



# TIMON

**“Enhanced real time services for optimized multimodal mobility relying on cooperative networks and open data”**

## **Deliverable D8.1: Project website**

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Public  Confidential, only for members of the consortium (including the Commission Services).

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**[www.timon-project.eu](http://www.timon-project.eu)**



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## **1. Introduction**

This document introduces the TIMON website. Active work has taken place throughout the first three months of TIMON in order to produce a visually attractive and comprehensive website that serves to highlight the best features of TIMON. The TIMON website is available at [www.timon-project.eu](http://www.timon-project.eu).

The website is currently structured in seven sections, each of which has related subsections providing more in-depth information. Currently, the focus is on presenting the TIMON project and its aims, the TIMON consortium, and the apps and services that will be developed throughout the lifespan of TIMON. However, the back-end of the website has been developed in such a way that the structure of the website can be altered easily and emphasis can be put on other elements of the project. It is possible that this option will be used at some point during the project. As TIMON grows and develops, the website may also evolve, in particular to bring maximum focus on the services TIMON will develop.

The website will prove to be useful in communicating both with the outside world and internally within the consortium. External visitors will be able to learn not only about the project and its latest developments, but also keep up-to-date with the latest news in road safety and achievements in intelligent transport systems in Europe. However, certainly, the main focus of the website will be to promote TIMON and its results. Internally, project partners will be able to make use of the restricted area, which will aim to foster cooperation and streamline work. The restricted area, available only to project partners, will be structured around the TIMON work packages in order to make it easier for project partners to find the information they are looking for.

The document that follows first emphasizes the importance and purpose of the TIMON website. It also observes the stakeholder categories that the TIMON website will primarily seek to attract. Then a full overview of the structure is given, including the text that is available on the website.

## **2. Purpose of the Website**

The TIMON website has been created with several objectives in mind. Most distinctly, the website will be used as a way to:

- ▶ Attract attention to the project and foster communication with the outside world;
- ▶ Promote the TIMON apps and services that will be designed throughout the course of the project in order to facilitate exploitation of project results at the end of the project;
- ▶ Facilitate communication between project partners via the restricted area of the website.

### 3. Target Groups

The TIMON website will be used to connect with groups that could be interested in the project and its results. These groups include:

- ▶ **End-users:**
  - Drivers
  - Vulnerable Road Users (VRUs)
  - Public administrations
  - Apps developers
- ▶ **Industrial stakeholders:**
  - International companies
  - SMEs
  - Technology adopters
  - Technology users
  - Road operators
  - Traffic managers
- ▶ **Regional, national, and European administrations**
- ▶ **European citizens and society at large**
- ▶ **Academia and students**

### 4. Website Structure

The TIMON website currently contains 7 main sections: 1) Home, 2) About TIMON, 3) TIMON Services, 4) News & Events, 5) ITS & Road Safety Links, 6) Restricted Area, and 7) Contacts.

The main menu will function as a dropdown menu. After the cursor is placed over the menu item, the subsections will appear together with their subpages. Thanks to this solution, visitors will be able to view the website structure at a single click.

Below is an overview of all the sections currently on the TIMON website.

- ▶ Home
- ▶ About TIMON
  - Who is TIMON?
    - DEUSTO
    - Fraunhofer
    - CTTC
    - INTECS
    - Scrapperwiki
    - GEOX
    - XLAB
    - ISKRA



## *D8.1. Project website*

- JP LPT
- CORTE
- TASS
- What is TIMON?
- How TIMON works?
  - TIMON Work Packages
  - TIMON Public Deliverables
- ▶ TIMON Services
- ▶ News & Events
  - News
    - TIMON News
    - ITS & Road Safety News
  - Events
    - TIMON Events
    - ITS & Road Safety Events
- ▶ ITS & Road Safety Links
  - ITS & Road Safety Links
  - Related Projects
- ▶ Restricted Area
- ▶ Contacts

The TIMON website has been designed in such a way that adding or deleting main sections and subsections can be done easily by CORTE, who, as the project leader for dissemination activities, will be in charge of keeping the website running smoothly and effectively. Therefore, the above can be seen as a tentative structure and starting point from where, if necessary, further modifications can be made.

The TIMON website will remain active, and will be updated frequently, throughout the course of the project, as well as for three years after the end of the project. Altogether, the project website will be accessible to visitors until the end of 2021.

The following sections present the content that will be available under each of the headings.

### **4.1. Home**

The home page currently includes the text available on the “What is TIMON?” page of the website.

As the project progresses, this area of the website will be used to highlight the most recent progress achieved within the project. The home page will also provide links to TIMON Facebook,

LinkedIn, and Twitter profiles, as well as the live TIMON Twitter feed. A separate section on the home page will also present the latest TIMON news and contain a link to the news section of the website.

## 4.2. About TIMON

The “About TIMON” subpages currently contain a brief introduction into the TIMON project. When a visitor hovers the mouse cursor over the “About TIMON” tab on the main menu, three subsections appear. These are 1) “Who is TIMON?”, which presents the consortium, 2) “What is TIMON?”, which presents the project and its objectives, and 3) “How TIMON works?”, which gives a brief outline of the project work packages and contains a depository of public deliverables, where documents will be added as soon as they are ready and approved.

### 4.2.1. Who is TIMON?

The TIMON consortium is formed by 11 organisations, formed by Universities, RTOs, SME and big industry from eight different European countries (Spain, Italy, Belgium, the United Kingdom, Germany, Hungary, the Netherlands, and Slovenia). TIMON initiative is led by the University of Deusto (Spain). Learn more about the consortium below.



Figure 1 TIMON consortium

### DEUSTO

DEUSTO will participate in TIMON through the DeustoTech Mobility Unit. The activity of the unit is focused on the research of ICT technologies for the application in transport, mobility and

logistics sectors, contributing to the development of Intelligent Transport Systems (ITS) which are capable of improving the mobility of people and goods, making it more sustainable, smart and comfortable, using the latest technologies in the field of Advanced Communications Systems and Artificial Intelligent algorithms, cooperative networks (V2V, V2I, V2X), implementation of multimodal route planners, goods tracking and enhanced logistics platforms. Besides, on the recent years many advances has been done on the research of seamless positioning and activity monitoring of people with MEMs, getting promising results. Among the techniques that have been researched on, are Kalman filters and Bayesian techniques.

Role in the project

DEUSTO is the project coordinator and will contribute to the development of the artificial intelligence techniques and the modelling/prediction methods needed to obtain high accuracy algorithms for traffic congestion prediction, traffic flow estimation, route optimisation and determination of levels of risk in the cases of use of study. DEUSTO will also carry out dissemination activities and foster exploitation discussions and agreements.

FRAUNHOFER

FRAUNHOFER contributes to the implementation and effective management of networked embedded systems.



In the automobile and transportation segment, it examines underlying communication technologies and software architectures for in-vehicle networking and vehicle-to-environment (V2x) infrastructures, in addition to researching methods for the development of flexible and reliable software systems, particularly embedded automotive systems.

Role in the project

FRAUNHOFER will lead Work Package 5, which focuses on developing, proving and evaluating an ITS-G5/LTE hybrid communication system solution. They will also participate in defining the system requisites and in the deployment of hybrid communication systems. FRAUNHOFER will also help disseminate the results of TIMON in the academic world through participation in congresses, lectures, articles, etc.

CTTC

The Statistical Inference for Communications and Positioning Department (CTTC) focuses on the application of the most recent statistical tools and digital signal processing advances in the fields of



Communications and Positioning systems. CTTC has a strong background and expertise in GNSS receivers, signal processing for navigation systems, localization and tracking algorithms, cooperative, distributed data fusion and advanced signal processing algorithms, digital communications, network coding, iterative information processing, etc.

Role in the project

CTTC will work in the analysis of positioning solutions based on GNSS technology in the framework of the scenarios considered and the identification of enhancements where standalone GNSS does not provide the desired performance. CTTC will contribute to the research activities enabling positioning in challenging scenarios where GNSS is partially or totally obstructed, by investigating cooperative positioning solutions exploiting communications links among the devices of the vehicular scenario.

INTECS

INTECS focuses on design and production of SW/HW electronic components, Software engineering and Quality. INTECS mainly operates in Space, Transport and Defence domains developing an outstanding experience and knowledge in many areas including Smart City/Intelligent Transport Systems, Automotive Real Time Software Systems, Safety Critical Embedded systems, Assessment of Safety related Software Development, etc.



Role in the project

INTECS will bring its "Automotive and Smart System" expertise in the area of ITS, Automotive and Internet of Things , fostering the definition of interoperable ITS capable of improving quality and reliability of info-mobility data. It will provide a data distribution architecture to facilitate "real-time local" information to a higher level of intelligence / data-integration.

Scraperwiki

SCRAPERWIKI is a software developer specialised in developing tools that help to collect and publish data. They are experts at extracting value from external data, and combining it with internal data assets. SCRAPERWIKI has a worldwide community of data scientists to help with data projects in multiple languages and multiple territories.



Role in the project

Given its experience of exporting collected data in a common format means, SCRAPERWIKI will lead the harmonisation of open data related to transport, especially to different services of public transport, and collected to deliver real time information within the system.

GEOX

GEOX is one of the leading GIS companies in Hungary and beyond. Established in 1998, GEOX has created and developed digital raster and vector maps, GIS applications, carried out business GIS analysis, geomarketing applications and provides GIS consultancy. In general the company provides IT solutions with special consideration to the geoinformatics and spatial databases. Its main scope of activity are spatial modelling, spatial database design and management, and customized map-application development.



Role in the project

Due to GEOX expertise in the development of dynamic maps technologies and mobile applications, GEOX will be mainly involved in the software and services development process of TIMON. It will also take part in the development of end user map - and navigation applications and APIs as well as in the development of services providing dynamic maps based on data gathered in the system.

XLAB

The research done at XLAB has been recognized as one of the strongest computer science research teams outside the academic world in Slovenia. XLAB has a vast contact base and access to more than 100 experts in the fields of computer science, electronics and mathematics, design and marketing. Current areas of research include cloud computing, distributed systems security, Security SLAs and HPC-related approaches. XLAB closely follows and researches the Internet of Things paradigm, especially in SmartGrids and connected analytics.



Role in the project

XLAB will be in charge of making possible different data exchange between the different agents involved. XLAB will focus on open data from multimodal transport. XLAB will put at the project's disposal all of its experience in software development (design, development and evaluation) and its infrastructure.

### ISKRA

ISKRA is a developer and provider of process automation, communications and security systems for power distribution, telecommunications, and railway and road traffic. Its Traffic Division offers contemporary technological solutions in road traffic automation and security. The ISKRA integrated traffic systems and electronic security systems are distinguished by their high degree of reliability, capacity, efficiency, adaptability, accuracy and connectivity, thus ensuring the lowest possible number of false alarms.



### Role in the project

ISKRA is the Technical Coordinator of the TIMON project. It will also contribute to the development of the open platform and services, as well as their validation through the pilot implementation in Ljubljana.

### JP LPT

Company JP LPT is fully owned by the Municipality of Ljubljana. JP LPT controls and manages urban mobility in the city of Ljubljana. JP LPT is also involved in managing automobile fairgrounds, safe driving centre, and management of two leased parking facilities.



### Role in the project

The role of JP LPT in TIMON is related to the services and platform requirements' definition and their validation in Ljubljana through the pilot deployment. It will be in charge of the engagement of end-users of the proposed services along the project, as well as of providing the collaboration of LPP, the public transportation company.

### CORTE

CORTE is an international organisation bringing together 55 national transport authorities from European and non-EU countries, 12 road transport associations and 18 road transport companies. It organises its activities under the three pillars of road transport, road security and road safety. It aims to encourage, promote, and assist the development and implementation of policies for road transport, road safety and road security in Europe and at international level.



Role in the project

CORTE will define the TIMON dissemination activities and business plan. CORTE will use its expertise and extensive network to involve end users in the project for the definition of user needs and requirements and to help disseminate the results of TIMON. TIMON developments and results will be communicated, validated and tested against CORTE members, i.e. road transport national authorities, road transport associations (some representing thousands of road transport companies) and transport companies.

TASS

TASS is a consolidation of 5 automotive divisions - Software and Services, Homologations, Safety Center,



Powertrain Center and Mobility Center – resulting in a single business entity that supports the transport industry in developing safety systems that lead to smarter, safer and greener vehicles. TASS operates the DITCM test site, which is a purpose-built facility for the development, testing and validation of ITS and cooperative technologies.

Role in the project

TASS will offer their extensive expertise, knowledge and experience about testing and validating connected mobility services and in the test-bed DITCM Facilities in Helmond (Netherlands) for proof-of-concept demonstrating the services of TIMON after which the services will be further deployed in other countries. These activities will be executed on the DITCM test site.

**4.2.2. What is TIMON?**

TIMON (“Enhanced real time services for an optimised multimodal mobility relying on cooperative networks and open data”) is a new EU research project funded by the European Commission under the Horizon 2020 programme, which was launched in June 2015. It will last for three and a half years, until the end of 2018.

The TIMON project brings together 11 organisations from around Europe, all of which have experience in different fields of transport and are able to approach the project from different perspectives. This has helped to create a strong consortium, where the knowledge of each organisation complements the experience of the others. The partners in the TIMON project are:

- ▶ Universidad de Deusto (Coordinator; Spain)
- ▶ Fraunhofer-ESK (Germany)
- ▶ Centre Tecnològic de Telecomunicacions de Catalunya – CTTC (Spain)
- ▶ Intecs (Italy)
- ▶ Scraperwiki (United Kingdom)
- ▶ Geox (Hungary)
- ▶ XLAB (Slovenia)
- ▶ ISKRA Sistemi (Slovenia)
- ▶ JP LPT (Slovenia)
- ▶ CORTE (Belgium)
- ▶ TASS International Mobility Center (Netherlands)

A large majority of European citizens live in urban environments. They live their daily lives in the same space, and for their mobility share the same infrastructure. The increasing world vehicle pool and the intermittence associated to urban driving, has made cities the principal source of CO2 emissions. This is despite the recent measures to tackling congestion by promoting car-sharing practices and the use of public transport. The European Union has also acknowledged this challenge and has been actively working to reduce road casualties and fatalities, as well as the level of greenhouse gas emissions from transport activities.

The TIMON project partners believe that the persisting problems related to congestion, traffic safety and environmental challenges could be solved, if people, vehicles, infrastructure and businesses were connected into a cooperative ecosystem. The creation of such an ecosystem is one of the key objectives of the TIMON project. This ecosystem will rely on cooperative networks and open data, and will help increase the overall safety, sustainability, flexibility and efficiency of road transport systems.

TIMON aims to deliver a framework of services to all users of the transport ecosystem – drivers, vulnerable road users, and businesses. The TIMON services will be structured in five key areas:

- ▶ Driver assistance services
- ▶ Services for vulnerable road users
- ▶ Multimodal dynamic commuter service
- ▶ Enhanced real time traffic API
- ▶ TIMON collaborative ecosystem

The TIMON project will start by identifying and analysing user needs and requirements. Subsequently, relevant data sources will be defined and a system for data harmonisation will be designed. With this knowledge, TIMON project partners will seek to develop the technology necessary for the deployment of the TIMON services. Finally, an open platform will be designed and the TIMON services will be implemented.

The project also foresees two practical test pilots in real environments, one to be carried out in a testbed site in Helmond (the Netherlands), focused on validating the technical performance of the

system. The second pilot will take place in the city of Ljubljana (Slovenia) and will aim to test the TIMON services with real end-users.

### 4.2.3. HOW TIMON works?

#### TIMON Work Packages

Below is a diagram depicting the structure of the TIMON work, which is organised into work packages (WP).

The project will start with WP1, and then move to WP2. The work of WP3, WP4, and WP5 will build upon the results achieved in WP1 and WP2. After the development of the core TIMON technologies, WP6 will design the open platform for the implementation and deployment of TIMON services. Lastly, the project results will be validated in test pilots in WP7.

WP8 and WP9 will run throughout the entire course of the project and help to disseminate the results (WP8) and manage the project (WP9).

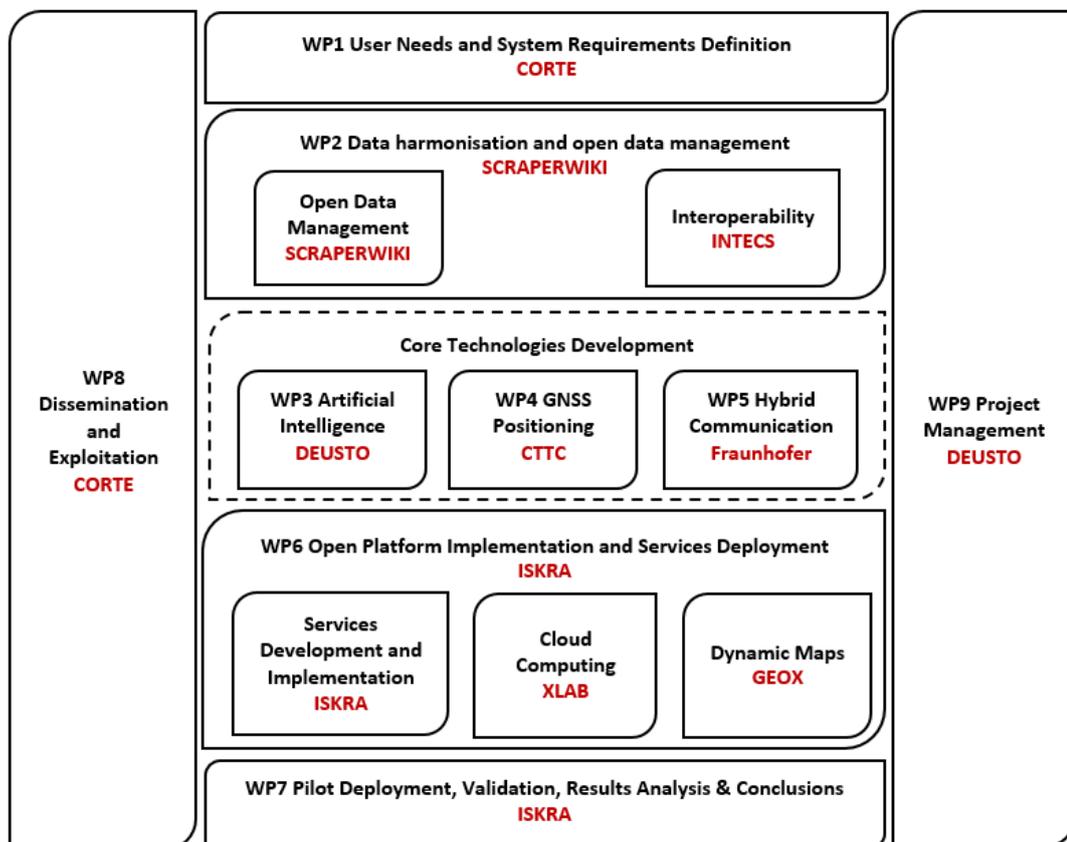


Figure 2 Work package breakdown structure in TIMON project

### TIMON Public Deliverables

As the TIMON project gains momentum, this section of the website will present the most recent public deliverables of the project.

#### **4.3. TIMON Services**

The TIMON services are structured in five key areas: driver assistance services, services for vulnerable road users (VRUs), multimodal dynamic commuter service, enhanced real time traffic API, and TIMON collaborative ecosystem.

This section provides more information about each of them.

##### Driver assistance services

This service will consist of real-time alerts (set of applications of C-ITS) that aim to increase safety and hazard warning. Typical scenarios would include the detection of bikes/motorcycles on highway or urban areas or the detection of pedestrians, especially in urban areas. Some urban city centre areas demand for special care, such as pedestrian, semi-pedestrian or school areas. Alerts will also be generated in situation where an emergency vehicle is approaching. Drivers will also be informed about roadwork on highways and the location of stationary vehicles.

##### Services for vulnerable road users (VRUs)

A communication bridge will be established between VRU and vehicles by means of the hybrid networks. Services developed for VRUs will focus on assisting riders of powered two-wheelers and cyclists. VRUs will have access a map depicting the current road traffic status and they will receive information on moving vehicles, vehicle collisions, as well as help in route re-planning for more efficient transport.

##### Multimodal dynamic commuter service

This service will be available on different mobile platforms and will support optimisation of citizen's individual transport. It will compute and suggest the most optimised transport route that best fits the individual citizen's needs and is calculated according to a user's profile and agenda. The calculation will be executed based on real-time data.

##### Enhanced real time traffic API

An amount of services will be gathered in an API that can be used to improve functionalities of other smartphone applications focused on enhancing road transport efficiency, such as car sharing applications, ElectroMobility services. The application will be capable of providing highly accurate

predictions on traffic congestion based on ITS and open data. This service is also intended for business-oriented applications, such as fleet management companies (logistics companies, postal services, etc.), requiring a reliable estimation of the time delay on the selected route.

#### TIMON collaborative ecosystem

The TIMON collaborative ecosystem will promote TIMON end users to share their experience on a social network based application. The TIMON collaborative ecosystem application will be supported by gamification techniques that will incentivise to share data. The incentivising approach will be closely assessed with public administration, in the TIMON project with JP LPT engaged partner.

#### **4.4. News & Events**

This section will keep visitors up-to-date with the achievements of TIMON, and the developments in road safety and intelligent transport systems in Europe.

#### **4.5. ITS & Road Safety Links**

This section of the TIMON website provides links where further information about ITS and road safety, as well as other projects related to TIMON, can be found.

##### **4.5.1. ITS & Road Safety Links**

- ▶ European Commission
  - [DG MOVE](#)
  - [DG CONNECT](#)
  - [European Commission Joint Research Centre](#)
- ▶ European Parliament
  - [TRAN Committee](#)

##### **4.5.2. Related Projects**

- ▶ [BONVOYAGE](#)
- ▶ [CODECS](#)
- ▶ [ETC](#)
- ▶ [EuTravel](#)
- ▶ [HIGHTS](#)
- ▶ [ITS Observatory](#)
- ▶ [MASAI](#)



- ▶ [OPTIMUM](#)
- ▶ [ROADART](#)
- ▶ [SocialCar](#)
  
- ▶ [ICSI](#)
- ▶ [TEAM](#)
- ▶ [eCoMove](#)
- ▶ [GET SERVICE](#)
- ▶ [MOBIS](#)
- ▶ I-TOUR
- ▶ [VIAJEO](#)
- ▶ [VRUITS](#)
- ▶ [MOBINET](#)
- ▶ TACOT

#### **4.6. Restricted Area**

This part of the website is restricted to TIMON partners only.

The restricted area page contains only the small disclaimer above. Only project partners will be able to access the restricted area, once they provide their unique log-in details (username and password). The restricted area will serve as a space where project partners can upload large documents and images in different formats. It will be structured around the TIMON work packages, to provide a clear overview and make it easier for project partners to find information.

#### **4.7. Contacts**

For more information about the TIMON project please contact:

Project coordinator  
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Asier Perallos  
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Dissemination leader  
CORTE  
Rue des Deux Eglises 37  
1000 Brussels  
[secretariat@corte.be](mailto:secretariat@corte.be)

## **5. Other Features**

At the bottom of each page of the TIMON website, visitors will be able to find links to TIMON social media profiles on Facebook, Twitter and LinkedIn. Visitors will be able to subscribe to new information from TIMON not only by following the project on social media, but also via the RSS feed available on the website.

The website will include an image of the EU flag and the disclaimer *“TIMON project has received funding from the European Union’s Horizon 2020 research and innovation programme under Grant Agreement No 636220”*.

## **6. Website Updates**

The website will be regularly updated with relevant news about developments in intelligent transport systems, urban transport systems, and road safety. External news articles will be published under the section *“ITS & Road Safety News”*.

The website will also constantly be updated with the latest developments in TIMON. Public deliverables will be published under the *“TIMON Public Deliverables”* section of the *“How TIMON works?”* web page. News items about TIMON consortium meetings and project breakthroughs will be published under the *“TIMON News”*.

CORTE, as the leader for WP8 and dissemination activities, will be in charge of maintaining and updating the TIMON social network profiles.

## **7. Assessment of Results**

The key result to be gained from the TIMON website is closer interaction both with the outside world and within the TIMON consortium. Emphasis, however, will be put on reaching out to organisations that represent the end-users that TIMON aims to attract, i.e. drivers, vulnerable road users, public administrations, and apps developers.

In order to assess the level of activity on the TIMON website, the Google Analytics tools will be used. Key performance indicators will include website hits, page views, document downloads, comments received, and information requests received. These numbers will be provided by Google Analytics and will be reflected in the TIMON dissemination plans.

## List of abbreviations and acronyms

Abbreviation	Definition
API	Application Program Interface
C-ITS	Cooperative Intelligent Transport Systems
CORTE	Confederation of Organisations in Road Transport Enforcement
CTTC	The Statistical Inference for Communications and Positioning Department
DEUSTO	Universidad de Deusto
DITCM	Dutch Integrated Test site for Cooperative Mobility
EU	European Union
GIS	Geographic Information System
GNSS	Global Navigation Satellite System
H2020	Horizon 2020
HPC	High Performance Computing
ICT	Information and Communication Technologies
IT	Information Technologies
ITS	Intelligent Transport Systems
RTO	Research and Technology Organisations
SLA	Security Level Agreement
SMEs	Small and Medium-sized Enterprises
TIMON	Enhanced real time services for optimised multimodal mobility relying on cooperative networks and open data
VRUs	Vulnerable Road Users
WP	Work Package

*Table 1 List of abbreviations and acronyms*