

Motivation for New WI Proposal: Enhancements on Full-Dimension (FD) MIMO for LTE

Agenda Item: 14.1.1, Document for: Discussion

Source: Samsung

Rel-13 EBF and FD-MIMO

- Based on significant performance improvement observed during the study, Rel-13 work item was completed in Dec, 2015 with the following features
 - Introduction of beamformed CSI-RS and relevant CSI mechanism
 - Enhancement of non-precoded CSI-RS to support up to 16 ports and relevant CSI mechanism
 - Enhancement of DMRS to support up to 4 orthogonal ports
 - Enhancement of SRS to improve SRS capacity
- However, due to the limited time, the specification support in Rel-13 was limited. For example,
 - CSI-RS can only support up to 16 ports
 - CSI-RS is not optimized for UE specific operation
 - CSI enhancement targeting high order MU-MIMO is not supported
 - Provisions for more robust FD-MIMO transmission (ex for high mobility UEs) is not provided

Rel-14 eFD-MIMO

- Rel-14 eFD-MIMO should focus on improving the features introduced in Rel-13 to provide better performance, applicability, and robustness
- Proposal: Approve a RAN1-led Rel-14 work item on eFD-MIMO to provide specification support for the following enhancements
 - Specify enhancements on reference signal (especially for CSI-RS to support up to 32 antenna ports and to support optimized UE specific operations)
 - Extend specification support for CSI reporting to realize efficient multi-user transmissions and support larger number of antenna ports
 - Specify enhancements to support more robust FD-MIMO transmission

Proposed WI Schedule

- WI approval at RAN#70 for completion at RAN#75 (core part)

RAN #70					Q1/2016					RAN #71	
R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf		
84	84	93	93	93	91	78	78	78	78		
5											

RAN #71										Q2/2016						RAN #72			
R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf	R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf
84bis	84bis	93bis	93bis	93bis	91bis	78bis	78bis	78bis	78bis	85	85	94	94	94	92	79	79	79	79
5										5									

RAN #72					Q3/2016					RAN #73	
R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf		
86	86	95	95	95	93	80	80	80	80		
5											

RAN #73										Q4/2016						RAN #74			
R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf	R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf
86bis	86bis	95bis	95bis	95bis	93bis	80bis	80bis	80bis	80bis	87	87	96	96	96	94	81	81	81	81
5										5		0.5							

RAN #74					Q1/2017					RAN #75	
R1L	R1U	R2L	R2U	R2J	R3	R4RF Core	R4RD Core	R4RF Perf	R4RD Perf		
88	88	97	97	97	95	82	82	82	82		
5		1					1				