

Interference Detection and Measurement

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Source:

Wei-Peng Chen, Chenxi Zhu, Dorin Viorel

Fujitsu

Yong Sun, Dharma Basgeet, Zhong Fan, Paul Strauch

Toshiba

I-Kang Fu, Wern-Ho Sheen, Fang-Ching Ren

ITRI and NCTU

Voice: +1-408-530-4622

Wei-Peng.Chen@us.fujitsu.com

Sun@toshiba-trel.com

IKFu@itri.org.tw

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Purpose:

For discussion and approval of inclusion of the proposed text into the P802.16j baseline document.

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Introduction

- Interference measurement and management is crucial for spectrum spatial reuse in 16j networks.
- Interference across multiple RS cells in the same BS and across adjacent BSs need to be evaluated.
- Interference can be estimated in either DL signal or UL signal (TDD symmetric).
- We propose to use existing UL sounding signal in 802.16e for channel measurement from MS → BS/RS, RS → RS/BS.

The proposal

- Define a multicast group for RSs (RS_interference_measurement_group) in a BS cell and use the multicast CID for signaling from BS to RS group.
- Use UL_Sounding_Command_IE to signal to the RSs which RS or MS will send the UL sounding signal.
 - For a RS in the group, send sounding signal if instructed by BS; measure sounding signal (CINR and/or RSSI) if sounding signal sent by another RS or MS.
- Define burst RSSI measurement to be used on UL sounding signal.
- Use REP-REQ/REP-RSP for RS to BS measurement report.
- Measurement across multiple BSs possible; multiple BSs need to coordinate for simultaneous measurement in different BS cells; each BS signals to its own RS_interference_measurement_groups.

Proposed text change

- Add 6.3.27.1:
 - Interferences measurement by RS sounding
- Add 8.4.11.2.1:
 - Burst-specific RSSI measurement
- Change to 11.11 (REP-REQ), 11.12 (REP-RSP):
 - add new TLV related to sounding/report.