



CELTIC-NEXT Pitch

28th August 2020



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



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Challenge



5G TNF

Is there Radio technology that would be:

- *Easy to deploy by anyone and anywhere.*
- *Open for new innovative products without significant legacy.*
- *For futuristic research to develop co-operative radio use cases and spectrum usage.*
- *Futuristic scale in terms density, network size enables “sensor dust”, and low latencies.*
- *Support different system architectures and network topologies.*
- ***What are different options for future Digitalization?***

WIREPAS

Wirepas' mission is to **scale up global efficiency, safety and sustainability** by developing scalable and economical wireless connectivity IPs. Wirepas focus on **mesh stack software**, related utility and value add software, end-to-end references and partner ecosystem.

CONNECTIVITY

Most reliable, optimized, scalable and simple to use connectivity for massive IoT.

SOFTWARE

Mesh Software makes any wireless IoT device to be access point for other devices.

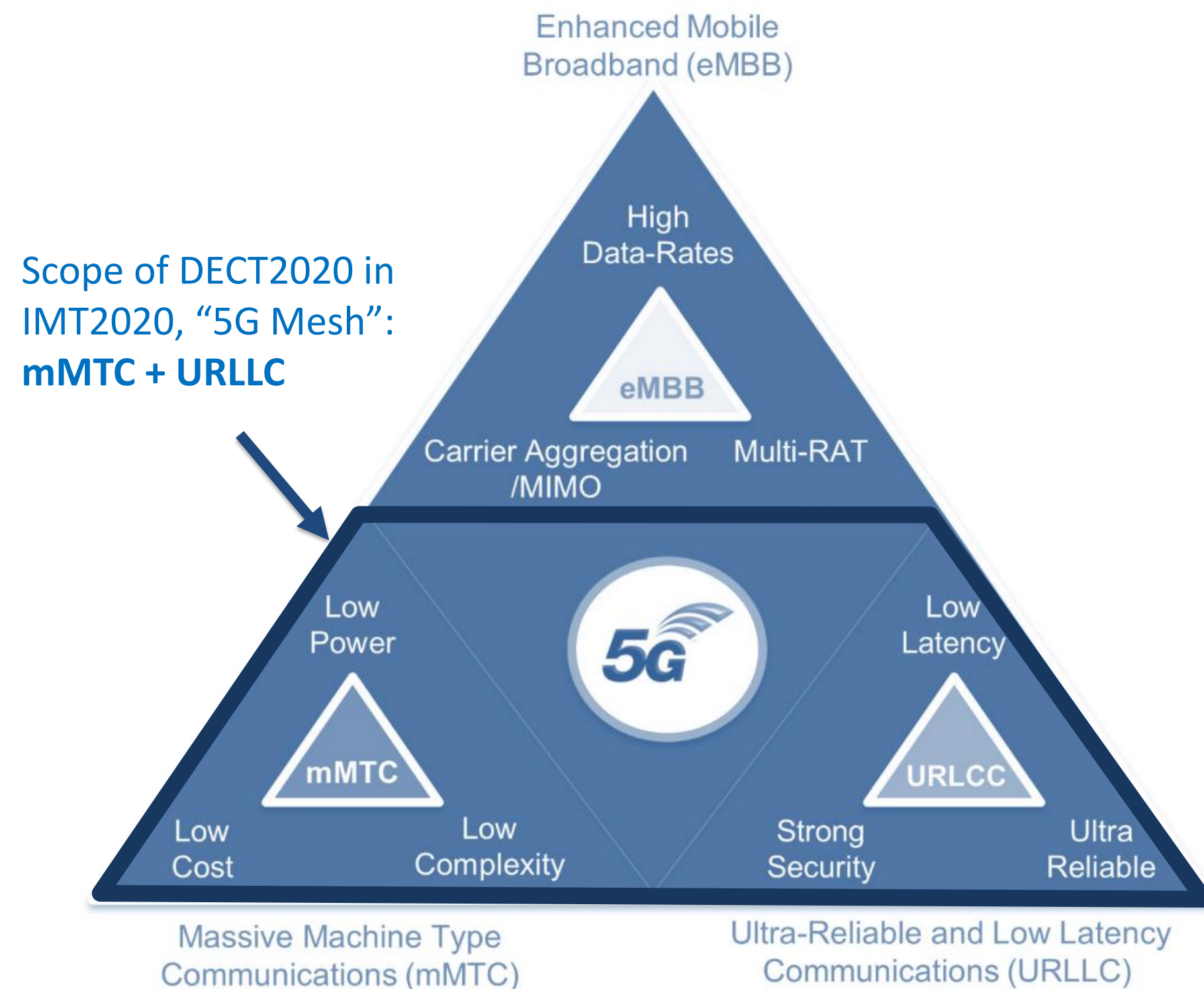
LARGE SCALE

Optimized for large scale deployments by providing lowest cost of ownership.

ECOSYSTEM

Ecosystem partners build hardware and turn-key solutions for end customers.

New Option!



**Logistics, Industry4.0, Energy, Lightning, Professional Audio*

Established standardization process:

First DECT-2020 Radio Interface Standards released June 2020 by ETSI.

Wider global adoption underway:

To be approved by ITU-R as part of IMT-2020 technology family during 2021 complementing 3GPP solutions.

Opportunity to revitalize European technology:

Strong support from various industry sectors and European Administrations*

New innovation opportunities:

New Radio Interface Technology for chipset vendors, protocol developers, product developers and universities.

Differentiate with business case and make impact and nurture digitalization business in Europe

Technology Basics

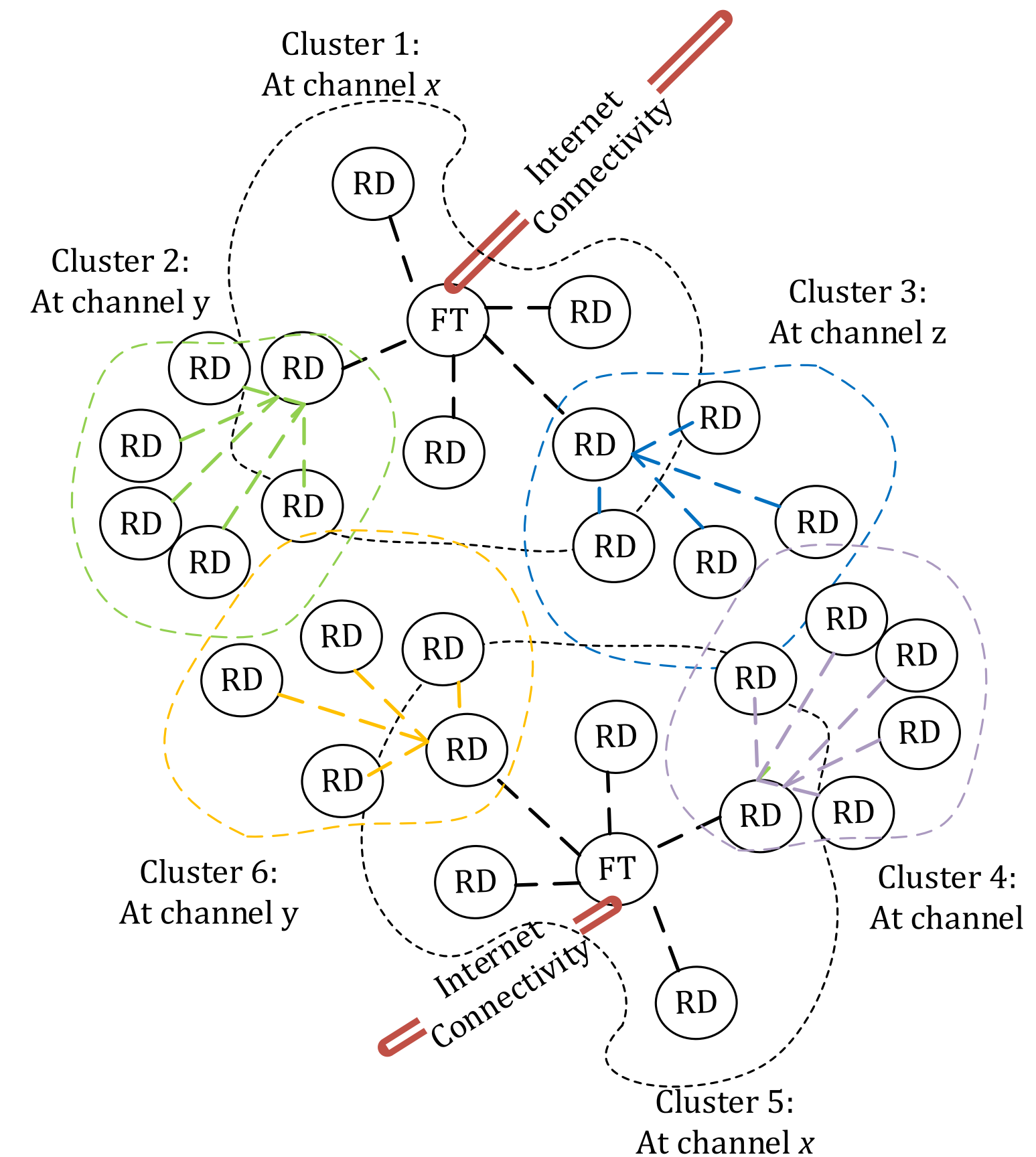


Supported system architectures:

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

Radio Interface Design

- Fully symmetric OFDMA 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, and 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 upto 4.2 billion devices in single network
- AES128 for ciphering and integrity protection.



Research Areas



Proposal brings many new opportunities for:

New chipset designs

Radio algorithm research development

Wireless protocol implementations

System analysis of different networks topologies



Results will be:

Publications & Thesis & Collaboration

Proof of Concept implementation(s)

Set of totally new innovative products driven by market and end user needs.

Standardization collaboration for Release 2 and 3.

Partners



Consortium Building Sessions



*Please indicate if you will participate in the Consortium Building Sessions in
September*

*This is a perfect opportunity to build an international consortium.
These sessions will be announced in the*

CELTIC Eurogia Proposers Day on 15th and 16th of September.

YES, we will participate

***Free registration, please visit:
www.celticnext.eu***

Contact Info



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