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SmartSpace Transit

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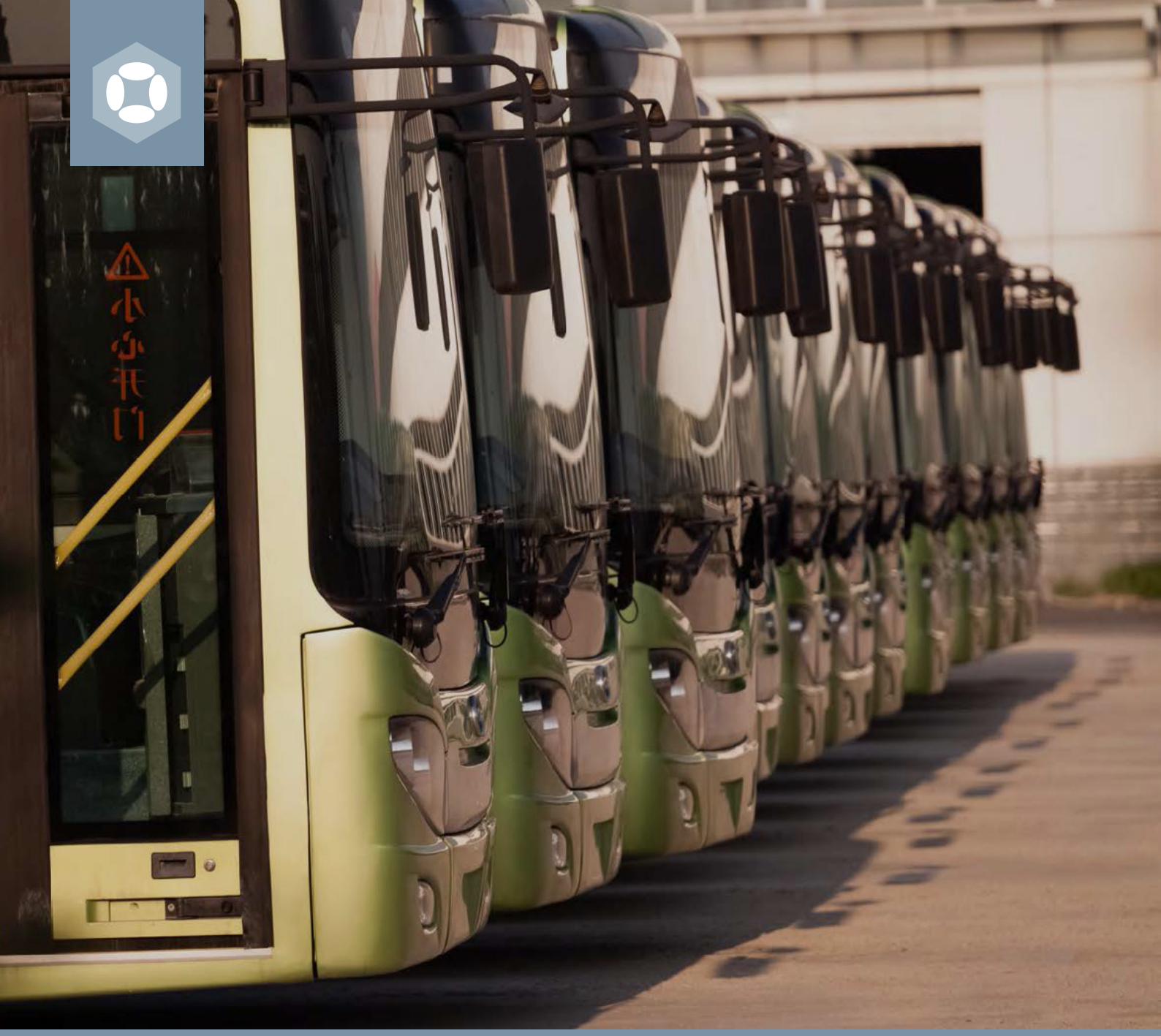

SOLUTION BRIEF

Transit Yard Management

Ubisense Transit Yard Management tracks the precise real-time location and movement of vehicles across indoor and outdoor transit yards so you can eliminate wasted search time and automate everyday processes. Remove the need to manually log every vehicle location and synchronize with existing dispatch, scheduling and maintenance systems.

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The Challenge

Depot management teams need to ensure vehicles are stored, maintained, and scheduled correctly to meet on-time dispatch. However, many routine process are manual, vehicles are often parked incorrectly, and systems are using out-of-date information leading to errors and delays. These processes often involve indoor areas where existing GPS systems do not operate and are repeated daily, exacerbating the effects.

These challenges can lead to:

- Wasted search time locating incorrectly parked vehicles
- Dispatch and scheduling errors of vehicles requiring cleaning, fueling or maintenance
- Costly shuffle time of vehicles across indoor and outdoor yards
- Inability to quickly and easily respond to changing situations such as breakdowns or adverse weather

"Ubisense is the key to our operational organization; we couldn't operate our network without this technology."

Grégoire Ramuz, TPF

The Outcomes

Ubisense is proud to work with many transit authorities around the globe, delivering the following outcomes with a typical ROI in less than 12 months:

- Complete elimination of search-time waste
- Cost reduction through work-flow optimization and task automation
- Improvement in on-time pull-out performance
- Optimal space utilization and elimination of dispatch errors

The Solution

Ubisense Transit Yard Management tracks the precise real-time location and movement of vehicles across both indoor and outdoor areas using high-performance Ultra-Wideband (UWB) and GPS/RTK-GPS technology. Operations are digitized enabling everyday processes to be automated and providing complete up-to-date visibility to users and existing systems.

Pre-configured functionality includes:

- Maps and searches for real-time location of vehicles across both indoor and outdoor areas
- A utomatic logging of cleaning, fueling, maintenance, and charging
- Guided parking for drivers to optimize storage and dispatch
- Graphical reports of current and historical KPIs

Ubisense Transit Yard Management Functionality

Ubisense Transit Yard Management includes pre-configured SmartSpace® software and a real-time location system (RTLS) to track the precise location, movement and status of vehicles across indoor and outdoor areas with the following core functionality.

Digital map of your facility

- Digital browser-based map of your facility imported via drawing or CAD file.
- Standard map icons for displaying common spaces and vehicle types and status.
- Simple import/scale/orient functions for custom icons and photos of vehicles.

Define vehicles and spaces

- Define different types of vehicles with related properties and representation icons (e.g. vehicle model, capacity).
- Create virtual spaces in 3 dimensions based on pre-defined space types (e.g. parking, cleaning, fueling, inspection, and maintenance spaces).

Connection with Location System data

- Connect and track any Location System data (e.g. Ultra-Wideband, GPS) to suit requirements.
- Process real-time tag data including location, battery status and properties.

Tag association

- A ssign tags to vehicles via an easy-to-use web form, barcode scan or CSV import.

Authentication and User access

- Role-based user access to SmartSpace web interface using Active Directory or local users

Pre-configured alerts

- Pop-up alerts, email notifications and icon updates with property changes:
  - Not located ('Lost') with last known location
  - Enter or exit of defined zones
  - Vehicle requiring maintenance, cleaning or fueling

Pre-configured searches

- Locate and filter vehicles using pre-defined properties:
  - Vehicle ID
  - Type, category or sub-category
  - Location (in defined spaces, e.g. in maintenance)
  - Status (e.g. due cleaning, ready for dispatch)
  - Assigned route

Standard reports (web reports)

- Real-time reports for displaying:
  - All associated and unassociated tags
  - All vehicles by type and space
  - All vehicles not located
  - A ll vehicles with maintenance date
  - Location history of vehicles by defined spaces including dwell time

Application and System Integration

- Facility to integrate with existing scheduling, dispatch and maintenance systems through CSV file, RDBMS integration or API

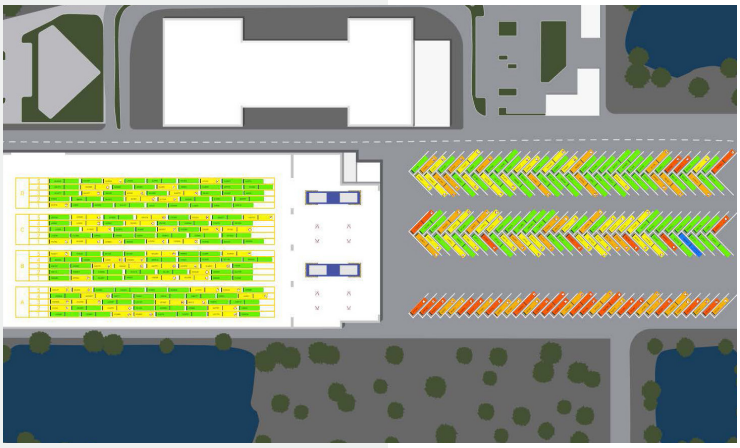
Optional Functionality

- Custom reports and dashboards
- Advanced IT
  - High availability setup (Failover and Dataset replication)
  - Test and production environments (property transfer)
  - Health monitoring

Eliminate Search Time

Replace time consuming, static and error-prone markup sheets with a real-time digital map of all vehicle locations and status.

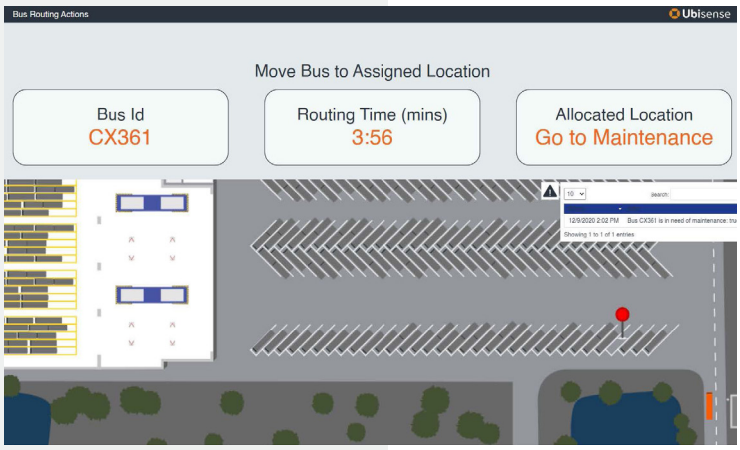
- Eliminate search time and easily find vehicles based on status; such as route assignment, due maintenance or requiring cleaning
- Set alerts to identify vehicles parked out of sequence to avoid unnecessary shuffle prior to dispatch



Automate Routine Processes

The use of real-time vehicle location can automatically log completion of everyday processes based on presence in designated spaces.

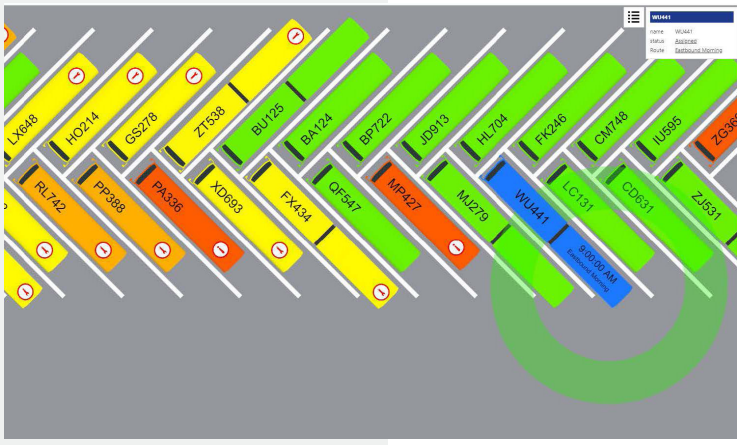
- Automate depot barrier entry and guide drivers to optimal parking locations based on real-time space availability or required maintenance
- Automatically update vehicles status as being cleaned, fueled, maintained or charged as they pass through those process spaces



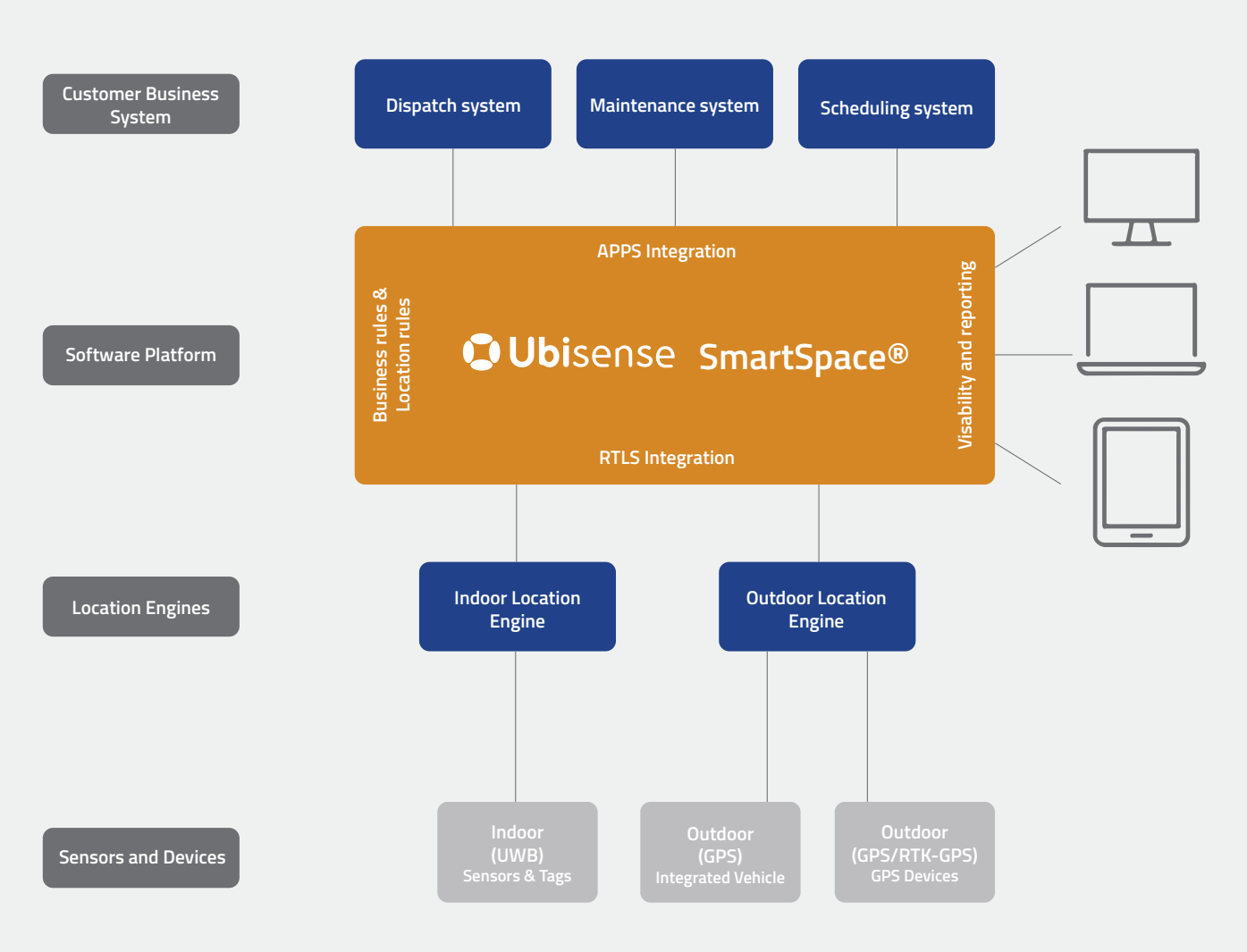
Real-Time Status & Reporting

Prevent errors and record performance against KPIs using real-time vehicle location and status.

- Assign drivers to vehicles based on actual availability not planned availability so dispatch times are always met
- Accurately record pull-in/out times of vehicles and time spent in maintenance to evaluate process performance
- Use dashboards and alerts to respond quicker to changing situations without relying on out-ofdate systems or information.



Solution Architecture



Ubisense SmartSpace takes any location sensor data, including Ultra-Wideband, GPS, and high-precision RTK-GPS Tags (either battery powered or integrated with vehicle power systems), or existing on-board vehicle GPS. Location data is synchronized in real-time with existing dispatch, scheduling and maintenance systems to provide insight and control via any browser-enabled device.

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To find out more, contact us on:

US +1 720 217 4397
DE +49 211 229733-0
UK +44 1223 53 5170
FR +33 1 83 79 06 82

www.ubisense.com

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