

Case study

One router, endless transit possibilities



ERICSSON

Image courtesy of STTR

How a Canadian transit agency uses Ericsson Cradlepoint routers to keep every connected system running across its fleet in Trois-Rivières

Customer:
Trois-Rivières Transit (STTR)

Industry:
Mass transit

Use case:
Application connectivity,
Docking integration

Success story highlights

Challenge — Trois-Rivières Transit (STTR) operated a fragmented onboard technology environment across its 65-bus fleet, each with a varied combination of routers, modems, and proprietary systems. When the agency's aging CAD/AVL system faced shutdown as Quebec's telecoms decommissioned 3G networks, unreliable data, costly vendor dependencies, and a hard deadline forced a fundamental change.

Solution — Trois-Rivières Transit replaced its disparate networking solutions with a single router that serves as the central computing

platform for each bus, consolidating every connected system into one rugged device. Working with CIMA+ and Systrans, the agency containerized its Navineo CAD/AVL software to run directly on the router, eliminating the need for a separate onboard computer.

Benefits — Ericsson Cradlepoint routers were deployed across 65 buses in approximately three weeks. Fleet-wide software updates now happen remotely in a single day. Reliable location data and working passenger information systems are now in place, and Transit Signal Priority helps buses stay on schedule.

"The router gives us a scalable, open foundation we control — and it's just the first step in how we'll evolve our fleet."

Julien Trépanier, Director of Planning and Development, Trois-Rivières Transit

Background and challenges

For decades, the formula for equipping transit bus systems has been straightforward: install dedicated hardware for each function. Need passenger information displays? Add a new communication device with its own antenna. Want automated announcements? Install another device. Require real-time vehicle tracking? That's yet another box. For Trois-Rivières Transit, which serves the communities of Trois-Rivières, Quebec, with a fleet of 65 buses managed by a lean IT team, that accumulation of hardware had become a serious liability.

Every onboard system was connected to a proprietary computer-aided dispatch and automatic vehicle location (CAD/AVL) computer via proprietary interfaces. Any change required costly negotiations with vendors whose systems were tightly interlocked. Updates to the fleet had to be pushed manually, bus by bus. When Quebec's telecoms began decommissioning 3G networks and the CAD/AVL system's embedded modem faced shutdown, the clock started ticking.

The consequences of the old architecture were felt across the whole operation. Operations supervisors could not fully trust the data they were looking at, and passenger information displays gave riders an incomplete picture of their bus location and status.

Solution

Working with engineering consultants CIMA+ and CAD/AVL software provider Systrans, Trois-Rivières Transit developed an approach that turns conventional transit technology on its head. Rather than buying another proprietary onboard computer, the team separated hardware from software: they chose an open, capable platform and let the software run on top of it.

Systrans containerized their CAD/AVL application into a Docker container running directly on an Ericsson Cradlepoint mobile router, and within a few months, the software was live across the fleet. The dedicated onboard computer was gone, replaced by the router itself.



How it works

A single Cradlepoint router is installed on each bus and acts as the central hub for everything connected to it: the passenger displays inside and outside the vehicle, the fare collection system, security cameras, the driver's tablet, automated stop announcements, and ridership counters. A single 7-in-1 antenna handles GPS, Wi-Fi, and cellular connectivity. Older devices that predate modern networking standards are bridged through small converter boxes, so even legacy hardware can plug into the same system without being replaced.

The driver's emergency panic button connects directly to the router, so an alert reaches the operations center the moment it is triggered. No separate device needed.

Operational and location data from each bus feeds into cloud-based systems that power both the real-time tracking that operations staff rely on and a Transit Signal Priority (TSP) system at intersections. When a bus is running behind schedule and carrying a full load of passengers, the system can extend a green light to help it catch up. Across approximately 100 intersections, that intelligence adds up to meaningfully faster, more reliable service for riders.

Outcomes

Faster deployment

Ericsson Cradlepoint routers were deployed across 65 buses in approximately three weeks. Each installation was tracked, with serial numbers logged and photos captured, giving the IT team a clean inventory record from day one. Once the container configuration was validated on one router, replicating it across the rest of the fleet was straightforward.

Simpler management

The entire fleet is managed remotely through Ericsson NetCloud Manager, giving the small IT team centralized visibility across the entire fleet. Configurations can be tested on a subset of buses before rolling out fleet-wide, and updates to the Docker application itself can be pushed the same way: remotely, without anyone setting foot on a bus.

Remote updates replace manual visits

Before, pushing a change meant physically visiting each bus with a USB stick, a process so cumbersome that it prevented evolutions of the previous CAD/AVL system. Today, configuration changes and application updates reach the entire fleet wirelessly, within a day.



65 buses equipped
in ~3 weeks

1 day to push fleet-wide
updates remotely

Reliable data and a future-ready foundation

With the Ericsson Cradlepoint routers in place, operations supervisors can track the fleet in real time with confidence. Passenger information systems that depend on accurate feeds are finally giving riders the arrival data they need. And Trois-Rivières Transit now owns its onboard architecture in a way it never did before. When a device needs to be replaced, they can simply swap it out without renegotiating vendor contracts, and new features get added through software, not new hardware.

Looking ahead

Trois-Rivières Transit's approach represents more than a successful technology deployment. It is a proof point for the entire transit industry: the future of fleet technology does not have to mean more boxes, more complexity, and more vendor lock-in. By reimagining Cradlepoint mobile routers as a platform rather than just a connectivity device, Trois-Rivières Transit and its partners have created a model that other agencies can adapt to their own needs, proving it is a viable model for the entire industry.

Learn at cradlepoint.ericsson.com

