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Koo et al.

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(54) **APPARATUS AND METHOD FOR PERFORMING RANGING IN A COMMUNICATION SYSTEM**

(56) **References Cited**

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(57) **ABSTRACT**

A ranging apparatus in a communication system is provided. A terminal generates a ranging code for ranging with a base station, maps the ranging code to at least one sub-carrier so the ranging code is repeated in a time domain, generates a ranging signal so the mapped ranging code has a size of one symbol interval, and transmits the generated ranging signal to the base station. The base station receives a ranging signal, extracts a half signal of a valid symbol interval of the ranging signal, generates a valid symbol interval signal by repeating the extracted half signal of the valid symbol interval, restores a ranging signal using the valid symbol interval signal, and performs ranging using the ranging signal.

(30) **Foreign Application Priority Data**

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(52) **U.S. Cl.** **370/208; 370/210; 370/509; 455/139**

(58) **Field of Classification Search** None
See application file for complete search history.

39 Claims, 11 Drawing Sheets

