CLAIMS

1. A method (400) for wireless communications, comprising:

transmitting (405) a first Orthogonal Frequency-Division Multiple Access, OFDMA, communications signal to a wireless node (115) in a licensed spectrum;

transmitting (410), concurrently with the transmission of the first OFDMA communications signal, a second OFDMA communications signal to the wireless node (115) in an unlicensed spectrum;

receiving a first Single-Carrier Frequency-Division Multiple Access, SC-FDMA, communications signal from the wireless node (115) in the licensed spectrum;

receiving, concurrently with the reception of the first SC-FDMA communications signal, a second SC-FDMA communications signal from the wireless node in the unlicensed spectrum;

wherein the second SC-FDMA communications signal is confined to an interleaved signal, wherein the interleaved signal increases a nominal bandwidth occupancy in the unlicensed spectrum.

2. The method (400) of claim 1, wherein the transmission of the second OFDMA communications signal in the unlicensed spectrum is time-synchronized with the first OFDMA communications signal in the licensed spectrum, with a fixed offset between a frame structure of the first OFDMA communications signal and a frame structure of the second OFDMA communications signal.

3. The method (400) of claim 2, wherein the fixed offset is equal to zero.

4. An apparatus (105) for wireless communications, comprising:

means for transmitting a first Orthogonal Frequency-Division Multiple Access, OFDMA, communications signal to a wireless node (115) in a licensed spectrum;

means for transmitting, concurrently with the transmission of the first OFDMA communications signal, a second OFDMA communications signal to the wireless node (115) in an unlicensed spectrum; and

means for receiving a first Single-Carrier Frequency-Division Multiple Access, SC-FDMA, communications signal from the wireless node (115) in the licensed spectrum;

means for receiving, concurrently with the reception of the first SC-FDMA communications signal, a second SC-FDMA communications signal from the wireless node in the unlicensed spectrum;

wherein the second SC-FDMA communications signal is confined to an interleaved signal, wherein the interleaved signal increases a nominal bandwidth occupancy in the unlicensed spectrum.

5. The apparatus (105) of claim 4, wherein the transmission of the second OFDMA communications signal in the unlicensed spectrum is time-synchronized with the first OFDMA communications signal in the licensed spectrum, with a fixed offset between a frame structure of the first OFDMA communications signal and a frame structure of the second OFDMA communications signal.

6. The apparatus (105) of claim 5, wherein the fixed offset is equal to zero.

7. A method (500) for wireless communications, comprising:

receiving (505) a first Orthogonal Frequency-Division Multiple Access, OFDMA, communications signal from a wireless node (105) in a licensed spectrum;

receiving (510), concurrently with the reception of the first OFDMA communications signal, a second OFDMA communication signal from the wireless node (105) in an unlicensed spectrum; and

transmitting a first SC-FDMA communications signal to the wireless node (105) in the licensed spectrum;

transmitting, concurrently with the transmission of the first SC-FDMA communications signal, a second SC-FDMA communications signal to the wireless node (105) in the unlicensed spectrum;

wherein the second SC-FDMA communications signal is confined to an interleaved signal, wherein the interleaved signal increases a nominal bandwidth occupancy in the unlicensed spectrum.

8. An apparatus (115) for wireless communications, comprising:

means for receiving a first Orthogonal Frequency-Division Multiple Access, OFDMA, communications signal from a wireless node (105) in a licensed spectrum;

means for receiving, concurrently with the reception of the first OFDMA communications signal, a second OFDMA communication signal from the wireless node (105) in an unlicensed spectrum; and

means for transmitting a first SC-FDMA communications signal to the wireless node in a licensed spectrum;

means for transmitting, concurrently with the transmission of the first SC-FDMA communications signal, a second SC-FDMA communications signal to the wireless node (105) in the unlicensed spectrum;

wherein the second SC-FDMA communications signal is confined to an interleaved signal, wherein the interleaved signal increases a nominal bandwidth occupancy in the unlicensed spectrum.

9. A computer program comprising instructions for performing a method of one of claims 1 – 3 or 7.