



5G Safety - Phase 2 Experimental development, sub-phase ER.1

Description of the demonstration scenario and test environment specifications

Result ER.1 activity T.4.1 Demonstration scenario and test environment specifications

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1. Abstract

The summary is prepared based on document ER.1: Demonstration scenario and test environment specifications, which is the result of activity T.4.1: Demonstration scenario and test environment specifications. The task is an integral part of the implementation of activities within the second phase of experimental development and includes the definition of the demonstration scenario and the determination of the parameters of the test environment for the demonstration, which is also the purpose of this task. The main goal of T4.1 activity is to define the test environment and the demonstration that will be carried out in the last phase of the project 5GSafety.

The task defines key and typical performance indicators (KPIs) for 5G network and additional specific KPIs defined for each individual scenario. The list is compiled based on the basic categorization of 5G scenarios by ITU and the identified specific capabilities or characteristics of 5G network for the purposes of supporting the operation of the PPDR. The identified scenarios and the associated KPIs will also serve as a starting point for the preparation of the validation plan and implementation, which will be specifically addressed in document ER.3 Final Validation Report.

The demonstration is defined based on its implementation methodology and specification and includes stakeholders and the specific objectives it pursues. The test environment specification includes requirements for infrastructure deployment and configuration, as well as specific requirements for the services to be used in the demonstration. The starting points for the preparation of test environment specifications are the results of previous handouts, research, and development on the 5GSafety project. In doing so, we considered the needs of existing and future users of PPDR services and applications. The specification of the test environment is the basis for Document ER.2 Prototypes 5GSafety PPDR, where the established demonstrator will be described in more detail. The task defines the objectives of a particular product or service to improve them, if necessary, through further research and development.

The definition of a demonstration includes the specific objectives we want to demonstrate in the last phase of the project and a description of the procedures for performing a demonstration of prototype performance. Specific objectives are defined in the set of descriptions of individual scenarios that will serve for demonstration or validation. Demonstration and validation in the relevant environment detail the demonstration scenarios and requirements for the demonstration environment, as well as the objectives that the demonstrated services and technologies will need to achieve. Innovative solutions and technologies are implemented in the scenarios, such as e.g. advanced dispatch and continuous intervention management, use of drones, advanced user positioning, automatic transmission of context when calling 112, establishing a video connection between the dispatcher and the user of the 112 application, using the 112 application and providing priority traffic treatment from the 112 application in mobile network, management of mobile devices for the needs of PPDR and others.

The test environment of the demonstrator will be set up at two primary locations, namely in Kranj in the premises of the company Iskratel and in Ljubljana in the BrihtaLab of the company Telekom Slovenije. The latter location will also serve as a redundant environment for the main layout. The demonstrator will use the available ICT equipment and infrastructure, as well as advanced developed software (DPaaS, application 112 and others), which will be sufficient for use in critical communications. The terminal equipment will support LTE mobile technology and / or 5G NSA. The products, technology, and services we developed during the 5GSafety project will be demonstrated through selected scenarios and finally validated, which will lead to a concrete decision on whether the functions of 5GSafety services meet the set expectations. The performed demonstration and validation of the planned products, services and applications in the industrially relevant telecommunication environment will prepare the basis for further 5G PPDR development and pilot activities after the completion of the 5GSafety project.