

HeERO Newsletter

Issue 1

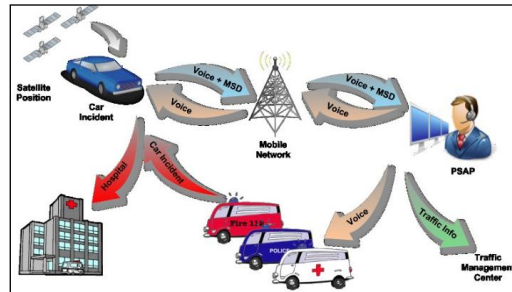
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HeERO 112 SOS Harmonised eCall European Pilot

1. Introduction

At European level, the HeERO project will prepare, coordinate and carry-out pre-deployment pilot projects of the EU-wide eCall, which is based on the single European emergency number 112. The consortium will test and validate in real condition pilots the common European eCall standards defined and approved by the European Standardisation Bodies.



During three years (January 2011 to December 2013), thanks to a strong cross-border cooperation, the nine European countries forming the HeERO consortium will carry out the start-up of an interoperable and harmonised 112 based in-vehicle emergency call system.



Croatia, Czech Republic, Finland, Germany, Greece, Italy, The Netherlands, Romania and Sweden are all sharing the same high-level objective: prepare the local 112 eCall infrastructure necessary for the provision of a sustainable eCall service for the European citizens and share their experiences with the other EU Members and Associated States.

The project is partially funded by the European Commission under the ICT PSP programme.

The project is now entering the phase in the deployment and testing which will take place between now and the end of June 2012. This is the first phase of testing which will not only feature the 9 pilot countries testing internally but also cross border testing. In this first phase of testing, this will be confined to laboratory testing between pilot sites, but each of the pilot countries have defined partners states who will actively test cross border to ensure that the rational of interoperability will work with all vehicles no matter which member state the vehicle happens to be in, this confirming that the eCall solution is truly Pan European and will provide the same level of service across all member states. This first period of testing will be followed by data capture and evaluation, to ensure that the defined standards are robust and fulfilling the needs of all stakeholders, along with providing valuable data on the activations, transmission and reception of both the voice and data.

2. Overall progress of the project

a) Update from the pilot countries

i. CROATIA

The core team of the Croatian pilot is composed of the National Protection and Rescue Directorate (DUZS), Ericsson Nikola Tesla (ENT) and the Croatian Automobile Club (HAK). The Croatian eCall Pilot consortium comprises also numerous stakeholders (ministries and governmental agencies, telecommunication equipment and vehicle manufacturers, mobile network operators, emergency service providers, motorway operators etc.) of the eCall business environment. The scenario of the Pilot is based on a regional Public Safety Answering Point (PSAP) which covers the Greater Zagreb area.

HeERO 112 SOS

Harmonised eCall European Pilot

The Croatian eCall Pilot aims to deploy the eCall service based on the existing E112 system and the existing mobile communication networks. The necessary software eCall-related modifications of both the mobile communication networks and the PSAP will be conducted in order to support in-band modem eCall service. Communication link will be established in support of voice and data exchange between PSAP and related services (fire brigade, medical emergency, police, road assistance, motorway operators, traffic information system). The utilisation of both GPS and Glonass-based In-Vehicle Units is expected.

The Croatian eCall Pilot has developed methodology, defined Key Performance Indicators (KPIs) and determined several groups of scenarios of the eCall performance and operation examination. The pilot test site fully implements the end-to-end eCall service chain in the eCall laboratory managed by ENT. Following the WP4 (Evaluation) preparatory activities, the WP3 (Operation) activities have been already started with performing scenarios testing and validation. On this subject, the Pilot has started co-operation with the European GNSS Agency (GSA), on behalf of the HeERO project. The Pilot started the implementation of the eCall features in real network environment with national coverage, which includes MNO with eCall enabled patch (TELE2). The PSAP installation at NPRD started with testing of both various IVS devices and remote testing. eCall lab facilities, commercial prototype IVS units and GPS receivers will be used.

ii. CZECH REPUBLIC

The core team of the Czech pilot is composed of the Ministry of Transport, the Ministry of Interior, the Road and Motorway Directorate and Telefonica. This team has started testing the eCall solution in pilot operation before the end of the year 2011.

Proving that the development and deployment of eCall is possible Czech eCall team has already completed the following activities: IVS development, IVS and PSAP simulator development, eCall flag implementation, PSAP application upgrade - VIN decoder implementation, MSD reception and visualization integrated with GIS. All these activities take place and run on the testing platform 112 dedicated for eCall.



The Czech partners said "Our intension is to complete the implementation of the PSAP modem, while making the first integration tests, which should bring us first results from the whole process of eCall : *send - identify - receive - dispatch*". The evaluation of testing results and preparation for other tests (like performance and interoperability) is planned by the Czech team for the year 2012.

iii. FINLAND

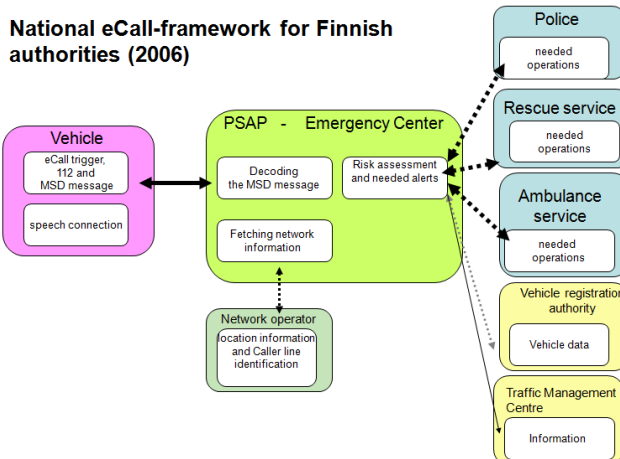
The core team of the Finnish pilot is composed of the Ministry of Transport and Communications, the Emergency Response Centre Administration, the Ministry of Interior, Mediamobile Nordic Oy, Ramboll and VTT.

The Finnish HeERO consortium will test and validate the whole eCall chain from car to emergency centre and further to the emergency handling operations. Cross-border tests with foreign in-vehicle units and Finnish back-office system and vice versa are seen as an

essential part of the task. The deployment of eCall in Finland is planned to start with tests during 2011-2012 (HeERO has an important role here) and then proceeding to gradual implementation to the PSAP system and routines during the next years.

During the first year of the project, tests were carried out with domestic eCall in-vehicle units, PSAP interface and the "eCall discriminator". Tests with the eCall discriminator (eCall flag) will be carried out in a testing environment provided by one of the Finnish mobile network operators.

eCall HeERO cross border tests were held at the end of the first year. First tests with Finnish eCall test bed and Russian ERA GLONASS in-vehicle units were carried out. Two types of eCall-compatible ERA GLONASS in-vehicle units were tested. VTT intends to carry out cross-border tests with eCall in-vehicle units in Russia during 2012 and has established contact with NIS which is responsible for the Russian ERA GLONASS project.



iv. GERMANY

The core team of the German pilot is composed of ITS Niedersachsen, ADAC, Continental, FHT, NXP Semiconductors, OECON P&S, NavCert and S1NN.

Keeping in mind the special German situation with its more than 250 different PSAPs with different levels of infrastructure, the German National Pilot was also developed as a fully redundant eCall system, with a small impact on the existing 112 system. However, integration into existing PSAP systems is a part of the German work plan in HeERO and will be managed during the second test phase at the end of 2012. Parallel to HeERO, the German National Pilot was also the first system establishing a connection to the EUCARIS database – as presented at the eCall Days in Berlin in September 2011.

The pilot also implements a complete test bed with vehicle and test case administration. This means that every event during the eCall reception is logged into a database. In addition, also the complete voice stream starting from accepting the call will be recorded. This will help to track errors and to determine the times and data for the testing. It also gives the chance to create reproducible tests.

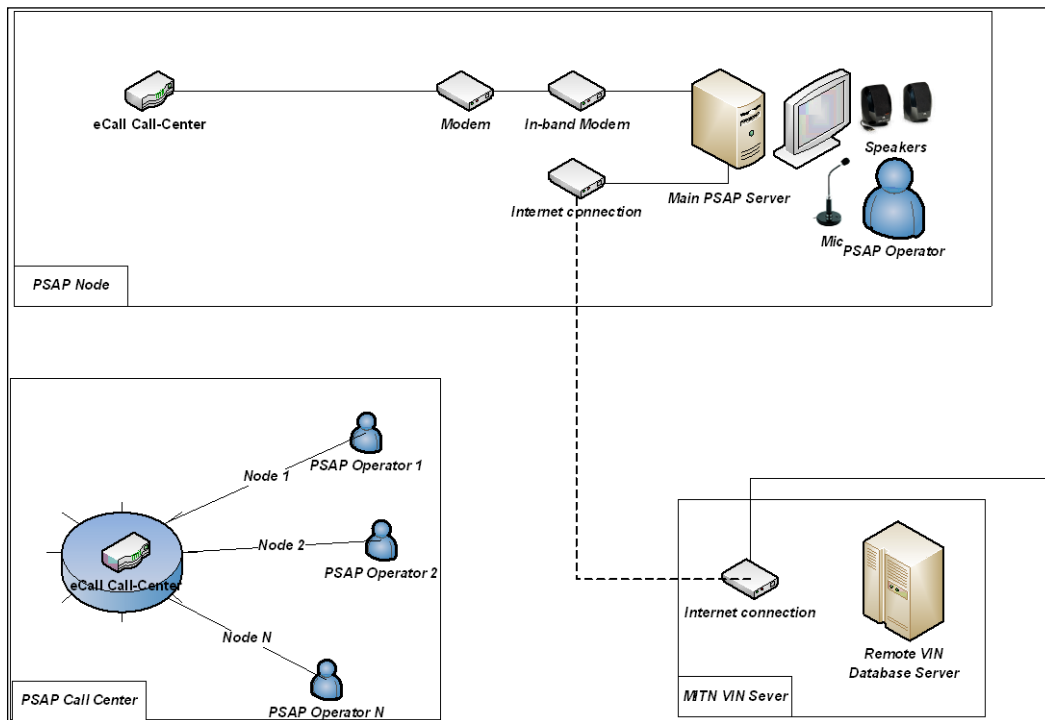
The German National pilot consists of a client-server based solution. Currently Windows-based clients are available, web-based clients are under development. However, the development of the National Pilot software is not a part of HeERO.

Soon the German team will start the next test phase with the help of the involved fleet. There will be different test scenarios with regard to the different situations, where an eCall could be applied. These field tests are very important to collect data for the following evaluation process and potential improvements. The direct link to the MNOs for implementing and testing the eCall flag will be also a main issue for the next steps.

V. GREECE

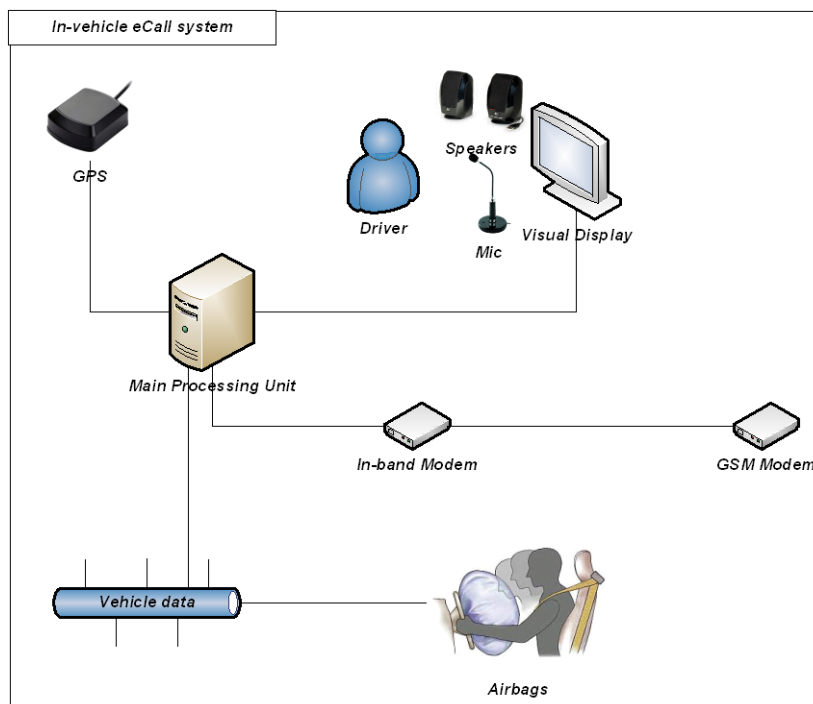
The core team of the Greek pilot is composed of the Ministry of Infrastructure, Transport and Networks and the General Secretariat for Civil Protection.

In Greece, the tender for the external technical consultant has been conducted and the Institute of Communication and Computer Systems has been selected for this. In the last period, the technical requirements for the hardware and software acquisition for the in-vehicle systems and the PSAP have been defined, taking as basis the relevant standards documents and the required systems functionalities. Meetings are organised with the General Secretariat of Public Protection, the Hellenic Telecommunications Organization and the Greek MNOs, to define the interoperability of the eCall PSAP with the existing 112 infrastructure and the possibility to implement the eCall flag for the Greek pilot. Meanwhile, contacts with market providers of relevant solutions are being performed. The main hardware components that will be used to implement the PSAP station are shown in the next figure.



The hardware components that are envisaged to be installed inside the client vehicles will be the following:

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The KPIs to be calculated in the Greek pilot are being defined and the test scenarios in which the eCall functionality will be evaluated are selected. It is envisaged that the driver of the equipped vehicle will manually initiate an eCall at various locations along different traffic conditions. At several adequately selected locations along the road, representative of the area and with possibly low GPS coverage, the driver will stop the vehicle at the roadside and will manually activate an eCall. Log files will be stored in the vehicle and in the PSAP and both the driver and the PSAP operator will complete a subjective questionnaire after the end of each eCall. Contacts with all the Greek stakeholders are established to conduct the survey in the framework of HeERO WP6 (working group on eCall Barrier and Enablers).

vi. ITALY

The core team of the Italian pilot is composed of the Presidency of Council of Ministers - Department Innovation, Magneti Marelli, CRF, Telecom Italia, AREU and the Automobile Club d'Italia.

2011 was almost entirely dedicated to analysing the state of the art for the Italian Test Site and the requirements needed to ensure that the various technical components of the system be perfectly integrated as well as to define every part of the process that will be implemented and tested.

The team concentrated on the definition of the state of the art in Italy of private SOS call systems and of the pan European eCall system. Moreover it defined the national requirements and functionalities for pilot architecture. The scope of the project will be testing the complete chain of the eCall, the management of an advanced breakdown service (shortened name bCall), and, finally, the communication between the PSAP and the simulated Real Time Traffic and Travel Information Centre (RTTI Centre) for a quicker information service to road users. Lastly, the team focused on the definition of the national implementation plan and definition of the system test case for the Italian pilot.



The Italian team also carried out a preliminary impact analysis for the deployment of the eCall signalling processing (e.g. eCall discriminator) in the operational mobile network serving the Varese area (test area) and for the fixed network routing mechanisms needed to deliver the received eCall to the designated first level PSAP in Varese.

In order to evaluate the performances of the different eCall implementations of the Member States in a comparable way, a close collaboration between Member State teams is needed to define the Key Performance Indicators (KPIs). The Italian pilot KPIs have been described and test scenarios and test methodologies have been compared to be common for all National Pilots to get a European level evaluation in addition to national level specific evaluation procedures.

i. NETHERLANDS

The HeERO pilot in the Netherlands has been initiated by the Ministry of Safety and Justice and the Ministry of Infrastructure and the Environment. The core team of the Dutch pilot is composed of the National Police Agency (KLPD) and the Directorate General for Public Works and Water Management. The eCall information is the starting point for the complete emergency process from vehicle to rescue services, road operator and salvage company. All involved parties have worked together on a functional design document. This is the basis of the system now under development. In the design process they tried to make maximum use of present experience to define the new situation and come to innovations in the process.

To get a clearer view on how eCall can save lives, the partners have just finished an in depth study on fatal collisions. The result confirms previous estimations of 1-2% reduction in deaths.

The IVS and MNO will be up and running in February 2012. The MNO will also implement the eCall flag in February 2012. With the PSAP ready in March 2012 the eCall chain will be ready for testing in March 2012. When the testing is done, the Dutch pilot will welcome the cars from other pilot countries for interoperability testing. At this stage private parties will also be welcome to use the Dutch pilot site to test their Pan European eCall applications.

The use of eCall for trucks and especially trucks loaded with Dangerous Goods is a major issue for the Netherlands. Together with the CEN Standards Working Group 15, a technical document (HGV eCall) was prepared. It is used as a preliminary standard in the HeERO project. It makes use of the additional capacity found in the Minimal Set of Data (MSD). HGV eCall will be tested in practice in the Netherlands.



ii. ROMANIA

The core team of the Romanian pilot is composed of ITS Romania, the Special Telecommunications Service, the National Company of Motorways and National Roads of Romania, UTI Systems, Electronic Solutions and Romania American University.

The Romanian national pilot is being implemented as a part of the current E112 working system and will test all the eCall service chain, including interfaces for accessing EUCARIS and sending data to the traffic management centre (TMC). For eCall handling, a centralised approach was chosen, routing all the calls to the Bucharest PSAP. The PSAP in Braşov will act as a backup, with both PSAPs sharing the same functionalities. All the hardware upgrades have been integrated in the current E112 system in 2011.



All the software development activities related to the MSD decoder, the interface for the call-taker and the interface with the EUCARIS platform were finalised in 2011. The first verification tests for the interface between the eCall modem and the MSD decoder were successful and tests will continue with the interface between the MSD decoder and the application used by the call-taker. A few prototype IVSs have been developed by a local producer in order to be tested during the project. These prototypes have been tested remotely and will be used further for the forthcoming tests. At the moment the eCall flag is not implemented in Romania, but discussions are being carried out with all the national MNOs. A few tests have been done with one MNO, with more expected to take place in the coming months.

The EUCARIS database will be used for decoding the VIN extracted from the MSD. An interface was designed to transmit the incident data from the 112 PSAP to the Traffic Management Centre. The functional specifications have been defined and work has started on the upgrades needed for integrating the received data in the TMC software.

All the major implementation activities were finalised in 2011; the operation stage started in January 2012 after the call-takers have received the necessary training.

iii. SWEDEN

The core team of the Swedish pilot is composed of Lindholmen Science Park, Actia Nordic, the Swedish Transport Administration, Ericsson and Volvo Cars. The project is also supported by SOS Alarm, TeliaSonera and Telenor, WirelessCar, MSB, Volvo Technology and Telematics Valley.

The Swedish pilot is dedicated to conduct a pre-deployment pilot based on extensions to the public E112 service already deployed in Sweden. With all competence and experience in-house, the pilot is focused on validation of the technical functionality of the eCall transmission and identification of related technical issues in IVS, Networks and PSAP. Due to the high technical competence in the consortium, extra attention is paid also to the aspects of timing, reliability and robustness of the MSD and 112 signalling.

The pilot is using Volvo's S60 cars, with Volvo On Call proven IVSs and solutions as a base line for addition of the eCall functionality. The eCall will then be sent over two mobile networks that both plan to have eCall implemented nationally for the pilot test, and directed to the 112 call centres run by SOS Alarm for all of Sweden. The 112 centres will receive the eCall and thus complete the full eCall functionality chain. It is expected that the existing procedures and methods can be followed for the PSAP, and that eCall will be a minor extension and modification.

During the past year the software for MNO, PSAP and IVS has been specified, developed and tested. Design tests have been conducted at participants test sites, and joint integration test workshops have been conducted at Ericsson's lab in Aachen in Germany, with also the eCall modem supplier Sierra Wireless participating. Workshops tested the technical functionality chain from manual eCall initiation in an IVS, the 112 call setup over the mobile network to the PSAP, MSD transmission and eCall call clearance. The tests have resulted in updated specifications, products and request on standardisation modifications. Most ambiguities are cleared by the end of 2011, while some technical issues remains to be solved.

By mid-year, one of the two MNOs installed the eCall flag in their networks. By beginning of October the full functionality test was done, with a manually initiated eCall from an IVS over a live mobile network to the test PSAP at SOS Alarms facilities. This means that the year of



2011 has been focused on design validation of eCall, and the plan for 2012 is to focus on controlled tests of non-functional performance combined with drive tests in operational mobile networks.

b) *HeERO partners test the interoperability of the eCall implementation with Russia*

What would happen to the eCall sent by a Russian vehicle crashed on European roads? Several HeERO partners have taken up the issue and have started to test the interoperability of the eCall chain with the ERA – GLONASS system. Although still under start-up phase, both sides have high expectations on that collaboration.

A December afternoon on the Highway 7 between Porvoo and Helsinki: a Russian driver, on his journey from Saint-Petersburg to Helsinki, hits the traffic barrier after sliding on black ice. Before the driver realises he's all well, the ERA – GLONASS unit has already sent an eCall, but what happens?

Several HeERO partners from Finland, Croatia and Romania have decided to answer that question and are conducting cross-border testing with their counter-parts from the Russian public-private partnership NIS (Navigation Information Systems), to test the behaviour of a Russian in-vehicle unit sending an eCall on European roads.

The first test session started in November and took place at the facilities of VTT in Finland, where an in-vehicle unit provided by NIS was tested. The outcomes of this first test session will be used to set-up the following one, involving Croatia and Romania, which will start in the early months of next year.

In the course of 2012, depending on the readiness of the in-vehicle unit implementations in HeERO, the opposite scenario will be tested as well, with some European units calling the Russian back-end. Alternatively, some remote tests have been envisaged: for example, an eCall could be sent from Europe and answered to in Russia.

To ensure that the tests conducted between HeERO partners and NIS are comparable with the other cross-border tests planned during HeERO, the HeERO methodology is used. As a first trial, the scope of the test session only focused on a limited number of performance indicators. However, with the growing maturity of the implementations on both sides, it is planned to use the HeERO methodology more extensively for the cross-border testing with Russia. This paves the way to future thorough interoperability testing between eCall and ERA – GLONASS under the umbrella of this collaboration, and later, to the full interoperability of the two services across the continent.

3. Events planned in 2012

- 18-20 April 2012
EU Emergency Services Workshop
Riga – Latvia
A one-hour session will focus on the HeERO project (overview of the project and presentation of first results by 2 pilot countries).
[More information here](#)
- 27-28 September 2012
eCall Days
Berlin – Germany
- 22-26 October 2012
ITS World Congress
Vienna – Austria
[More information here](#)
- 15-16 November 2012
First HeERO International Conference and Roundtable on 112 in the Balkan Countries
Zagreb - Croatia
One whole day will focus on showing the first results of the HeERO project.

4. Additional information

a) HeERO General Assembly

HeERO held the first General Assembly in October 2011. The event was held at ERTICO, and was attended by Mr Emilio Davila-Gonzalez, who is the project officer of the European Commission for HeERO. Over 28 partners were represented at the event. This first General Assembly saw a review of each of the 9 pilot sites for activities during 2011, and looking forward to 2012, these included specific issues for each of the pilot sites and the steps that each of the pilot sites felt was necessary to overcome these issues. The co-ordination of the project was also discussed where agreement was reached to ensure that the next phase of the project is in line with the project plan. The General Assembly, welcomed representatives from European CAR and driving license Information System (EUCARIS) gave a presentation on how the HeERO project could utilise this information system to ensure that where a non-member state vehicle is involved in a incident the information received about the vehicle is as accurate as that for a member state vehicle. This cooperation will be developed over the coming months as part of the HeERO strategy to ensure that the Pan European eCall solution is truly interoperable across all member states.

b) Change of project coordinator

ERTICO welcomed Andy Rooke as the new project co-ordinator to take over from Monica Schettino who has moved onto new challenges. Andy has a long history with eCall being part of both eMerge and GST project consortiums. Andy's background is in Road Policing in the



UK, as well as a Technical Advisor to both the UK Police and TISPOL. In the coming month Andy will be visiting all nine HeERO pilot sites to see firsthand the progress being made, and to gain a greater understanding of the challenges that each Member State Pilot Sites faces. The first of these visits was to the Czech Republic, where the project co-ordinator held meetings with the Pilot Site Leader and the technical partners responsible for realizing E112 in the Czech Republic, along with the rescue services.

5. Glossary

- ERA-GLONASS: Russian automated emergency response system, similar to eCall
- EUCARIS: EUropean CAR and driving license Information System
- GIS: Geographic Information System
- HeERO: Harmonised ecall EuROpean pilot
- HGV: Heavy Goods Vehicle
- IVS: In-Vehicle System
- KPI: Key Performance Indicator
- MSD: Minimum Set of Data
- PSAP: Public Safety Answering Point
- TMC: Traffic Management Center
- VIN: Vehicle Identification Number

Any question?

Visit the HeERO website: www.heero-pilot.eu

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