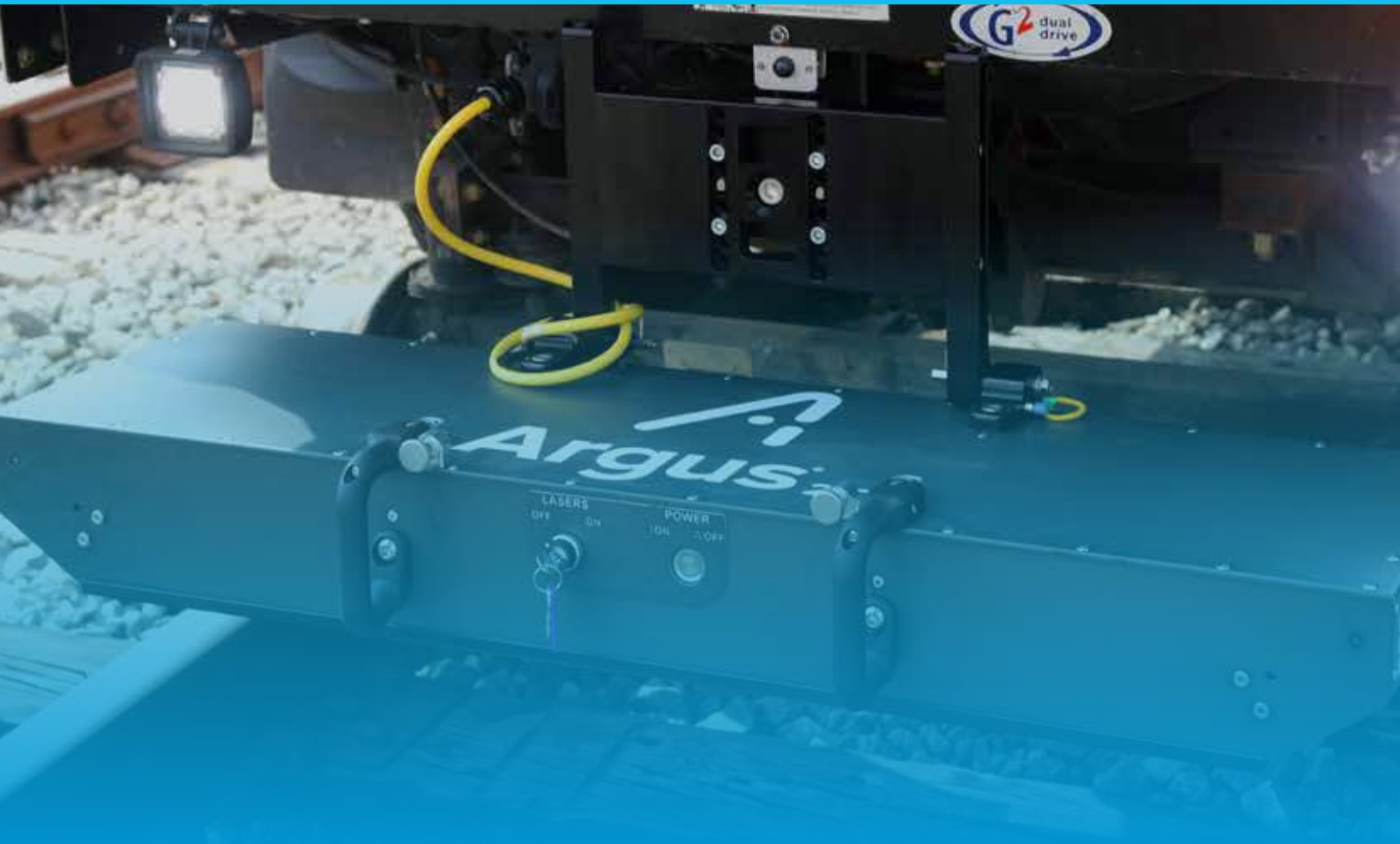


 **Holland**[®]

**RAIL MEASUREMENT
SYSTEMS AND SERVICES**



 **Argus**[®]

Using Holland's proprietary Argus[®] track measurement technology, we offer multiple applications to test your track condition.



Argus®, Holland's proprietary non-contact track geometry and rail profile measurement technology, provides great flexibility to be deployed from a variety of platforms such as small size road-railers (hi-rail vehicles), rail-bound track inspection cars and revenue service locomotives. Our Argus® system generates accurate and repeatable track measurements, both in chord-based and space-curve, according to North American and European standards. Custom track geometry channels and defect configurations can be provided.

Portable Inspection Systems

These systems are lightweight (<23 kg.), portable and cost-effective track measurement systems. This design turns any road-railer (hi-rail) with a standard hitch assembly into a track measurement platform. The foldable mount design allows operators to get on and off the track without removing the system. The Track Inspector System can be installed and deployed within a few minutes and come with its own laptop and travel case.



Track Inspector

This system provides full track geometry measurements along with rail profile. Operator uses a laptop with Argus reporting software that is configured for customers requested defect thresholds and report settings. In addition to gauge, cross-level, longitudinal level, alignment and twist, custom channels can be created. The Track Inspector system is available with three different software options or "modes"; Attended, Heads-Up, and Autonomous.

UGMS (Unattended Geometry Measurement System)

Argus UGMS (Unattended / Autonomous Geometry Measurement System) provides the most cost-effective and stringent track measurement through a bogie-mounted design. The system utilizes available on-board power of the platform, such as locomotives or passenger vehicles, to reduce the overall cost and minimize the number of components to maintain. Our proprietary mount design allows necessary excitations to be sensed for accurate geometry measurement, but attenuate damaging shocks for maximum hardware reliability. In addition to geometry, rail profile data is collected to generate key rail measurements such as inclination, rail wear, rail head slope, gauge face angle, base-to-height ratio and more. UGMS comes with customer-specific auto-locate software and defect analyzer software applications. All geometry records and defects are accessible through Holland's geometry web portal. Machine-learning based algorithms review and eliminate false positive defects to accelerate turnover time for geometry defects and reports.

Passenger Railcar UGMS



Locomotive Mounted UGMS



Rangecam™

Track Inspection and Maintenance Planning Software

Make the right decisions at the right time.

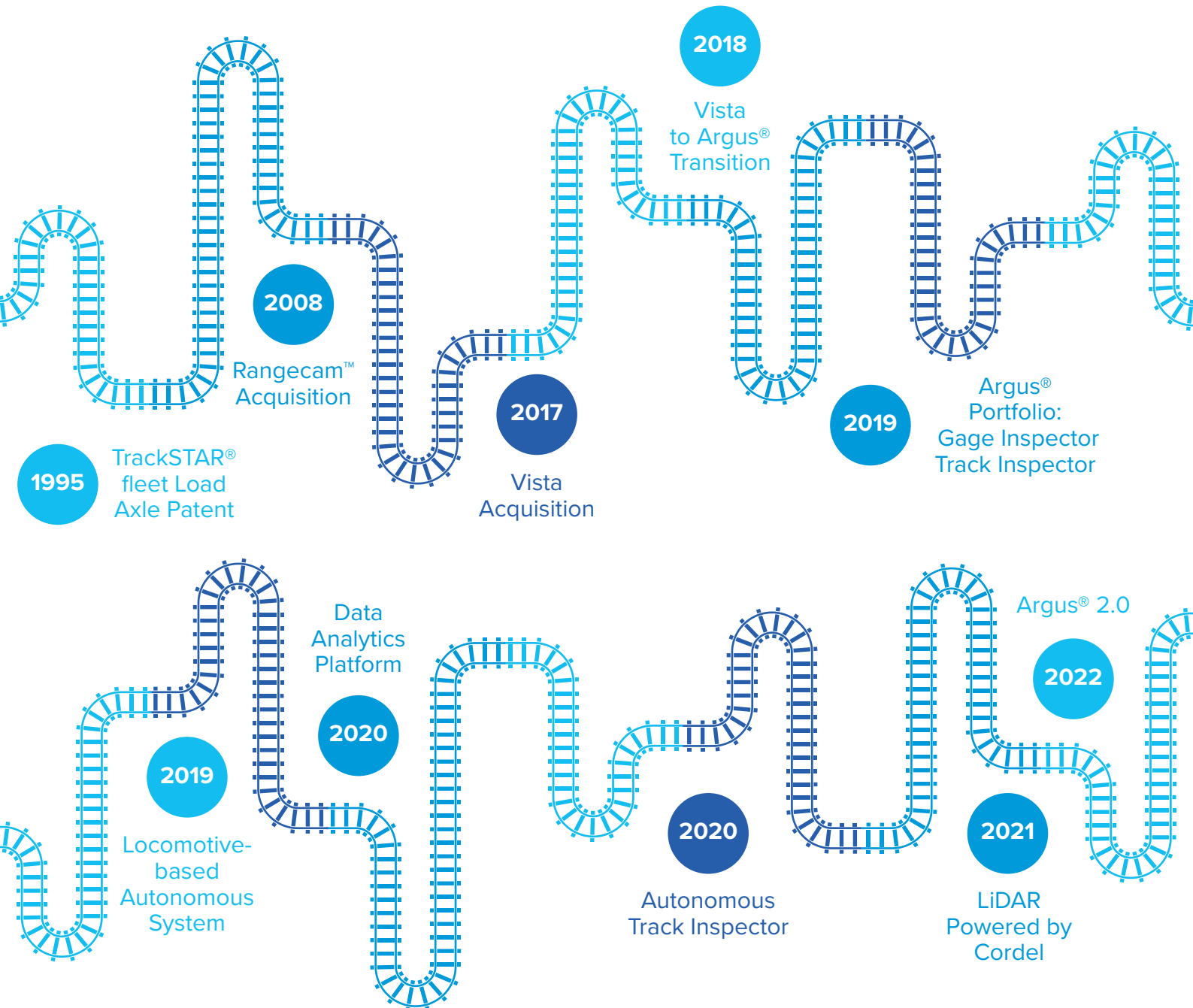
Rangecam takes data in its raw form, cleans it up, and makes it useful for our partners.

- Viewing and reporting of track condition data including geometry, GRMS, rail wear, profile and rail flaws.
- Rail replacement and interactive visual multi-year replacement plans. Tie/sleeper replacement planning with budget.
- Manages data from a variety of sources. Data alignment, auto-detect rail weights, calculate measurements. High-level reporting.
- Combines wheel and rail profiles to examine the wheel/rail interface. Monitor wheel wear rates and optimize truing.
- Rail grind planning. Grind templates and plans. Pre and post-grind analysis for grind quality assurance.



Holland Rail Measurement Systems and Services

Headquartered in Chicago, IL, Holland's has served as a rail solution partner since 1935, with 1000+ employees and equipment in 36 countries. Specifically, our rail measurement systems and services division has been operating since 1995 and currently tests over 100,000 miles of track every year throughout North America.



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