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(54) **LOCATION AWARE MOBILE-DEVICE SOFTWARE DEVELOPMENT**

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(57) **ABSTRACT**

A development environment makes it easier to develop and use location aware software applications. Combining the currently separate and complex tasks of location information gathering, analysis, and display and making them integrated such that non-experts can build location services into their applications increases a developer's capability to write rich location-aware software applications. A higher level programming model allows a programmer to use location information as a logical entity rather than just raw location data, such as latitude and longitude. A location data store and map data store may be accessed by different location aware applications on the device. Instead of each location application relying on its own data store, applications may share their location related information.
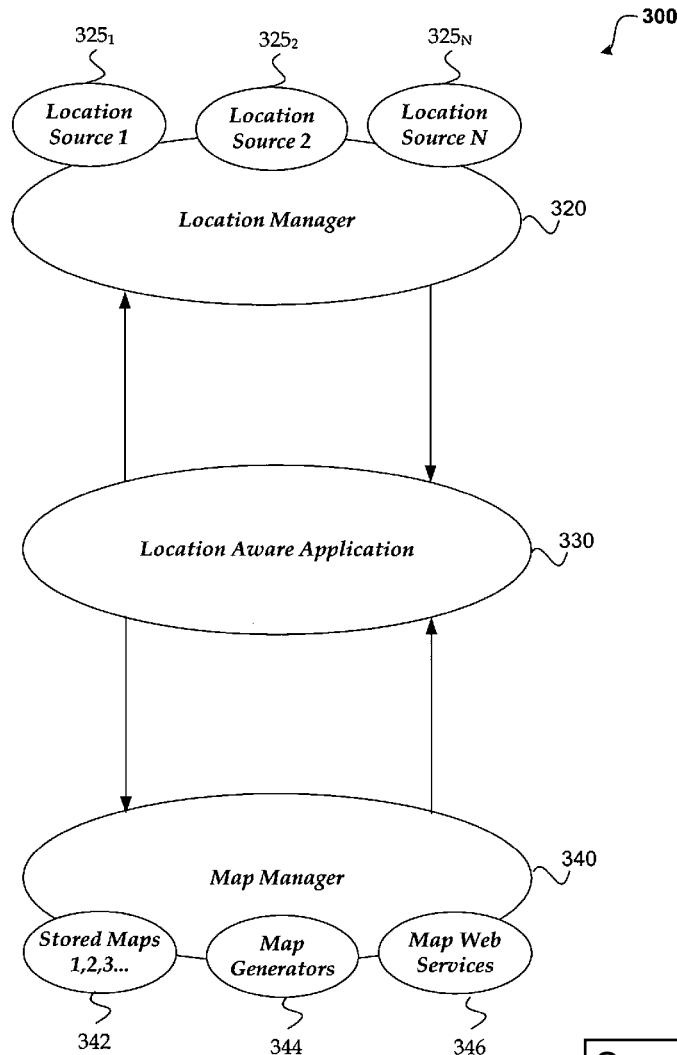
Fig. 1

Fig.2

300

325_1 325_2 325_N

Location Source 1

Location Source 2

Location Source N

Location Manager   320

Location Aware Application   330

Map Manager   340

Stored Maps 1,2,3...

Map Generators

Map Web Services

342   344   346

Fig. 3

400

420

Selection of Maps and Map Servers

Designation of Geographical Areas of Interest

410

430

Development of Event Based Location Driven Code

Iterative Development

450

Testing with Real and Simulated Location Sources

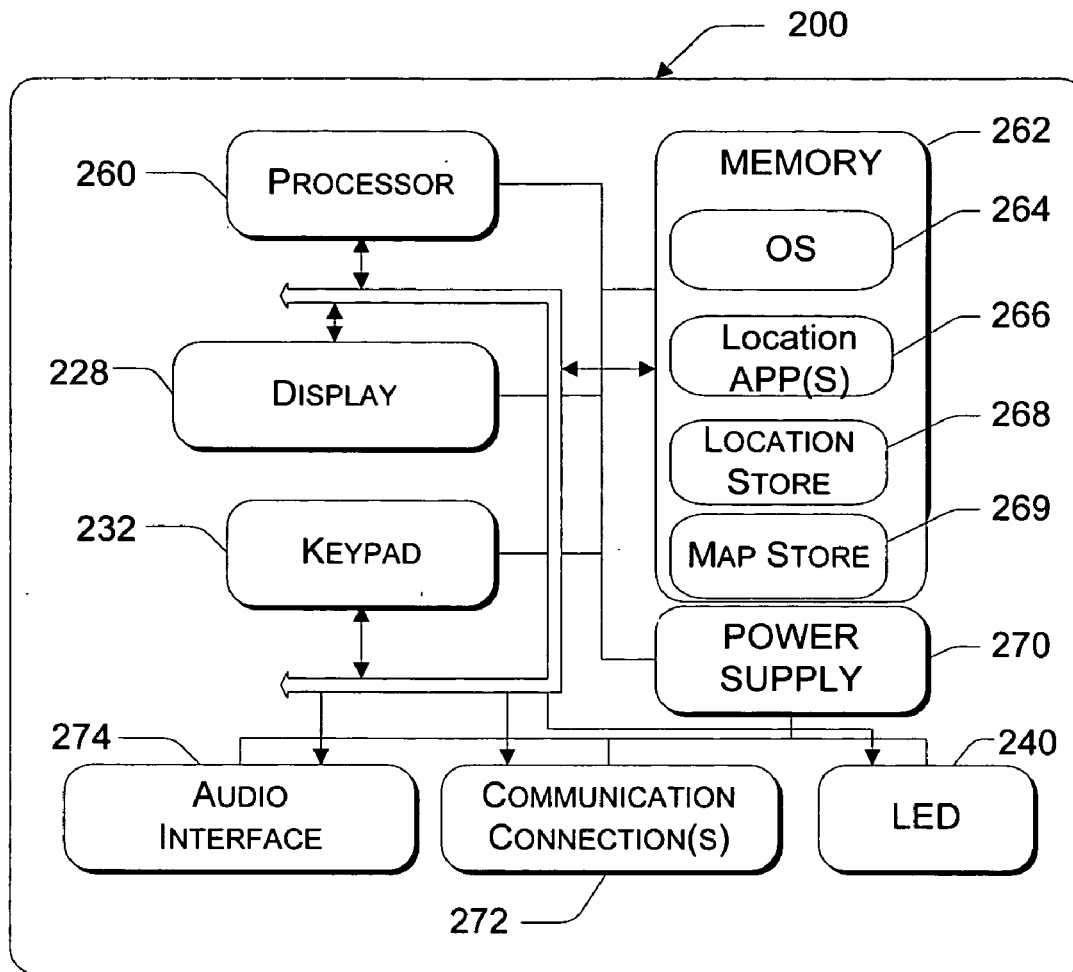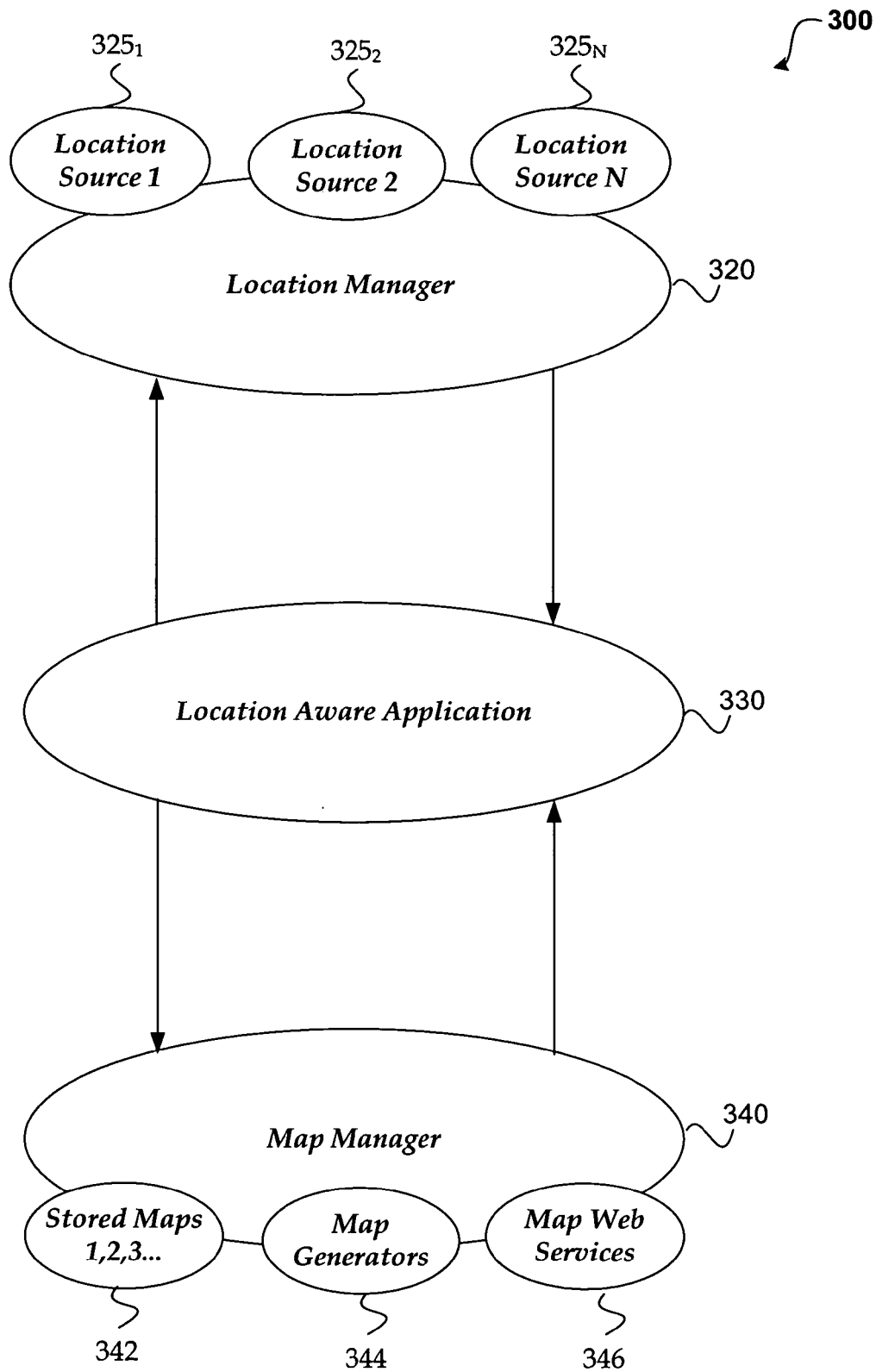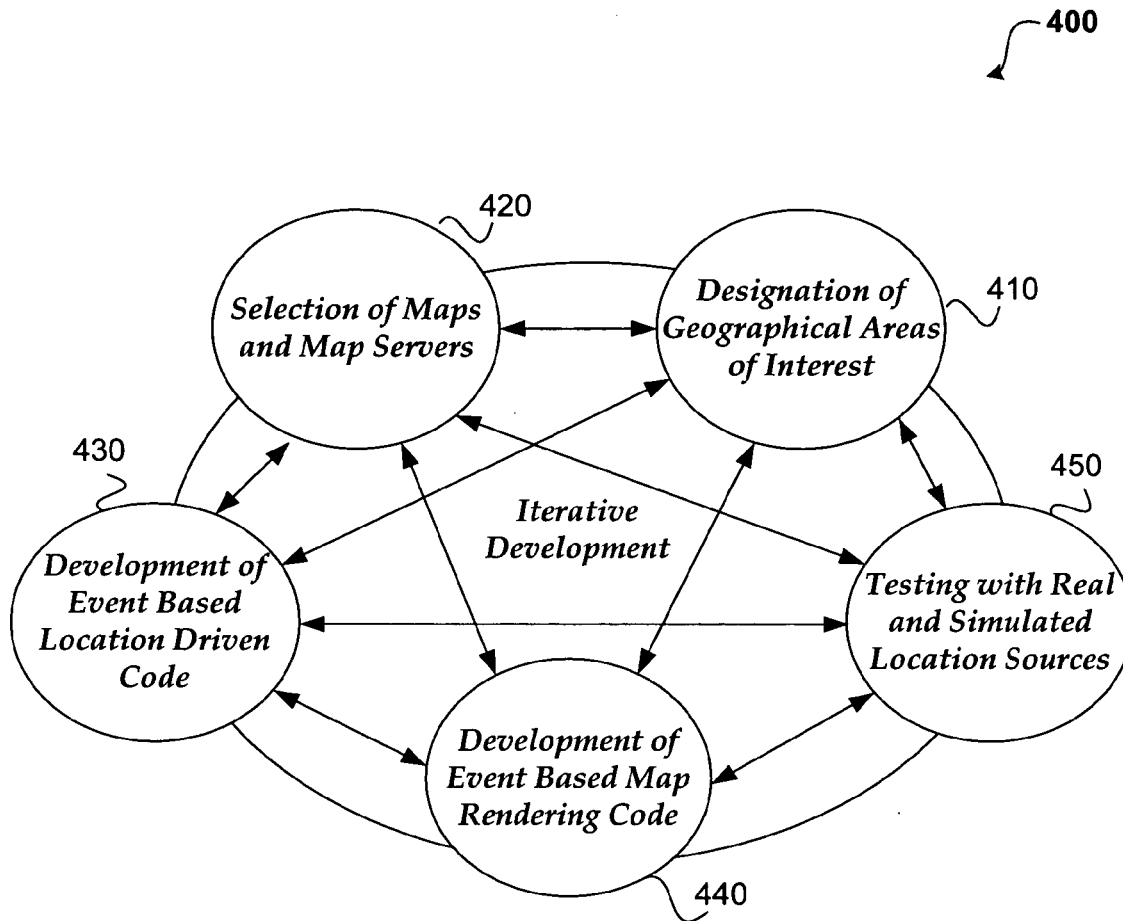**Development of Event Based Map Rendering Code**

440

Fig. 4

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