



Company Newsletter of INIT Innovations
in Transportation, Inc. for business
partners, employees and friends



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Imprint

General Electric Transportation LLC was recently awarded a contract to provide an Advanced Communication and Information System (ACIS) to the Golden Gate Bridge, Highway and Transportation District (District) in San Francisco, CA. INIT was chosen as the subcontractor for the new Intermodal Transport Control System (ITCS).

INIT will equip Golden Gate Transit buses and the Golden Gate Ferry fleet with a computer aided dispatch/automatic vehicle location system. In addition, INIT will supply the on-board computers, mobile data terminals, passenger information displays, automatic passenger counting system, automated stop announcements, as well as a real-time passenger information system.

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Dear Transportation Professionals,

As an account manager for INIT, my responsibilities revolve around how to best meet the needs of our current and prospective customers.

First, it is my job to know the details of our customers' transit strategy. Through pre- and post-implementation, a transit agency's needs sometimes change. Whether it is a current customer or potentially new customer, having a clear understanding of what the agency requires is critical. Sometimes an end user may find it difficult to describe what is necessary in terms of hardware or software. It is my goal to dig deeper, discover the specific requirements,

translate those requirements into an INIT solution and finally communicate that in a clear and concise manner to the customer. I ensure INIT provides the necessary hardware, software and training to give the best value to our customers.

Second, it is my responsibility to manage the process of responding to any requests for proposal (RFP) that may fit the INIT solution. The RFP process is a collaborative effort and requires the assistance of many first-rate people in- and outside the INIT organization.

ITS solutions are complex. Helping agencies realize long-term success with the INIT system is an integral part of what I do. The success of a project can ultimately be credited to a proper understanding of the needs and a positive working relationship with customer.

INIT values the relationships it has built with our clients over the years. The camaraderie and respect we share has yielded many mutual successes. It is truly a pleasure to work with so many fine people both at INIT and within our customer community.



> Carl Commons
Senior Account Manager

Carl Commons



Issue 1/2009

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Radio Frequency ID and Bus Yard Management.

Taking over where GPS leaves off.



> **RFID technology has come a long way assisting agencies with the ability to track vehicles in the yard even without an ITCS.**

Since the creation of bus yards and bus bays, transit agencies have struggled with keeping track of their vehicles, and their vehicles' locations. This is especially a problem when trying to assign vehicles to blocks without having to shuffle them to get the right bus out of the pack. In addition, issues may arise from breakdowns or dead batteries which force last minute changes.

In the past, transit agencies have often hired staff to take inventory and direct traffic in order to locate and position vehicles. This is especially true when the bays and yards are covered and therefore have no direct GPS access. Some agencies require full-time positions just to inventory vehicles at each garage. This can amount to four shifts a week for 24/7 operations.

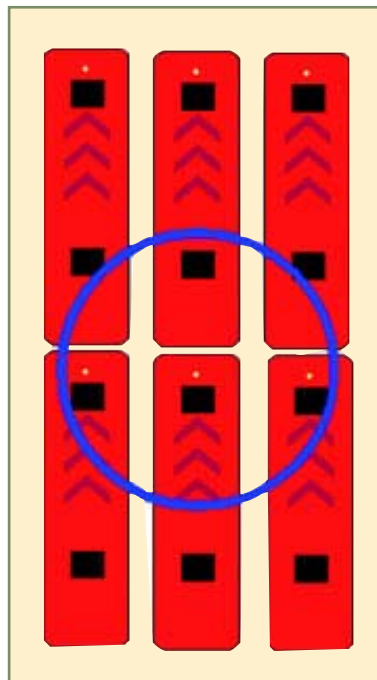
So why not just use GPS and dead reckoning to solve the tracking issues as we do with our ITCS?

The answer is accuracy. In the figure to the right, we see six buses parked as they commonly are in a garage. The blue circle shows the expected margin of error, even with WAAS (Wide Area Augmentation System) or other DGPS (Differential Global Positioning System) techniques. One does not know with certainty which of the parking spaces the individual vehicle occupies. Indoors, where we need to rely on dead reckoning

(even with gyro), the accumulated error is even worse. So, conventional GPS techniques can fail.

What is the solution? RFID tags and readers.

RFID technology has come a long way in the past few years. Costs have dropped and sophistication has grown. Even



> **MOBILE-DMS clearly arranges and tracks vehicles in the yard.**

without an ITCS, it is now possible to track vehicles in the yard or in bays using this technology.

How does RFID work?

Simply put, there are two elements involved in the technology: passive tags and active readers. When passive tags come in range of a reader, the radio signal sent from the reader energizes the tag causing it to transmit its ID.

There are two ways to deploy tags and readers to learn locations:

- Embed passive tags in the tarmac at known locations
- Place tags on the vehicles and triangulate the tags' locations.

In the first case, as a vehicle equipped with a reader encounters a tag, it records the location and can offload the series of tags encountered, or simply report the last tag over WiFi or other wireless media. In the second case, when vehicle tags enter an area covered by a grid of tag readers, their locations are tracked. This information is then sent to a server over a wired LAN. Either method will determine with sufficient accuracy the parking position of the vehicles.

Now that we have a way to accurately collect vehicle locations, software can make our jobs easier — INIT's **MOBILE-DMS**.

So what is it and what does it do?

MOBILE-DMS performs three key management tasks:

- Automates block scheduling
- Provides accurate vehicle locations in the yard for operations and maintenance
- Builds reports on yard activities

MOBILE-DMS assists operations in staging and tracking vehicles in the

yard. This operation has several aspects which computers are well suited to manage. First, there is the issue of assigning vehicles to the appropriate blocks whenever they enter and exit service. The assignments may have several attributes that need to be matched up with the blocks themselves. They can include:

- Range — short or long blocks
- Size — turning radius
- Number of passengers
- Equipment — wheel chair lift, bike rack
- Passenger WiFi
- Type of vehicle — over-the-road, BRT, paratransit
- Maintenance — scheduled for Periodic Maintenance (PM), paint shop, critical failure and others

Finally, **MOBILE-DMS** considers the physical location of the vehicles in the yard and calculates, based on the pull-in order of the vehicles, the best assignment strategy to minimize shuffling of vehicles at pull-out.

MOBILE-DMS supports user defined statuses and commerce rules. For example, if a vehicle is scheduled for PM, the transit agency's rules might allow it to be used for short blocks or as a tripper. **MOBILE-DMS** allows the client to define the status and the rules. **MOBILE-DMS** takes these inputs and suggests an optimized assignment schedule. Since there are often last minute changes or other factors, **MOBILE-DMS** presents the schedule and allows the user to modify the assignments in an interactive display.

In preparation of the next service day, **MOBILE-DMS** does its first calculation of where the vehicles should be parked and the block assignments. Since it is aware of the blocks and schedules that the vehicles are currently running, it anticipates the order of their arrivals.

As vehicles arrive in the yard, the driver is directed to the proper parking

location for the vehicle. This can be done through the MDT, via an electronic billboard, or at a console by the fare box or fueling station.

Once the vehicles are parked, **MOBILE-DMS** reviews the actual locations of the fleet and makes any adjustments. If automated assignments are not possible, **MOBILE-DMS** provides a list for operations so manual adjustments may be made.

Often vehicles are moved overnight for washing or other reasons. In the

morning before pullout, the assignments may be run again to validate the schedule. Manual overrides are also available to support last minute changes.

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MOBILE-DMS can produce reports on many yard activities. These are some of the reports that may be generated from the data tracked in the **MOBILE-DMS**.

List of vehicles:

- Displays all vehicles in a table with additional information
- Type, equipment, range, etc.

List of user actions:

- All interventions manually performed by a user
- Change the status of a vehicle to maintenance
- Change the status of a vehicle to ready for production
- Change the status of a vehicle to ready for production with restrictions
- Manually assign a location to a vehicle
- Add maintenance information to a vehicle
- Define parking spaces, location of transponders at the depot

Vehicle status:

- All vehicle messages and special interventions of the user

Key maintenance metrics – Time, Frequency, Trends:

- Cleaning
- Maintenance
- Repair — daily, weekly, monthly

MOBILE-DMS fulfills the following objectives to improve Bus Yard operations:

Pre-assign vehicles to proper areas of yard:

- Maintenance
- Tripper lot
- Etc.

Assign blocks from FIFO queues of vehicles:

- Location
- Vehicle status
- Vehicle types
- Locate vehicles in yard
- Track fuel/Wash bay cycle times
- React to last minute changes

Eliminate manual processes:

- Physical audits
- Vehicle shuffling
- Manual entries
- Report generation

MOBILE-DMS can show a 100% return on investment in as little as one year by reducing labor hours and eliminating manual searches and bus yard inventories.

INIT APC accuracy recorded at 99.30%. Denver RTD and other customers report astounding results.

For the past several years, INIT has been receiving reports from customers confirming the extreme accuracy and efficiency of their automatic passenger counting system, **MOBILE-APC**. The latest report comes from the Regional Transportation Authority of Denver, Colorado. RTD recently conducted test trips with INIT's APC and service monitors on the same vehicle. After 485 trips, the data consistently recorded accuracy counts of 99.30%.

It's no surprise, since INIT utilizes the most advanced laser technology available on the market today. The InfraRed Motion Analyzer (IRMA) counting device counts entering and exiting passengers using active and passive sensors; the best of both

technologies. Passenger recognition is so accurate that a mother carrying a small child will be counted as two riders whereas a passenger with a large bag or backpack will only be counted once. Passengers who stand in the door area during the trip are not recorded as entering or exiting because the sensor signals are interpreted as passenger counts only when the doors are open.

For the Regional Transportation District of Denver, as for each of INIT's APC customers, this means optimal operational success, increased report accuracy, enhanced productivity and better customer service.

See for example what our customer in Montréal is saying about INIT's automatic passenger counting system:

"INIT has shown ... a high level of product quality and support. The hardware has been proven reliable and very accurate at counting people. Moreover, the staff has been very skillful at designing the equipment configuration in order to give our agency a powerful system with flawless installation. As the project manager for the APC system, (and like every one of us here), I would like to say how fully satisfied I am with INIT as a supplier. I would like to express my sincere appreciation to all of you."

Michel Thérér
Executive Consultant
Société de Transport de Montréal
Montréal (Québec)

10 Years in North America. INIT celebrates success with international event.

On January 14, 1999, INIT, Inc. opened up its North American headquarters in Chesapeake, Virginia with a small office and three employees. Shortly after opening its doors, INIT began winning contracts and successfully navigating its way into the North American market. After 10 years of business, INIT has tripled its office space and increased its staff to over 50 employees.

To commemorate the 10 year Anniversary, INIT is planning an International User Group Meeting, with a combined Working Group Meeting and 10th Anniversary Gala Event to be held on October 19-21, 2009 in Virginia Beach, Virginia. The three day event will include workshops, technical presen-

tations, tours, special guest speakers and hands-on training. INIT looks forward to welcoming their customers, consultants and friends to this very special event.

For more information about the User Group Meeting, Working Group Meeting or the 10th Anniversary Celebration, please visit our website at www.initusa.com and click on the INIT Anniversary logo.

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> **INIT North American headquarters** located in Chesapeake, Virginia.

Customer agency highlight.

Coast Mountain Bus Company hosts first West Coast Working Group Meeting.



> The preparation for the winter Olympic Games in 2010 is one of Vancouver's goals.

Coast Mountain Bus Company (CMBC), a Translink operating subsidiary, operates a multi-modal system with over 1,500 vehicles including regular buses, supervisory and service vehicles, as well as sea buses. The agency's ability to successfully transport its passengers was a paramount concern three years ago when they were looking for an Intermodal Transport Control System (ITCS) to improve their operating efficiency and service. However, an even larger purpose loomed ahead of them with the upcoming Winter Olympics being hosted in their home town of Vancouver, BC in 2010.

Officials at Translink realized early on that they would need a system with the ability to fully support CMBC's daily operations and also accommodate the massive crowds expected during the biggest event of the city's history. Having chosen **MOBILE-ITCS** from INIT, officials found the confidence and support they needed to get the job done. This year, Coast Mountain Bus Company will also host a smaller, yet significant event, the first ever West Coast North American Working Group Meeting. In conjunction with INIT, CMBC will host

the spring Working Group Meeting on April 27-28, at their new training facility, the Vancouver Transit Center in beautiful Vancouver, British Columbia.

The Working Group Meeting is a bi-annual, customer-focused event open to dispatchers, operators, administrators and managers of INIT's **MOBILE-ITCS**. The goal of the group is to get to know the system better through collaboration with fellow users, sharing of best practices, and open discussion of customer presentations. During this

meeting, CMBC will discuss their operational successes with **MOBILE-ITCS** and outline their plans for successful transit operations during the upcoming Olympic Games.

A highlight of the meeting will include an official tour of CMBC's operations center which will give participants first hand experience with this multi-modal system. INIT will also address new topics of interest including paratransit operations and the latest communication displays. All suggested improvements to INIT's system arising from the group are relayed to INIT's technical and software support staff for further development.

MOBILE-ITCS is INIT's next generation of Computer Aided Dispatch / Automatic Vehicle Location (CAD/AVL) system. Participation in the ITCS Working Group Meeting is free, but lodging and travel are the responsibility of the attendees.

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> **Collaboration and group discussions** provide the opportunity to exchange ideas with fellow users.

VVO opts for INIT's innovative technology. INIT to equip the buses of the Upper Elbe Regional Transport with new on-board computers.

INIT has been contracted to fit around 700 buses of the Upper Elbe Regional Transport (VVO) and its affiliated transportation providers with new vehicle technology. This will include the new **EVENDpc**, a device combining an on-board computer with a ticket printer. The contract also provides for an option of equipping 200 more vehicles operated by the neighboring Transport Federation Upper-Lusatia-Lower-Silesia (ZVON). The project started in January 2009 and is scheduled to be completed within two years.

The **EVENDpc** is already in use in over 3,000 buses run by the DB Stadtverkehr GmbH in Bavaria. A number of standard interfaces, an announcement function, voice communication via GSM and data radio transmission via GPRS, as well as the integrated GPS receiver and WLAN functionality make the **EVENDpc** ticket printer highly practical for transit service providers operating at a regional level. An integrated card reader for contactless smart cards allows for an electronic fare management system, thus offering passengers the option to check-in/check-out "in passing".



> Some 197 million passengers per year will profit from INIT's solution for VVO in Dresden.

The Upper Elbe Regional Transport service area in and around Dresden covers more than 2,900 sq. miles and transports some 197 million passengers per year who board and alight at around 3,800 stations and stops.

With the new on-board computers, the buses of the partner companies in the VVO will also be integrated into the commissioned Intermodal Transport

Control System of the Upper Elbe Regional Transport service area, which is scheduled for completion by 2010. In the future, passengers will be able to obtain up-to-the-minute information on scheduled services and actual departure times. It is expected that the connection to the central information system of the German railways, and to transport companies of the neighboring transport associations, will achieve better coordination of bus and rail services.



> Passengers can check-in/check-out quickly with the EVENDpc using their smart cards.

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New technology advances Bay Area transit system.

INIT partners with GE Transportation LLC to provide Golden Gate with intelligent transportation system.

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INIT's on-board computer, **COPILOTpc**, is based on Windows® XP embedded technology and will give the District cost-effective standard software with the advantage of future expandability. The mobile data terminal, **TOUCHmon** will provide drivers with a full 8.4" graphic capable touch screen with built-in surface acoustic wave technology. Golden Gate Transit and Golden Gate Ferry passengers will also experience INIT's real time passenger information through improved signage, and further real time data by cell phone and internet using the San Francisco Bay area "511" service. In addition, on-board, clearly audible next stop announcements and displays will help identify stops for passengers.

INIT will interface the ITCS with a digital voice and data radio system to provide the customer with a fully integrated seamless solution. The multi-million dollar project is now underway



> **The Golden Gate Bridge** is a landmark that spans the San Francisco Bay.

and will take about two years for project build out.

About the Golden Gate Bridge, Highway and Transportation District.

The Golden Gate Bridge Highway and Transportation District is a public agency based in San Francisco, California. It has three operating divisions: Golden Gate Bridge, Golden Gate Transit and Golden Gate Ferry. The

District serves more than 45 million customers annually using tolls, transit fares, limited operating grants, as well as revenues from advertising, concessions and leases to fund its services.

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CUTA honors INIT, Inc. with two awards.

"Corporate Recognition Award" & "2008 Best Booth Award".

In 2008, INIT Innovations in Transportation, Inc., Chesapeake, Virginia was honored to receive two separate awards from the Canadian Urban Transportation Association (CUTA).

The first was presented on May 27 during CUTA's Annual Meeting held in Edmonton, Alberta. INIT received the "Corporate Recognition Award" acknowledging INIT's outstanding achievement with their advanced intelligent transportation system installed on York's VIVA Bus Rapid Transit system in Ontario, Canada. After installation of INIT's complete ITCS suite of products,

including on-board computers and real-time passenger information, as well as automatic passenger counting and traffic signal priority, VIVA won the "IT Project of the Year" award.

The second award was presented at the Association's Annual Trans-Expo in Windsor, Ontario on November 11. The "2008 Best Booth Award" was presented to INIT for their outstanding display. The award was presented by Steve New, Chair of CUTA.

INIT gratefully acknowledged both awards given by CUTA.



> **"2008 Best Booth Award"** presented to INIT staff by Steve New, Chair of CUTA.

INIT celebrates Grand Opening in Dubai.

Twenty-five years after it was founded INIT opens a new chapter of success in Dubai.



► **Eyad Tayeb**, Managing Director of INIT FZE; **Mohamed Mezghani**, Head of UITP Middle-East and North Africa Office; **Dr. Jürgen Greschner**, Chief Sales Officer of init AG and **Hans-Burkhard Sauerteig**, German Deputy Consul General.

and it is planned to successively expand the fleet to up to 3,000 vehicles.

On November 19, 2008, a ceremony to celebrate the Grand Opening took place at the JW Marriott Hotel in Dubai. On this occasion, INIT was glad to welcome numerous friends, partners and customers. A special honor and joy were the kind welcoming speeches addressed to INIT and its guests by the German Deputy Consul General, Hans-Burkhard Sauerteig, and Mohamed Mezghani, head of the UITP Middle-East and North Africa Office.

This unique event and INIT's successful participation at the Roadex-Raillex exhibition that took place in Abu Dhabi from November 23–25 have opened promising new perspectives for INIT in 2009.

After 25 successful years INIT celebrated the Grand Opening of its latest subsidiary, Init Innovation in Traffic Systems FZE at the Dubai Airport Free Zone on November 19, 2008.

The new office is an expression of INIT's strategy to offer its customers advanced ITS solutions worldwide while providing a local service. The

highly qualified team at the new branch office will guarantee the success of the ITS project INIT is currently realizing together with its local partner in Dubai. The fully integrated fleet management and information system for the Roads & Transport Authority (RTA) bus operations will incorporate more than 1,350 buses during the initial phase

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Interesting

- February 18 – 20, 2009 “**APTA TransITech Conference**” in Toronto, ON
- April 27 – 28, 2009 “**North American Working Group Meeting**” in Vancouver, BC
- May 1 – 6, 2009 “**APTA Bus & Paratransit Conference**” in Seattle, WA
- June 7 – 11, 2009 “**58th UITP World Congress and Mobility & City Transport Exhibition**” in Vienna, Austria

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