



ATD™ - ANOMALOUS TURN DETECTOR

AUTOMATIC EVALUATION OF THE DRIVER BEHAVIOUR DURING THE EXECUTION OF TURNS



OVERVIEW

ATD™ is a software technology allowing the automatic evaluation of the driver behaviour during the execution of turns.

The technology developed by Attain IT may be exploited as advanced system for personalized driver support for the detection of driving irregularities detected by comparison of the driver's normal style, learnt, by experience, along usual road paths.

TECHNOLOGY FEATURES

ATD™ exploits the information published on the data network of the vehicle (CANbus) combining it with the GPS information. This combination allows building reference patterns related to the driving style and detecting possible irregularities while driving.

These irregularities could be symptoms of drowsiness or of an altered physiological status, based on the assumption that the human factors, such as the driver status, translate to the vehicle side (on the vehicle dynamics and driving command

signals) thanks to the human-vehicle-mechanical coupling.

The reference patterns are continuously updated while driving and are associated to the personal driving style. This allows performing a diagnosis of the driving style which may be different from driver to driver, i.e. what is detected as a normal driving pattern for a particular driver could be a irregular driving pattern for another driver.

TECHNOLOGY IMPLEMENTATION

The **ATD™** technology is implemented on a Windows CE embedded platform, provided with an internal GPS receiver and connected to the vehicle data network with an external CAN interface.

Qualification measures and experimental tests on the road proved the effectiveness of the technology suitable to run also on embedded systems characterized by limited resources both in terms of computing power and available memory.

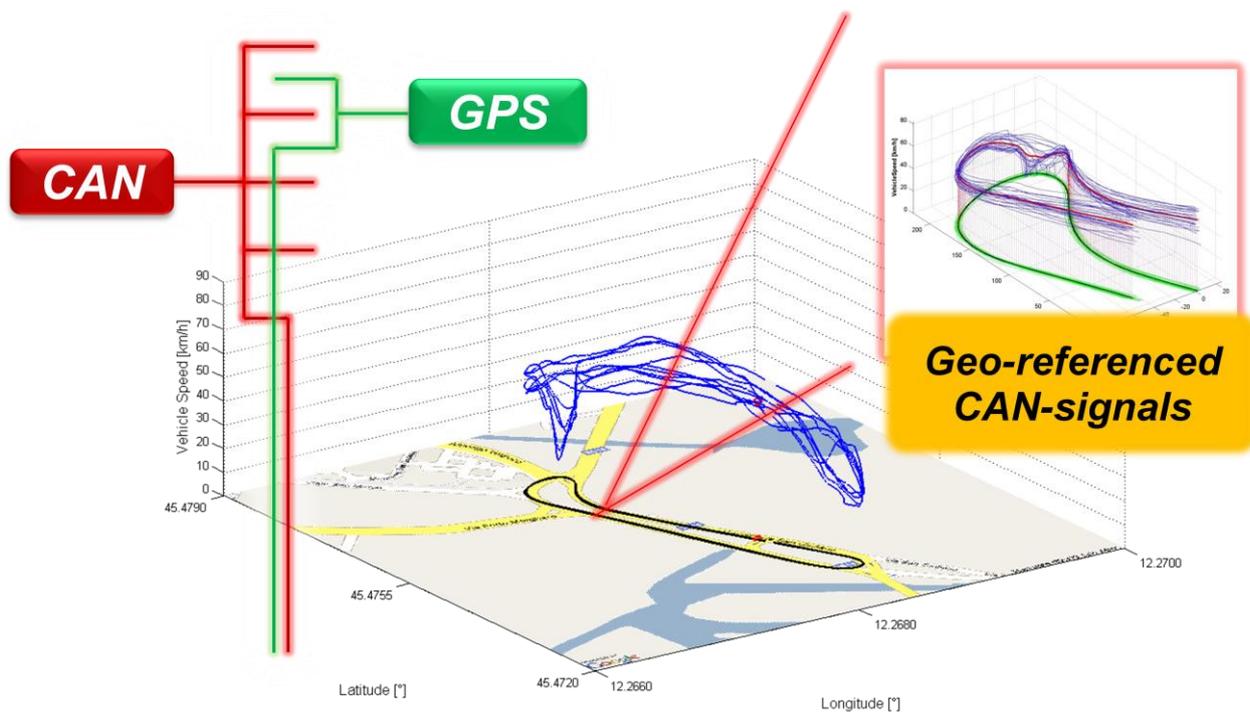
However the technology may be tailored by Attain IT to the specific needs of the customer and customized to meet the requirements of the hardware platform on which the software will run.

PERSONALIZED DRIVER SUPPORT

The **ATD™** technology may be used to improve safety and enhance comfort providing useful real-time feedback to the driver. Further if the irregularities rate show an increasing trend warnings may be issued and, eventually, suggestions, such as to rest for a while, may be provided to the driver.

TESTED IN REAL DRIVE CONDITIONS

The **ATD™** technology was developed after many years of research in the field of diagnostics (before by S.A.T.E. and then by Attain IT) applied initially to mechanical systems and then to the human behaviour dimension. All the diagnostic applications, including the **ATD™** technology were thoroughly tested in real drive conditions on the road with extensive tests with different drivers and vehicles accounting now over 1.000.000 km of tests.



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ATD™ E' STATO REALIZZATO AVVALENDOSI DEL FINANZIAMENTO POR
OBIETTIVO COMPETITIVITÀ REGIONALE E OCCUPAZIONE PARTE FESR, 2007-2013
Asse 1 Azione 1.1.2 e Azione 1.1.3

Innovazione e tecnologie sviluppate nei progetti DRIVER TUTOR di S.A.T.E. S.r.l. e DBM (Diagnostica Basata su Modello) di Attain IT S.r.l.



IL VENETO UNA REGIONE D'EUROPA