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CEWiT INDIA

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IAB Enhancements for Rel. 18

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Motivation

- Focus of Rel. 17 IAB discussions
  - Duplexing enhancements
    - Support for FDM, SDM and IBFD in addition to TDM
  - Dual connectivity
    - Support for Inter-band inter carrier and intra band inter carrier DC scenarios

- Scope of Rel. 18 IAB discussion
  - New deployment scenarios
  - Inclusion of advanced NR features
  - Refinements to topics on Rel. 17

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Mobile IAB

- IAB node mounted on vehicle or moving platform
- Advantages: Coverage extension, serving UE on board, reduce impact of movement on UE
- Areas of enhancements
  - Enhancements to support variations in backhaul link
  - Enhancements to support group hand over mechanism
  - Enhancements to support NR in backhaul and multi-RAT in access

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Integration of IAB with NTN/HAPS

- Use cases
  - Satellite communicating with an IAB node deployed in a remote area instead on individual UE
  - Treating HAPS as IAB nodes
  - HAPS can act as parent node to several IAB nodes on ground

- Advantage: extend coverage to remote areas, reduce the impact of satellite variations on UE, reduce the number of hops

- Areas of enhancements
  - Impact of large propagation delay in backhaul
  - Impact of differential delay and doppler

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Full duplex IAB

- IAB node performing MT-Tx/DU-Rx and MT-Rx/DU-Tx
- Advantage: reduced latency
- Areas of enhancements
  - Advanced interference handling mechanisms
  - Handling intra and inter IAB node interference

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Intra-carrier dual connectivity

- IAB node connected simultaneously to more than one parent node using resources within a carrier

- Advantage: Adding redundant paths for backhaul traffic

- Areas of enhancements
  - Enhancements to resource allocation and resource sharing
  - Advanced coordination mechanism among parent nodes

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IAB in beyond 52.6 band

- Using beyond 52.6 band for communication in IAB backhaul/child link

- Advantages: Higher bandwidth and data rate, well suited for the planned deployment and LoS scenarios in IAB n/w

- Areas of enhancements
  - Impact of higher SCS
  - Enhancements for resource sharing
  - Impact of channel occupancy time

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Mesh topology for IAB

- Direct connection between IAB nodes without going through donor-CU
- Advantage: Reduced latency, dynamic control, local routing
- Areas of enhancements
  - Routing enhancements
  - Enhancements for resource allocation/coordination
  - Extending developments in side-link/V2X

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THANK YOU

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