5G Safety- Phase1 Industrial Research, Subphase IR.3

Report on laboratory prototyping and validation for operational communications and disaster scenarios

Result IR.10 activity T.3.3 Operational communications for disaster scenarios

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1. Abstract

The summary is prepared based on document IR.10: Report on laboratory prototyping and validation for operational communications and accident scenarios, which is the result of activity T.3.3: Report on laboratory prototyping and validation for operational communications. The task T.3.3 is an integral part of the implementation of activities within the first phase of industrial research in in context of laboratory prototyping and validation (IR.3 Laboratory prototyping and validation). laboratory or development environment, ie. with fewer interactions with other 5G ecosystem components Security.

The design and testing is based on a user scenario that addresses the resilience of the 5G Safety ecosystem to so-called disaster scenarios. In crisis situations, there are often outages and interruptions in the operational dispatcher centers or networks. This cases are the scenario of disaster for us. The disaster scenario include cases such as technical failures, natural disasters or deliberate attacks on the dispatch system. The modern dispatching system must be resistant to such situations, and in this document we present our solutions and the proposed implementation for resistance to disaster scenarios.

The presentation of the user scenario and disaster scenarios was discussed in the second chapter, where the architecture is also presented. In the second chapter we present and discuss about functionalities of components in the case of disaster scenario where redundant is required.
In the third chapter, we discuss conceptual designs for resilience to disaster scenarios by presenting the design from the perspective of major individual architectural components. We are dealing with access radio network (RAN), the mobile core, the fixed backbone network (IMS) and the oCAS, DPaaS and DPaaS GUI modules. The main task is to present the ways of performing the redundancy of the mentioned components. We present each set of components as it is built, present the architecture and process operation, and also present the safety aspect.
The fourth chapter is devoted to tests in the laboratory environment on components that relate to disaster scenarios and are strictly necessary to perform redundancy. In this last chapter, we also present the test development laboratory environment, the tests themselves and the implementation. In addition to the tests performed, we also provide guidelines for the future in the experimental phase.