AUTODESK

The benefits of digital delivery for rail

AT A GLANCE

The benefits of digital delivery for rail

Plan, design and build rail infrastructure to last

Rail owners and operators have the opportunity to develop safer, greener and smarter rail networks with the help of digital delivery.

Key macro trends such as sustainability, urbanization, and population growth align railways as part of a transport solution to meet future capacity demands.

Governments around the world are investing in rail infrastructure to enhance and increase passenger rail services that help relieve road traffic congestion, reduce emissions, and improve the sector's digital connectivity.

Rail industry facts:

Global
Worldwide investment in **1.3 million** route-kilometers of rail infrastructure is on the rise

Europe
The European Green Deal stimulus package includes **€87.5 billion** in investment for rail

USA
The United States Infrastructure Investment and Jobs Act (IIJA) allocates **$66 billion** towards rail improvements

Africa
Africa's integrated **high-speed train network** is at the heart of Agenda 2063

The challenge

Rail owners need to improve the management of infrastructure projects and comply with challenging targets to enhance safety, sustainability and operational efficiency.

The answer: Digital delivery

Reap long-term benefits with insights from data during the design phase, improving construction, maintenance, and operation.

Take control of change management and introduce digital project processes – supported by training – to meet new industry standards for BIM, improve collaboration, asset delivery and performance.

Digital delivery improves:

Safety
- Reduce rework and injuries with real-time monitoring
- Use BIM and automated planning tasks to boost safety for construction and maintenance and reduce accidents
- Get better data insights with BIM to help reinforce safety measures throughout the project and rail asset lifecycle
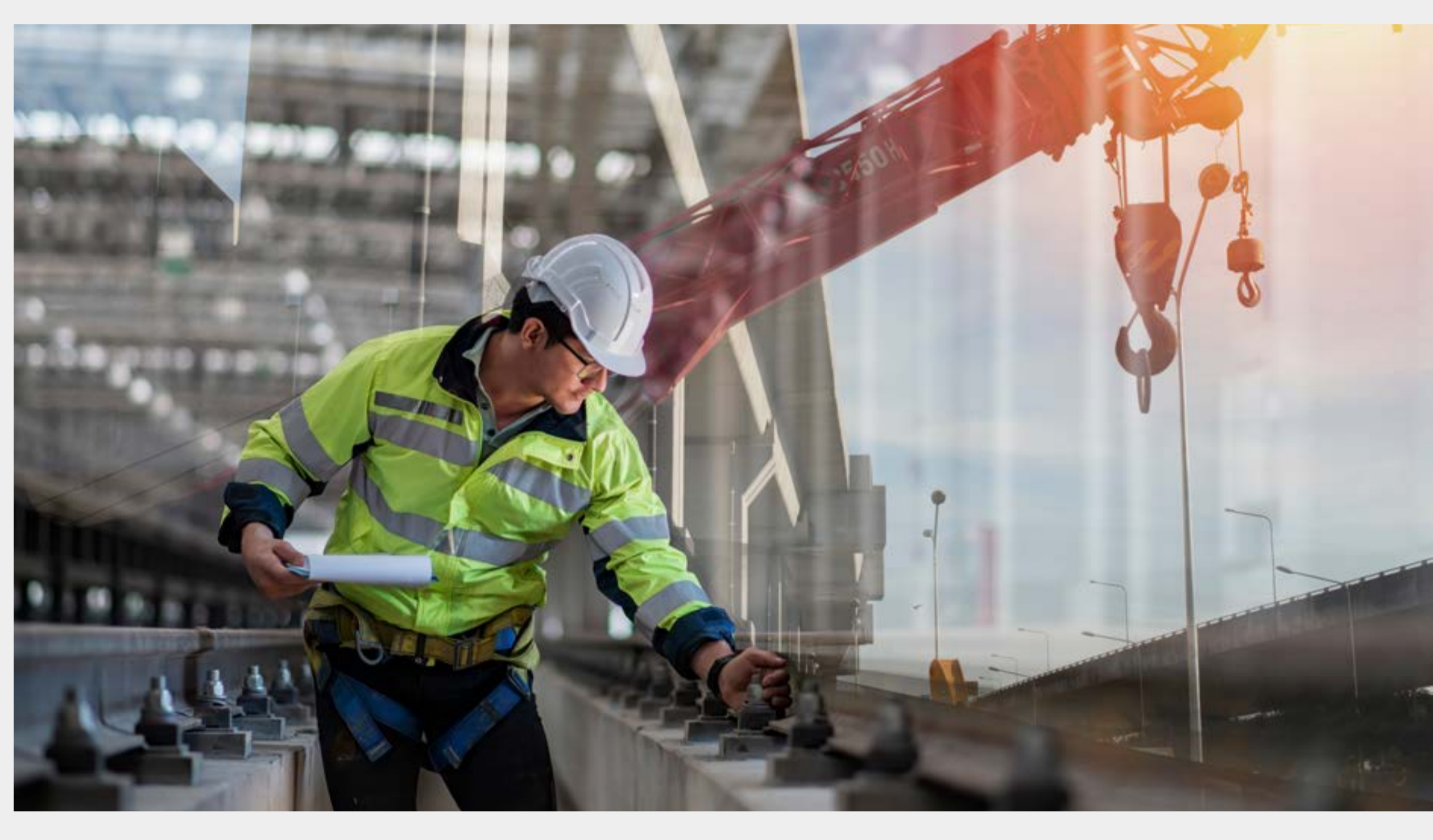
Sustainability
- Collaborate via cloud-based tools to simplify decision-making and help provide sustainable, resilient project outcomes
- Understand flooding risks and general geological conditions with BIM and Geographic Information System (GIS) data
- Optimize material supply use and start developing a circular economy by connecting design information and location intelligence

Operational efficiency
- Keep all stakeholders in the loop in real-time throughout project planning and design stages with a digital road map
- Use BIM and data management tools to improve operational excellence with effective maintenance strategies
- Mitigate disruption to services with easier construction schedule management
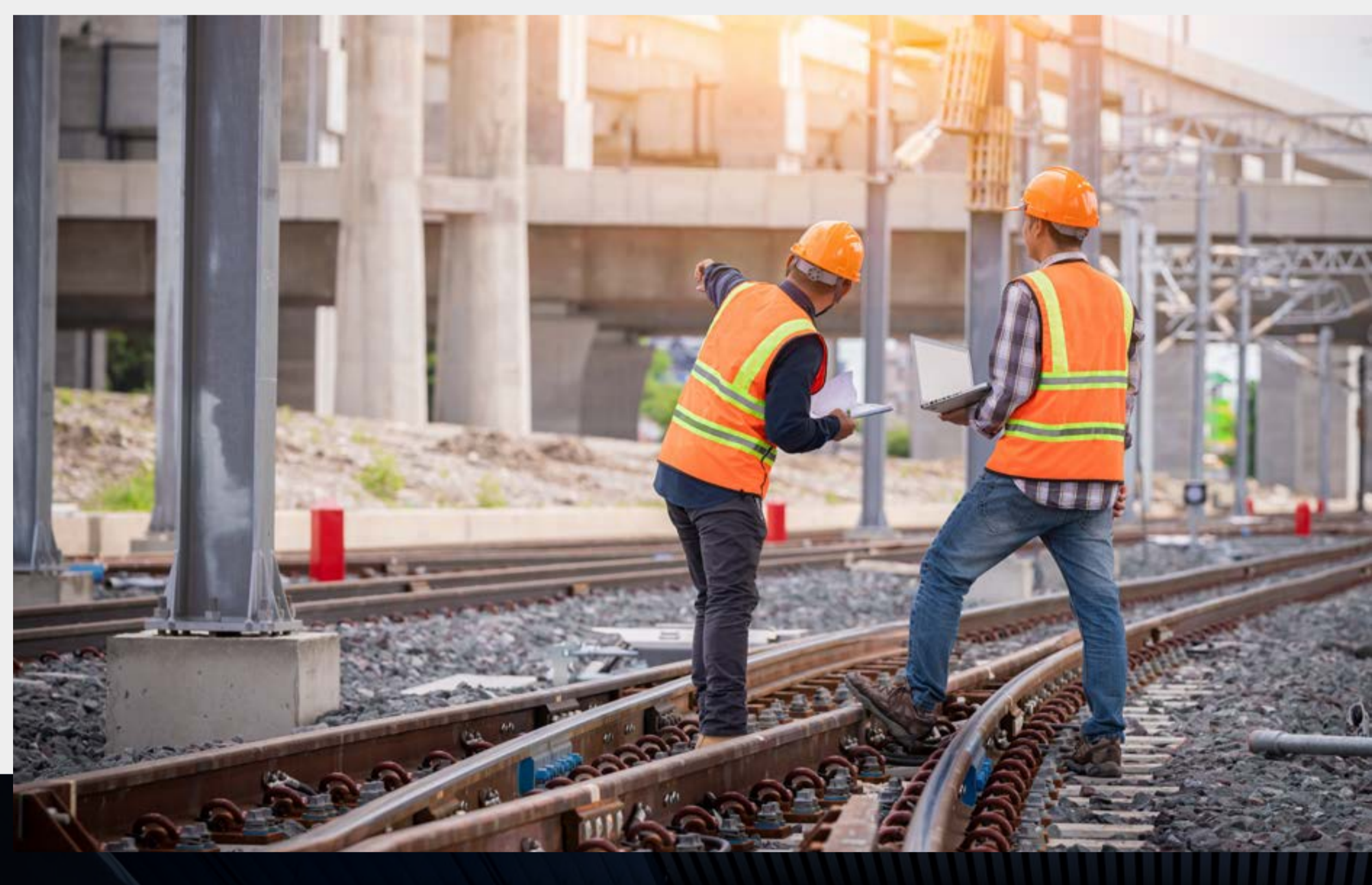
Drive collaboration with digital project delivery
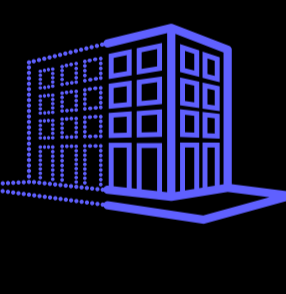
Create and deploy digital twins with Autodesk Tandem to harness fragmented BIM data across a project and turn it into business intelligence
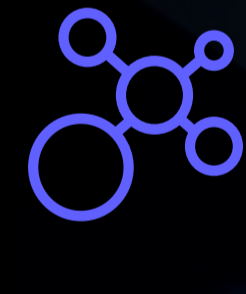
Access and use design and engineering data from your digital twin via the cloud with APIs and services from Autodesk's Forge platform

Automate data processing with APIs from Autodesk Platform Services to eliminate silos and share knowledge

Collaborate in the cloud and gain location-based insights from BIM & GIS to enhance communication between stakeholders across disciplines and improve decision-making and maintenance throughout an asset's lifecycle

These products make it happen:

Reduce risk and drive project delivery. Connect your team, and manage and elevate every phase with Autodesk's Rail Solution Portfolio.

	Plan	Design	Build	Operate
				Digital Twin
AUTODESK Construction Cloud Data Platform. Streamline project management on one centralized platform. Tools include BIM Collaborate, Takeoff, Build and more.	Gain permission-based document control and approvals. Centralize issue tracking and reduce rework. Enhance transmittal management and tracking.	Manage the exchange of data, visualize design process, supercharge collaboration. Automate clash detection and issue management for constructability. Leverage project data and dashboards to identify trends, mitigate risks, and improve decisions.	Connect field and project management workflows. Manage quality and safety issues in one common data environment. Perform construction engineering, conduct scope analysis, and calculate quantities.	Unlock easy handover to asset management system with a common data environment. Access and track your project data to keep your transportation system running.
AUTODESK Architecture Engineering & Construction Collection Design solutions. A complete set of tools and workflows for all your design and engineering needs. Tools include AutoCAD, Civil 3D, Revit, InfraWorks, ReCap Pro, Navisworks, and more.	Capture and digitize existing conditions. Analyze, simulate and prioritize railway projects. Accelerate the design process by utilizing BIM tools for preliminary design.	Draft, annotate, design and coordinate complete 2D geometry and 3D-based model designs. Combine design and construction data into a single model, improving documentation and constructability. Run 5D analysis, clash detection, design simulation and coordinate multi-disciplinary design.	Centralize design and construction data in a single model. Improve 5D analysis, clash detection and design simulation. Mitigate disruption to traffic flow with improved construction schedule management.	Capture and process current conditions to further inform your asset management plans. Increase the accuracy of digital existing conditions with 3D models directly from design.

esri Partnership
Easily connect to industry leading technology for better insights, accuracy and execution of all projects.

Autodesk & ESRI:
Start seeing your assets in context by connecting geospatial data to your design and construction information to explore and collaborate on project information – easing communications and improving decisions throughout an asset's lifecycle.

Contact us for more information

Digitalization is the key to increased capacity, automation, connectivity, and sustainability in rail infrastructure.

Get in touch

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