

/ E2E-aware Optimizations and advancements for the Network Edge of 5G New Radio

ONE5G Demonstration in Mobile World Congress 2018

Serving underserved areas through 5G (IoT and big data) technologies

A critical infrastructure and agricultural use case

ONE5G Scope and Approach



Approach (Work areas)

- System Requirements, Integration, and Evaluation
- E2E multi-service performance optimization
- Multi-antenna access and link enhancement
- Proof of Concept and Trials (lead: WINGS)
- Dissemination, Exploitation and Standardization

Architecture

Verticals - IoT applications



1. Physical domain and sensors/IoT

Low cost 5G network



2. 5G connectivity and cloud platform

Analytics



3. Big data platform (analysis and predictions)

Dynamic Dashboard



4. Visualization of predictions, real-time and historical data



- Temperature, humidity, sensors
- Video cameras



- Reconfigurable architecture (USRPs, OAI)
- Slicing, resource allocation



- Data Management and Analysis
- Request/Analysis for/ of extra data (e.g., video feeds)



- Visualization of events and actions-impact based on stakeholder requirements
- Event identification (e.g. agricultural incident)
- Network slice monitoring

Main Benefits

Technical Benefits

- Efficiency of 5G technologies in supporting the requirements in rural and suburban areas (underserved areas) and in the management of critical infrastructures
- Technologies for serving traffic mMTC, eMBB (when needed), URLLC (under conditions)
- Low cost (CAPEX/OPEX) through flexible creation and management of slices

Business-Societal Benefits

- How 5G can be used for narrowing the digital divide between megacities and underserved areas
- Retaining a low cost 5G network in rural and suburban areas
- Win-win situations for various businesses