DRIVE C2X

Accelerate cooperative mobility

Deliverable D37.1

Report on implementation of DRIVE C2X Services/applications management to test sites

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SEVENTH FRAMEWORK PROGRAMME

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Executive summary

The DRIVE C2X project developed a set of reference applications in SP2 which are used to collect sufficient amount of data for an extensive analysis in SP4 based on FOT operations in the test sites. This document describes the implementation of the DRIVE C2X applications in the test sites, which was executed within WP37.

The work package is set to build a bridge between the reference applications, which were developed in SP2 and the data analysis in SP4 with WP 3.7 focusing on the adaptation of the applications in the test sites and their correct operation. Special focus is put on safeguarding the interoperability between the different system parts as the AUDI / GLOSA tests in Sweden could impressively demonstrate. This report documents the applications, their technical test site environments and the experiences made during the implementation.

In principle, the applications are implemented in a given DRIVE C2X test site either

- As unmodified reference applications on reference hardware for controlled testing (Netherlands and Germany),
- As reference applications adapted by adding interfaces to local sources other modifications which are running on compliant hardware (Finland, Sweden, Italy and Spain) or
- As applications similar to the DRIVE C2X in terms of functionality and purpose but originate from different FOT approaches (SCORE@F and simTD in France and Germany).

These applications will be used to collect data sets during the FOT operations in the test sites. Also, massive amounts of data from the naturalistic tests in the national FOT simTD in Germany will be used by the SP4 in the analysis task.

Though several minor technical problems mainly prolonging the adaptation time were noticed during the adaptation work, no major issues were met when adapting the applications. The tests as preparation for piloting and FOT were commenced successfully with the only exception of the TS Sweden where the implementation of the specifically designed HMI is currently concluded as preparation for overall testing.

This report is structured into the following chapters:

Chapter 1 contains the introduction and document boundary definition. The test sites are described in more general way in D33.1, the detailed tests of the reference applications conducted in the test site Netherlands is contained in D32.1. Both are not repeated here.

Chapter 2 provides an overview of the technical ancillary conditions in the different test sites. In principle, all test sites but France and Germany have the same setting and use the reference applications, the latter two participate (also) utilising systems from their national FOTs.

Chapter 3 describes the applications and how they are adapted to and implemented in each test site comprising of the addition of interfaces and other modifications to satisfy the requirements of the local hard- and software environments with France (and Germany) utilising similar, but different applications and hardware setups.

Chapter 4 describes the lessons learned from the adaptation which were mainly related to how the adaptation could further be eased in the future and which aspects should be considered for planning these activities.

These experiences lead to the conclusions and recommendations provided in chapter 5.

The annex holds important supporting information. Annex A holds the abbreviations used in the document.

More importantly, the annexes B and C hold the description of the applications in the simTD and SCORE@F national FOTs. As WP 37.1 implements the applications which generate data for the analysis in SP4, as the data collected via their applications shall be used for analysis in SP4.

As the applications are not identical to the DRIVE C2X applications, a clear understanding on their specifics is essential for SP4.

Historically, The DRIVE C2X applications were first implemented in the test site Netherlands with the task to investigate the reference applications within a defined environment and understand any critical issues which might relate to their implementation. The deliverable D32.1 holds detailed information on these tests and hence the findings are not repeated in this document. These tests formed the basis for the implementation of the applications in the different test sites.

Within the test site implementation activities, the applications were implemented either as reference applications (as in the test site Netherlands) or adapted to a given test site´s ancillary conditions. Among the first group, the test site Germany implemented a wide range of Drive C2X reference applications and tested all operations (including communications) successfully in a controlled environment (the test site also provides data from the national FOT simTD).

The test sites Finland, Italy and Spain implemented several reference applications and adapted them to the local data sources and transmission methods. The applications included, among others, the road weather warning, traffic jam ahead-warning and road works warning-applications and tested them successfully in a controlled and/or naturalistic environment.

Finally, the test site France uses the implementations from the French national FOT *SCORE@F* and adapted the results for use by the DRIVE C2X analysis processes.

As conclusion it can be said that the implementation and adaptation of the applications in the test sites were executed without major issues apart of the finalisation of the adaptation and implementation of the HMI in the test site Sweden, which is, as some minor other issues, still to be solved.