

5G PERFECTA

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5G and next generation mobile Performance compliance testing assurance

The main objective of 5G-PERFECTA has been to develop the technology to assure the 5G service quality based on data processing, that is, to guarantee that the quality of 5G networks is aligned with the expectations of bandwidth, latency and other key performance indicators.

Main focus

The 5G Infrastructure will deliver solutions, architectures, technologies and standards for the ubiquitous 5G communication infrastructures of the next decade. This new high-performance network needs to be effectively tested to assure that 5G technology is actually offered with high quality levels. The main focus has been to develop the technology to assure the 5G service quality. For this purpose, a series of innovation activities have been proposed in order to establish a reference architecture for supervising 5G networks by means of monitoring devices that allow measuring 5G performance indicators in order to evaluate the real performance of 5G networks. The project has developed automated processes, tools and mechanisms ensuring 5G service quality, based on data processing and analytics approaches. The technological innovation fields of 5G PERFECTA project are related to develop a framework for new gener-

ation mobile services on beyond 4G mobile platforms, including some 5G performance compliance testing assurance. The proposal is extremely well timed, since the 5G market is expected to boost just at the end of the project, in 2021.

Approach

For this purpose, we have developed a 5G performance compliance testing assurance solution that calculates KPI (Key Performance Indicators) to show the real behavior of 5G network and services. In addition, we have developed automated processes, tools and mechanisms ensuring 5G service quality, based on data processing and analytics approaches. We have defined two-man project scenarios and six use cases. The 5G Network Performance scenario provides the performance monitoring information and includes the testbed and measurement scope for 5G network performance analysis. The 5G Quality Assurance scenario provides the quality of service monitoring information, including the time sensitive networking mechanisms, the deployment of critical services with performance guarantees and the QoS observability for 5G. See in figure 1 the project scenarios and use cases.

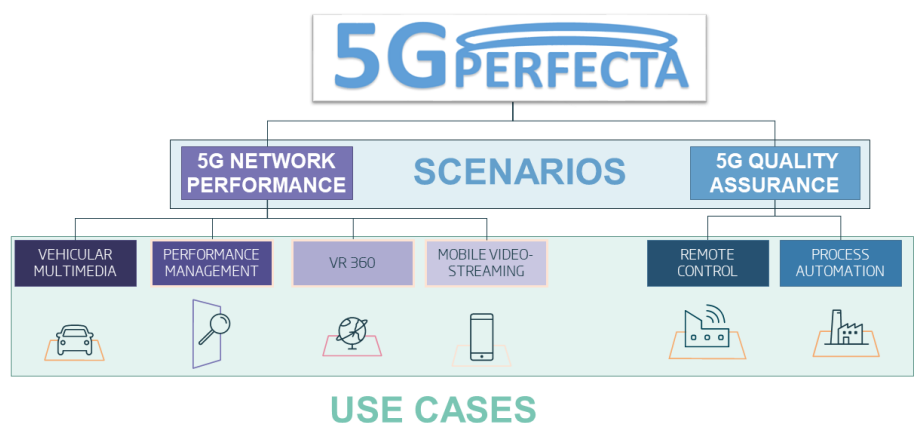


Figure 1: 5G-PERFECTA scenarios and use cases

Achieved results

The project has provided capabilities that improve efficiency in content delivery by means of user-oriented quality assurance capabilities, which will be able to attend a significant part of the 5G revenues expected for the following years. The outcomes of this project will allow network and service providers to deploy the right 5G infrastructure to run the most advanced video technology business cases before final 5G standardization is complete. 5G-PERFECTA will provide a monitoring platform that deliver real measurements of several new feasible services over the new generation mobile networks, tested on a real infrastructure. These performance indicators will allow to determine the suitability of new mobile infrastructure, including 5G to support next generation applications in mobility, such as remote driving, medical care, logistics, retail, smart-cities, Industry 4.0, etc.

Impact

The 5G Performance compliance testing assurance solution will help the Digital Providers (Operators, Service Providers, Applications Providers, etc.) to evaluate how next generation services are performed on the 5G networks for different purposes: measure of 5G network performance, validate the services on 5G networks, monitor the QoS and QoE, launching of new applications, 5G dimensioning

About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new „Smart Connected World“ paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies

and capacity planning, etc. In addition, there is a very strong focus on end users in 5G PERFECTA, since they are the real beneficiaries of the correct behaviour of the 5G network. The impact of 5G-PERFECTA comprises twenty new and improved products as well as 86 dissemination activities have been carried out: 42 papers in scientific journals and conferences, 10 contributions to standards, 9 Master theses, 1 PhD theses; and 22 other exhibitions, dissemination events and activities.

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Public Authorities

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or universities and research organizations. Even companies outside the EUREKA countries may get some possibilities to join a Celtic-Plus project under certain conditions.

