Celtic-Plus Proposal
Proposers Day
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5G++
Project Proposal

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Teaser

• 5G networks are going to bring new capabilities to current cellular communications
  • More BW, higher bitrate, x100 users, IoT integration, self-management, etc

• However, some areas and systems might not be able to enjoy such benefits:
  • Rural isolated areas, open-sea oil platforms, maritime users, airplanes

• Satellite networks can provide the required backhauling to 5G networks and bring 5G benefits to challenging places
Novelsat Profile

Novelsat NS3 & NS4:
Outperform any other waveform available in the market

Novelsat SW Duet™ CeC:
Double traffic/same BW

Superior mitigation of:
- Jamming & Interference
- Weather fluctuation
- Saturation

Software Defined Architecture:
SW/FPGA
Low to High data rates – 0.1-850Mbps
Dual Channel Mode - Broadcast & IP in a single Carrier

Low Latency
Proprietary IP Encapsulation

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Novelsat Profile (II)

Make More Money
- More TV Channels, Same Bandwidth. OR.
- More Data with Same Bandwidth

Save Money
- Same TV Channels with Less Bandwidth. OR.
- Same Data Rate with Less Bandwidth

Video Broadcast

Data Communications

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BCE Profile

- Broadcasting Center Europe (BCE) is a major European player providing technical services in the fields of TV, radio, digital media, telecommunications and ICT.

- Facts (2016):
  - Turnover: 45,1 mio€
  - Staff: 208

- Foundation:
  - After 50 years of services within the RTL Group, BCE was created in 2000 as an independent company.
BCE Profile (II)

35 Channels broadcasted

70+ customers File-based connected

400 + customers

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BCE Profile (III)

Television
- rt nederland
- RTL TVI
- MTG

Radio
- SFR SPORT5
- arte
- RTL CBS

Content
- NBCUniversal
- ENEX
- 20th Century FOX

Other
- UTA
- CBS
- FremantleMedia
- Bouygues
- Assemblée Nationale

More references on:
www.bce.lu/references/

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1. **Intelligent backhauling of 5G Hotspots in areas of no or low 5G coverage**
   - Maximize BW utilization: BW on Demand
   - Increasing Resilience: Radar detection, CW detection, ACM
   - Reducing the number of transponders

2. **Content Delivery Networks (CDN):**
   - Fully transparent and redundant IP Infrastructure from Ingest to distribution
   - Allowing any kind of ingest
   - Optional cloud based “content enrichment”
   - SMPTE ST 2022-6/-7 (stream redundancy)
   - AES67 for audio signals in the same network
   - SMPTE 2110 Standards/Interop
   - Digital Rights Management: entitlement for distributed content, stronger encryption using OTA key management
   - Distribution to 5G infrastructure or any kind of IP-based “network “ carrier

3. **Bandwidth optimization**
   - using the remaining BW for additional applications (broadcast and IP traffic in a single carrier)
Proposal Introduction (2)

Expected Outcomes & Impact:

- Introducing a fully IP-based workflow with 5G input and output possibilities based on the latest industry standards
- Convergence of 5G and Satellite networks to the CDN to support IP enabled video contribution and distribution (as an usage example)
- Supporting DRM with enhanced security in CDN
- Leverage 5G capabilities bringing 5G to challenging scenarios using satellite communications
- Maximizing BW utilization in satellite communications
- Enhancing resilience in satellite communications

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Partners

Evolving Consortium:
• NovelSat (Israel)
• BCE (Luxembourg)
• Nuromedia (Germany)
  • VRT (Belgium)
  • Turkcell (Turkey)

Looking for partners with the following profile:
• Telecom Operators (Both 5G & Satellite Operators)
• Digital Content Providers
• Industry and Academic partners researching on 5G & Satellite convergence
Contact Info

For more information and for interest to participate please contact:

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