Project	IEEE 802.16 Broadband Wireless Access Working Group <**http://ieee802.org/16**>
Title	GNSS-equipped RS CDMA-based Ranging
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Re:	IEEE 802.16j-06/034: "Call for Technical Proposals regarding IEEE Project P802.16j"
Abstract	This contribution proposes procedures for GNSS-equipped RS CDMA-based ranging
Purpose	Text proposal for 802.16j Baseline Document
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GNSS-equipped RS CDMA-based Ranging

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 CDMA-based ranging for GNSS-equipped RS with access station. 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

6.3.10 Ranging

6.3.10.3 OFDMA based ranging

6.3.10.3.4 Relaying support for OFDMA based ranging

6.3.10.3.4.8 Support for GNSS-equipped RS OFDMA based ranging

6.3.10.3.4.8.1 GNSS-equipped RS contention-based initial/handover ranging

A GNSS-equipped RS that support initial/handover ranging process shall take a process similar to that defined in section 6.3.10.3.4.5 and 6.3.10.3.4.5 with the following modifications.

After GNSS-equipped RS is time synchronized, the RS can perform initial/handover ranging procedure during network entry. The RS initial/handover ranging process begins by sending a randomly selected RS CDMA initial/handover ranging code in a randomly selected ranging slot from available periodic ranging region, instead of sending it in the one from initial ranging region.

6.3.10.3.4.8.2 GNSS-equipped RS periodic ranging

After GNSS-equipped RS is time synchronized, the periodic ranging process should be omitted.