

3GPP TSG-RAN WG1#80

R1-150559



Athens, Greece, 9-13 February 2015

SOURCE: ERICSSON

TITLE: CSI FEEDBACK PROPOSAL FOR
2DAAS

AGENDA ITEM: 7.2.4.3.1

DOCUMENT FOR: DISCUSSION AND
DECISION

SUMMARY



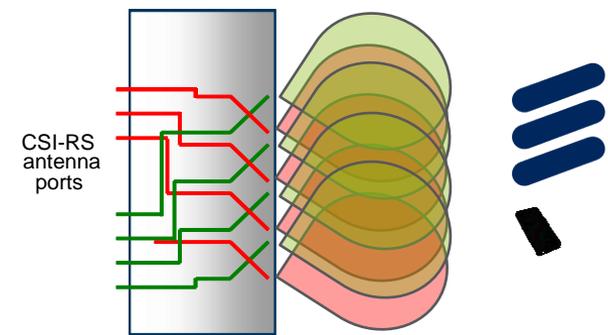
› Proposal:

- Agree on **both** these CSI frameworks for EB/FD-MIMO:
 1. CSI-RS antenna ports supporting both 1D and 2D antenna port configurations
 2. Support for beamformed CSI-RS

› Distinguishing use cases:

- Approach 1 targets **a few up to a moderate number** of antenna elements.
- Approach 2 targets the case of **many antenna elements**

MOTIVATION FOR APPROACH 1

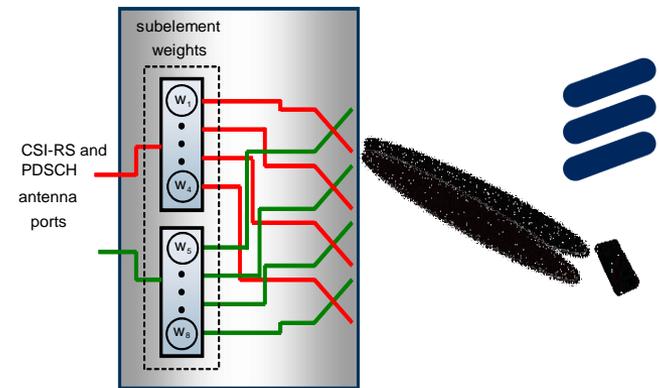


- › Introduce CSI-RS antenna ports supporting both 1D and 2D antenna port configurations
 - Likely up to 20 ports feasible, maybe a larger number of CSI-RS ports could be feasible in terms of RS overhead (see table below)

- › This is the preferred CSI feedback framework for this lower range of antennas since it is
 - › Well known and simple algorithmically, robust, minimizes link adaptation errors, allows instantaneous channel properties to be tracked, allows for frequency selective feedback, may allow for relaxed antenna calibration

	10 ports	20 ports	40 ports	64 ports
CSI-RS Overhead (1 cell reuse)	1.9%	3.7%	7.4%	12%
CSI-RS Overhead (3 cell reuse)	5.5%	11.2%	22.5%	36%

MOTIVATION FOR APPROACH 2



- › Approach 2 is targeting arrays with **many antennas**
 - › Per element CSI-RS is not feasible from RS overhead and UE complexity perspective
 - › Instead, **long term channel properties is exploited** to reduce overhead
 - › Maintain a high spatial resolution by accepting a somewhat lower beam update rate
- The simplest way to determine a beam would be to use the discovery signal or by reciprocity
- Beamformed CSI-RS is used to measure CQI for the determined beam that will actually be used → good link adaptation is ensured



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