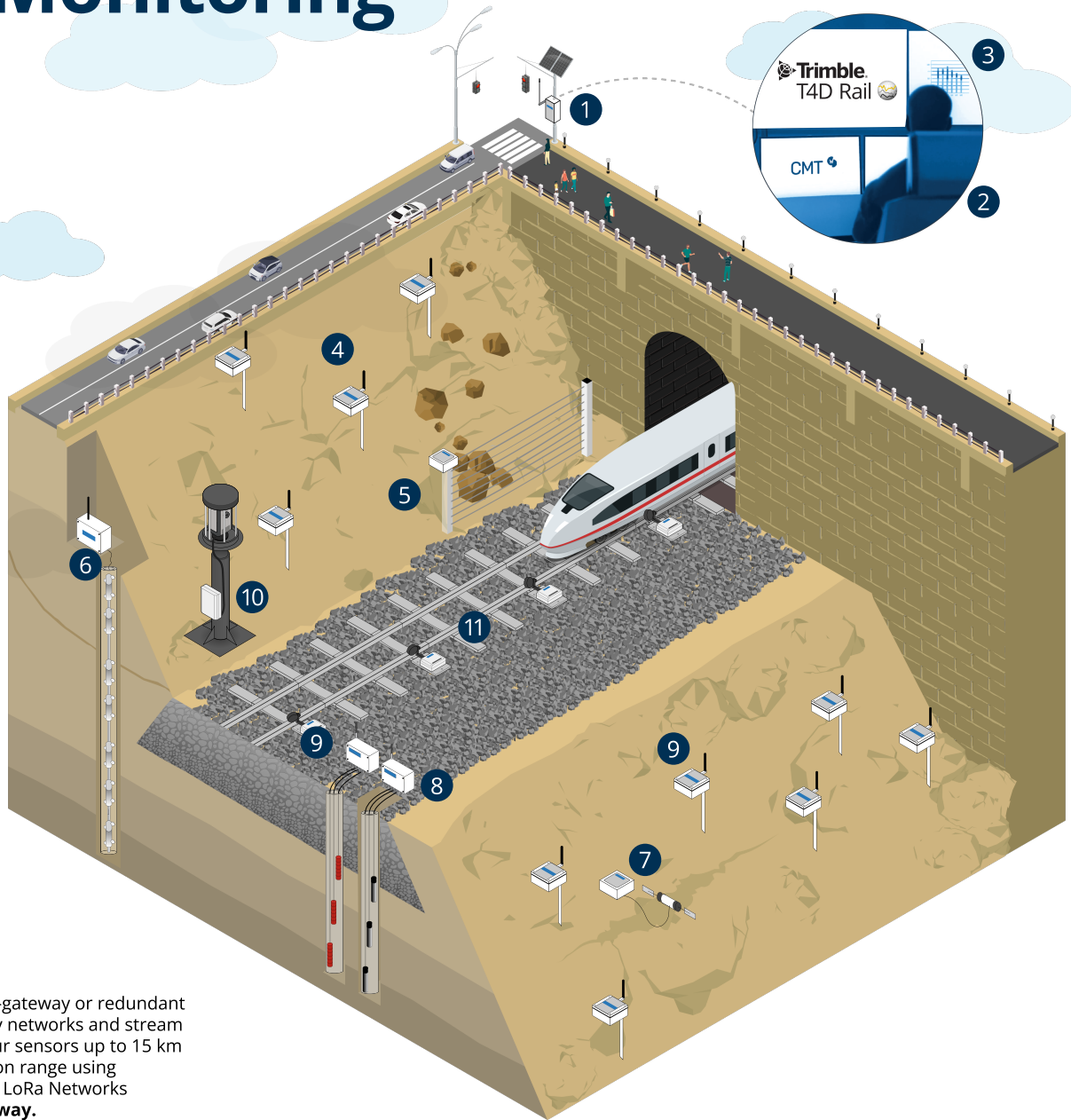


Rail Monitoring



- 1 Deploy single-gateway or redundant multi-gateway networks and stream data from your sensors up to 15 km communication range using Worldsensing LoRa Networks with **4G Gateway**.
- 2 Remotely manage and monitor your network and all deployed devices with Worldsensing management software **CMT**. Integrate your data analytics software in CMT to create complete monitoring reports.
- 3 Utilize the **Trimble® 4D Control™** (T4D) add-on **T4D Rail** module to meet demanding rail industry standards for accuracy and efficiency. Eliminate manual calculations and easily automate your track geometry monitoring using geodetic or geotechnical data.

GEOTECHNICAL | GEOSPATIAL MONITORING

- 4 Monitor lateral displacement due to slope instability with the **Tilt90-X, Wireless Tiltmeter with external antenna**, mounted on a pole and installed on a slope.

- 5 Connect a rock detection system to a **Piconode**.
- 6 Monitor in-depth lateral displacements of the subsoil due to instability and/or presence of discontinuities using a string of in-place inclinometers connected to a **digital logger** for longer chains.
- 7 Analyze soil cracks that can lead to soil failure with a crack meter connected to a **Piconode**.
- 8 Measure pore water pressure and water level variations associated with vertical displacement and bearing capacity of the soil with vibrating wire multipoint piezometers connected to a **Vibrating Wire 5-channel data logger**.

- 9 Monitor vertical displacements linked to soil settlement with a multipoint borehole extensometer (MPBX) connected to a **Vibrating Wire 5-channel data logger**.
- 10 Complement your geotechnical monitoring with a **Trimble Robotic Total Station** for accurate movement detection. Integrate surveying and imaging capabilities into everyday projects.

STRUCTURAL MONITORING

- 11 Measure track conditions (cant and twist) with a **Tilt90-i, Wireless Tiltmeter with an internal antenna**.