Deliverable D4.2.3: Study for adopting EU ITS Action Plan main areas in Hungary

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<tr>
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<th>Name</th>
<th>Short name</th>
<th>Country</th>
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<tr>
<td>LP</td>
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<td>CERTH-HIT</td>
<td>Greece</td>
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<td>ADEP S.A.</td>
<td>Greece</td>
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<td>Croatia</td>
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Abstract: This report aims at analysing the 4 priority areas of the EU ITS Directive followed by a thorough procedure for defining the ways (technical, policy, financial) that will ensure the successful adaptation of these areas in Hungary.
**EXECUTIVE SUMMARY**

This activity comprises a collection and analysis of measures that have been identified or proposed against the background of the four priority areas of the EU ITS Directive in each country participating in SEE-ITS. Using a questionnaire there is a prioritisation carried out within the collection of existing measures in terms of implementation timeframe and level of confidence. In addition to a description and an impact assessment each measure is evaluated based on seven aspects defined in the questionnaire. This report shall in further consequence be considered a “living” document since measures always relate to specific time horizon. With national development progressing, measures have to be updated as well on a regular basis. The specifications defined in the EU ITS Directive can be considered the counterpart on EU-level as they provide guidelines within a certain thematic framework.

Based on the following overview measures of all countries can be compared and possible common potential can be identified. Knowing about the importance of each measure certain fields can be pursued even stronger as well as completely new spheres of activity can be identified and opened up.
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1. **INTRODUCTION**

EU Member States are currently not obliged to implement ITS services and applications however, if they do implement any kind of ITS services, these have to meet the specifications set out in the EU ITS Directive. The Directive has the task to put the Action Plan for the Deployment of Intelligent Transport Systems in Europe that was presented in 2008 into practice. After adopting the Council’s conclusion on the European ITS Action Plan there was a workgroup held on evaluating the proposal for a Directive on ITS which was crucially modified in the course of it. The obligation for transposition was discarded and priority areas and actions were identified for which specifications are to be elaborated. Since EU Member States are constantly working on developing and implementing ITS services and applications the work on the specifications is in full swing as well in order to ensure an appropriate framework for ITS deployment within the next years.

On the following priority Actions specifications have already been created:

**Specification for priority action (c) “Data and procedures for the provision, where possible, of road safety related minimum universal traffic information free of charge to users”**

The specifications for priority action (c) include the definition of minimum requirements for road safety related “universal traffic information” provided, where possible, free of charge to all users, as well as their minimum content, based on:

- Creating and using a standardised list of safety-relevant traffic events (universal traffic information) that should be provided to users free of charge
- Compatibility of “universal traffic information” and their integration into ITS services in order to provide real-time traffic information and multimodal travel information

**Specification for priority action (d) “The harmonised provision for an interoperable EU-wide e-Call”**

The specification for priority action (d) sets out the basis for upgrading the infrastructures of emergency inquiry terminals that is necessary for proper answering and processing e-Call emergency calls in order to ensure compatibility, interoperability and continuity of the harmonised EU-wide e-Call service. The following required measures have to be determined:

- Availability of necessary vehicle ITS data that are to be transmitted
- Availability of the required equipment at the emergency call centres that will receive the data transmitted by the vehicles
- Facilitation of electronic data exchange between vehicles and emergency call centres

The specifications for interoperable EU-wide e-Call have already been published in the Official Journal of the EU and are expected to come into force shortly. The next step for e-
Call will be an amendment to the vehicle type regulations to provide for the mandatory installation of the equipment in all new cars.

**Specification for priority action (e) “The provision of information services for safe and secure parking places for trucks and commercial vehicles”**

The specification on priority action (e) aims at defining harmonised standard regulations for introducing Europe-wide information services for safe and secure parking places for trucks and commercial vehicles. With mandatory specifications of functions for the provision of such information services the utilisation of parking places shall be optimised as well as road safety and the safety of truck drivers shall increase. Discussions in this area are now concluded and draft specifications are being finalised, these will be sent forward in time to the Council and the Parliament. The following necessary measures have to be taken as a basis:

- Availability of information about roadside parking possibilities for users
- Facilitation of electronic data exchange between roadside parking places, control centres, and vehicles

On the following priority Actions there still remains work to be done:

**Specification for priority action (a) “The provision of EU-wide multimodal travel information”**

While there are a number of multi-modal journey planners on local, regional or national level (however rarely providing cross-border or even fully door-to-door travel information), the need is to bring them together and ensure the sharing of the most accurate data available in the respective geographic areas. This requires motivating and incentivising the development of such cooperation among relevant journey planners’ providers. Subsequently, there is a number of persisting challenges that still impede the deployment of truly EU-wide Multimodal Travel Planning and Information Services:

1. Lack of access to public (and private) transport data, combined with unclear re-use rules and licences;
2. Lack of a fully interoperable or compatible format for data exchange in all transport modes, combined with lack of open interfaces able to link together the existing solutions;
3. Lack of availability of public (and private) transport static and dynamic data;
4. Lack of strong mechanisms of cooperation between different stakeholders.

The proposed measures are as follows:

1. Ensuring access to data through legislation
2. Defining an interoperable data format
3. Support and promotional activities aiming at extending availability of transport data
4. Foster cooperation between stakeholders, by establishing a cooperation platform
**Specification for priority action (b) “Provision of EU-Wide Real-Time Traffic Information Services”**

There is a continuing concern that not all relevant data is made available or is correctly processed, or that resulting information is not timely disseminated to users. The European Commission will adopt specifications to make EU-wide real-time traffic information services accurate and available to users across borders. These specifications will be binding and will need to aim at ensuring compatible and interoperable developments, where possible based on existing standards and technology. Currently, the European Commission is conducting a study in support to the development of the specifications on the Provision of EU-Wide Real-Time Traffic Information Services.

The objective of a workshop held in Brussels on 26 June 2013 was to inform interested stakeholders and gather their opinions on the key issues and possible options for the development of the specifications. With the participation of stakeholders from the whole value chain the following key topics were discussed during the workshop through three panel sessions:

- Technological developments and market trends
- The role of public authorities and the issues related to public-private co-operation
- The availability of and access to public and private data and the conditions for the use and re-use of data
- The potential role for harmonisation and regulation
- The challenges related to measuring, monitoring and managing data quality

**Specification for priority action (f) “Provision of reservation services for safe and secure truck parking for trucks and commercial vehicles”**

The existing capacity of truck parking areas along the main European transport corridors is not utilised efficiently everywhere in the Member States and there is hardly any possibility to make a reservation. This utilisation is not optimal because truck drivers or transport companies don’t have access to real time information about occupancy of truck parking places. Specifications for priority action (e) provided the definition and the procedures to define a harmonised collection, sharing, and dissemination of information on safe and secure parking places for trucks and commercial vehicles. Specifications on reservation of parking places is the logical next step for harnessing the benefits of the provision of information on safe and secure parking places for trucks and commercial vehicles.

A workshop on this topic was held in Brussels on 4 July 2013 and addressed the following problems:

- The existing capacity of truck parking areas along the main European transport corridors is not utilised efficiently
- There is hardly any possibility to make a reservation
- There is no extensive inventory on suitable, safe and secure parking places for trucks that offer a reservation service
There are no standardised and user friendly rules and procedures defined to make a reservation including payment before or during the trip.

The following report carries out an assessment of national measures for the SEE area, focusing on the priority areas of the EU ITS Directive.
2. IDENTIFIED MEASURES IN HUNGARY

2.1. Priority area 1 - Optimal use of road, traffic and travel data

2.1.1. Establishing a transport database

The “transport database” is a common solution/service of state organisations/authorities and the business sector that provides the static, real time transport information produced by the state (not only traffic and weather information but also multimodal, co-modal information) for the business sector. Relevant regulations and feeding data providers with the appropriate data ensure the valuable operating environment for the establishment of intelligent transport services. “Opening” the comprehensive transport/traffic database requires the record of responsibilities and competences, the clear regulation (both from state and private organisations) of possibilities of access either by legislative regulation or specified business models. Business models allow creating wide range of travel information services and different business opportunities.

In a second step travel time determining and displaying systems shall be installed on the M0 motorway and the motorway sections leading to Budapest. This system shall be based on cooperation of operators and data source users in the area of Budapest and will be a continuation of earlier developments. By determining the potential travel time travellers can be informed on a higher quality level to plan their routes on and around the Budapest road network. With the implementation of this system congestions are expected to be reduced and travel times are expected to be shortened.

2.1.2. Geographical area

The transport database applies to and has to be implemented for the whole national road network in order to ensure comprehensive and sustainable ITS deployment in Hungary. The travel time determining and displaying system will cover the area of and around Budapest.

2.1.3. Preliminary implementation actions

Operational

- Review of other existing or planned “priority area 1” projects in Hungary
- Review of other existing or planned “priority area 1” projects in the neighbour countries
- Exploring the possibility of any cooperation with other organisations

Organisational
- Setting up the project team by hiring new employees (if necessary)
- Preparing the projects’ engineering specifications
- Preparation and conduct of tendering procedures
- Monitoring the project

**Legislative**
- Creating the legal framework of data use
- Contracting and reaching agreements with the data providers

**Financial**
- Exploring funding opportunities
- Preparation of detailed financial schedules
- Monitoring the projects’ financial execution

**Promotional**
- Participation in events, conferences and workshops
- Promoting the project and the new service on different platforms (internet, press, etc.)
- Preparing promotional materials

### 2.1.4. Technological innovation

**Service innovation**
- Actual, detailed and predictive information (including travel times) will be available on the road network.
- Relevant access to harmonised data/information means setting up deployments and services that cover travellers/road users’ needs, independent from transport modes and cross-border (technical)

**Technical innovation**
- By using an advanced data management software and high performance hardware the service will be capable of high-speed transfers and storing huge amount of data

### 2.1.5. Involved parties and beneficiaries

**Involved partners and lead stakeholder for the transport database are:**
- Coordination Centre for Transport Development (lead stakeholder),
- Hungarian Public Roads Company,
- Public Road Private Limited Co.,
- State Motorway Management Company, other motorway-operators,
- private system providers,
Involved partners and lead stakeholder for the travel time determines and display system are:

- Hungarian Public Roads Company
- Public Road Private Limited Co.
- State Motorway Management Company (lead stakeholder)
- Other motorway-operators
- Private system providers

2.1.6. Expected results and benefits

<table>
<thead>
<tr>
<th>Safety</th>
<th>Efficiency</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better traffic safety situation</td>
<td>The increase of the travel/traffic services leads to a better traffic flow on the road network</td>
<td>Less fuel consumption</td>
</tr>
<tr>
<td>Less road casualties</td>
<td>Less congestion</td>
<td>Less pollution/emission</td>
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</tbody>
</table>

2.1.7. Cost and funding elements

**Project I. (Transport information service)**

**Estimated costs:**
The total budget of the multi-step investment is 4 billion HUF in the following 5 years. The cost of maintenance is 200 million HUF per annum on average from 2013 to 2017.

**Financing:**
The investment is implemented from budget source supported by EU (TEN-T source: in the framework of EasyWay Phase III, and the regional, cohesion funds available from 2014). The operation is ensured by the budget of the Coordination Centre for Transport Development (KKK).

**Project II (Installation of travel time determines and display system)**

**Estimated costs:**
The total investment costs of the display systems signing travel times is about 1 billion HUF in the following 5 years. The cost of maintenance is about 40 million HUF per annum on average from 2013 to 2017.

**Financing:**
The investment is implemented from budget source supported by EU (TEN-T source: in the framework of EasyWay Phase III, and the regional, cohesion funds available until 2014).
### 2.1.8. Implementation timeplan

<table>
<thead>
<tr>
<th>Project</th>
<th>Expected implementation period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a transport database with data portal to set up travel/transport information services</td>
<td>2013–2017</td>
</tr>
<tr>
<td>Installation of travel time determines and display systems – M0 motorway and the motorway sections leading to Budapest (continue earlier developments, develop a system based on cooperation of operators and data source users in the area of Budapest)</td>
<td>2013–2014</td>
</tr>
</tbody>
</table>
2.2. **Priority area 2 - Continuity of traffic and freight management ITS services**

2.2.1. *Implementation of comprehensive traffic management /preparation of traffic management plan as regards to the whole motorway network*

In order to operate the whole motorway network in an efficient, safe and high quality way it is necessary to prepare traffic management plans for every possible traffic situation (cooperate with linking/local and urban road network operators), taking into account needs of cross-border traffic management with neighbouring countries and also the traffic management at certain border crossing areas (particularly in non-Schengen zones). The plans advise personnel of traffic control centres and external partners what to do in particular traffic situations. Cooperation with the Budapest traffic control centre has high priority in order to manage conurbation traffic effectively.

There are four dedicated initiatives that apply to this measure and priority area.

I. **Traffic management of the motorway network, cross-border traffic management on the motorway corridors including traffic management of border crossing areas (in the case of non-Schengen-zone border crossings)**

*Project objective/description:* preparation and operation of joint traffic management plans with the road network operators (both national and foreign) involved. The implementation of the tasks of a comprehensive traffic management is essential to implement the same service level and technical quality, interoperable traffic regulation and information system as on the TERN-network on the future motorway network.

II. **Cross-operation border traffic management with urban interfaces – joint traffic management plans on the urban sections of motorways in the conurbation areas**

*Project objective/description:* common management of the traffic problems of the conurbation area of Budapest (urban motorway sections) by the operators of motorway and urban network with the cooperation of motorway and urban traffic control centers by operating joint traffic management plans.

III. **Development of motorway traffic management systems**

*Project objective/description:* development of the toolkit of the motorway traffic management, physical establishment of the motorway traffic control centre (TCC):

- Installation/change of information displays;
- Installation/change of monitoring devices, cover of sensitive sections (M70, M19, M4);
- Implementation of M0 traffic management systems (use of emergency lane – pilot, comprehensive speed control system and a regulation system for the overtaking ban of heavy goods vehicles);
• Upgrading the motorway traffic control centre (with necessary bandwidth transmission systems).

IV. Establishing an open and harmonised database of public transport (urban areas, alongside main routes of the public network) in order to establish high quality passenger information services

Project objective/description: provide a reliable, easy-to-use and real-time information service based on a common database in the travel chain for travelers on public transport. Passengers at least at urban areas and alongside the main routes of public transport network will be supported by timetable and real-time public transport information provided by (commercial) travel information services with the help of their mobile phones or other existing devices.

2.2.2. Geographical area

Project I: Motorway corridors proposed are M7–M70 (Budapest – Ljubljana) and M3 (Budapest – border of Ukraine).
Project II: Area of Budapest (On the urban sections of motorways in the conurbation areas)
Project III: All motorways in Hungary
Project IV: Area of Budapest

2.2.3. Preliminary implementation actions

Operational
• Review of other existing or planned “priority area 2” projects in Hungary
• Review of other existing or planned “priority area 2” projects in the neighbour countries
• Exploring the possibility of cooperation with other organisations

Organisational
• Setting up the project team by hiring new employees (if necessary)
• Preparing the projects’ engineering specifications
• preparation and conduct of tendering procedures
• Monitoring the project

Legislative
• Creating the legal framework of data use
• Contracting and reaching agreements with the data providers

Financial
• Exploring funding opportunities
• Preparation of detailed financial schedules
• Monitoring the projects’ financial execution
Promotional
- Participation in events, conferences and workshops
- Promoting the project and the new service on different platforms (internet, press, etc.)
- Preparing promotional materials

2.2.4. Technological innovation

The whole work includes the current monitoring and the development of data-connection between traffic control centres and the installation of communication devices (VMS).

2.2.5. Involved parties and beneficiaries

Project I.
Partners involved/lead stakeholder:
- State Motorway Management Company (lead stakeholder),
- Hungarian Public Roads Company,
- Foreign operators of the linking sections of the motorway-corridor.

Project II.
Partners involved:
- State Motorway Management Company,
- Public Road Private Limited Co. (common responsibility).

Project III.
Partners involved/lead stakeholder:
- State Motorway Management Company (lead stakeholder),
- Public Road Private Limited Co.,
- Hungarian Public Roads Company.

Project IV.
Partners involved/lead stakeholder:
- Public Road Private Limited Co. (lead stakeholder),
- Municipality of Budapest etc.

2.2.6. Expected results and benefits

<table>
<thead>
<tr>
<th>Safety</th>
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<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better traffic safety situation</td>
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<tr>
<td>Less casualties in road traffic</td>
<td>Better traffic flow on the road network</td>
<td>Less pollution of the road network</td>
</tr>
</tbody>
</table>
2.2.7. Cost and funding elements

**Project I.**
*Estimated costs:* the total investment cost of the traffic regulation systems is about 2 billion HUF in the following 5 years. The cost of maintenance is 80 million HUF per annum on average from 2013 to 2017.

*Financing:* the investment is implemented from budget source supported by EU (before 2014 as part of KözOP “Targeted developments for improvement of road safety”, after 2014 in the framework of EasyWay Phase III and the cohesion and regional funds available after 2014). Maintenance is ensured by an O&M contract between the company and KKK.

**Project II.**
*Estimated costs:* the total investment cost of the traffic control systems is about 25 billion HUF in the following 5 years. The cost of maintenance is about 2 billion HUF per annum on average from 2013 to 2017. It is shared between the State Motorway Management Company and the Public Road Private Limited Co. according to their operating and proprietary rate.

*Financing:* the investment is implemented from budget source supported by EU (TEN-T source: in the framework of EasyWay Phase III, and the regional, cohesion funds available after 2014). Maintenance is ensured by an O&M (Operation & Management) contract between ÁAK and KKK and also a contract between the Centre of Budapest Transport and the Public Road Private Limited Co.

**Project III.**
*Estimated costs:* the total investment cost is about 7 billion HUF in the following 5 years. The cost of maintenance is about 400 million HUF per annum on average from 2013 to 2017.

*Financing:* the investment is planned to be implemented from budget source supported by EU (before 2014 as part of KözOP “Targeted developments for improvement of road safety” and the project called “Road traffic influence with ITS devices in and around the high-speed road sections of Budapest” which is to be submitted for request of support. After 2014 in the framework of EasyWay Phase III and the cohesion and regional funds available after 2014). Maintenance is ensured by an O&M contract between the State Motorway Management Company and KKK.

**Project IV.**
*Estimated costs:* the total investment cost of the establishment of an integrated database linked to public transport is 5 billion HUF in the following 5 years. The cost of maintenance is about 200 million HUF per annum on average from 2013 to 2017.

*Financing:* the investment is implemented from budget source supported by EU (TEN-T source: in the framework of EasyWay Phase III, and the regional, cohesion funds available
after 2014). The operational costs of the investment are paid by Public Road Private Limited Co. for their operational liability sources.

### 2.2.8. Implementation timeplan

<table>
<thead>
<tr>
<th>Project number</th>
<th>Project</th>
<th>Expected implementation period</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Traffic management of the motorway network, cross-border traffic management on the motorway corridors including traffic management of border crossing areas (in the case of non Schengen-zone border crossings)</td>
<td>2013–2017</td>
</tr>
<tr>
<td>II.</td>
<td>Cross-operation border traffic management with urban interfaces – joint traffic management plans on the urban sections of motorways in the conurbation areas</td>
<td>2013–2017</td>
</tr>
<tr>
<td>III.</td>
<td>Development of motorway traffic management systems</td>
<td>2013–2017</td>
</tr>
<tr>
<td>IV.</td>
<td>Establishing an open and harmonized database of public transport (urban areas, alongside main routes of the public network) in order to establish high quality passenger information services</td>
<td>2013–2017</td>
</tr>
</tbody>
</table>
2.3. Priority area 3 - ITS road safety and security applications

2.3.1. e-Call service

e-Call is based on a single EU wide emergency phone number, 112. The service allows seamless and continuous service both within and outside EU boundaries.

The in-vehicle e-Call system makes it possible that in case of emergency, either automatically via activation of in-vehicle sensors or manually by the driver or the passenger, an emergency call can be initiated. The system is based on accurate positioning via satellite systems and other information related to the vehicles involved in the incident (accurate location, time, identifying the vehicle) which is included in the transmission as a minimum set of data. In case of activation of e-Call the system initiates a voice/audio call to the Public Safety Answering Point (PSAP). PSAP can be a governmentally owned centre or a private centre under the supervision of the state.

I. National implementation of e-Call

*Project objective/description:* Two Public Safety Answering Points are implemented during the ESR-112 project. The PSAPs are currently available on the emergency number 112 and they will be available from all national numbers and all telecommunications networks. The PSAPs will be built in Szombathely and Miskolc giving work for 850 operators at 250 modern, well-equipped, high quality working stations. The geo-redundant establishment of the telemetric system ensures that incoming emergency calls in different channels (phone, e-Call, SMS, MMS, e-mail etc) in each case generate rapid and relevant interventions from the side of contingency bodies through their activity management system (Computer Aided Dispatch – CAD) updated at the same time.

As a result of the development a state-of-the-art info-communication background is created at the contingency bodies which ensure that emergency calls receive professional attendance while wrong, malicious calls are filtered. Separated reception and activity management makes it possible that dispatchers of contingency bodies only deal with real emergency calls require substantive intervention.

II. Full establishment of the parking management system of M1 motorway, creating pilot reservation systems

*Project objective/description:* The primary objective is the optimal use of limited parking places for trucks along motorways.
2.3.2. Geographical area

Project I.
The Public Safety Answering Points will take place in two cities: Miskolc and Szombathely, but the project will be applied throughout the whole country.

Project II.
All motorways will be included.

2.3.3. Preliminary implementation actions

Operational
- Review of other existing or planned “priority area 3” projects in Hungary
- Review of other existing or planned “priority area 2” projects in the neighbour countries
- Exploring the possibility of cooperation with other organisations

Organisational
- Setting up the project team by hiring new employees (if necessary)
- Preparing the projects’ engineering specifications
- preparation and conduct of tendering procedures
- Monitoring the project

Legislative
- Creating the legal framework of data use
- Contracting and reaching agreements with the data providers

Financial
- Exploring funding opportunities
- Preparation of detailed financial schedules
- Monitoring the projects’ financial execution

Promotional
- Participation in events, conferences and workshops
- Promoting the project and the new service on different platforms (internet, press, etc.)
- Preparing promotional materials

2.3.4. Technological innovation

The objective of e-Call is to become a harmonised EU-wide service. e-Call service, as an interoperable service, shall work across Europe in the future. According to the intention of
the European Commission each new passenger vehicle and light commercial vehicle has to be equipped with life-saving e-Call emergency call system from 2015. It leads to the enhancement of road safety as the e-Call emergency call system is one of the most promising systems among eSafety actions, such as seat belt, ABS (Antilock-Braking System) and ESC (Electronic Stability Control) used to be.

2.3.5. Involved parties and beneficiaries

Project I.

Project II.
Partners involved/lead stakeholder: State Motorway Management Company (lead stakeholder), Hungarian Public Roads Company.

2.3.6. Expected results and benefits

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<tr>
<td>It leads to the enhancement of road safety as the e-Call emergency call system is one of the most promising systems among e-Safety actions.</td>
<td>Reducing observation time</td>
<td>Less fuel consumption due to faster clearance times after an accident</td>
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<td>Reducing the number of fatalities</td>
<td>Reducing intervention time of contingency services</td>
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<td>Improvement of road safety due to less illegal parking</td>
<td>Reducing time of congestions</td>
<td>Improvements for freight dispatchers in terms of planning resting times</td>
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2.3.7. Cost and funding elements

Project I.
Estimated costs: the total investment cost of the PSAPs (2) is 2 billion HUF in the following 5 years. The cost of maintenance is about 1 billion HUF per annum on average from 2013 to 2017. The investment is financed by EKOP (Operational Programme for Electronic Administration) based on the cohesion fund of the EU and the Ministry of Interior as bearer of operational costs.

Deliverable D4.2.3: Study for adopting EU ITS Action Plan main areas in Hungary 21
Financing: the investment is implemented from about 10 billion HUF source (including national and EU sources of ESR-112 project and OMSZ MIR project).

**Project II.**

**Estimated costs:** setting up the monitoring systems at lay-bys and preparing the reservation pilot cost about 1 billion HUF in the following 5 years. The cost of maintenance is about 40 million HUF per annum on average from 2013 to 2017.

Financing: the investment is implemented from budget source supported by EU (TEN-T source: in the framework of EasyWay phase III, and the regional, cohesion funds available from 2014). Maintenance is ensured by an O&M contract between the State Motorway Management Company and KKK.

### 2.3.8. Implementation timeplan

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<th>Project number</th>
<th>Project</th>
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<td>I.</td>
<td>National implementation of e-Call</td>
<td>2012–2013</td>
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<td>II.</td>
<td>Full establishment of the parking management system of M1 motorway, creating pilot reservation systems</td>
<td>2013–2017</td>
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2.4. **Priority area 4 - Linking the vehicle with the transport infrastructure**

There are currently no measures or projects in Hungary that would apply to this priority area.
3. **CONCLUSION**

First, it is important to distinguish between measures and project descriptions since the latter are always limited to the project scope. Measures however should be formulated in ways that cause as little limitation as possible on the one hand yet give a clear direction for projects and initiatives to move in on the other hand. So it is crucial to define actual measures in order to ensure a long-term significance and applicability as well as to provide enough space for progression and integration of new measures based on already achieved intermediate goals. This has successfully been carried out in chapter 2. The initiatives described in the respective subchapters clearly shows that there are many activities already going on and the relatively short implementation horizon, ranging to 2017 in most cases, indicates a lot of ambition in finalising these activities.

Reading through the measures, there is a general focus on fundamental applications like making traffic data available in a general Hungarian database visible in priority area I. Many stakeholders will have access to this data which could support a comprehensive approach in terms of stakeholder integration from the beginning, if executed properly. Furthermore the data are required to support multimodality. Next step could be proceeding to the collection and use of dynamic traffic data instead of static. The short-term implementation horizon seems sensible as such a database is an important foundation for future services to be based on.

This would also support the traffic management plans mentioned in priority area II. These however seem to abandon the multimodal approach that would be possible with the traffic data from the transport database. Thus the recommendation must be to extend the traffic management concepts beyond road transport and incorporate other modes as well. Future preliminary activities could include incentive actions to attract public transport operators, providers of vehicle sharing concepts or software companies in view of smartphone app development based on high quality and governmentally approved traffic data. An awareness campaign that emphasises the most attractive aspects of possible cooperation could encourage key stakeholders to participate on their own accord and maybe contribute with innovative ideas.
### ANNEX

Priority Area I: Optimal use of traffic and travel data

**Project 1.A.: Establishing a transport database**

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Deliverable D4.2.3: Study for adopting EU ITS Action Plan main areas in Hungary
### Project 1.B.: Installation of travel time determining and displaying systems

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Priority Area II: Continuity of traffic and freight management ITS services

Project 2.A.: Implementation of comprehensive traffic management /preparation of traffic management plan as regards to the whole motorway network

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Environment

(reduction of negative environmental impacts) |   |   |   |   |   |   |   |   |   | x  |

Safety and security |   |   |   |   |   |   |   |   |   | x  |

Strengthening of the transport sector

(e.g. increased turn-overs, new jobs) |   |   |   |   |   |   |   |   |   | x  |

ITS-related innovation and technology

(e.g. development of new innovative products) |   |   |   |   |   |   |   |   |   | x  |

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Priority Area III: ITS road safety and security applications

Project 3.A.: e-Call service

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