1xEV-DV Reverse Link Overview

1x-EV-DV Reverse Link Summary & Status

- An ad-hoc group in 3GPP2 has been working on selecting a framework for the Reverse Link under TSG-C Working Group 5
- Five different Reverse Link proposals and additional component proposals are being considered
- “Winning” proposal may be a combination of those being considered
- A number of additional proposals are being considered as component technologies that may be included regardless of which proposal is selected

Main Features of Reverse Link Proposals

- Backward compatibility with cdma2000 1x
- Combination of TDM/CDM operation
- Scheduling and congestion control mechanisms
  - Shared packet data channel (fast scheduling)
  - Autonomous transmission with congestion control
  - Combinations thereof
- Frame sizes
  - Fixed (2.5, 5, and 20 ms)
  - Dynamically variable frame sizes (multi-frames are also possible)
- Transmission rate
  - Fixed, based upon scheduling
  - Fixed, based upon scheduling with some MS autonomy
  - Totally autonomous by MS
- Adaptive Modulation and Coding
- Physical layer ARQ
  - Simple energy combining
  - Simple incremental redundancy
  - Asynchronous adaptive incremental redundancy

Other Reverse Link Aspects

- Quasi-Active State for packet data applications to improve power consumption
- Higher data rates than cdma2000
  - Proposed up to 2.4 Mbps in 1.25 MHz
- Interference cancellation
- Control signaling on Forward Link to support Reverse Link
- New control channels (cdma2000 1x) to enable fast RL operation
- Spatial/Time diversity (e.g., STS, MIMO)
- Spectrally efficient spreading codes
- Better use of common channels for efficient transmission of short data packets
- Code orthogonal reverse link

Status of Reverse Link Proposal Evaluation

- **Performance results for the various proposals are being examined prior to reaching a framework**
- **Merits of scheduling approaches: “fast” scheduling, “autonomous” transmission, and a combination thereof are being considered**