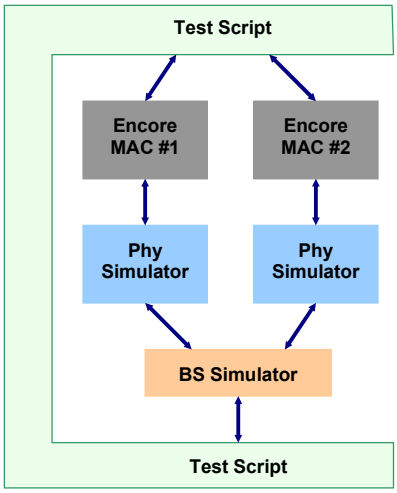
Encore's WiMAX – SS MAC Specifications – 802.16RevD, Release 2004



MAC Specifications

Encore MAC implements following sub layers:

- *Convergence sub layer (CS)*: Provides interface with upper layers in protocol hierarchy. Encore implementation provides interface with IPv4.
- *Common part sub layer (CPS)*: CPS provides the core MAC functionality.
- *Privacy sub layer (PS)*: Specifies the security options within 802.16 standard. Encore implementation uses DES, 3-DES for encryption / decryption, RSA & HMAC-SHA1 for authentication mechanism. Currently algorithms from OpenSSL library are used for testing the implementation.

Encore implementation supports profile "***ProfM3_PMP***" for OFDM physical layer. Implemented to ensure greater testability, portability and optimizability.

Feature Specifications

ProfM3_PMP Features Supported

- Packet Convergence Sublayer
  a. Classification
  b. PHS
  c. IPv4
- CRC
- ARQ
- Service Flows
  a. Unsolicited grant service
  b. Real-time polling service
  c. Non real-time polling
  d. Best Efforts
- Cryptographic suites
  a. No data enc, no data auth and 3-DES, 128
  b. CBC-Mode 56-bit DES, no data authentication and 3-DES, 128
  c. No data enc, no data authentication and RSA, 1024
  d. CBC-mode, no data authentication and RSA, 1024

Test Automation Functionality (TAF)

- Graphical as well as command line interface for testing
- Ability to trace messages at various sub-layers
- Commands for injecting messages, receiving messages, comparing messages
- Scripting support for regression testing
- Simulator for physical layer and base station. Generates frames with DL_MAP, UL_MAP, DCD, UCD and data grants. Can test multiple instances of the MAC
- Test cases for testing MAC in variety of configurations

RTOS Abstraction Layer (RAL)

- Timers
- Shared data buffering
- Tasks
- Inter-task communication

Interfaces

- IP
- PHY
- RTOS
- Test environment

Performance Specifications

- Completely hand written 'C' code
- Modular architecture defined as communicating threads for finer timing adjustments
- Real-time implementation on Linux running on desktop
- Program memory on PC Pentium III processor is 304 KB (including interface with test environment)
- Throughput of 5 Kilo packets per second for data transfer on PIII with 500 MHz with 256 KB cache (includes Classification, PHS, PDU construction & Uplink scheduling)

Encore Software

Encore Software Ltd.
6F Leo Complex, 44 45 Residency (Cross) Road
Bangalore 560 025, INDIA
Tel: +91-80-4112 4291 to 95
Fax: +91-80-2558 7690
ip@ncoretech.com
www.ncoretech.com