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Reverse Link Variable Data Rates with Dedicated RA (Reverse Activity)

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Outline

- Introduction
- Current Mechanism
- Proposed Mechanism
- Conclusion

Introduction

- Main concerns for 1x-EV : focused on forward link
- Increasing FL throughput :
  - AMC (Adaptive Modulation & Coding)
  - Hybrid ARQ (AAIR)
- Increasing RL throughput
  - Nothing special has been presented
  - About 1Mbps with 8PSK modulation is defined i
    Qualcomm's proposal and 1xtreme proposal
- Fast RL data rate adaptation technique with more granularity may be required
- In this proposal, a mechanism of Reverse link varia with dedicated type of RA (Reverse Activity) bits w presented

Current Mechanism (1X-EV DO)

- 1x-EV DO : p-persistent based variable data rate
  - mobile itself can increase or keep RL data rate p-persistent random function if combined busy b
  - mobile itself can also decrease RL data rate wit persistent random function if combined busy bit

- Some points to be discussed in current mechanism
  - Every mobile has the same probability of increa decreasing the RL data rate regardless of its loc loss and shadowing
  - It may be very difficult even for the mobiles nea center of cell to reach maximum RL data rate
  - Other cell interference can not be controlled in a

Proposed Mechanism

- BS controls each mobile's reverse link data rates b type RA(Reverse Activity) bit
- Mobiles near the center of a cell are controlled to h probability of increasing the reverse link data rates far from the center of cell. In this way, the other ce can be minimized.
- BS sets RA bit to
  - ' 1' to inform certain mobiles to increase RL data
  - '-1' to inform certain mobiles to decrease RL data
  - ' 0' to inform certain mobiles to keep RL data rat
- To support this mechanism, a Forward Common R Channel (F-CRCCH) should be required. It has a structure as that of F-CPCCH.
- RA bit will be updated every 20 ms.

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