Cal/Amp®

Real-Time Passenger Load Data for Improved Transit Efficiency

Highlights

- **Streamline Operations:**
  Deployed more than 2,000 LMU-4200 and LMU-5530 to improve operational efficiency across 100 transit agencies over a span of 10 years

- **Data Integrity:**
  The LMUs generate and reliably transmit approximately five million records daily equating to millions of passengers per year

- **Flexibility:**
  LMU's report via a cellular network or with private local servers/Wi-Fi networks

- **Durability:**
  Rugged hardware operates reliably in transit environments with some of the original LMU-4100s still in active service after a decade of operation

About AppLocation & Urban Transportation Associates, Inc.

AppLocation provides telematics and wireless solutions, enabling fleet operators to improve efficiency, reduce repairs and collect key performance metrics. These metrics help companies drive continual operations improvement, from mapping to activity reports to mobile apps for field staff.

Urban Transportation Associates, Inc. (UTA) provides transit authorities throughout North America with a mature Automatic Passenger Counting system (APC) consisting of proven hardware, software and support procedures that produces highly accurate and reliable information for transit managers.

The Challenge

Transit operators rely on ridership and passenger loading data to plan operations and maximize operational efficiency. APC data is critical for transit planners to deploy transit assets on the right route, at the right time and for the right duration. In an era of scarce resources, transit managers require accurate and detailed information in order to evaluate the quality and productivity of existing transit service. A lack of operational data, either in real-time or offline, makes efficient and effective allocation of transit assets extremely challenging.

The Solution

UTA builds and deploys solutions that provide insight into transit service utilization, letting transit operators optimize their service quickly in response to changing travel demand. Ridership and passenger load data is immediate and granular, giving planners insight into individual route segments and enabling them to fine-tune routes to maximize efficiency while retaining high levels of transit service quality. Transit schedulers utilize UTA APC data to develop schedules that reflect actual on-street operating conditions which increases the on-time performance of transit service. Looking at a single market, San Antonio (VIA) has 300 UTA/AppLocation equipped vehicles. On average, VIA provides service to 110,000 riders per day which equates to more than 30 million per year.

> " The LMU-4225 and LMU-5530 operate in these environments in a very reliable way. Transit authorities realize a significant return on the investment in the form of reduced costs of data collection and analysis along with improved transit service productivity and quality."
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> Thomas W. Kowalski,
> President and CEO at Urban Transportation Associates, Inc.

The planning data is made up of thousands of records collected from transit vehicles in active service installed with AppLocation's solution in combination with CalAmp's LMU-4225 and LMU-5530. Transit vehicles installed with CalAmp technology provide continuous location and passenger load data detailing the number of riders entering and exiting a bus or train at every stop. The passenger load data is sent immediately over cellular network or stored for later Wi-Fi download to save cellular data consumption. It's estimated that more than 750,000 reports are generated daily via cellular network with the rest logged and sent via private local servers/Wi-Fi networks. The LMU-4225 and LMU-5530 generate and reliably transmit approximately five million of these records daily from more than 125 transit agencies using UTA's APC system. This gives planners the information necessary to improve and optimize overall service.

Over 125 transit authorities in the U.S. and Canada benefit from UTA's APC system. Recently, the system was deployed on a commuter rail system with both above and below ground segments. Ridership and passenger load data collected before and after each stop is transmitted immediately while the train is above ground. In the tunnels, the CalAmp LMU-5530 is integrated with RFID tags to accurately identify each underground station. When the train is below ground the data is held until a wireless signal is available. CalAmp's LMU-5530 is enabled with the intelligence to act upon these situational conditions to optimize performance while in motion.

In addition to providing direct access to passenger load and location data, the LMU-5530 can connect directly to the vehicle engine via the J1939 interface to provide real-time diagnostic data about fuel economy and emissions, predictive maintenance alerts, and information about engine faults to continuously monitor and mitigate potential risks.

With the UTA solution, transit agencies improved their service productivity and quality, increased efficiency with more precise response to changing demand, and provided accurate and comprehensive information to meet local, state and federal reporting requirements.

Overall, the UTA solution advances efficiency while saving money on route effectiveness, vehicle health and operations.

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