



Common C-ITS Service Definitions

Hazardous Locations Notification

Public Transport Vehicle at Stop (HLN-PTVS)

C-Roads Platform

Working Group 2 Technical Aspects

Taskforce 2 Service Harmonisation

Publication History

Version	Date	Description, updates and changes	Status
0.1	05.09.2019	Copied available harmonized description into separate document	Draft
0.2	17.10.2019	Minor editorial improvements	Draft

Index


1	Functional Description of Hazardous Locations Notification	3
1.1	Hazardous Locations Notification service introduction	3
1.2	Public Transport Vehicle at Stop (HLN-PTVS) – V2V and I2V	4

1 Functional Description of Hazardous Locations Notification

1.1 Hazardous Locations Notification service introduction

Service introduction	
Summary	N/A
Background	N/A
Objective	N/A
Expected benefits	N/A
Use Cases	N/A

1.2 Public Transport Vehicle at Stop (HLN-PTVS) – V_{PT2V}

HLN – UC – PTVS Public Transport Vehicle at Stop (V2V)	
Type of road network	Road, urban road
Type of vehicle	All vehicles
Use case introduction	
Summary	Providing in-car information and warning about public transport vehicle at a stop.
Background	<p>The public transport vehicles stopping in some types of stops create an obstacle on the road. These situations happen mainly in the stops on the road lane or stops where passengers get off directly on the road. In these locations, approaching vehicle could collide with the stationary public transport vehicle or even the passengers. These locations can be very dangerous mainly in combination with bad weather conditions.</p> 
Objective	<p>The driver gets warned about the presence of a public transport vehicle at the stop to raise his/her attention when approaching it by providing in-car information and warnings about this situation.</p> <p>During the getting on/off to public transport, the passengers often don't pay much attention. Due to the warning, the driver can be prepared for unexpected pedestrian behaviour.</p>
Desired behaviour	<ul style="list-style-type: none"> • Increased driver attention • Adaptation of the driving speed in the vicinity of the stop (stopping the vehicle in front of stationary PT vehicle) • Readiness for unexpected pedestrian behaviour
Expected benefits	<ul style="list-style-type: none"> • Reducing the risk of accident with PT vehicles • Reducing the risk of road vehicle accidents in the vicinity of PT stops • Increased driving comfort
Use case description	
Situation	Vehicle is approaching a PT stop (e.g. stop on the road lane) where the PT vehicle is standing and passengers are getting on/off the vehicle in a hurry. The driver is informed about this situation.
Logic of transmission	V _{PT2V}
Actors and relations	<ul style="list-style-type: none"> • Public transport operator is the origin of the information of the message. The direct source are OBUs in their vehicles. • End-user receives the warnings in the vicinity PT vehicle at a stop.
Scenario	<ul style="list-style-type: none"> • The PT vehicle stops at a stop. • Warning messages begin to be generated by the PT vehicle's OBU. • Transfer of information into vehicles equipped with OBU. • The vehicle receives the information and displays it to the driver. • The driver adapts his/her behaviour.

<p>Display / alert principle</p>	<ul style="list-style-type: none"> • The warning to the driver needs to be displayed early enough for him/her to adapt his driving. • The user is provided with related information. Layout and sequence of presentation are left to OEM-specific implementation.
<p>Functional Constraints / dependencies</p>	<p>-</p>
<p>Relation to C-Roads C-ITS Infrastructure Functions and Specifications</p>	<p>The DENM message for HLN-PTVS is profiled in chapter 3.1.1.1 and 3.1.1.3 of the C-ITS Infrastructure Functions and Specifications document.</p> <p>For this use-case, causeCode is 94 (stationary vehicle) and subCauseCode is 4 (publicTransportStop)</p> <p>ValidityDuration should be quite short and corresponding to the mean time of a stop.</p>