IMT-Advanced Evaluation
3GPP RIT

TCOE, India

assisted by CEWiT, India

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Analysis Component

- Control plane latency
  - Completed
  - The RIT / SRIT satisfies the control plane latency requirement
- User plane latency
  - Completed
  - The RIT / SRIT satisfies the user plane latency requirement
- Inter- and Intra-frequency handover interruption time
  - Completed
  - The RIT / SRIT satisfies the user plane latency requirement
- Peak spectrum efficiency
  - Completed
  - The RIT / SRIT satisfies the user plane latency requirement

Inspection Component

- Bandwidth
  - Completed
  - The RIT / SRIT has support for 40 MHz bandwidth (extendable to 100 MHz)

- Inter-system handover
  - Completed
  - The RIT / SRIT can potentially support inter-system handover using the mechanisms provided
  - The RIT / SRIT has support for inter-system handover

- Deployment in the IMT band
  - Completed
  - The RIT / SRIT can be deployed in a wide range of spectral allocations
  - The RIT / SRIT can be deployed in more than one IMT bands

- Channel bandwidth scalability
  - Completed
  - The RIT / SRIT has support for 1.4, 3, 5, 10, 15, 20 and multiples thereof up to 100 MHz

- Support of different services
  - Completed
  - The RIT / SRIT defines support for a 8 different service classes
  - The RIT / SRIT has support for different range of services

Simulation Component

- Cell spectral efficiency
  - In-progress
- Cell edge user spectral efficiency
  - In-progress
- Mobility
  - Not under study
- VoIP capacity
  - In-progress

Schemes Identified for Simulation Based Evaluation

Downlink

- FDD and TDD RITs
- Urban micro, urban macro, rural macro and open area rural models
- Full buffer traffic

- Simulation studies
  - SU-MIMO with 4x2 antenna configuration (uncorrelated antenna mode)
  - MU-MIMO with 4x2 antenna configuration (uncorrelated antenna mode)

- Evaluation ongoing

Uplink

- FDD and TDD RITs
- Urban micro, urban macro, rural macro and open area rural models
- Full buffer traffic

- Simulation studies
  - SU-MIMO with 1x4 antenna configuration (uncorrelated mode)

- Evaluation ongoing

Simulation Status

- TCoE India had a coordination workshop with participants from ChEG, REG, TCoE India and friends from 3GPP in April. We had some good interactions on the simulation process.

- Simulations are still on-going and results being collated from the different coordination partners
  - We will have the results in time for the WP-5D meeting

- Based on our preliminary analysis, we have identified that single user MIMO performance was sufficient to meet the IMT-A requirements for the 3GPP-LTE FDD RIT in the following scenario: RMa when using a 4x2 antenna configuration

- It is based on our analysis that multi user MIMO performance is needed for the UMi and UMa scenarios to meet the IMT-A requirements (4x2 antenna configuration)
  - Mean values of 2.35 for UMi and 2.1 for UMa, slightly below ITU requirements
  - Simulations ongoing for MU-MIMO

- We are also investigating how good the RIT behaves for the proposed open area rural model based on the simulation assumptions submitted in the ITU correspondence group

VoIP

- FDD RITs
- Urban micro, urban macro (rural macro and open area rural models)
- Semi-persistent schedulers

- Simulation studies
  - Downlink 2x2 antenna configuration

- Evaluation ongoing

Status of Evaluation

Characteristic for Evaluation	Method	Status
Cell spectral efficiency	Simulation	In progress
Peak spectral efficiency	Analytical	Completed, Satisfies
Bandwidth	Inspection	Completed, Satisfies
Cell edge user spectral efficiency	Simulation	In progress
Control plane latency	Analytical	Completed, Satisfies
User plane latency	Analytical	Completed, Satisfies
Mobility	Simulation	Not under study
Intra and inter frequency handover interruption time	Analytical	Completed, Satisfies
Inter system handover	Inspection	Completed, Satisfies
VoIP capacity	Simulation	In progress
Deployment possible in at least one of the identified IMT bands	Inspection	Completed, Satisfies
Channel bandwidth scalability	Inspection	Completed, Satisfies
Support for a wide range of services	Inspection	Completed, Satisfies

Observations

- TCOE India is making progress in the evaluation of the 3GPP RIT / SRIT components

- We have completed the analytical and inspection components of the evaluation

- Simulation exercises are ongoing and are hopeful of results for the ITU meeting

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