

EasyWay

Evaluation Expert Group (EW EEG) Document – EEG/11/7

Travel time service on the ASF network

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PREFACE

This reporting template is designed to help those evaluating projects in EasyWay to prepare and present the results of their work on evaluating the implementation of ITS projects in a common format.

It is important to recognise that projects in EasyWay are funded by Member States as well as by the European Commission, and that some Member States will have their own requirements for presenting evaluation results. However, adoption of this common format for presenting results will help to ensure that results of similar implementations can be compared, assisting in the transfer of results between sites and providing European Added Value. It will also ensure that a periodic report can be prepared by the EasyWay Evaluation Expert Group (EW EEG) of progress towards achieving EasyWay's objective of reducing congestion and emissions from transport and improving safety.

Because the final peer reviewed version of the results will be made public, reports should not contain any information which cannot be made available in the public domain.

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REPORT

Project Reference (From EasyWay Work plan): CS113

Project Name:

Deployment of a new travel time service (on the ASF network allowing to disseminate every time and everywhere travel time information to main destinations)

EasyWay Region: SERTI

1. Key Evaluation Results

1.1. Impact on Traffic Flow

Knowing the travel time and the traffic jam crossing time allows the adaptation of the customers travels by optimising their routes, anticipating or delaying their stops.

1.2. Impact on Safety

A known time pass more quickly. When facing problems on the road, that is a way to keep customers calm

1.3. Impact on Environment

If drivers are aware about bad situation, they can anticipate or delay a stop and thus reduce their impact of CO2 emission when blocked in a traffic jam or a traffic congestion.

2. Description of the Problem

2.1. Site

With a 2,600 km long network flowing an average annual daily traffic of 110,000 veh/day made up of 20% of heavy goods vehicles, the ASF network is one of the busiest networks in Europe.

2.2. Issues Addressed

One of the priorities for motorways operators is to provide homogeneous, high quality and value added information and in particular on cross-border stretches.

Real time information about travel time is a very relevant data for the traveller to organise its trip on the motorway.

Historically ASF has been processing and disseminating travel times to drivers (VMS, FM Radio and the Internet) since 1998 on a part of its network. In 2008, ASF decided to recast its dissemination policy by extending the travel time information coverage to the whole network and over a main cross-border French-Spanish areas (Montpellier – Barcelona) and ensuring a permanent dissemination.

Travel times calculation is based on powerful algorithms using traffic counting sensor data, camera data and . However on certain parts of the ASF network the density of traffic counting sensors is not sufficient enough to collect the required amount of data to calculate accurate travel times.

This lack of data collection equipments leads to rethink the way travel times are calculated by integrating alternative information sources like floating car data (Toll data) into the algorithm.

The advantages of the system can be resume as :

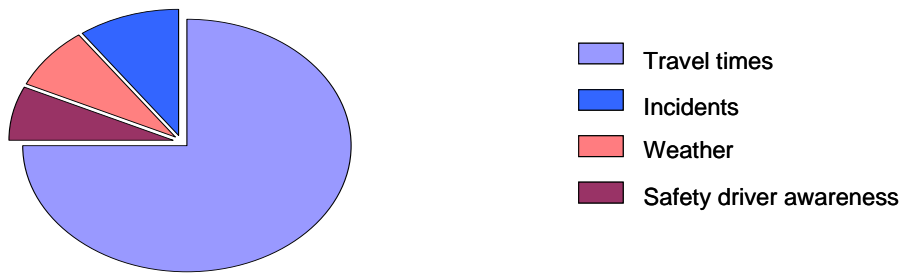
- An improvement of the travel times calculation model aimed at optimizing the use of the traffic counting data and alternative toll data sources,
- A deployment of the ASF travel times solution at a lower cost on the less equipped parts of the network,
- A guarantee of a better reactivity of the model by an earlier detection of congestions.
- A dissemination through the whole network of VMS, on the motorway and before entering the network.
- A calculation and availability 24 h a day, 365 days a year

VMS are one of the channels to disseminate travel time information among radio broadcasting (107.7 FM), ASF call center, the Internet... However customers recognised VMS as the first media for real time traffic information.

The project aims to realize two main operations:

- Change operating processes to make a full time use for travel time dissemination and not only in incidents or crisis,
- Use of VMS also to inform customers when the level of service is good (smooth traffic: normal travel time displayed)

Usage of VMS spaces availability



3. Description of the ITS Project

3.1. Service Area

The EasyWay II Domain structure is for this project :

Traveller Information Services

The EasyWay II Sub Core Service:

Travel Time information

The project consists in :

- the creation of fusion algorithms allowing to feed the processing engine with several data sources : traffic counting stations, toll data.
- the setting up of cross-border systems allowing to process and disseminate cross-border travel time to Barcelona,
- the setting up of systems allowing to process and disseminate permanent (24/7) dissemination all over the ASF network, deployment of access VMS in order to inform incoming customers and mainline VMS in order to ensure a 30-minute customer information frequency.

More precisely :

- implement a calculation system
- implement dissemination VMS, on the network and before entering the motorway (tollgate).
- make these data available through the web and the 107.7FM motorway radio

3.2. Key Words

Pre-trip traveller information, on-trip traveller information, variable message signs, cross-border fertilization

3.3. Objectives

- Set up a real-time traffic information service permanently available with several dissemination channels
- Ensure continuity of information outside the ASF network (seamless information with neighbouring operators : ACESA, Escota, Cofiroute)

3.4. Systems and Technologies Applied

The system is based on two modules that allow to disseminate travel times according to real-time traffic conditions :

- The processing engine calculates every 6 minutes the travel times of 740 journeys and is fed with 2 types of data : the real-time toll data and the traffic counting stations data.
- The real-time dissemination system is fed with the calculation results from the processing engine and ensures the dissemination on several channels (400 VMS spread along the 2,600 km-long network, radio and internet) once the calculation is done.

3.5. Costs

- Capital costs - ITS Technologies : around 3,000,000 € (VMS, counting systems, and software development)
- Annual operating costs : around 300,000 €

3.6. Status of the Project

Phase 1

The experimentation conclusions teach us the system can be generalised so it makes necessary to extend the travel time coverage to the whole A7-A9 network addressing the main destinations.

Phase 2

The travel time service will be deployed on sections requiring feasibility studies due to their traffic specificities (widening works, lack of traffic counting equipments...) such as A63, sections out of ASF concession but surrounded by ASF network such as A64 (Toulouse - Biarritz) and A54 (Salon de provence – Nîmes), neighbouring sections leading to major urban areas like Barcelona.

3.7. Timing and Type of Evaluation

Evaluation carried out following implementation (ex-post evaluation), with no simulation.

3.8. Objectives for the Evaluation

Three goals:

- Customers satisfaction
- Accuracy of information provided to customers according to real-time traffic situation
- Improvement of safety conditions on the motorway

3.9. Research Questions

None.

3.10. Study Area for the Evaluation

Whole ASF network.

3.11. Expected Impacts

The upcoming results must also be compared to surveys results made before the deployments, indeed, drivers survey have been made to know more precisely their expectations on the subject and their eventual complementary needs, some important points can be highlighted after this survey:

- the drivers questioned want to have travel times informations because travel times synthesize well the traffic situation,
- 68% of the drivers say spontaneously that they remember having seen travel time in middle of a numerous of information written on test VMS,
- for the comprehension point of view, more than 70% of the drivers have a perfect and complete comprehension of the traffic indicator "travel times",
- the error margin that seems to be tolerable for questioned drivers is for 80% of them less than the technique error margin.

3.12. Expected Methods

Information disseminated will be compared with reference values processed off-time and based on toll data.

4. The Impact of the Project - Results

4.1. Technical Performance

The technical results of the project can be considered as the capability of the system to display travel times on the motorway's VMS, when no more important information have to be displayed. Several measurements have been made and it could be concluded that in 99,3% of the cases which the travel time have to be displayed, it is effectively displayed.

A customer's satisfaction survey has been realized in falls 2010 on 600 drivers and on the whole network:

- The reconnaissance rate of the travel times on the VMS is 86%
- 86 % says these information are useful to manage their travel times

4.2. Results

These results confirm the technical efficiency and the audience acceptance of the system.

4.3. Reliability of Results

The reliability of travel times that is now close to 95% has been reached after several tests on the first decade of 2000. The most difficult situations to be solved were to calculate a reliable travel time during traffic peak periods or very low traffic flow. At this end of this works and corresponding tests, the target of a 95% of reliability was reached for all circumstances.

4.4. Research Questions Answered

None.

4.5. Overall Assessment

Summarise the main findings in terms of their impact on European objectives under the headings below.

4.5.1. SAFETY

A known time pass more quickly, that is a way to avoid driver's nervousness.

Improve the safety feeling by showing to the drivers that somebody is watching out the motorway

4.5.2. EFFICIENCY

The system is running 24/7 with an efficiency close to 100%

4.5.3. ENVIRONMENT

No touchable result can be liked the environment considerations.



5. European Dimension: Transferability of the Results

Authors are asked to indicate the extent to which the results of the evaluation are applicable to other similar implementations in the same or different countries. This should include any special experimental, external or local conditions which may have influenced the results. This section is to enable the reader in judging the transferability of the results obtained.

Where several evaluation reports have been produced in respect of similar implementations, this section of the report could be used to present comparative results and to draw out conclusions relating to the transferability of those results. Links to related evaluation reports might also be added in this section.

Annex 1: Technical Annex

Selected Indicators

Wherever possible standard indicators should be adopted for the evaluation of project impacts, related to EasyWay objectives. Guidance on appropriate indicators is included in the EEG's 'Euro-Regional Project Evaluation Guidelines' available via the EEG's website (<http://www.easyway-its.eu>).

Breakdown of Project Costs

Data Collection Methods

Other Technical Aspects e.g. Modelling

Include as appropriate