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(54) **LOCATION-ASSISTED SERVICE CAPABILITY MONITORING**

(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventors: **Bharath Narasimha Rao**, Sunnyvale, CA (US); **Cherif Jazra**, Los Altos, CA (US); **Leonardo A. Soto Matamala**, Los Altos, CA (US)

(73) Assignee: **Apple Inc.**, Cupertino, CA (US)

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See application file for complete search history.

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Primary Examiner — Brandon J Miller
(74) *Attorney, Agent, or Firm* — Kilpatrick Townsend & Stockton LLP

(57) **ABSTRACT**

A digitally stored map can indicate the signal quality for each of the map's regions. A device can determine its location, speed, and direction using global positioning system (GPS) and other sensors. Based on this information, the mobile device can predict a field of locations within which the device will probably be located within a specified future time frame. Based on both the information indicating signal quality and the probable future field of locations, the device can estimate a moment at which the device will probably begin to suffer from low-quality or absent signal. Using this prediction, the device can proactively perform a variety of anticipatory remedial actions. For example, the device can begin allocating a greater portion of currently available wireless network communication bandwidth to the reception of data packets that represent content that is being streamed to the device, so that the device can proactively buffer those packets.

20 Claims, 12 Drawing Sheets