



Digital transformation and the Mass Transit industry

Belden helps you improve
operational efficiency, safety
and passenger satisfaction

Solution Brief



Digital transformation brings automation and data analytics to mass transit rail systems.

These systems face challenges due to their complex infrastructure, high user concentrations and broad geographic scope.

Riders expect comfort, on-time performance and safety. Modern riders also want seamless connectivity and data security.

Belden's connected rail solution provides everything you need to meet these demands.

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Customer Innovation Centers | CICs

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Customer
Innovation
Center



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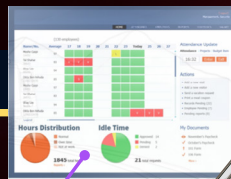
The connected rail system for Mass Transit

Belden helps you design, install and validate the bandwidth for large data volumes. We enable redundancy for reliable performance and cybersecurity to protect against service interruptions and data theft. Our solutions address rail transit's top five operational imperatives, enhancing your operational efficiency.

1 Labour productivity

workforce management systems

automated operations



2 Passenger safety and security

automated doors

CCTV

alarms

3 Passenger experience

WiFi

on-board entertainment

realtime information

4 Asset productivity

CBTC systems

optimized scheduling solution

maintenance management system

spare-part management system

5 Maintenance

Meeting these imperatives requires integrating various independent yet interconnected systems. Each system has unique requirements, forming a complete end-to-end solution that provides the best value.

Our experts are your partners, guiding you step by step. Together, we create a robust interconnected data network, unlocking the full potential of your modern rail system.

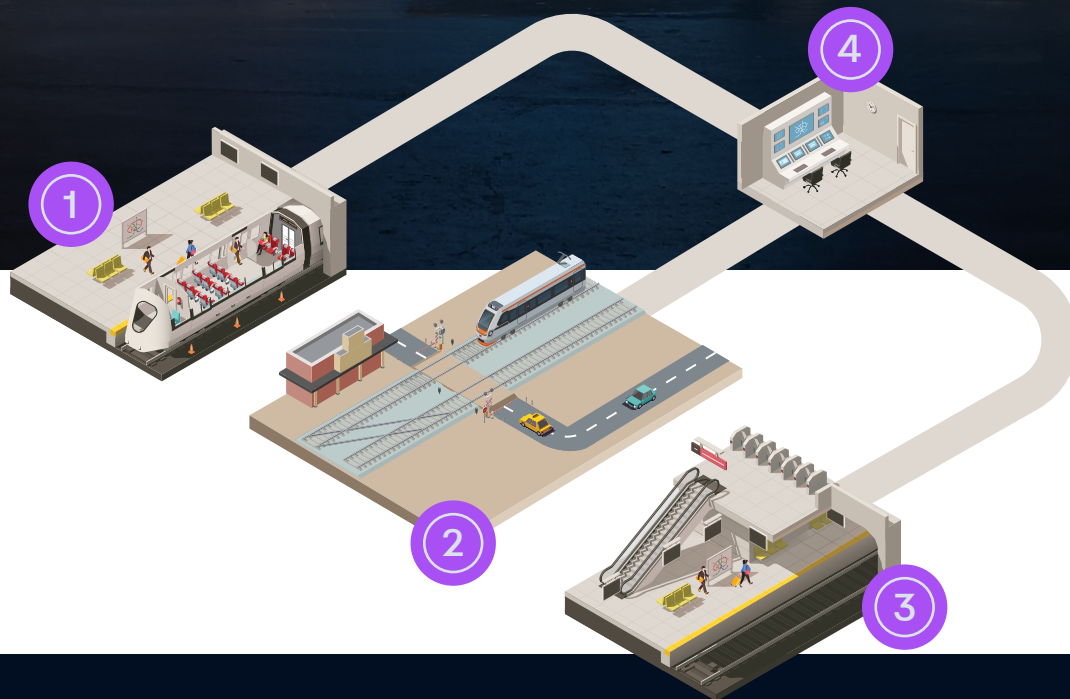


Transform your rail system with Belden

With Belden's help, your complete solution will enhance components throughout the connected rail system including rolling stock, rail infrastructure, stations and operation control centers. These improvements benefit all stakeholders. Each rail application has unique requirements, so Belden creates your connected data network to meet your needs.

Our experts know which combinations of technologies work best and follow industry-leading best practices to create a solution adapted to the intricacies of your system.

Most mass transit systems include the following elements:



1 The connected train network

Establish connections onboard rolling-stock assets

- Train control systems
- Train operations systems
- Onboard experience systems

2 The connected trackside network

Provide connectivity for track-side equipment

- Train-to-ground connections
- Trackside control systems
- Trackside operations systems

3 The connected station network

Enable communications for in-station systems

- Station control systems
- Station operations systems
- In-station experience systems

4 The connected backbone and OCC Network

Enable communications for in-station systems

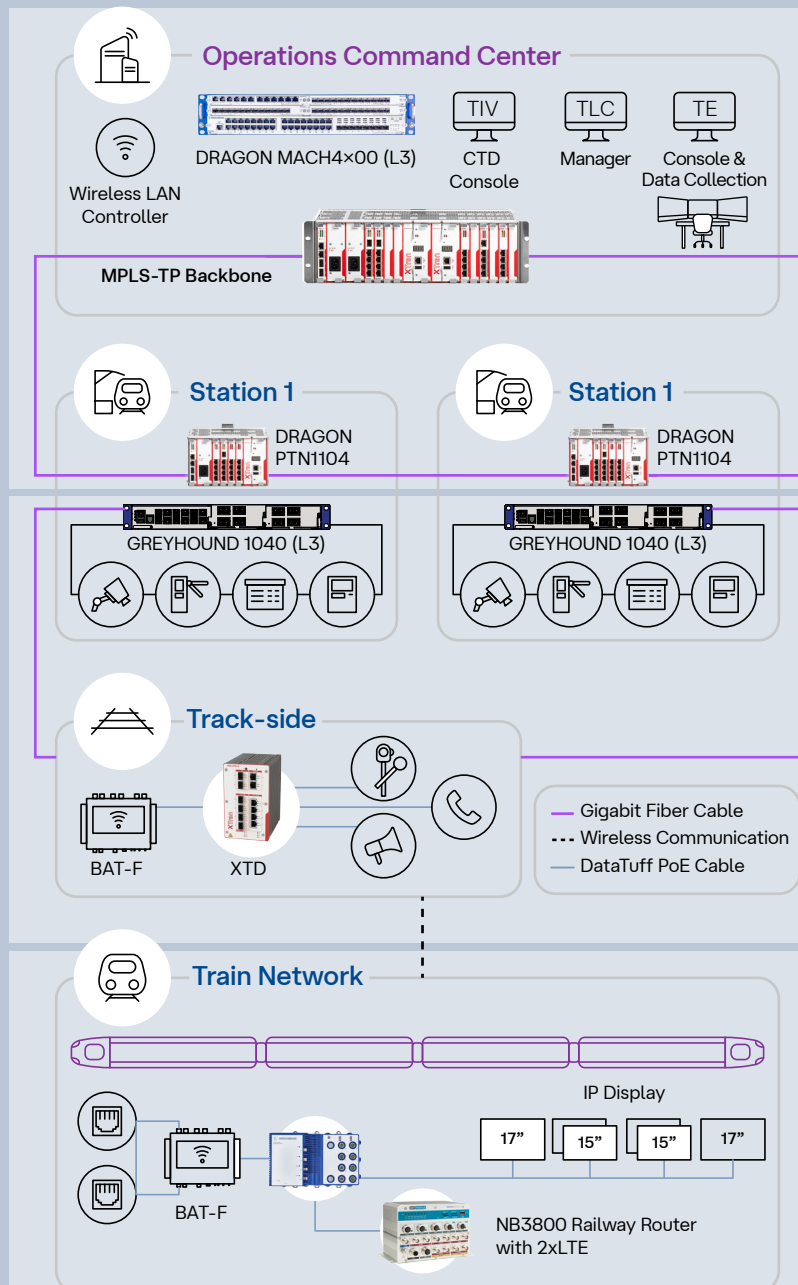
- Area of operation (AO) interconnections
- Operations control center
- Remote connectivity



Leverage Belden's expertise for your rail network

As an end-to-end network solution provider, Belden guides you to the products, services and tools you need to advance your digitization journey. With our experts at your side, you'll see your unique automation plans come to life through a combination of Belden's extensive network portfolio and appropriate third-party tools and services.

Let's work together to create a seamless, efficient and connected rail solution.



Passenger safety and security

- XT & XTR MPLS-TP nodes
- Mach4500 High density switch/router
- 19" Compact Cabinets E-SERIES
- HiVision & TXCare Network Management Software
- NAC Network access controller

The connected station network

- 19-inch Compact Cabinets E-series
- GRS switch/router
- XTR MPLS_TP node
- AP3400 WiFi6 access points
- EAGLE40-07206 Firewalls

The connected trackside network

- RailTuff fiber optic cables (TT-*LG-024-HNNN)
- MIPP DIN Rail box
- XTD-2110-A MPLSTP trackside node
- BRS managed switch
- BAT450 Access Point

The connected train network

- XT & XTR MPLS-TP nodes
- Mach4500 High density switch/router
- 19" Compact Cabinets E-SERIES
- HiVision & TXCare Network Management Software
- NAC Network access controller

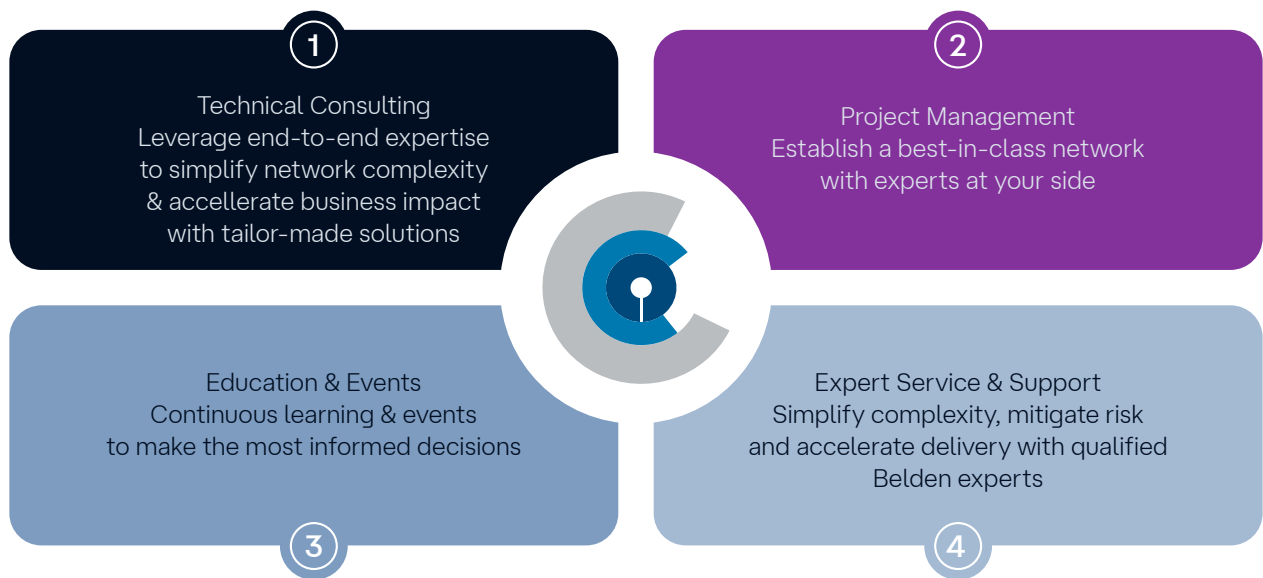
Discover the entire portfolio

Visit belden.com/mass-transit and contact our experts to learn more on our Mass Transit solutions' products and services offer.



Drive transformation with Belden’s Global Customer Innovation Centers™

Belden’s Customer Innovation Centers (CICs) serve your needs throughout the solution development lifecycle. These hubs — strategically located to serve regions throughout the world — offer access to best-in-class capabilities, including the opportunity to run proof of concepts (PoCs) in our validation lab.



Dedicated experts by your side

Crafting the perfect solution for your business needs can be challenging. That’s why Belden offers direct access to our experts, ensuring you get the support and guidance you need.

>>> Solution Architect	>>> Digital Automation Consultant	>>> Solution Consultant	>>> Service Engineer
• Deep technical knowledge of network architectures • Develop, design, and validate best solutions tailored to the complexity of each customer’s unique business challenge	• Industry expertise with deep networking know-how • Lead process, workflows and data assessments to identify digital transformation opportunities • Calculate the potential value of network solutions for the customer	• Deep technical knowledge of applications and industries • Guide the customer in their digital transformation journey • Conduct industrial network audits and position the ideal solutions	• Deep technical knowledge of products and technologies • Conduct trainings, test and commission networks • Lead network assessments and deliver high quality presales and post-sales technical support



Connect to what's possible.

Solution Brief



About Belden

Belden Inc. delivers complete connection solutions that unlock untold possibilities for our customers, their customers and the world. We advance ideas and technologies that enable a safer, smarter and more prosperous future. Throughout our 120+ year history we have evolved as a company, but our purpose remains – making connections. By connecting people, information and ideas, we make it possible. We are headquartered in St. Louis and have manufacturing capabilities in North America, Europe, Asia and Africa.

For more information, visit us at:
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