ABSTRACT

RANDOM ACCESS CHANNEL (RACH) RESPONSE (RAR) RECEPTION IN AN UNLICENSED RADIO FREQUENCY (RF) SPECTRUM BAND

This disclosure provides systems, methods, and apparatuses to enable a user equipment (UE) and a base station to improve reception of a random access response (RAR) by the UE in an unlicensed spectrum. A network may define a procedure for calculating a random access radio network temporary identifier (RA-RNTI) specific to unlicensed spectrum based on an extended RAR window. The calculation procedure may allow UEs transmitting in the window to calculate a unique RA-RNTI and identify a RAR addressed to the UE using the unique RA-RNTI. Additionally, or alternatively, a base station may transmit a RAR including timing information associated with a corresponding random access request. Accordingly, a UE may receive the RAR and compare the timing information with its own random access request in order to determine whether the RAR is addressed to the UE. Additionally, a UE may monitor a secondary cell or a sub-band for the RAR.

Fig. 10