C-ITS Corridor "Roadworks Warning in Context": *Purpose and objectives of this TPEG + ETSI G5 Trial*

1 Summary

The BASt is organizing a "Roadworks Warning in Context" trial within the German C-ITS Corridor project. Purpose of this trial is to determine appropriate methods/harmonized information in order to provide Roadworks information (as a first "day 1" application) to drivers both via ETSI G5 technology and as Traffic Information (TPEG via Digital Broadcast/IP) – see Figure 1.

The practical trial is planned for the fall of 2015 where road works information is provided both via WLAN (DENM over ETSI G5) and service providers (TPEG protocol over DAB or IP). Necessary information for the TPEG feed is published on the MDM (as DATEXII). In preparation of this trial, a series of preparation workshops is planned.

This practical trial is the first attempt to create a holistic view on (co-operative) ITS and to harmonise across delivery technologies, and ITS standards. This practical trial should provide insights and answers to the following questions:

- 1. What are **necessary information/warning items** when driving towards roadworks from afar (e.g. 50km out) unto approaching at close range (100's of meters); **when to inform** a driver?
- 2. What is needed to ensure a **consistent user experience**, even though information is provided along the way via different channels with different encodings, different location precision, with different timeliness of information?
- 3. What **standards extensions** (DENM / DATEXII / TPEG) shall be initiated to ensure such a consistent user experience?

This practical trial should be interesting for OEMs, receiver manufacturers, and service providers. The remainder of this document provides further details of this trial and plans (see Figure 1).

Your participation is kindly invited!

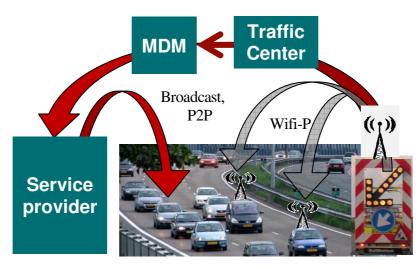


Figure 1: Road Works Warning concept with feed to the Mobility Data Marketplace (MDM) and Service Providers

2 Overview and scope

Road Works Warning (RWW) is one of the so-called "day-1" applications of Cooperative ITS using ETSI G5. The aim of the Road Works Warning service is to warn and inform vehicles approaching a road works site directly via ETSI G5 "wifi-p" communication, in addition to the conventional signage means. The exact location, start and end time and changes w.r.t normal situation will be provided on basis of the location of the road works safety trailers, as shown in Figure 1, right side. In the Austrian-Dutch-German C-ITS Corridor, the Road Works Warning service is the first ETSI G5 based Cooperative ITS application to be tested.

In the German C-ITS Corridor, Road Works Warning messages are checked and enhanced by a Traffic Center (when a connection exists), and then sent back in an elaborated form to the Road Works Safety Trailer for dissemination via ETSI G5 to approaching vehicles. Additionally, the checked information on the Road Works Warning is passed on to the Mobility Data Marketplace (MDM) where traffic information service providers can collect these, and incorporate Road Works events in traffic services transmitted over broadcast channels such as FM-RDS or DAB, or via peer-to-peer mobile internet connections to in-vehicle devices as shown in Figure 1, left side.

The link to MDM and long range communication ensures that Road Works events can reach the vehicles much earlier in their itineraries, than is possible via short-range ETSI G5 communication alone. Nonetheless, then information on the same Roadworks event will reach the vehicle via different channels and protocols.



The scope of this (add-on) trial, as shown on the left, is to ensure that the information provided via the MDM can reach the vehicle early on, but still allows coherent and consistent information to the presented to a driver as the vehicle approaches the Road Works event.

A preliminary outline of this project is given below:

September 4th: Workshop 1 TPEG + ETSI G5 Stakeholder interests; scenario planning

- What are Stakeholder interests, success factors, and learning points?
- What are relevant test scenarios and technical gaps/challenges?
- What data is currently planned to be available via ETSI G5 and MDM?

End September: Workshop 2: TPEG + ETSI G5 trial preparation/planning

- Proposal for test consortia (Service providers Receiver Manufacturers/OEMs).
- Determination of experimental extensions of standards as needed.
- Plan for availability static test data/dynamic data and preparation towards trial.
- Finalization of learning points/Evaluation criteria.

October-November 2015: TPEG + ETSI G5 Roadworks Warning Trial execution

November-December 2015: Workshop 3: TPEG + ETSI G5 Roadworks Warning Trial Evaluation

- Was all needed information available at the right time with expected/required quality?
- What went well, what is in need of improvement?
- What standards extensions shall be proposed?