dataintrans
empowering road safety

inTrans Advanced

Intelligent Fleet Management, Driver Behavior & Diagnostics Solution

Intelligence is all about processing multi-source data to achieve effective results. This is inTrans Advanced in a nutshell.

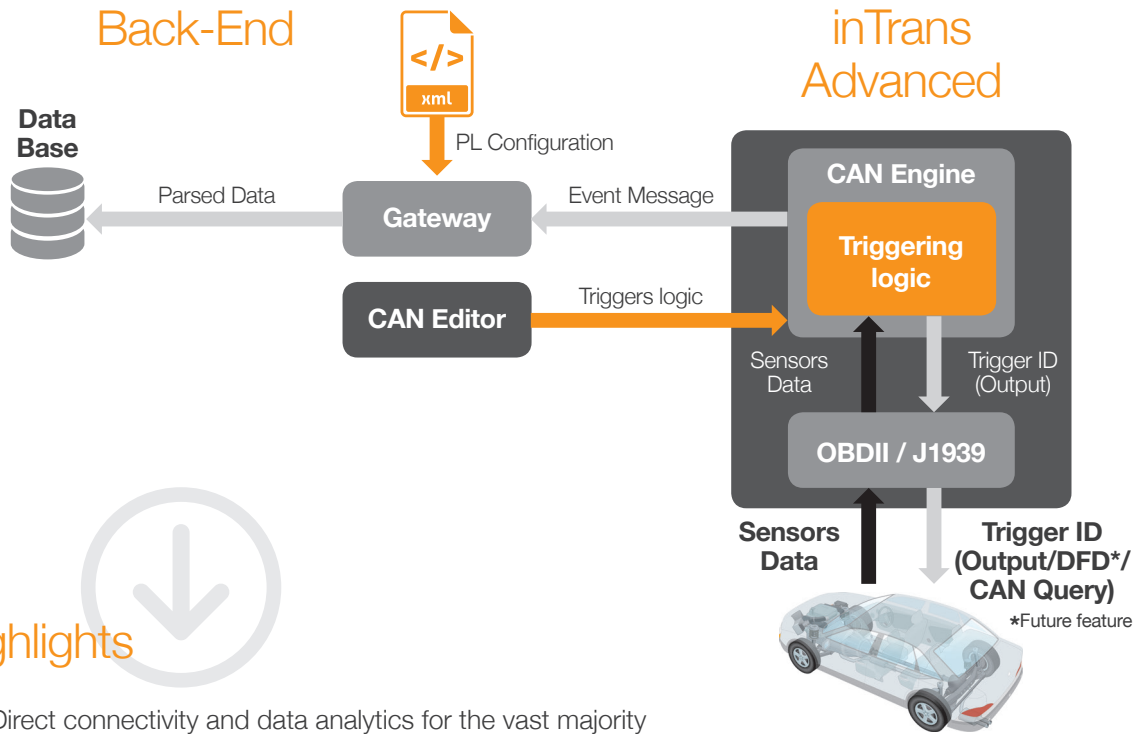
With the advanced multi-source data analytics delivered by inTrans Advanced, your business intelligence is reinforced and operating costs are reduced, largely due to lower fuel consumption, reduced warranty expenses, improved driving habits, and optimized maintenance processes.

inTrans Advanced is a fleet management solution, utilizing a smart algorithm to combine data from various vehicle environment interfaces. These interfaces include standard CANBUS and OBD, driver identification, serial communication with third party devices, discrete, analog and frequency measurement ports, voice channel, and others. All of which are designed and configured for maximum flexibility with CAN data aggregation, filtering, processing and event triggering.

inTrans Advanced also features advanced driver behavior capabilities, including accident event logging, recording and reconstruction.

Real-Time and On-Board Triggering Logic

inTrans Advanced filters real-time data based on the vehicle's sensors and data received from the inTrans Advanced unit, triggers logic based on the rules defined via the CAN Editor, and, as a result, generates events which are sent to the back-end and/or operate its I/Os.



Highlights

- Direct connectivity and data analytics for the vast majority of vehicle data buses and interfaces, enabling a wide range of applications driven by the vehicle CANBUS data.
- **Supports the following standards:**
  - OBDII (ISO 15765, ISO 14229)
  - CAN2.0 (ISO 11898, J1939, FMS)
- **Supports the following hardware platforms:**
  - 3G
  - Advanced multi-GNSS (GPS + GLONASS) with cutoff/short-circuit detection
  - Multi-purpose 1-wire (Dallas port)
  - Interface with the Bluetooth Extender accessory – supporting Bluetooth classic communication with ELD devices and BLE communication with the MultiSense devices.
- Variety of embedded algorithms for calculating total fuel consumption in a trip, based on different available CAN parameters, leading to increased ROI realization.
- DTC (Diagnostic Trouble Code) reporting logic over supported CANBUS protocol.
- Flexible and configurable maneuver and trip scoring logic. Includes on-board ECO and safety scores trip calculation, and online & real-time driver feedback display.
- Professional Services (CAN libraries) - Data inTrans offers complementary vehicle libraries, which include vehicle models and parameters sampled by our field engineering team. The libraries are updated and published on a monthly basis. Data inTrans professional services also include the configuration of the device's data collection and triggering logic according to your defined use case and for quick time to market.

Use Cases

Fuel Management

Easy, low-cost monitoring of the fuel tank, including fuel consumption rate, detection of fuel frauds (fuel syphoning), improved management of refueling time and place (gas station prices), accurate measurement of fuel efficiency, and so on.

Fleet Efficiency

Fleet managers can easily monitor driver behavior and improve their driving and vehicle operation skills in real-time by applying training plans. These plans can dramatically influence fuel usage and also reduce vehicle maintenance, thus increasing the fleet operational efficiency. Examples of related events: long brake presses; starting engine with the acceleration pedal pressed; and faulty use of air retarder.

Fleet and Driver Safety

inTrans Advanced enables flexible and configurable maneuver and trip scoring logic, including on-board trip ECO and safety scores calculation, and online, real-time driver feedback display leading to increased driver safety. Examples of related events: Driver seat belt unbuckled; hard right/left turn; driving when ESP lamp is on.

Proactive Vehicle Maintenance & Remote Diagnostics

Real-time vehicle performance profiling, including engine temperature, oil pressure, tire pressure, emission and fuel consumption are sent to the back-end with the DTC reporting in order to facilitate preventive maintenance. This enables an immediate reaction upon failure detection and dramatically reduces repair costs. In addition, it allows the workshop to receive advance data regarding the vehicle's health status and in turn, helps fine-tune the periodic maintenance work. Furthermore, it facilitates the daily vehicle checklist which is usually done by the driver and now can be partially or fully automated. Examples of related events: deviation from engine coolant.

Add-On Accessories

BT Extender

The BT Extender serves as a Bluetooth dual mode gateway to RS232, supporting the wireless communication channels between the inTrans Advanced device and other devices with BT/BLE capabilities:

- **BT Classic** - supports the Serial Port Profile (SPP), enabling the usage of any device supporting BT SPP, such as smartphones and Electronic Logging Devices (ELDs).
- **BLE Mode** - supports the communication channel between the inTrans Advanced and the MultiSense devices, which include a range of internal embedded sensors that create a Wireless Sensor Network (WSN) and sense temperature, relative humidity (in the MultiSense TH model), light, freefall, impact, movement, orientation change, door status, and more.

inTrans Advanced Specifications

Communication	
GSM Modes:	3G
Power Output	2W, 1W
SIM	Internal, replaceable, remote PIN code management
Antenna	Internal, multi band GSM antenna
Packet Data	TCP/IP, UDP/IP
GNSS	
Technology	STM STA8088 Chipset
Sensitivity (tracking)	-162dBm
Acquisition (normal)	Cold <35Sec, Warm<35Sec, Hot<1Sec
Internal Antenna	On board, internal patch antenna
External Antenna	External active antenna (2.85V ± 0.5%), SMA connector. External antenna short/Disconnect detection circuitry. Firmware controlled receiver antenna source selection.
Inputs and Outputs	
Inputs	1 internally pulled down input dedicated for ignition switch 1 internally pulled up Discrete Dry input with assignable functionality and configurable threshold for logical high and low states. 2 configurable inputs capable of serving as: Frequency counters - configurable resolution; Up to 5kHz input signal; signal level (3V < Vin ≤ 30V), accuracy ±2% Analog inputs with variable resolution - 8bit, adapted to 0-2.5V signal, resolution 20mV, accuracy ±20mV; 8bits, adapted to 0-30V signal, resolution 100mV, accuracy ±100mV Discrete Dry – configurable threshold for logical high and low states. Discrete Wet - configurable threshold for logical high and low states.
Outputs	4 general purpose open drain outputs (250mA max) with assignable functionality.

Interfaces		
COM port (RS232)	Selectable baud rate (9600 or 115000bps) True RS232 levels; 8 bit, 1 Stop Bit, No Parity MDT Interface Garmin™ Interface PSP™ (Car Alarm) Interface	 Transparent data mode Configuration update Firmware upgrade
Debug port (RS232 out)	External monitoring of modem-CPU dialog 115000bps True RS232 levels; 8 bit, 1 Stop Bit, No Parity	
CAN interface	CAN-H, CAN-L signals Bus-Pin Fault Protection up to ±36 V Bus-Pin ESD Protection exceeds 16-kV HBM ISO 11898; Signaling rate up to 1 Mbps	Extended –7V to 12V Common-Mode range SAE J1939 Standard Data Bus Interface ISO 15765 for OBDII connectivity ISO 11783 Standard Data Bus Interface
D8 interface	D8 serial protocol Rx line for interfacing Digital Tachograph (DTCO).	
1-Wire™ (Dallas port)	DS1990A, DS1971 compliant Extended bus current source with 7 mA driving capability Driver management Car alarm authorization	
Accelerometer	3D, ±2g/8g range, 12 Bit representation, 1mg resolution, I2C interface	
Connectors	20pin Molex, automotive SMA switch for optional external GPS antenna	
Power		
Input Voltage	9-32VDC	
Average Current Consumption	Normal: 40mA Economic: 23mA Hibernation: <2mA Shipment (Off): <20uA (Internal Battery)	
Internal Battery	Li-Ion Polymer, 3.7V, 1Ah, rechargeable Up to 200 Tx @ 1Msg/min @ 25°C Embedded NTC for temperature controlled charging Operating temperature: -20°C (65% charge) to 60°C Protections: over current, overcharge and over discharge	
Vehicle Environment Immunity		
Immunity	Compliant with ISO 7637 test level #4 (in accordance with e-mark directive)	
Environment		
Temp, operation	-30°C to +70°C full performance	
Temp, storage	-40°C to +85°C	
Humidity	95% non-condensing	
Ingress Protection	IP40	
Vibration, Impact	ISO 16750	
Power transients	ISO 7637 Test level 4 (e-mark directives compliant)	
Dimensions & Weight		
Dimensions	91x73x23mm	
Weight	110gr	
Harnesses		
Basic OBDII (P/N:711-00321)	Harness designed for self-installation, supports DFD	
Generic Harness (P/N:711-00318)	Fully featured, 17-20 wires	
OBDII Splitter (P/N:711-00335)	Provides access to CAN and power wires + selected I/O's Does not disturb normal diagnostics services	
Contactless CANBUS adapter (P/N: AR0288)	Ensures no writing to the bus. Listening mode only! Avoids warranty loss	

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