



# INFODEV

Electronic Designers International



## KEEP TRACK OF WHAT MATTERS



### AUTOMATIC PASSENGER COUNTING SOLUTIONS

For Subways, Trains, Trams, Platform Doors and Stations



Ideal for : Train Manufacturers, Integrators, Trains  
Operators and Transit Agencies



## Automatic Passenger Counting

For Subways, Trains, Trams, Platform Doors and Stations.



INFODEV offers a complete Automatic Passenger Counting solutions for public transport companies, integrators, and rail vehicle builders.





# INFODEV, THE LEADING PROVEN TECHNOLOGY

In operation since 1993, Infodev EDI is the world's leader of Raw Accuracy in the industry of Automatic People and Passenger Counting Systems. Infodev EDI is a turnkey supplier working with public transport companies, integrators, and rail vehicle builders. Our headquarters and production facility are located in Quebec City, Canada with a regional office in Europe.

Infodev EDI is renowned for its cutting-edge technology and dedicated team of professionals. **Infodev EDI Automatic Passenger Counting systems have achieved many times a verified counting accuracy between 97.5% and 99.5% in trains without the application of any correction factors.** Infodev EDI sensors are integrated in an ultracompact, only 13.5 millimeter to 17 millimeters thick, aluminum bar. Infodev EDI offers TCPIP/PoE and high-performance wireless technologies, thus keeping all antennas inside the vehicles and eliminating a significant amount of costly cabling in the vehicles. **The end result is a high-accuracy, independent or fully integrated, lightweight, rapidly installed and easily maintained Automatic Passenger Counting system.**

New and exciting technologies are currently emerging in Infodev's EDI Innovation Labs. Contact our sales team today to learn more.

## TRUSTED BY:



Nederlandse Spoorwegen



**BOMBARDIER**

And many more...



**Automatic Passenger Counting**  
For Subways, Trains, Trams, Platform Doors  
and Stations

# INFODEV POSSESSES A CUTTING-EDGE EXPERTISE IN ALL THESE SPECIALTIES:

## SERVICES

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PROJECT  
MANAGEMENT



INSTALLATION



TECHNICAL  
SUPPORT



TRAINING

## PRODUCT DESIGN, DEVELOPMENT AND PRODUCTION

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ELECTRONICS



OPTICS



MECHANICS



FIRMWARE



APPLICATION  
SOFTWARE



## PLANNING YOUR FUTURE AUTOMATIC PASSENGER COUNTING (APC) SYSTEM



The acquisition, installation, and commissioning of a new Automatic Passenger Counting system, requires effective preparation and supervision. Infodev's dedicated and knowledgeable staff will gladly assist you with the design and implementation of your project and provide you with successful outcomes. In the early stage of a new project, they can help you to:

- Survey and study the physical particularities of your vehicles and infrastructure;
- Plan your IT systems, interfaces, and reports;
- Develop budget and schedule;
- Review applicable standards.





## Automatic Passenger Counting

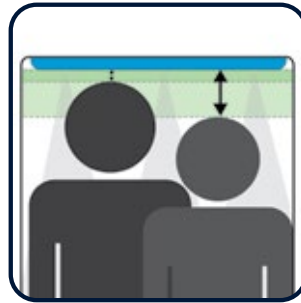
For Subways, Trains, Trams, Platform Doors and Stations.

# OUR PASSENGER COUNTING SOLUTIONS

## ACCURATE AND RELIABLE

- **Accuracy between 97.5% and 99.5% has been proven many times**, provided by unique electro-optical technology that requires no correction factors (ex.: seasonal, per sensor, etc.).
- High-definition sensors that do not count small objects
- Counting data independent of passenger and luggage weight, for each station or stop and for any given period or specific time
- Simple and easy online access to application software, data, and customized counting reports
- Certification of counting accuracy using integrated video camera recording
- From single components to all-inclusive fixed price projects

## KEY ADVANTAGES OF OUR APC



No minimum height required for installation.



Sensors cover the entire door's width and are installed directly above the gap.



No lateral or frontal obstruction of the field of view even in high density period.



Unaffected by light sources or speed of passage

## ACCURACY RESULTS

No correction, uncertain counts, profiling, tempering or statistical manipulation applied to the data. \* Real data from various customers between 2008 and 2017.

TYPE	MANUAL COUNT	INFODEV ACCURACY
Bus	15,554	99.13%
Train	2,236	98.03%
Bus	1,349	98.37%
Bus	4,942	97.98%
Train	2,652	98.11%
Bus	12,019	98.23%
Bus	3,947	98.91%
Train	1,830	98.31%
Train	9,958	99.24%
Train	3,148	97.68%
Train	4,579	98.61%
Train	11,588	98.02%
Train	7,272	99.29%
<b>TOTAL:</b>	<b>81,074</b>	<b>98,46 %</b>

# INFODEV'S PASSENGER COUNTING SYSTEMS: DESIGNED TO BENEFIT OUR CLIENTS IN EVERY WAY



## Factory Calibrated Sensor Assemblies

Do not require any costly and time consuming recurring manual recalibration or data profiling.



## Discreet & Aesthetic

Sensores de hasta 13.5 mm de espesor, lo que permite un acabado personalizado que se puede integrar fácilmente con los accesorios interiores del tren.



## Modular, Flexible & Simple Architecture

Installation on any vehicle door configuration with minimal cabling.



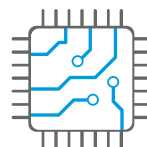
## Low Maintenance

Effortless and simple, so you can invest your money elsewhere.



## Quick & Easy Installation

Ingenious "bolt-on design" that allows for surface or recessed mounting of the counting system.



## Compact Passenger Counting Computers

Hidden behind the vehicle's inside panels or easily surface-mounted inside the vehicle.



## Optical Door Detection

No interface with door opening systems required.



## No OnBoard Central System Required

Infodev's equipment installed on each pair of facing doors can operate independently of other on-board equipment.



## From Basic to Complete Software Portfolio

Software and web apps developed in-house by our team of experts.



## Antennas Installed Inside the Vehicle

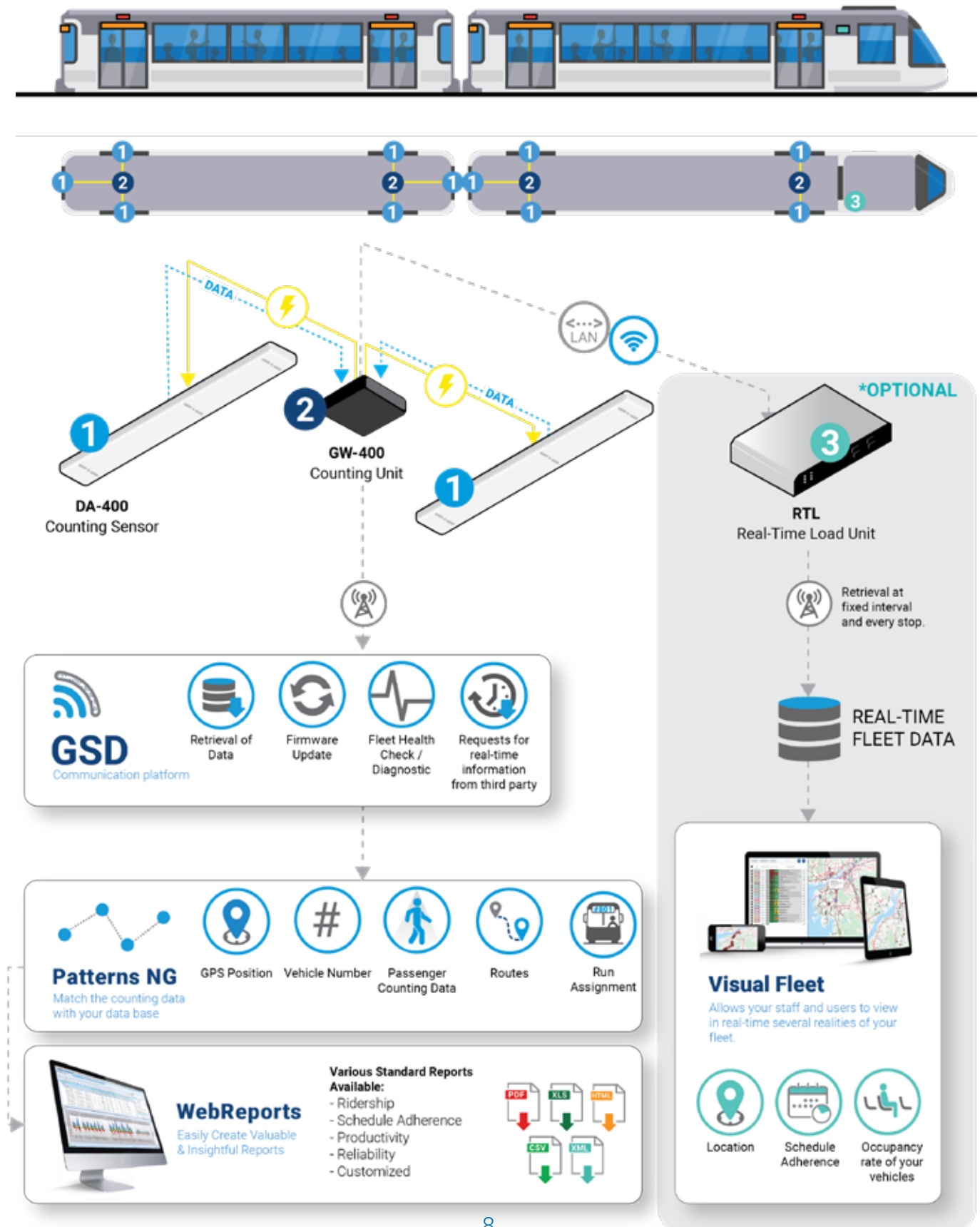
High sensitivity GPS modules and high performance RF modems eliminate complications relating to outside antennas.



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# APC SYSTEM DIAGRAM







# DA-SERIES

## COUNTING SENSORS

Infodev EDI's unique electro-optical technology uses an intelligent digital signal processing algorithm to accurately count passengers boarding and alighting public transit vehicles.

These sensors are only 13.5 to 17 mm thick, which allows for easy surface mounting above doors, even under tight clearance restrictions.

**The DA-400 is a "plug and play" sensor. It is factory-calibrated and specially designed for a quick installation using only a few screws.**

This clever "bolt-on design" eliminates the complications and the costs associated with alterations to the vehicles and multiple sensor adjustments during installation and commissioning.

The DA-400 sensors are highly accurate in detecting the passengers entering and exiting each door. The data produced is associated with specific doors, and the time and location of every stop or station. This detailed combined data makes it possible to generate customized and very specific reports that provide a strong base for profitable optimization decisions.

Our sensor uses its own invisible light source, in such a way that they are not affected by environmental conditions, as well as speed of passage or passengers standing idly under the sensor.

- Length of the bar and number of integrated sensor elements: depending on door width
- Weight (example): 1.1 kg for a three-sensor element DA-400, 800 mm (31.5 ") long
- Integrated optical door detection
- Diagnostic LEDs activated during local technical intervention
- Industry Standard Certifications





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# GW SERIES

## GATEWAY COUNTING COMPUTERS

These compact onboard counting computer are fully autonomous or can be easily connected to other existing onboard computers. They are installed inside the vehicles. Its built-in power supply can adapt to a wide range of voltages.

At each stop or station, the Gateways receive the signals from the DA-400 and transform them into counting data. The data is then stored in the Gateway's memory until it receives a download command. The data is usually transferred via a wireless module (or GSM, or LAN) directly to the ground data analysis server or onboard computer. This saves on cabling costs and installation time.

**The compact Gateways are easily hidden behind the vehicle's inside panels.**

### Communication Options

- Ethernet-LAN/PoE;
- 802.11 b/g;
- Cellular GPRS/GSM;
- WiFi ;
- Long-range RF;
- Serial RS-485/RS-232;
- Other options available.





# SOFTWARE & APPS

## OVERVIEW



## Patterns NG

### Useful Data When You Need It

15 years of practical deployment has allowed Infodev to create Patterns. A software that pairs the data from the APC system to the client's database information. It resolves the difficult challenge of reading and matching schedule, trips and routes from external database with the data collected by the APC System (boarding and alighting counts as well as GPS positions).

## WebReports NG

### Efficiently Create Valuable & Insightful Reports:

A powerful and flexible web reporting tool that will provide detailed presentations of transit operations. Tables and graphs are used to analyze and forecast the counting data and schedule adherence. In addition, it gives access to a wide variety of performance reports (KPIs) specially designed in collaboration with experts and clients through the years.

\* This software works in sync with Patterns

## Visual Fleet NG

### Visualize in Real-Time the status of your fleet:

This latest Infodev's Web application allows transit operation teams to visualize the fleet in real time. Various data about location, schedule adherence and occupancy rates are displayed on a city map in real time.

The data available through this Web app is an essential tool for smart cities and transit organization to help improve customer experience.

## Already have your own software running? Or want to build your own?

**Infodev's Application Programming Interface (API)** uses Infodev expertise in processing and matching data to deliver accurate, powerful, versatile and easy to use information. Infodev's API simplifies the software integration process, while providing more accurate results adjusted to transit schedules and overall operations.

This means an easy access to all the necessary data to create beautiful and user-friendly apps for users from operations employees to transit passengers.





## Contact us

Infodev EDI head office is located in Quebec City, Canada, with a regional office in Europe. For more information regarding our technology and our most recent achievements, please contact us.



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