Fundusze Europejskie dla Mazowsza

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NOTEL

Project
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Optimization and enhancement of the platform for analyzing and assessing service quality in next-generation 5G mobile networks

Fundusze Europejskie dla Mazowsza | Rzeczpospolita Polska | Dofinansowane przez Unię Europejską | Mazowsze. serce Polski

The objective of this project is to develop, through research work, innovative functionalities and modules for the RFBENCHMARK CrowdSource platform.

As part of the research, a new microservices architecture will be designed for the existing data collection platform; new methods for visualizing the results of mobile device quality tests will be developed on an interactive web map; HEX binary packet decoders will be implemented and the reading of radio frames transmitted and received by mobile internet access devices will be enabled; and, finally, a functionality for building customer versions of the RFBENCHMARK software will be developed. The work carried out will translate into innovative features that will distinguish the RFBENCHMARK CrowdSource solution from competing offerings.

Project beneficiaries

The data visualization approach and the unique combination of available crowdsourced data with other data sources (data enrichment) enable the platform to be used not only by mobile network operators. It will also allow, among other things, the creation of "genetypes" of mobile app users, detection of user mobility patterns, analysis of how they use mobile networks, and detection of whether users are in open spaces or inside buildings.

New data sources enriched with access network (RAN) data enable a new offering for commercial companies and public institutions, addressing, among other things, problems related to access to critical telecommunications infrastructure for services.

The potential to create a new market is also driven by additional applications of the new analytics, such as determining user profiles present in a given area, or verifying network coverage and quality on roads for the purpose of validating latency for real-time services.

The project outcomes will also have social relevance.

One of the key innovation outcomes will be improved measurement accuracy and improved visualization of analytical data within the RFBENCHMARK platform, which—alongside its commercial offering—also provides free comparison of access network quality and services offered by mobile operators and independent entities. Access to the analytics platform and the mobile application increases awareness among mobile network customers regarding coverage and service availability in a given area. The presented data can be used by companies to improve service quality by selecting the best internet access and voice services. The same data can be used to assess potential risks related to lack of access to telecommunications infrastructure for services (critical communications). Improved measurement accuracy and data visualization will also significantly enhance the ability to assess the quality of services and access to applications such as, among others, mObywatel.

Project tasks

Task 1
Development and implementation of an advanced, scalable microservices architecture, specifically tailored to enhance the existing data collection platform.

Task 2
Creation and refinement of innovative visualization methods aimed at presenting the results of mobile device quality tests on an interactive, user-friendly online map.

Task 3
Implementation of a specialized HEX binary packet decoder.

Task 4
Creation of a fully automated set of Continuous Integration and Continuous Delivery (CI/CD) tools.

Completion of the planned project stages will enable the Applicant to introduce an innovative product to the market. This solution will provide enhanced capabilities for monitoring and in-depth analysis of service quality available in 5G networks, materially complementing and expanding existing network monitoring offerings. The product will deliver unique, advanced diagnostic capabilities, allowing users to better understand and optimize the experience of using 5G services.

The solution proposed by NOTEL will offer a broad range of configurable mini-applications that can be precisely tailored to various functionalities and specific customer requirements. Such flexibility will increase the usefulness and applicability of the platform across different contexts.

The project assumes research and development of innovative methods and solutions related to analyzing and assessing service quality in next-generation 5G mobile networks. Innovations will include geolocation techniques intended to improve and accelerate data visualization, enabling faster and broader access to valuable information. In addition, the project provides for the development of automated methodologies for generating binary applications intended for users in the telecommunications sector, further increasing operational efficiency and ease of use.

Target groups

1. Telecommunications and mobile network operators
2. Telecommunications equipment vendors and manufacturers
3. Internet service providers
4. Individual private users

The Applicant will develop and internally deploy innovative functionalities on its own platform, leveraging and significantly modernizing its current infrastructure in order to achieve the project objectives and deliver greater value to users.

Project duration:
1 January 2025 – 30 April 2027

Total project value:
6,222,661.55 PLN

European Union financial contribution:
2,583,589.29 PLN