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Source(s)	Kanchei (Ken) Loa, Yi-Hsueh Tsai, Chih-Chiang Hsieh, Yung-Ting Lee, Hua-Chiang Yin, Shiann-Tsong Sheu, Frank C.D. Tsai, Youn-Tai Lee, Heng-Iang Hsu Institute for Information Industry 8F., No. 218, Sec. 2, Dunhua S. Rd., Taipei City, Taiwan. [add co-authors here]	Voice: +886-2-2739-9616 loa@iii.org.tw
Re:	IEEE 802.16j-06/034: "Call for Technical Proposals regarding IEEE Project P802.16j"	
Abstract	This contribution proposes procedures for RS autonomous synchronization	
Purpose	Text proposal for 802.16j Baseline Document	
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RS Autonomous Synchronization

Global navigation satellite system (GNSS) is the generic name given to the satellite-based navigation systems including GPS (global positioning system), GLONASS (global navigation satellite system), and Galileo. GPS is the first passive one-way ranging satellite system to be-come operational. While GPS was under development by United States (US), the Soviet Union undertook to develop a similar system, called GLONASS. Like GPS, GLONASS was designed primarily for the military, and was also offered for civil use. In a later time, the European Un-ion decided to develop a similar system planed to under civil control. This system is called Galileo, which is now developed by European Space Agency (ESA).

This contribution describes RS time synchronization with MR-BS. In order to facilitate the incorporation of this proposal into IEEE 802.16j standard, specific changes to the baseline working document IEEE 802.16j-06/026r1 are listed below.

Text Proposal

6.3.2.3 MAC management messages

6.3.2.3.25 Clock Comparison (CLK-CMP) message

6.3.2.3.25.1 RS Clock Synchronization (CLK-SYNC) message

In MR network systems with service flows carrying information that requires the RSs to transmit preamble synchronously, CLK-SYNC messages shall be periodically broadcast by access stations. Implementation of the CLK-SYNC message at RS is optional. If provisioned to do so, the access station shall take a time difference measurement between preamble and GPS time at every periodic interval and transmit one CLK-SYNC message according to the format shown in Table xxx.

Upon receiving CLK-SYNC message, RS shall synchronize with the access station. Algorithms to synchronize with the access station are out of scope of this specification.

Table xxx – CLK-SYNC message format

Syntax	Size	Notes
CLK-SYNC_ message_format () {	-	-
Management Message Type = xx	8 bits	-
Frame Sequence Number	8 bits	8-LSB Frame Sequence Number
Fraction GPS time	24 bits	Fraction GPS time for frame-start DL preamble of current frame, where fraction GPS time defined as the GPS time minus the integer GPS time in second (unit 1 micro second)
}	-	-