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Venue: Comments for consideration and inclusion into the MAC specification.

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Purpose: The presentation is for the improvement of MAC proposals for IEEE 802.16.3 TG1, TG2, TG3, TG4 as applicable.

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802.16 MAC Synchronization

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Medium Access Control (MAC)
Time-Of-Day (TOD) Sources

- GPS TOD
- Payload Time Code Data
- NTP Time Code Data
- On-board Time Code Data

Fault Tolerant Comparator
MAC Time-Of-Day (TOD) Synchronizer

Reference Clock
GPS 1PPS
Message Strobe

Timing Generator

Register A

Fault Tolerant Comparator

Register B

Clocked Buffer

Derived GPS TOD

Register C

Fault Tolerant Comparator

Direct from Payload

Register D

Payload Time Code Data

NTP Time Code Data

On-board Time Code Data

From On-board Protocol Stack (OSI Layer 3)

From On-board Real-time Clock

GPS TOD
Benefits of MAC Synchronization

- Reduced meta-stable symptoms in logic and protocol
- Adds more flexibility to scheduling, including sessions or transmissions
  - Scheduler algorithms can benefit from MAC layer synchronization to achieve enhanced call subscription, acquisition, or queuing algorithms
  - Embedded TOD may lead to reduced collisions in the physical layer
- Establishes some predictability of the chaos of random access process
- May enable more types of applications since it is a type of control mechanism