

| Showcase

# ITCS and Passenger Information System for Dubai

Dubai Roads & Transport Authority

**init**  
The Future of Mobility

*As one of the world's fastest-growing cities, Dubai must always ensure that its public transport system is not only up-to-date but future-proof for years to come. In addition, with continuous growth and increasing worldwide importance, Dubai has become one of the world's foremost host cities for important events (e.g. Expo 2020 and COP 2023). To give Dubai citizens and visitors the ultimate public transport experience, Dubai's Roads & Transport Authority (RTA) has implemented INIT's complex telematics system. Over almost twenty years since implementation of the first system, RTA and INIT consequently have kept the ITS system state-of-the-art and added a bundle of features.*

## Project at a glance

+1,500 vehicles

+180 bus routes

168,000 km bus network

155m passengers per year



## Maintaining a modern public transport system in Dubai – with high-performance technology.

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### › The task

Facing transportation challenges resulting from its fast growth, the Emirate of Dubai has been obligated to enhance its public transport system and expand its bus network. Improving the service quality of its bus operation was of great significance for the Dubai Roads & Transport Authority when it was founded in 2005. It was obvious right away that this goal could only be achieved with the implementation of high-performance technology. This is why RTA Dubai has relied on the INIT Intermodal Transport Control System MOBILE-ITCS as an Automatic Vehicle Management (AVM) and Passenger Information System – now for almost twenty years.

### › The solution

The central Intermodal Transport Control System MOBILE-ITCS has proven to be the mainstay of RTA's software landscape. It is the core element of operations control and has enabled RTA to monitor and dispatch their fleet efficiently. The clear display of all necessary information allows the dispatchers in the operations control center to always stay on top of things. Knowing the exact location of all vehicles allows for prompt identification of incidents and congestions and dispatch measures can be initiated immediately. It is an always reliable system RTA uses – the system availability lies at over 99.5%.

#### **Efficient management of operation**

Optimum information for dispatchers: This is one of the key factors for successfully operating an attractive and efficient bus system. Punctuality of the fleet is one of the Key Performance Indicators which RTA Dubai was able to

increase with MOBILE-ITCS significantly and keep it high. The statistical evaluation of the daily operation has played a major role. Specifically by analyzing the schedule adherence of all performed trips, weak spots could be detected and timetable and duty planning could be optimized.

This proved to be extremely important when world-renowned events took place in Dubai. An example: COP 28, the UN Climate Change Conference, took place in late 2023 and people attended from all over the world.

#### **Passenger information is service quality**

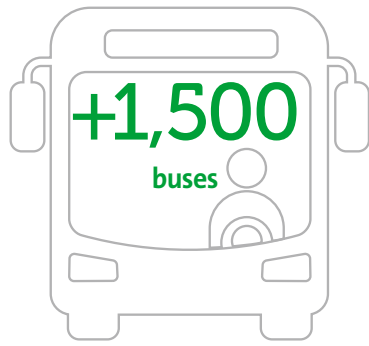
Constant, reliable customer service is extremely important for RTA. This includes thorough and convenient passenger information anywhere anytime – in real time. It is based on the calculation of the actual stop departure times computed by the INIT system with an elaborate prognosis algorithm. The real-time departure times are available to the passengers through various channels: a web-based journey planner which can be accessed via both a regular PC and smartphones, and through passenger information displays at stops and bus stations. In English and Arabic language.

Passengers on board the RTA buses are also informed bilingually: audibly through the announcement module PAmobile and visually on the multimedia TFT infotainment display PIDvisio. The real-time passenger information system, MOBILE-STOPinfo, sends real-time information to the information systems.

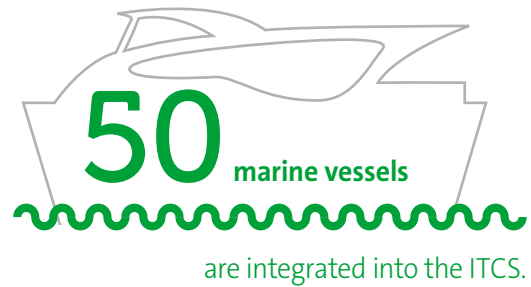
#### **High performance vehicle equipment**

At the core of the vehicle intelligence are the on-board computers COPILOTpc2 and COPILOTpc3 – both versions of INIT's proven hardware are used by RTA. The PC based on-board computer controls voice and data radio as well as all





are equipped with  
COPILOTpc on-board  
computers.



ITCS functions. It calculates e.g. the current location and schedule adherence which is then transmitted to the central control system. The COPILOTpc also controls all connected peripheral devices on board and acts as their communication gateway. The drivers can gather all information and instructions quickly and easily on the 21 cm (8.4") touch screen of the TOUCHmon mobile data terminal. A modern on-board video surveillance system guarantees enhanced safety for drivers and passengers.

#### Automatic Passenger Counting

More than 600 buses are equipped with INIT's Automatic Passenger Counting System (APC), to provide a better understanding of ridership patterns. Highly precise IRMA Matrix sensors are connected via Ethernet with the on-board computer, which organizes the data upload to the statistical evaluation tool MOBILEstatistics. In addition, RTA is able to compare the ridership counts with the data from their ticketing system to identify possible fare evasion.

| RTA's bus fleet is monitored and dispatched with INIT's MOBILE-ITCS.



A recently implemented APC SIRI interface is used to collect live passenger counts in buses. The COPILOTpc on-board computers track the APC data and send it to the control center. In this way, RTA is always aware of passenger demand and can add buses to their schedules or remove them.

#### Innovative communication and data provision

The vehicles are equipped with 4G radio modules. Using the existing public communication networks has turned out to be very reliable in daily operation. The upload and download of mass data from/to vehicles can be performed at 6 depots located across the operating area. Special depot servers control the transfer using INIT's Intelligent Messaging System MOBILE-IMS. The system manages the transfers and the correct data synchronization between the central servers, the depot servers, and the buses. MOBILE-IMS also controls the data transfer of a number of third-party components in the vehicle. Thus, INIT makes consistent, controlled data transfer of all components integrated into the system feasible.

MOBILEsurvey is a tool for automatic gathering of exact route data and stop coordinates. Thanks to MOBILEsurvey, it is no longer necessary for RTA to make special trips to measure exact stop positions and distances. Instead, the COPILOTpc logs the data automatically during normal operations.

#### Integration of marine services

In addition to their bus fleet, RTA has integrated their Marine Transport Vessel Service in Dubai Marina into the ITCS. Abras, water taxis, water buses and ferries are equipped with the same ITCS on-board system. Hence, they can be monitored and managed by a Marine Dispatcher in the Operations Control Center (OCC).



| Water taxis, Abras and ferries (shown) – RTA Water Transport is fully integrated into the ITCS.

## › The conclusion

With the support of INIT's ITCS, public transport in Dubai has become more reliable and passenger information is getting better and faster. Over the years, the system grew with RTA's public transport network. Even more, the improvements which RTA implemented in recent years led to a noticeable increase in passenger numbers. In fact, the share of public transport and shared mobility in people's journeys grew from 6% in 2006, when RTA joined forces with INIT, to an impressive 20.6% in 2022. Almost quadrupling the number of public transport passengers is a remarkable feat. INIT systems have been part of this veritable public transport success story from the start.

| Thanks to INIT's APC system, RTA is always aware of the current passenger demand and can add buses to their schedules or remove them.



It started back in 2008 when the Road Transport Authority in Dubai decided to make an evolution in the transportation system. Today we are managing over 1500 buses with the latest generation of AVM system (Automated Vehicle Management) coming from INIT. We have a very advanced operations control center that looks after these buses' operations. The system allows us to achieve the desired KPIs that are required and that reflect the quality of service that we provide to the customers and the citizens of Dubai. To get the ridership information we need, we decided to work on a project with INIT for automated passenger counting. The daily actual information that we were getting from the system allowed us to plan the operation of the bus network.



Khalid Abdul Rahman Al Awadhi,  
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Roads and Transport Authority



# | The project at a glance

## DUBAI ROADS & TRANSPORT AUTHORITY

1,500 buses plus 50 marine transport vessels

Intermodal Transport Control System

Real-Time Passenger Information System

Automatic Passenger Counting

Intelligent Messaging System

Evaluation and statistics

Multimedia displays in buses and at stops

IT platform on board

Video surveillance system

## TASK

- Implementation of an ITCS and Real-Time Passenger Information System
- Improvement of service quality

## SOLUTION

- Installation of an entirely integrated telematics solution with real-time passenger information, high-performance vehicle equipment and innovative communication systems

## ADVANTAGES

- Comfortable monitoring and fleet management
- High service reliability
- High punctuality
- Reliable passenger information
- High passenger satisfaction
- Schedules can be adapted according to passenger demand based on APC data

*If you would like to know more about this project and featured INIT products, please contact us at [sales@initse.com](mailto:sales@initse.com). We look forward to hearing from you.*

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*More than 1,400 transport providers worldwide rely on our comprehensive solutions to support them with their daily tasks*

- *Planning & Dispatching*
- *Ticketing & Fare Management*
- *Operations Control & Real-Time Passenger Information*
- *Analyzing & Optimizing*

*Moreover, transport companies can also master all requirements of electromobility and set up a single sign-on mobility platform using our modular solutions. A robust package of operational services completes the INIT offer.*

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