



CELTIC-NEXT DAY

02nd December 2020, 09:30 – 16:00 CET



Pitch of the Project Proposal (USWA) Ultra Scalable Wireless Access



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Challenge



For future Digitalization, it is vital that wireless systems are:

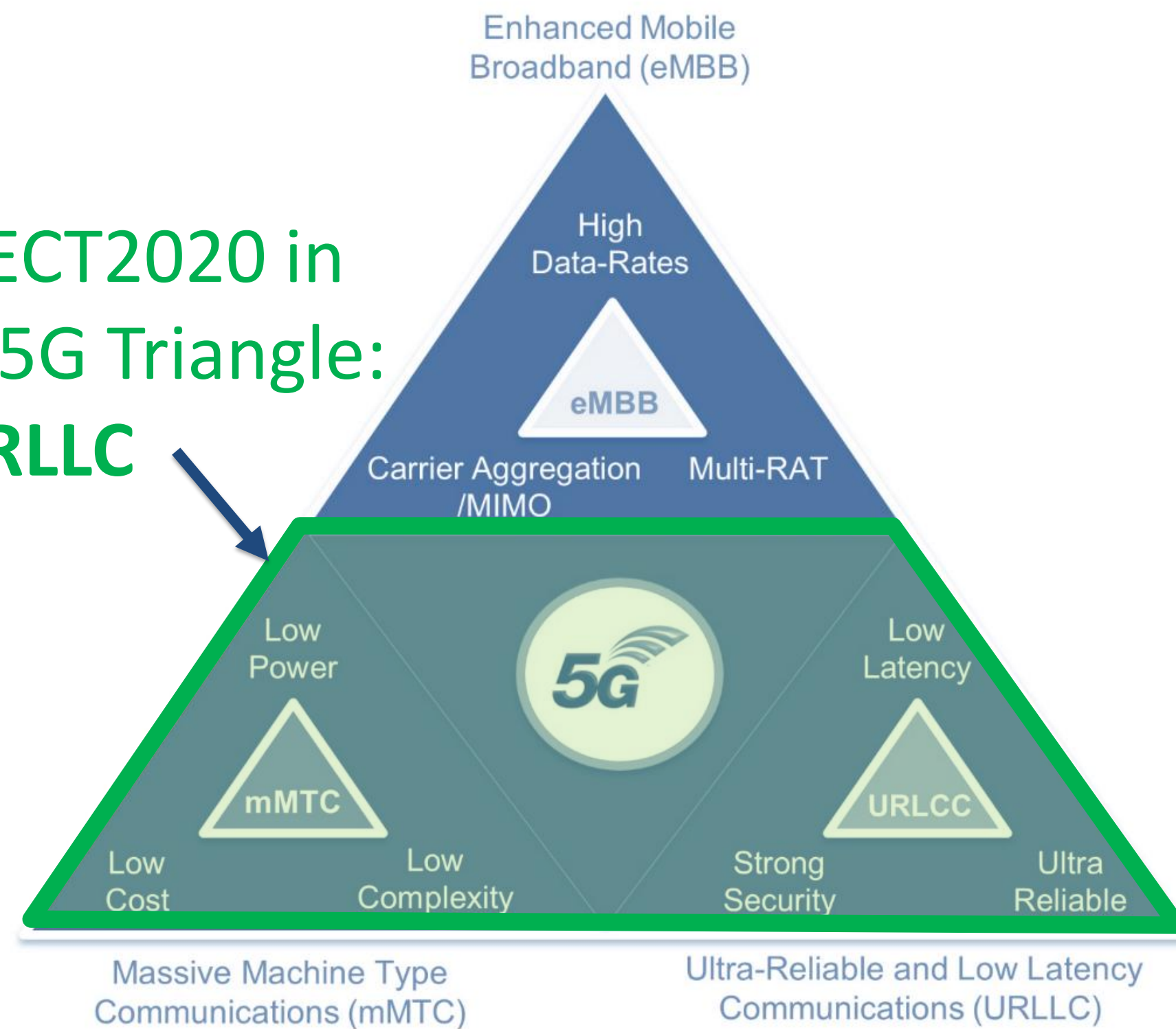
- *Easy to deploy by anyone and anywhere.*
- *Support different system architectures and network topologies.*
- *Future proof scaling in terms of: density, network size enabling “sensor dust”, and low latencies.*
- *Enable new innovative products **without significant legacy.***
- *Allow development of **cooperative use cases** and addressing radio technology and spectrum usage.*

We believe that distributed wireless systems will play a vital role in future Digitalization.

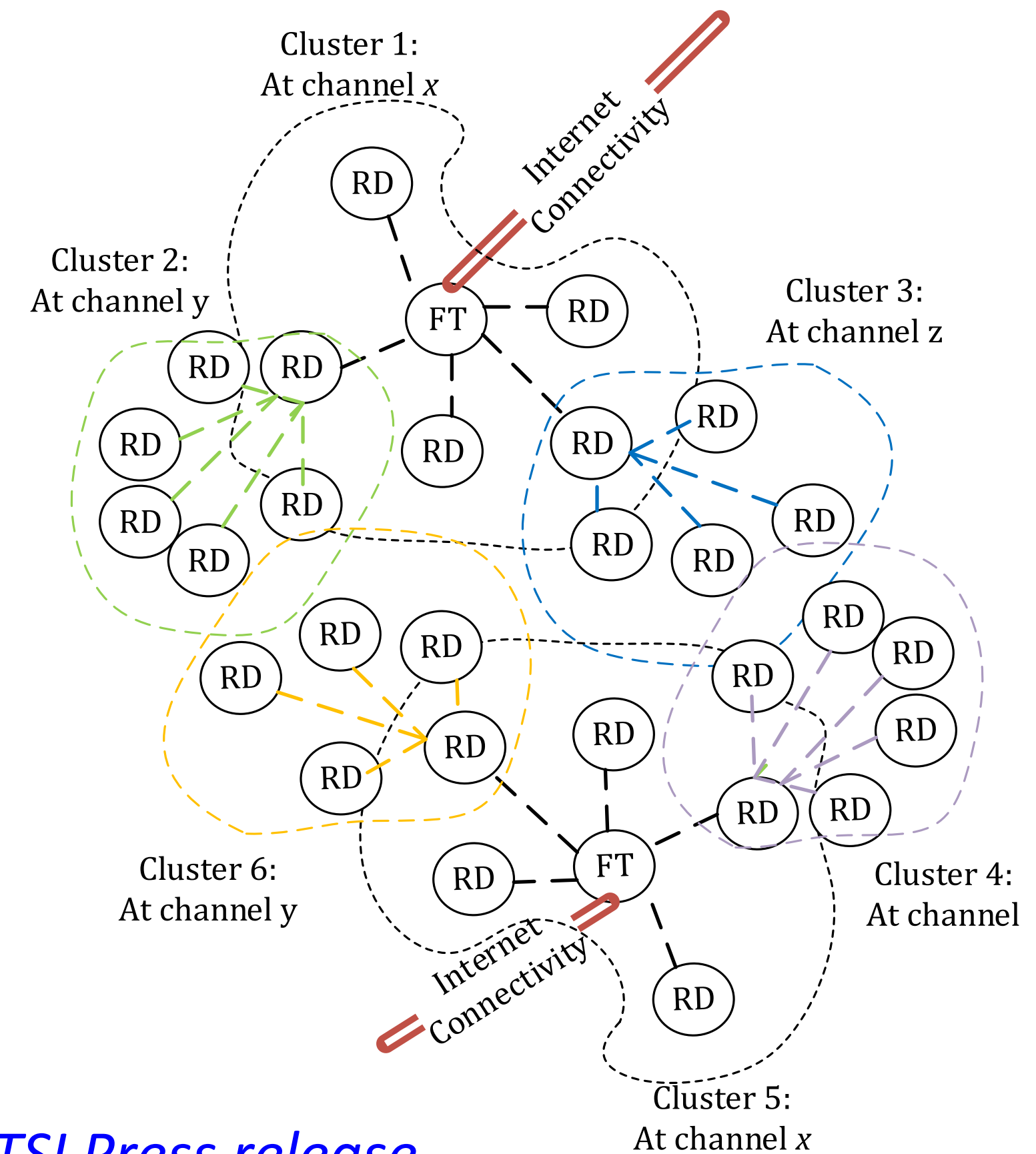
Our Solution

DECT2020

Scope of DECT2020 in IMT2020, "5G Triangle: mMTC + URLLC



Meshed Networks



First DECT-2020 Radio Interface Standards released June 2020 by ETSI. [ETSI Press release.](#)

Project Idea



- ***Establish Product-Like Proof-of-Concept Implementations (PoC) of DECT2020 Technology for Massive IoT and URLLC use cases***
 - *Gather applications requirements from the industry*
 - *Develop system architecture*
 - *Develop new features on top of Release 1.*
 - *Implement PoCs*
- ***Validate the performance of the PoCs for Mesh Networks***
 - *mMTC*
 - *URLLC*
 - *Spectrum management and co-existence*
- ***Dissemination of Results***
 - *Input to Standardization*
 - *Publications*

Project setup



- ***Project consortium to be ready during early 2021***
- ***CELTIC project application for spring call 2021. (Deadline April 12th)***
- ***Project for 3 years, starting at 3Q2021.***
 - *Each WP and Country to have own project contact persons.*
- ***Current Work Packages, in addition with project management:***
 - *Application Requirements and System Architecture*
 - *IoT mMTC in Mesh Network,*
 - *URLLC in Mesh Network*
 - *Spectrum management and co-existence in Mesh Network*
 - *DECT-2020 Proof Of Concept Implementations*
 - *Standardization and dissemination*

Current Partners



Germany



Spain



Sweden



Turkey

ACD



New Partners



- ***We are looking new partners mainly from existing countries:***
 - *Germany, Sweden, Finland*
- ***Type of industrial partners we are looking for:***
 - *End Users of wireless solutions with unsolved challenges*
 - *Equipment manufacturers*
 - *Wireless Testing Facilities*
 - *ASIC design, development and manufacturing*

Contact Info



For more information and for interest to participate please contact:

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Appendix

MORE TECHNICAL DETAILS

Technology Basics



Supported system architectures:

- Mesh network topology
- Point-to-Point and Point-to-Multipoint Links
- Local Area Wireless Access Networks in Cellular Network Topology

Radio Interface Design

- Symmetric OFDM radio with scalable numerology
- TDD with operating BW between 1.728 MHz and 221.184 MHz
- Data rates from ~1 Mbps to 1.3 Gbps with single stream depending on BW
- MIMO up to 8 streams and beamforming
- HARQ with adaptive modulation and coding.
- Technology specific band on 1.9 GHz, support for IMT-2020 and ISM bands below 6 GHz.
- Scheduled and contention-based (with LBT) access.
- Network Co-existing and interference avoidance features inbuild.
- Massive scale with up to 4.2 billion devices in single network
- AES128 for ciphering and integrity protection.
- Release 1 specifications available [here](#).

