



Celtic-Plus Proposers Day

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5G++ Project Proposal



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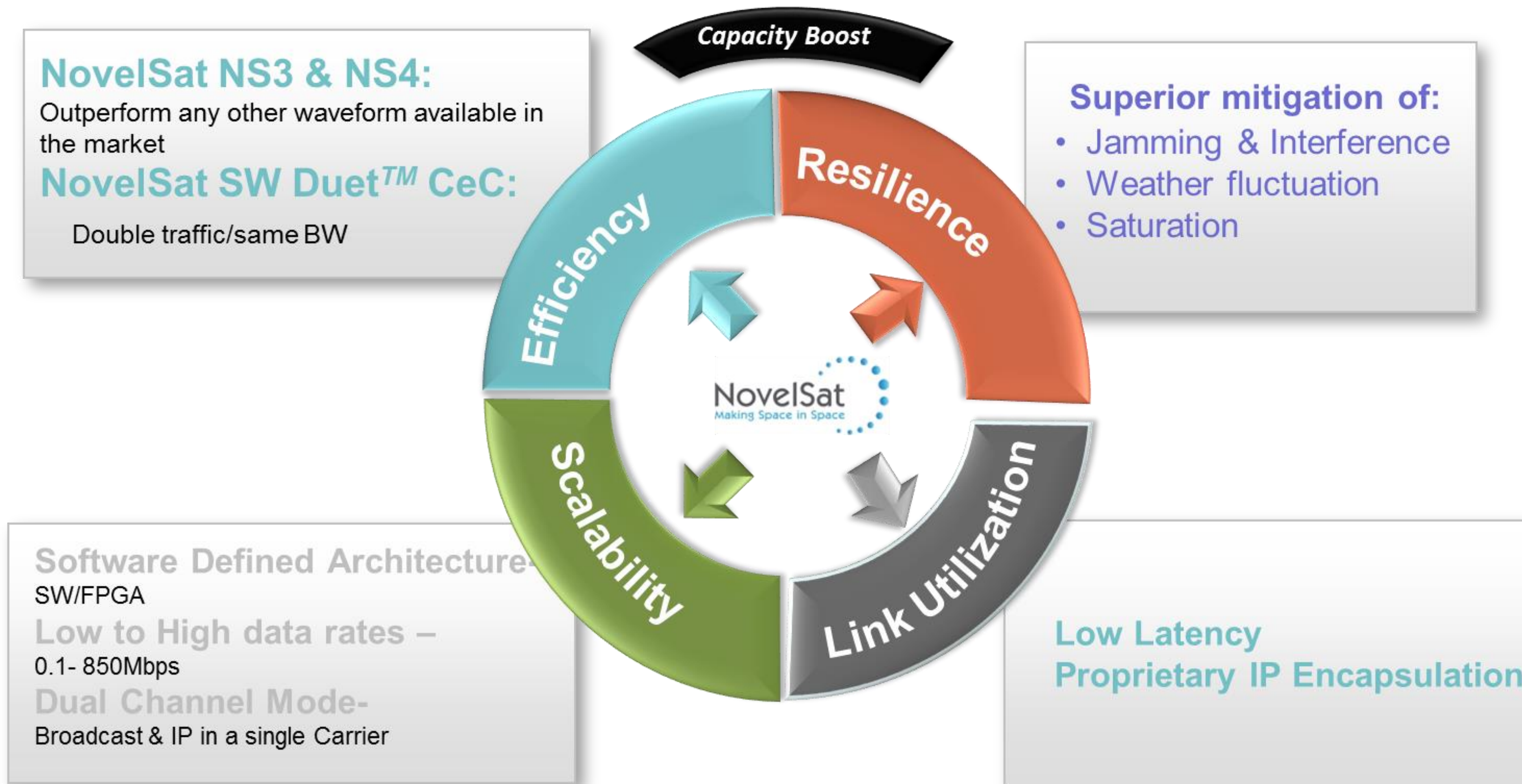


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Teaser

- 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 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



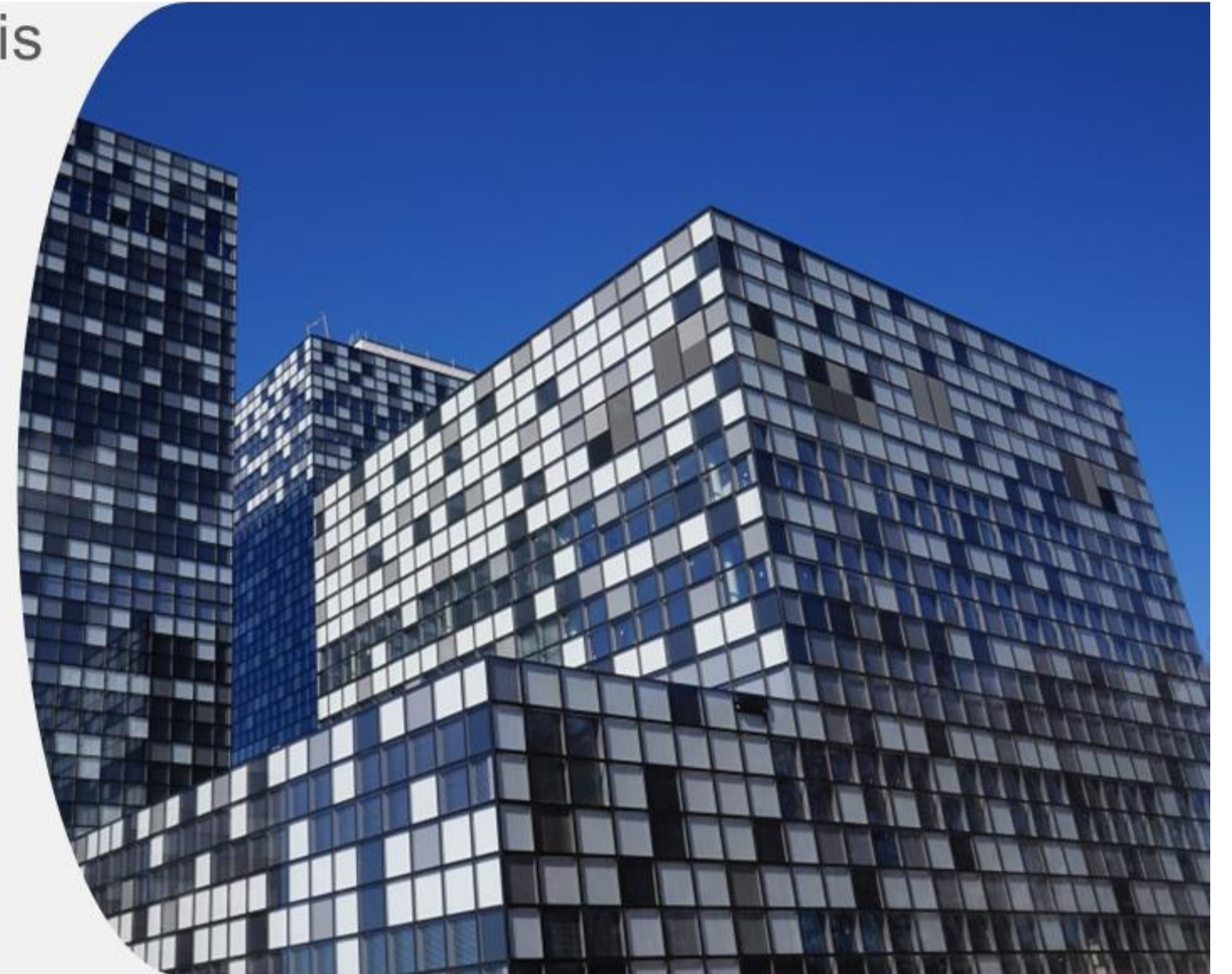
Video Broadcast



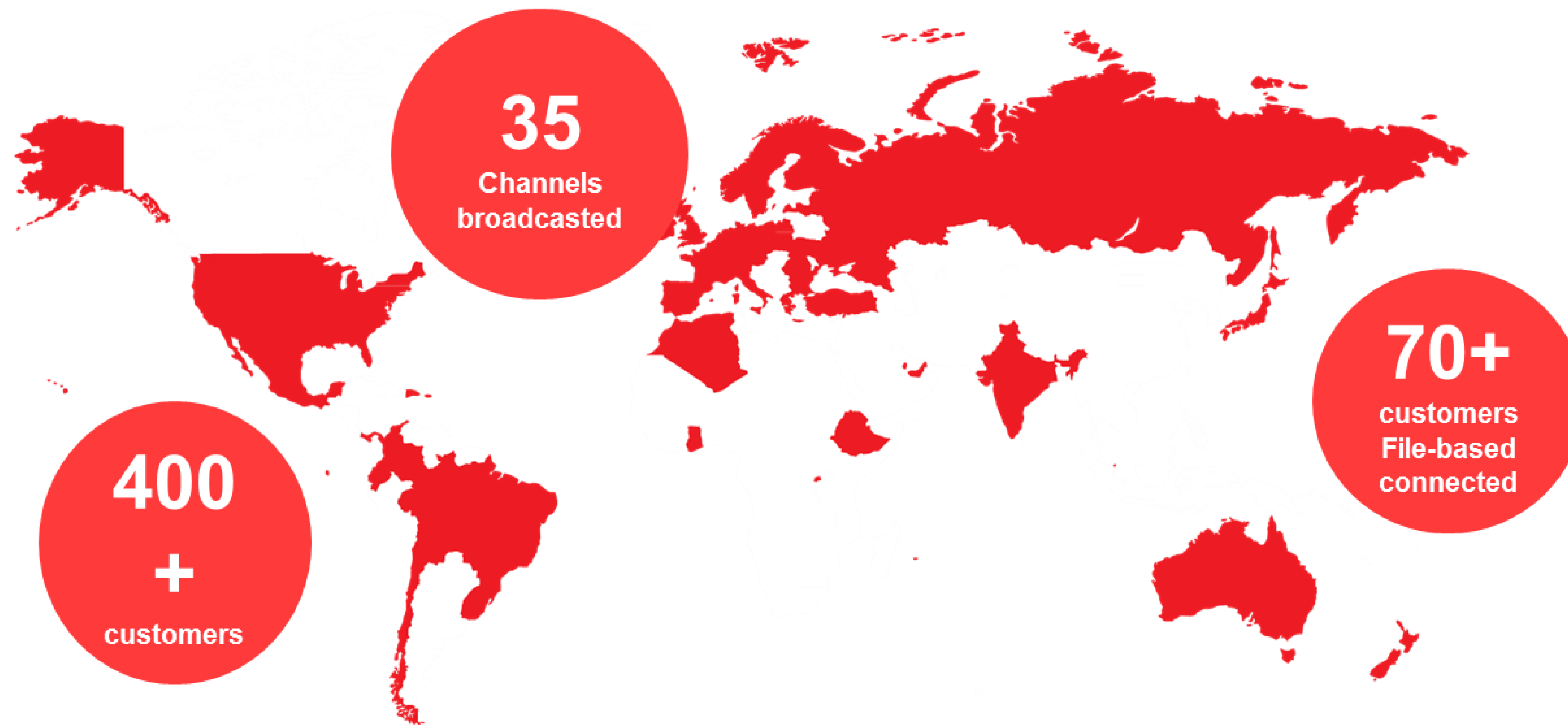
Data Communications

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)



BCE Profile (III)



Television Content



Radio Other



Proposal Introduction (1)



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

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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