



Common C-ITS Service Definitions In Vehicle Signage Parking Information

C-Roads Platform

Working Group 2 Technical Aspects

Taskforce 2 Service Harmonisation

Publication History

Version	Date	Description, updates and changes	Status
0.1	22.01.2020	Copied input from France into C-Roads template	Draft
0.2	30.01.2020	Few modifications of sentences and formatting	Draft
0.3	07.02.2020	Few additional modifications after TF2 conference call	Draft
0.4	05.03.2020	Few additional modifications after WG2 remote meeting	Draft
1.7.0.TF.5	08.05.2020	Integrated new template	Draft

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1 Functional Description of In Vehicle Signage

1.1 In Vehicle Signage service introduction

Service introduction	
Summary	Already existing
Background	Already existing
Objective	Already existing
Expected benefits	Already existing
Use Cases	Already existing

1.2 Parking Information

Type of road network	Highway
Type of vehicle	All
Use case introduction	
Summary	The use case is to provide to drivers of all vehicles (light vehicles and heavy goods vehicles) information related to parking lots (location, availability, services, rates, etc). As this use case has only been deployed on highways, it is currently limited to this type of road network.
Background	<ul style="list-style-type: none"> • Today, there are announcements for parking lots via variable message signs. This use case brings the information inside the vehicle. • The core value of this service is to create and share the same display for this type of information, by being independent of the sources of information (which are numerous and have different communication means). Above all, it is a matter of bringing more comfort to the road user. However, this information can also bring more safety by helping the road user manage his driving time. • This kind of information can also help the road user to reduce the duration of his trip. • For passenger cars, the information on accessible park-and-ride facilities has value itself because some park-and-ride facilities are not accessible to all users as they are restricted to subscribers.
Objective	<ul style="list-style-type: none"> • Allow drivers to manage their driving time according to the availability of parking lots and associated services. • This use case applies to HGV drivers who are subject to regulations on the maximal time of driving, as well as to light vehicles drivers. • To prevent overcrowded (truck) parking and illegal parking on hard shoulders (or other places that are not suitable as parking spaces) • To prevent (truck) drivers searching for an available parking space, causing unnecessary traffic movements from (heavy goods) vehicles
Desired behaviour	<ul style="list-style-type: none"> • Drivers adapt their journey based on received information.
Expected benefits	<ul style="list-style-type: none"> • Security: As the driver will have the information upstream, it will allow him to plan his stop accordingly, especially for a HGV driver. Thus, he will be able to drive more safely. • Traffic management • Parking lots management • Comfort (information on services at the parking)
Use case description	
Situation	<p>Information provided can be:</p> <ul style="list-style-type: none"> • The location of parking lots, • Opening hours • If the parking is open or closed (can be closed due to maintenance, roadworks, event in the area,...). • The number of their available spaces. If not known, information provided is just "full" or "free", • Vehicle Types permitted to be parked, • Services provided in the parking lot, and associated rates, • If the parking is secured or not (especially for truck parking). • If there is a charging point for electric vehicle (with the power, the availability...) • Multimodal facilities in the vicinity • Availability of safe and secure parking places for trucks and commercial vehicles

Met opmerkingen [OT1]: Align with ITS Directive 2010, Delegated Act, priority action E

Logic of transmission	I2V
Actors and relations	<ul style="list-style-type: none"> • Parking operators: The parking operator may be the sender of the information. • Road operator: The road operator can also be the sender of the information, after obtaining the information from the parking operator. • Road users are the end-users of the service (LVs or HGVs).
Scenario	<ul style="list-style-type: none"> • The road operator, or the parking operator, gets the information by his own means or through his data/service provider. • The road/parking operator sends it to all the vehicles, in a relevant area. • Vehicles receive the information but do not display it yet. • When the driver requests the information, the information is displayed in the vehicle on the HMI, adapted if possible to the type of vehicle (e.g. Light Vehicle or Heavy Goods Vehicle). • Road users adapt their trip, and choose a parking lot according their needs. • Eventually, the road user could put his itinerary in the guidance system of the vehicle that is connected to the C-ITS system to go to the parking lot.
Display / alert principle	Information is provided to drivers who request it (e.g. POI).
Functional Constraints / dependencies	<p><u>Constraints</u></p> <ul style="list-style-type: none"> • The important points of considerations concern the information supply and its quality. • HMI constraints to display the information properly. • Make sure that there is enough resources available to carry out a comprehensive work of specifications. <p><u>Dependencies</u></p> <ul style="list-style-type: none"> • Additional inputs about the possibility to adapt this use case for urban use could result into a broadening of the use case in the future.
Interoperability requirements	
Message profile requirements	POI message The French message description is inspired by ETSI TS 101 556-1 V1.1.1 "Electric Vehicle Charging Spot Notification Specification".
Security and data protection requirements	<i>More details to follow</i>
Communication technology requirements	
Test and validation requirements	