

ABSTRACT**SOFT HANDOFF WITH INTERFERENCE CANCELLATION IN A WIRELESS
FREQUENCY HOPPING COMMUNICATION SYSTEM**

Techniques are provided to support soft handoff in a frequency hopping OFDMA system (120x). Each sector (104a, 104b, 104c) concurrently supports 'non-handoff' users and 'soft-handoff' users. A non-handoff user communicates with only one sector, and a soft-handoff user communicates with multiple sectors (104a, 104b, 104c) simultaneously. Non-handoff users are assigned traffic channels by their sole sectors (104a, 104b, 104c), and soft-handoff users are assigned traffic channels by their 'serving' sectors. For each sector, the traffic channels assigned to the non-handoff users are orthogonal to one another and may or may not be orthogonal to the traffic channels assigned to the soft-handoff users. Each sector (104a, 104b, 104c) processes its received signal and recovers the data transmissions from the non-handoff users of that sector. Each sector (104a, 104b, 104c) then estimates the interference (520) due to the non-handoff users and cancels the interference (530) from the received signal. Each sector further processes its interference-canceled signal to recover the data transmissions from the soft-handoff users (540a).

FIG. 3