

RTI CUSTOMER SNAPSHOT

# MT Robot AG

SWISS MANUFACTURER DEPLOYS CONNEXT DDS  
TO ENSURE PRECISION IN ROBOTIC TRANSPORT

*“Developing robotics software is a challenging task, as it requires interaction with a wide variety of systems - from the core hardware abstraction, written in C++ to user interfaces and web services written in C# and JS. This is where DDS shines, as it provides unified data types and communication channels, which speeds up development considerably.”*

Michael Travella  
Software Engineer, MT Robot AG

## HIGHLIGHTS

- Transport robots use DDS to adapt and expand to tasks while seamlessly integrating with ERP and other software systems
- Connext DDS manages data flows for the robots in motion, reducing demands on customer networks
- UNITR transport robots navigate autonomously and safely around hospitals or warehouses, delivering supplies 24/7

## ABOUT MT ROBOT AG

Based in Switzerland, MT Robot AG develops innovative, autonomous robotics and the software that runs them. The company's software solutions are modularly expandable, compatible with ERP systems via interfaces and include analysis and reporting tools.

## CHALLENGE

As facility managers know, using robots to transport goods within a building presents a number of variables that can be difficult to address. Regardless of industry, the process of addressing these challenges can lead to running into walls - quite literally, in some cases. Often, narrow corridors and heavily trafficked spaces are too tight for traditional moving equipment. For facilities like hospitals or industrial automotive companies in particular, it's also quite common to be moving heavy items like gears and rotors, or healthcare equipment and supplies that are both heavy and extremely delicate.

Negotiating tight spaces isn't the only restriction. In recent years, facilities management technology has tapped into constrained facilities networks, which need to capture streaming data on everything from elevators to lights and temperature controls, while also managing and controlling access to the building. Therefore, when added to the mix, a transportation solution would need to work unobtrusively, without placing undue demands on limited network bandwidth.

## SOLUTION

Making transportation for facilities run with Swiss precision is the focus for MT Robot. It starts with the hardware: the company's UNITR robot is designed to transport European-standard KLT containers. Each robot can carry a maximum load up to 200 kilograms per trip. The UNITR robot is controlled by a touchscreen interface and controller hardware that allows it to perform different transport tasks with specific add-on modules, which can also be changed automatically. The robot can then glide autonomously through narrow corridors - even when people are present - and safely perform tasks at any hour of the day or night.

Between the robot and the controller hardware, something even more revolutionary is going on. MT Robot uses RTI Connex DDS to solve the problem of moving data through the system efficiently and quickly enough to control the robot, without flooding the server and losing performance.

Connex DDS creates a data-centric environment that keeps data in motion and moves data to where it's needed, when it's needed. To operate the robot on a .NET Core front end running Linux for example, each Linux host would typically be running 20 services related to sensors, localization, maneuver control and more. Using the data-centricity of Connex DDS, each Linux host can perform as if only one service is running, without being tethered to a database. This approach ensures that network speeds remain highly efficient, while keeping robot operation and control transparent for facilities managers.



Factory Overview software panel for monitoring and controlling UNITR

## RESULTS

MT Robot has deployed UNITR robots in several locations, with a more widespread rollout expected in 2021. Early results are positive, as customers integrate the robots seamlessly into their existing facilities. “Our system is pretty efficient, and our customers are very excited about our automated transport offerings” says Michael Travella, software engineer at MT Robot. “And that’s the goal, isn’t it? When everything works, there are no issues and customers can focus on getting down to business. The accuracy of our solutions is becoming something our customers can rely on, and that’s a great honor.”

And meanwhile, the UNITR robot keeps whisking its way along corridors and up and down elevators, doing exactly what it was designed to do: Delivering goods while navigating real-world environments safely and reliably, day and night.

## ABOUT RTI

Real-Time Innovations (RTI) is the largest software framework provider for smart machines and real-world systems. The company’s RTI Connex<sup>®</sup> product enables intelligent architecture by sharing information in real time, making large applications work together as one.

With over 1,500 deployments, RTI software runs the largest power plants in North America, connects perception to control in vehicles, coordinates combat management on US Navy ships, drives a new generation of medical robotics, controls hyperloop and flying cars, and provides 24/7 medical intelligence for hospital patients and emergency victims.

RTI is the best in the world at connecting intelligent, distributed systems. These systems improve medical care, make our roads safer, improve energy use, and protect our freedom.

RTI is the leading vendor of products compliant with the Object Management Group<sup>®</sup> (OMG) Data Distribution Service<sup>™</sup> (DDS) standard. RTI is privately held and headquartered in Sunnyvale, California with regional headquarters in Spain and Singapore.

Download a free 30-day trial of the latest, fully-functional Connex DDS software today: <https://www.rti.com/downloads>.

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