



Intelligent Urban Transport Systems



New products, services and technologies at IT-TRANS 2018

Part 4: Passenger management

Karlsruhe/Brussels, 17 January 2018. Calculating passenger volumes on the basis of statistically verified data is crucial for public transport providers. This information is an essential basis for optimising timetables and vehicle allocation. Additionally, the data is used for assigning revenue streams to the various companies within a transport association. The providers of passenger management technologies and services will be among the around 250 exhibitors from more than 30 countries present at **IT-TRANS**. The sixth edition of the International Conference and Exhibition on Intelligent Urban Transport Systems will take place at the Karlsruhe Trade Fair Centre from 6 to 8 March 2018.

Acorel offers FOCUS-software for data analysis with 3D stereoscopic technology

Acorel from France has specialised in real-time turnkey solutions for automatic passenger counting since 1989. The FOCUS software product range includes an on board solution for all types of vehicles (buses, trains, trams, and metro) and FOCUS Static for static applications in any type of building, such as shops, malls, public buildings, airports, ports, train, and metro stations. The solutions help public transport providers to fight fraud, manage and optimise the transport network and human resources, ensure a fair distribution of revenue and provide real time information for passengers. The automatic counting solution FOCUS Onboard relies on sensors installed at the vehicle doors, which record the number of passengers getting on and off in real time. The collected data is enhanced by other systems (ITCS, OSS, GPS, etc.) and is then processed and analysed by the software, which produces standardised or custom reports. The high-precision stereoscopic sensor works just like the human eye. Thanks to two different cameras, it creates a 3D image. An algorithmic analysis of images in real time makes it possible to follow any movements in the detection field.

Advantages:

- vertical counting with up to over 98 % accuracy
- only one sensor per access point
- unaffected by people stopping
- proof of accuracy through videos

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The user interfaces of the software solutions are completely secure and provide decision-makers with a summary of all data, adapted to their needs, in the form of detailed reports. The reports are configurable, ergonomic and intuitive, simple and user-friendly and are in the form of graphs or statistical tables, updated daily or in real time.

VISUALCOUNTER presents passenger counting solutions

Spanish engineering company VISUALCOUNTER will present two of its passenger counting solutions at **IT-TRANS**. The VISUALCOUNTER.TRANSIT system with reliable and precise (>95%) two-way counting of individuals on public transport permits the registration and analysis of passenger flow data at the door and the bus stop/station.

Innovative Ir3D technology with an array of emitters and micro-sensors that create a 3D image of the infrared rays reflected from the passengers. By detecting shape and height, it is able to discount objects and animals. Designed with artificial intelligence algorithms based on neural networks, the device is highly reliable in any situation (lighting, environment and volume of passengers). It can be installed at the doors, at a non-intrusive angle (zenith angle), with different housing designs that will adapt to every environment, fastenings and trims tailored to each client.

Advantages:

- passenger flow in different vehicles, doors, routes and stops/stations
- optimisation of services (routes, frequency of transit)
- optimisation of vehicle use (number and size)
- helps in the management of fraud and optimisation of ticket collectors
- measures the advertising value of stations, posters and videos in vehicles

The VISUALCOUNTER GATEWAY data concentrator allows the VISUALCOUNTER.TRANSIT passenger counting solution to function autonomously in any public transport vehicle without the need for a computer on board. Adds up the data from the counting of passengers per door and stop, and sends it via 3G together with the GPS location to a remote server, for management and statistical use. It has multiple communication interfaces: 3G wireless communications module, RS-485 serial and TCP/IP Ethernet communications. Easy integration with external systems/sensors with optocoupled digitals I/O to facilitate integration. Approved by official laboratories for installation into automotive vehicles and railway.



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AWAAIT DETECTOR: System for automatic fare evasion control in public transport

Barcelona-based software company AWAAIT will present its fare dodging control system DETECTOR at **IT-TRANS** 2018. DETECTOR is an automatic real-time video analytics system. Via an Artificial Intelligence-Machine Learning (AI-ML) set of algorithms that analyse video streams from cameras near ticket barriers, the system operates in real-time and provides very precise alerts to security staff. Ticket inspectors immediately receive images of fare dodging incidents via a mobile app, enabling them to react rapidly.

Consequently, checks on paying passengers are drastically reduced. There is less need for frequent mass ticket inspections to control fare dodging, which results in more efficient surveillance as well as an increase in trust and satisfaction of paying passengers. On the other hand, fare evasion reduction helps to improve public transport economic sustainability.

DETECTOR is the first successful attempt that combines artificial vision and mobile technologies to aid ticket inspectors to tackle tailgating and gate jumping. FGC (Ferrocarrils de la Generalitat de Catalunya), a regional and commuter train operator in Barcelona and development partner, reported a 70% drop in fare evasion during evaluation tests. Moreover, more than 1.2 million unnecessary individual ticket inspections to paying passengers were avoided since the beginning of the system's deployment. DETECTOR currently operates in four of the main FGC stations in Barcelona and is being deployed in a fifth one.

Automatic passenger counting solutions from Signon, GVS and Connetive

SIGNON Deutschland GmbH has launched its software EPPsta (Evaluation and Passenger Projection and STatistics) in December 2017. It is an intuitively operable, efficient and compact tool for the evaluation and calculation of passenger numbers. EPPsta utilises and validates data from various source systems (vehicle sensors) and enables individual analyses, freely configurable Pivot evaluations and a comfortable export of data to MS Excel.

GVS Gesellschaft für Verkehrsberatung und Systemplanung mbH from Hanover develops and implements routing-based empirical revenue sharing. In this context, GVS runs complex passenger surveys based on the software FAN FahrgastAnalyse im Nahverkehr (Passenger Analysis in Local Public



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Transport.) FAN is a complex software tool that links transport service data with daily updated schedules and multilayered travel demand data into a single system. As a result, users can easily create sophisticated reports during day-to-day business. The software is used by more than 50 customers in Germany, Austria, and Switzerland.

SIGMA is a complete software solution for passenger counting developed by Swiss company Connective. SIGMA includes a planning tool for disposition, as well as the import, extrapolation, balancing and analysis of passenger counting numbers. A 10-step-plausibility check results in best quality data. SIGMA is fast calculating, offers useful analysis and is easy to use. It also integrates data into the punctuality statistics "OPAL" and can be used in the simulation application "SIM". During a three-month test period, prospective customers have an opportunity to test the application with their own data.

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IT-TRANS, International Conference and Exhibition on Intelligent Urban Transport Systems, celebrated its debut in Karlsruhe in 2008. Within a short period, the biennial event was established as the most important platform for the industry. It is organised by the International Association of Public Transport (UITP) and Karlsruher Messe- und Kongress GmbH. **IT-TRANS** 2018 is under the patronage of Violeta Bulc, EU Commissioner for Traffic and Transport and is supported by the Association of German Transport Companies (VDV), the Italian Transport Association (ASSTRA), ITS Spain and the Polish Chamber of Railway. **IT-TRANS** is aimed at all players in the public transport sector, and in particular at decision-makers from transportation companies and representatives of the private sector, government and professional associations. At seminars, workshops and presentations held during the three-day conference, international speakers will discuss innovations and how to practically implement IT solutions for public transport. About 250 international companies and service providers will present their latest products at the exhibition.

The next **IT-TRANS** will take place at the Karlsruhe Trade Fair Centre from 6 to 8 March 2018.

More information: www.it-trans.org and www.twitter.com/IT_TRANS and <https://www.facebook.com/ittrans.org/>



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Caption: AWAAIT



AWAAIT will present its fare dodging control system DETECTOR at **IT-TRANS** 2018. It is an automatic real-time video analytics system that analyses video streams from cameras near ticket barriers. The system provides very precise alerts to security staff.