**5. Program stubs and test data requirements**

**5.1 Program stubs**

As previously stated many times, all 3 subsystems need quite complex stubs that simulate the behaviour of remote components to which they ask services. There is no need of other stubs during integration phases due to the fact that the approach chosen is mostly bottom-up.

Stubs for ApplicationServer components:

* Email server stub (MessageBroker)
* Database stub (DatabaseManager)
* GPS stub (QueueManager)
* Client stub for notifications (MessageBroker)
* WebServer stub for web notifications (MessageBroker)

Stubs for WebServer component:

* AppServer stub
* WebNotifications stub (basically a web client stub)

Stubs for MobileClient component:

* AppServer stub

We do not mention the drivers here because they are much simpler to program, since they only need to call procedures of the components.

In addition, as previously stated in chapter 2, we do not include stubs for the web client component because it is only a logical component already implemented by any kind of browser.

**5.2 Test data**

In order to perform meaningful tests, some “fake” data sets are required:

* Test set of users’ accounts, both drivers and customers.
* Test set of rides, both requests and reservations.
* Test sets of taxi and GPS coordinates.
* Test sets of zones and related queues.