ABSTRACT

CONCURRENT WIRELESS COMMUNICATIONS OVER LICENSED AND UNLICENSED SPECTRUM

Methods and apparatuses are described for wireless communications. A first method includes transmitting a first Orthogonal Frequency-Division Multiple Access (OFDMA) communications signal to a wireless node in a licensed spectrum, and transmitting, concurrently with the transmission of the first OFDMA communications signal, a second OFDMA communications signal to the wireless node in an unlicensed spectrum. A second method includes receiving a first Orthogonal Frequency-Division Multiple Access (OFDMA) communications signal from a wireless node in a licensed spectrum, and receiving, concurrently with the reception of the first OFDMA communications signal, a second OFDMA communication signal from the wireless node in an unlicensed spectrum. A third method includes generating a periodic gating interval for a cellular downlink in an unlicensed spectrum, and synchronizing at least one boundary of the periodic gating interval with at least one boundary of a periodic frame structure associated with a primary component carrier of the cellular downlink.

Figs. 2A and 2B