

# ZF Bus Connect Portal

Total Control for Bus Fleet Operators via One Web Based Portal



## Live View

Real-time monitoring of fleets, vehicles and driving routes



## E-Logbook

Driving history and replay of routes



## Consumption Monitor

Overview of fuel consumption for combustion vehicles or SoC for electric



## Profi Driver

Real-time feedback to driver and unique grading system of drivers' driving style



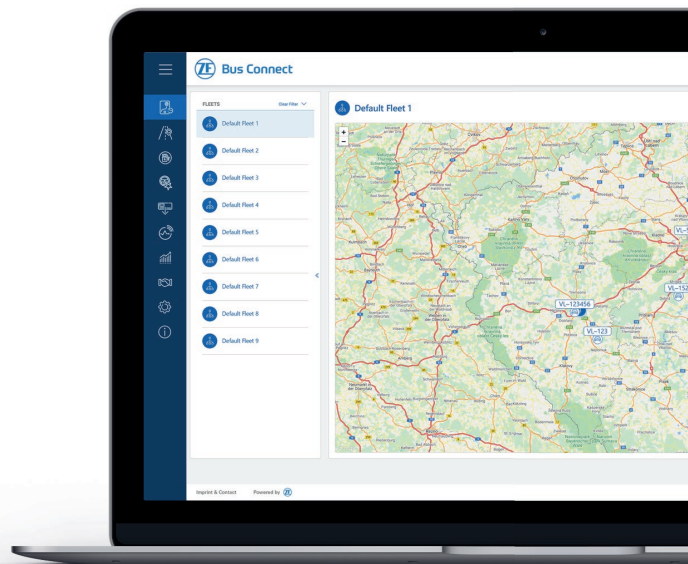
## Digitacho Download

Download of driver card and mass memory files (DDD) to ensure working time compliance



## Vehicle Inspector

Diagnostics-CAN signals in Live, TelItales, DM1 and Brake Pad Analysis



## Pro Analytics

Access to Data Analytics on Power BI



## Custom Analytics

Custom reports implemented for a specific customer



## Data Link

IoT Data Link to send data directly to customer or 3rd party cloud



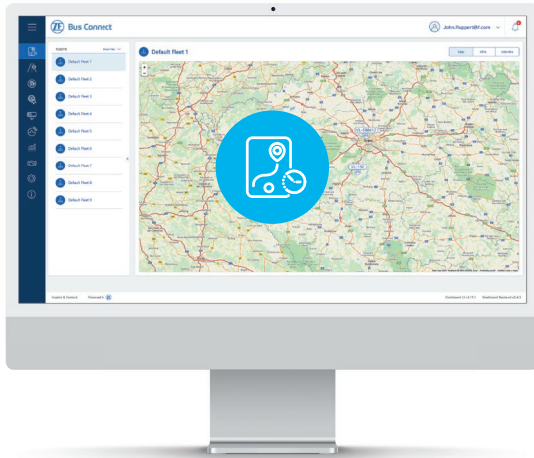
## Geo Fencer

Alerts and notifications based on defined geo-fenced Zones



## Data Logger

Continuous & Event-based data logging and storage



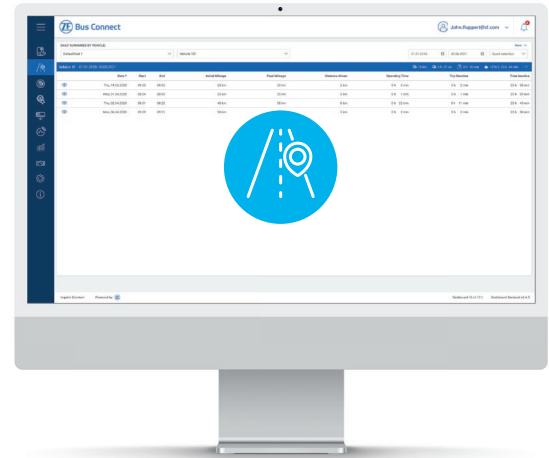
## Live View

### Features

- View live status and location of fleet vehicles on map display
- Show vehicle performance KPIs (fuel consumption, speed, trip duration etc.) in real time
- Access extended list of vehicle information such as trip line, geocoding, or a list of signals
- Flag critical asset states (defined by configurable thresholds) immediately
- Supports combustion, hybrid and electric vehicles, supports charging stations as well as mixed fleets with various vehicle types and manufacturers
- Dashboard supports multitenancy allowing for assigning one vehicle to multiple clients

### Benefits

- Real-time view of all monitoring and diagnostic requirements
- Futureproofed for complex and modernizing fleets
- Trigger timely maintenance for improved fleet upkeep



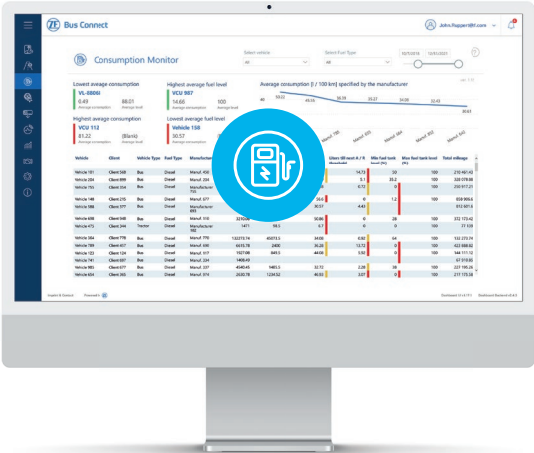
## E-logbook

### Features

- Record vehicle information as well as individual vehicle routes with E-logbook app
- AI based advanced algorithm and Trip Model approach is designed to support different vehicle types (Ignition signal, E-drive signal, time-based)
- Configure trip definitions in master data
- Detailed statistics of individual trips such as average fuel consumption, driving speed, distance, and duration of the trip
- Integrated with ITCS (Intermodal transport control system)
- Report on SoC (state of charge)

### Benefits

- Quickly and easily access historical trip data of individual vehicles in organized summary online
- Pay drivers according to how much they worked based on their driving activity
- Visualize multiple trips with accompanying data on the map



# Consumption Monitor

## Features

- Detailed overview of fuel consumption in various driving situations for different vehicle types (combustion, electric, hybrid)
- Precise information about current and historical consumption metrics of single vehicle or fleet (identification of both positive and negative trends)
- Adjustable thresholds for refueling or unexpected fuel level drops
- Definable alerts can be sent via sms or email

## Benefits

- Improves transparency and reduces admin burden
- Efficient fuel theft protection – possibility to identify sudden high fuel consumption in context of the fleet
- Enables comprehensive vehicle management along with other vehicle KPIs and measures (financials, eco driving etc)



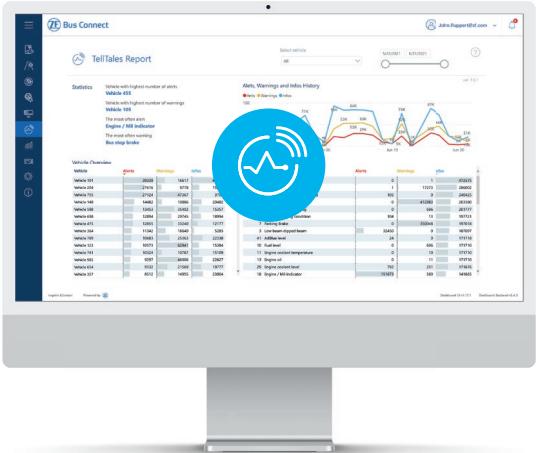
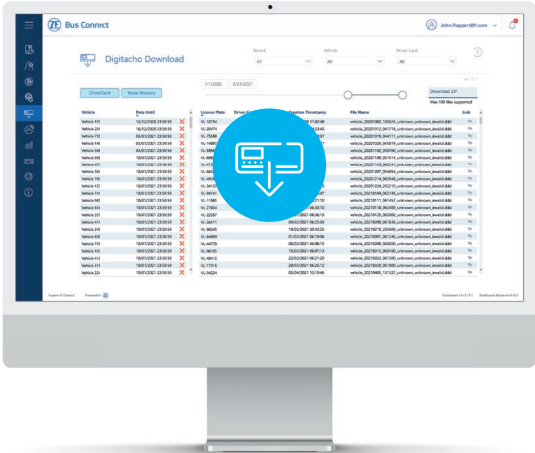
# Profi Driver

## Features

- Live feedback to driver if an event appears or monitored thresholds have been exceeded
- Regular scoring reports of drivers (daily, weekly, monthly) based on a grading system
- Controlled by the VCU Pro, configurable
- Event types – harsh braking/acceleration, overspeeding, overrevolving, cornering, trailer cornering, jerk
- Detailed report of events in Microsoft PowerBI Benefits
- Complete drivers scoring tool for fleet managers
- Data input for further analysis in ECO Scoring

## Benefits

- Identify dangerous and unfavorable driving style to prevent accidents
- Improve passenger safety
- Reduce wear and tear on fleet vehicles from aggressive driving



## DigiTacho Download

### Features

- Gathers information on the driver's resting and driving times in DDD file formats
- Download data automatically from the mass storage and the driver card
- VCU Pro reads DDD files from all tachograph standards incl. DTCO 4.0 (Conformity EU 561/2006)
- Alarm raised if data not available
- Batch interface from the command line is supported
- Frequency of downloads is configurable with many options
- All data can be browsed and downloaded (individually as DDD or grouped as ZIP) from the data storage via DigiTacho Report

### Benefits

- Ensures regular data storage compliance meets regulations
- Take immediate action during suspected manipulation attempts
- Easily view, search, and analyze downloaded data

## Vehicle Inspector

### Features

- Live statistics and alerts for electric and diesel vehicles in the fleet
- Analysis of brake lining remaining (BLR) for each wheel with configurable threshold levels
- Difference between brake lining thickness both on front and rear axles
- Active error codes in vehicles
- Overview of indicator lamps in vehiclecockpit
- FMS based diagnostics
- Transmits active error codes by all vehicle components that support J1939 Diagnostics
- Early warning with 75 indicators of vehicle component malfunction

### Benefits

- Proactively monitor brake health
- Optimize maintenance and replacement schedules
- Improved vehicle, driver, and passenger safety

# Another functions

## Smart App with smart functions



### Pro Analytics

- Pre-Defined Data Sets
- Self-Service Report Creation
- Select Thresholds and Alerts
- Export of Reports to XLSX, PDF
- Paginated Reports



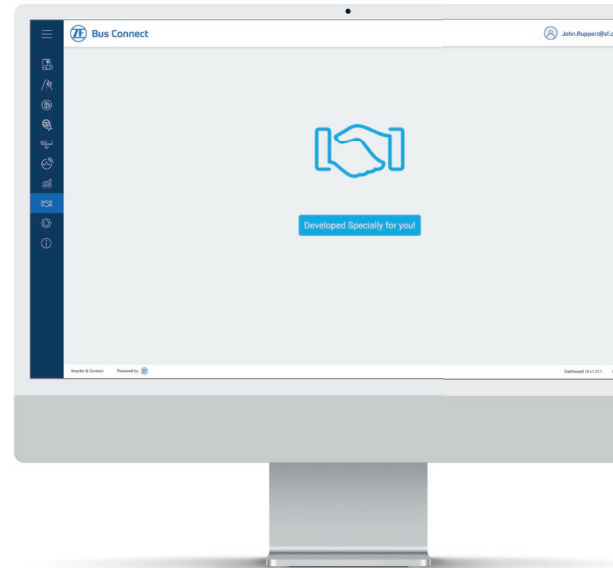
### Custom Analytics

- Raw Data Sets
- Custom Report Design and Implementation
- Customise Thresholds and Alert Definition
- Export of Reports to XLSX, PDF
- Paginated Reports



### Data Link

- Live Vehicle Data Transmission from your Fleet to any Cloud
- Rich Data Sources
- Configurable Data Clusters
- Conditional Data Collection and Configurable Transmission
- Multiple Data Formats



### Data Logger

- Continuous logging mode for long term data acquisition
- Event-based logging enabling high frequency data recording with customizable pre- and post-trigger periods
- Black box functionality to store the defined data set directly on the device with the copy on server side for accidents investigation and reporting

# VCU – Vehicle Communication Unit

Smart hardware,  
simple process



## Next-generation telematics interface

With the VCU Pro Onboard Unit, ZF offers fleet operators a new generation of progressive and robust telematics hardware.

VCU Pro is the advanced on-board unit from the Vehicle Connectivity Unit series. With 4 CAN interfaces (2 standard CAN and 2 CAN FD), 4 analog inputs and 4 digital outputs VCU Pro is a professional and robust vehicle gateway. Two independent processors ensure both a safe and secure connection to the vehicle network and also provide a universal communication capability.



### Advantages

- Supports Bluetooth 4.2 and WiFi as well as all popular GNSS
- Two independent processors guarantee stable and secure connections to the vehicle's network
- Secure over-the-air updates
- Regionally adaptable LTE Cat4 versions
- Compatible with all popular commercial vehicle brands and thus ideal for mixed fleets
- Track multiple vehicle, route and driving behavior parameters in real time via the cloud



Technical Overview

- New generation of communication gateways by ZF
- Interfaces and functions for various application areas
- AI capable
- Secure connectivity with HSM
- VCU's Aurix extension module (safe data exchange)
- GNSS, 4×CAN(FD), GPIOs, Serial, Bluetooth, WIFI, Ethernet (1+2×BroadR)
- Compliant with IBIS and IBIS-IP

VCU Pro Onboard Unit

Dimensions (l × w × h)	200 mm × 122 mm × 40 mm
Operating temperature	-40 °C to +85 °C
Power supply	9 to 36 V DC
Internal memory	4 GB Flash
Sensors	3D accelerometer, 3D gyroscope
GNSS	uBlox NEO-M8L with Dead Reckoning