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(54) **MACHINE LEARNING LOCALIZATION METHODS AND SYSTEMS**

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(57) **ABSTRACT**

Machine learning method and systems for estimating a location of a target wireless device in an environment are disclosed. A machine learning method comprises: receiving a plurality of training received signal indictor data sets for discrete locations in the environment, each training received signal data set comprising received signal indicator values and corresponding wireless transmitter identifiers for wireless signals received by a test wireless device at a respective discrete location; generating feature vectors from the received signal indicator data sets; training a machine learning model using the feature vectors to obtain a trained machine learning model; receiving a target received signal data set from the target wireless device, the target received signal data set comprising signal indicator values and corresponding wireless transmitter identifiers for wireless signals received by the target wireless device; generating a target feature vector from the target received signal data set; and estimating a location of the target wireless device as a discrete location output by the trained machine learning model in response to the target feature vector.