

Satellite beyond the Backhaul Opportunity: Integration with “the Network” – A New Paradigm

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ITU's vision for IMT-2020 (5G)



Fiber-like speeds

Multi-Gbps peak rates for both download (consumption) and upload (sharing)



Uniform experience

Reliable performance, e.g. 100+ Mbps, even in challenging environments or at the cell edge



Lower latency

As low as 1ms for interactive content, as well as reduced buffering requirements and lag



Lower cost-per-bit

Significantly lower than today's networks to efficiently support cost-effective data plans

10x

experienced throughput

10x

decrease in end-to-end latency

10x

connection density

3x

spectrum efficiency

100x

traffic capacity

100x

network efficiency

5G early focus

- As deployments of 5G start in mid-band or millimeter wave coverage will be limited compared to 2G, 3G and LTE that run on lower frequency bands.
- However a deliberate strategy as you go where your early use cases are, enhanced mobile broadband...
- Advanced antenna technologies using massive MIMO and beam forming improve link budgets over previously technologies but still...
- Low frequency spectrum is needed for cost efficient rural coverage.



Perhaps we are looking at 5G all wrong!

- 5G according to ITU and 3GPP is all about a new radio access network and new spectrum...
- But there is a need to use a broader definition:

“5G brings together all previous mobile standards, wired networks, IP services and Internet of Things under a common framework”.

- Important innovations are happening around how networks and services are created and made more open and accessible.
- It is not only about the RAN. It is about **The Network!**

Increase satellite's relevance

- Innovation in software, automation, machine learning, APIs and open standards will drive significant opportunities that we can start leveraging today! Move the focus from the base station to the Network!
- It is time for satellite to step out of the shadows!
- There is a huge opportunity in integrating satellite services with terrestrial networks and adopt open standards and frameworks.
- In a new world of software defined networking, distributed services and open APIs satellite has all the right attributes and some very unique selling points!
- Key is to make satellite look and feel seamless to the Network
- One excellent example of this is SES and their MEF CE 2.0 certification – satellite now looks and feels like any other terrestrial Ethernet service to Telcos and ISP's.



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