

ITS

Advanced ITMS and passenger information platform

ITS Suite is a modern platform for public transport, providing access to a range of ITS applications such as fleet management and passenger information system, planning and scheduling, regulation and real-time control, ticketing, Eco-Driving, CCTV, Business Intelligence and much more.

Our experience and continual innovative drive has made GMV the leading supplier of Intelligent Transportation Management Systems and passenger information systems, now taken up by over 400 transport operators from 100 cities in countries like the United States, Spain, Malaysia, Poland, Morocco, Sweden and Mexico.

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PRODUCT HIGHLIGHTS

Increase ridership by improving the punctuality and reliability of the transportation services. Additionally, **ITS Suite's** passenger information engine generates accurate and real-time information and spreads it through the channels that passengers demand today.

Interoperability is ensured as GMV is compliant with all the relevant industry standards to share information across systems, either supplied by GMV or third parties. This feature allows for **ITS Suite's** integration in multimodal environments and smart mobility initiatives.

REAL-TIME PASSENGER INFORMATION

OPERATION COSTS

WEBS & MOBILE APPS

ALERTS MANAGEMENT

MULTI-FLEET

PASSENGER COUNTING

ECO DRIVING

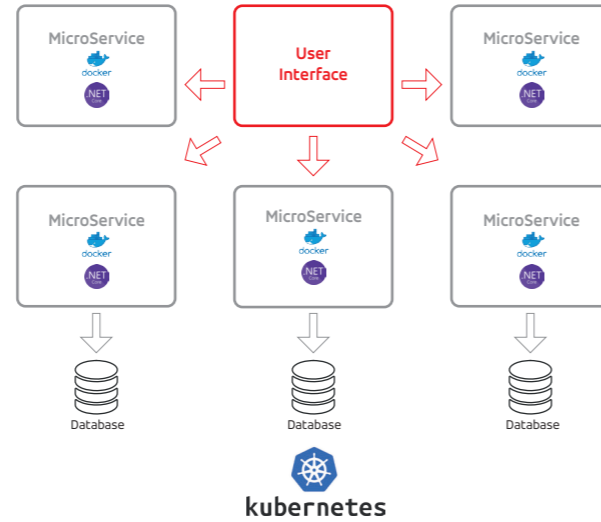
TRANSPORT ON DEMAND

SAFETY & SECURITY

OPEN STANDARDS

SERVICE REGULATION

BUSINESS INTELLIGENCE



OPERATIONS CONTROL CENTRE

ITS Suite consists of a series of modular applications that provide:

System configuration, meeting the needs of both complex transport consortia and smaller operators.

Operations planning, scheduling, and dispatching: enable operators to manage the entire lifecycle of operations, including unexpected situations.

Real-time monitoring allows the operator to improve service performance by making complex regulatory decisions and creating temporary detours.

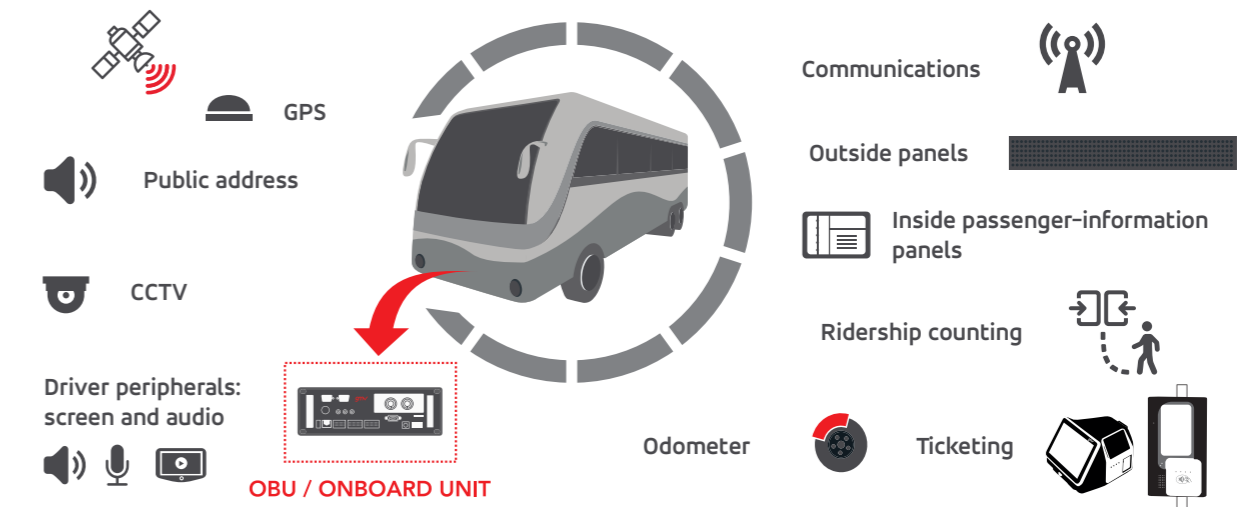
A Business Intelligence tool, which includes a comprehensive set of predefined historical reports, service playback features, and various charts of service parameters.

A two-way communication system to establish voice and data communications with the driver. This system offers both group (multiple buses) and individual voice and data communications, where the groups can be static or dynamic.

The management of alerts and incidents of all types ensures that any incident that affects the proper operation of the vehicles will be notified to the control center. These include alerts related to the service, as well as those coming from the in-vehicle hardware.

IN-VEHICLE DEVICES

GMV provides a wide array of in-house developed on board units in order to meet every customer needs. These state-of-the-art computers support the needs of transport providers as they centralize the information exchange with the Operations Control Center and manage the data from the rest of in-vehicle systems such as passenger information boards, public address, fare collection systems, passenger counting, CAN bus, odometer, etc.



MODERN AND SCALABLE ARCHITECTURE

ITS Suite has been developed using the latest software technology, ensuring a very high level of robustness and scalability.

ITS Suite is a cloud-native solution based on microservices, which are deployed in Docker containers and orchestrated by Kubernetes. This architecture ensures high availability, scalability, resilience, and load balancing.

The web interface guarantees access from anywhere using a browser, even from mobile devices, with total user space flexibility and a professional design following the Material Design guidelines.



PASSENGER INFORMATION SYSTEMS (PIS)

Accurate information about transport services is available in real time through different media, on board, at stations and terminals, customized webs, mobile webs and APPs. In order to provide improved accessibility to travel information, GMV's **ITS Suite** makes it available through the public address systems both on board and at stations and terminals.



COMPLIANCE WITH INDUSTRY STANDARDS

ITS Suite's modular and open architecture allows its integration with third party systems based on its compliance with various standards of this sector (SIRI, ITxPT, GTFS, TransXChange, NeTeX and CAN bus among others) as well as ad-hoc protocols developed based on customer demands.

INTEGRATED SYSTEMS FOR AN INTELLIGENT TRANSPORT

FARE COLLECTION SYSTEMS

GMV's **ITS Suite** integrates with Fare Collection Systems both in the back-office, to synchronize the transport network configuration, and in the vehicles in order to update the FCS equipment with information about the current service (line, route, stops) for the correct fare charging.

PASSENGER COUNTING

The in-vehicle system can be easily upgraded to integrate passenger counting sensors. That information will be seamlessly managed and offered to the Operations Control Centre where decisions about realtime capacity or routes design are taken.

TRAFFIC PRIORITY / GREEN WAVE

Upon the integration with the city Traffic Control Centre, GMV's **ITS Suite** generates configurable green light requests in order to prioritize public transportation buses over private vehicles.

ECO-DRIVING

GMV's in-vehicle devices retrieve driving quality information from the CAN bus, allowing the transport company to take decisions aiming the increase of passenger comfort, reducing maintenance cost, promoting environmental-friendly driving habits and lately improving safety for passengers and drivers. This feature is a current trend in the requirements of transport service providers since it supports them in their quest for continuous improvement.

TRANSPORT ON DEMAND

Provides the service provider with the balance between streamlining the operating costs and providing responsive service based on passenger needs. GMV's Transport on demand system is made by different modules that can be deployed independently or integrated with **ITS Suite** ITMS, namely passenger trip booking, real-time scheduling, dynamic routing and service dispatching.

SECURITY

CCTV Video surveillance both on board and at the stations and terminals provides enhanced security to

the passengers, reduces risks and helps to understand past accidents and avoid future ones. Video feed is sent in real time to the Control Centre and also stored in the buses. Any emergency detected in the system rises an automatic call to the concerned emergency response department.



GMV-ITS IN FIGURES

