802.16j Generic Scheduler

IEEE 802.16 Presentation Submission Template (Rev. 8.3)

Document Number:

IEEE C802.16j-06/122

Date Submitted:

2006-09-26

Source:

D.J.Shyy
MITRE
McLean, VA, USA

Voice:
Fax:
E-mail: djshyy@mitre.org

Venue:

IEEE 802.16 Meeting # 45 Mont Tremblant, Canada

Base Document:

IEEE 802.16j-06/013

Purpose:

Supported material for comment #13038

802.16e Generic Scheduler

- The BS scheduler determines the data rate for each UL and DL burst allocation based on the requested data rate, requested QoS, interference condition, and amount of resource in a frame.
  - It determines the order of serving requests from relays and mobiles
  - It determines the time and frequency allocation (2-D symbol region) of each burst in a TDD frame
  - It also determines the modulation and coding scheme of each burst

802.16e Generic Scheduler

- Requests with different priorities are stored in different queues
  - The priority order is VoIP, Live Video, Video Streaming, Web Browning and FTP.
  - For the same priority level, the relay requests are served before the mobile requests
- The bandwidth reallocation is done once per frame for all requests
  - Starting from the highest priority queue and processing the request one by one
- The capacity allocation is based on weighted fair queuing
- The modulation/coding scheme is allocated based on the SINR.
  - The SINR value for each MC scheme is TBD
  - The data rate for each MC scheme can be found from Table 3 of "Mobile WiMAX – Part 1: A Technical Overview and Performance Evaluation," WiMAX Forum White Paper, June 2006"

Summary of System Assumptions

Channel bandwidth (MHz)	5
Frame duration (ms)	5
UL Subframe duration (ms)	1.532225
DL Subframe duration (ms)	3.06451
TTG/RTG (ms)	0.10084/0.3024
Symbol duration (ms)	0.10084
Symbol guard time (ms)	Symbol duration/8
# of subcarriers	512
# of overhead subcarriers (guard, pilot and DC)*	240
# of Symbols per Frame	45
# of overhead Symbols per Frame (premable, FCH, DL MAP, UL MAP, and ACK/RANGING/CQICH)**	TBD
# of Symbols per UL Subframe	15
# of Symbols per DL Subframe	30

*"Mobile WiMAX – Part 1: A Technical Overview and Performance Evaluation," WiMAX Forum White Paper, June 2006.