CCS Enabling 5G

Self-organising mmWave access and backhaul

Metnet 12Gbps unlicensed 60GHz mmWave

Metnet nodes connect autonomously to form flexible MPtMP (mesh) self-organising (SON), self-healing links that dynamically reconfigure to optimise performance and spectral efficiency as LOS or NLOS circumstances or traffic levels change. The CCS Metnet system enables mmWave deployment in a flexible, organic way allowing customers to start small and grow as they go.

Applications include:

- Small cell backhaul
- Pre-5G FWA and enterprise
- Wifi backhaul
- Fibre/G-Fast extension
- CCTV backhaul

Metnet's next generation mmWave system has an initial switching capacity of 12Gbps, low latency and self-organisation capabilities. Operating in the unlicensed mmWave spectrum band from 57GHz to 71GHz together with proprietary interference avoidance technology to manage coordination and co-existence with other 60GHz systems, Metnet will deliver high QoS and high capacity with the lowest TCO. Metnet CPE's can be connected into standard mesh nodes to support high capacity and low cost FWA subscribers.

Metnet is capable of implementing both Wi-Gig and future 5G standards for both access and backhaul. Harnessing multiple high capacity phased array transceivers, Metnet's NG solution roadmap is geared up to provide 100Gbps node switching capacity as standard. The next generation mmWave platform evolves to support 24GHz-42GHz with potential for E-band, W-band and other bands as required. Metnet's core SON capability provides the backbone for the end-to-end QOS, interference control, synchronisation and scalability required – for ultimate 5G performance and next-generation future-proofing.

Metnet 12 Gbps	
Frequency band	60GHz mmWave unlicensed Full 57GHz to 71GHz band
Topologies	MultiPoint-to-MultiPoint (MPtMP) mesh Point-to-MultiPoint (PtMP) Point-to-Point (PtP)
Capacity	12Gbps per Node
Radio Access	Metnet SON utilizing S-TDMA Dynamic TDD Self-organising zero frequency planning, interference aware with time and frequency switching agility

Beamwidth	Wide 300° field of view
Antennas	Beamforming Phase array 16x2 element arrangment 20dBi gain per antenna
Channels	Multiple 2160MHz wide channels 802.11ad WiGig compliant
Modulation and coding	13 levels of adaptive encoding
Transmitter	20 dBm SiGE based
Effective radiated power	40dBM per sector
Range	300m at MCS10 (3Gbps) Up to 1km at lower order encoding rates
Interfaces	Up to 4 Ethernet interfaces 2 x fixed RJ45 100/1000 Base-T 1 x optional 2.5 Gbps SFP (Optical or Electrical) 1 x optional 10 Gbps SFP (Optical or Electrical)
Ethernet services	Native Ethernet 802.1Q (VLAN tagging) 802.1p (Class of service) Differentiated Services Code Point (DSCP) 802.1ad (QinQ)
Power	100V - 240V AC / 50 - 60 Hz 48 V DC and PoE (1 x PD interface IEEE 802.3bt)
Dimensions	137W x 257H x 100D mm
Weight	3.3 kg

All specifications are draft and subject to change.

November 2017

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