



OmaReitti Android

v. 0.75.1 beta

Boris Nechaev
Vladislav Bondarenko

Design goals

OmaReitti Android is an advanced travel navigator for Helsinki area. The application is built for Android mobile platform and uses Reittiopas API 1.1.2 for route lookup. The key features are: (i) ease of use, (ii) departure and arrival reminders, (iii) real-time tracking of transport positions. The combination of these three features makes OmaReitti a novel and unique application.

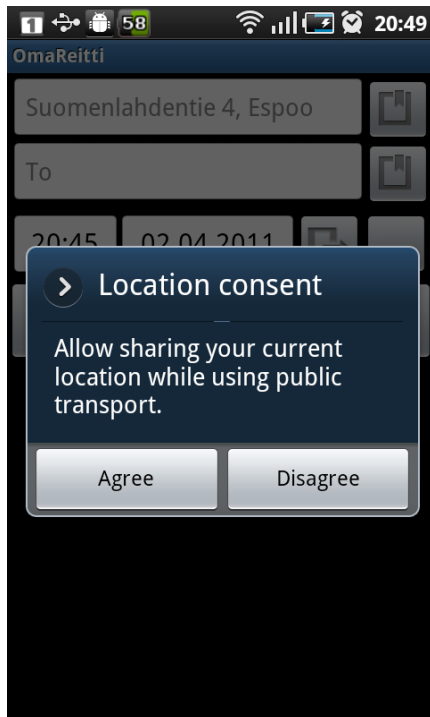
OmaReitti was designed with a primary focus on usability. Intuitive interface allows users to easily navigate through the application. Users should be able to access most commonly used features with only one or two clicks. On the contrary, all the rarely used features should be hidden.

Two most notable features of OmaReitti are reminders and location tracking. There are two types of reminders - for departure and arrival. After the user looks up and selects a route, the application calculates how much time is left till departure and notifies several (by default 5) minutes before that by ringing, vibrating and showing a message. For example, after waking up in the morning, a user can select a route which starts in e.g. 40 minutes. Then, while doing the morning routine, the user doesn't have to worry about missing the bus - OmaReitti will automatically remind that it's time to leave.

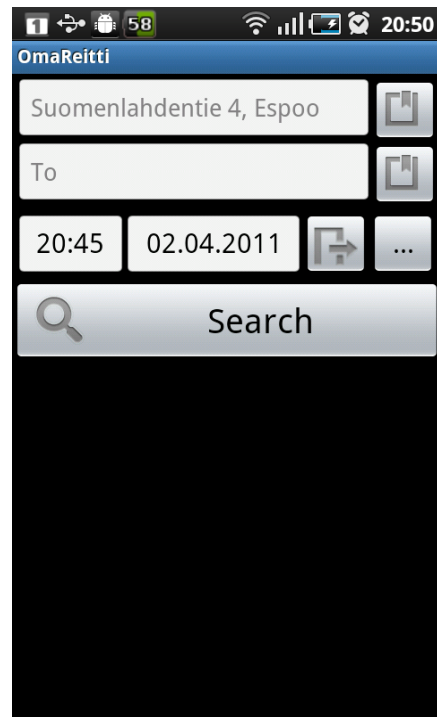
Arrival reminder is used to notify the user that it's time to exit the bus, train, tram or metro. When the user is in the bus, OmaReitti uses GPS to determine current location and after comparing it with the selected route reminds the user that the bus is approaching the destination stop. In trains, trams and metro, the route schedule taken from Reittiopas API is used to remind arrival, since these types of transport usually closely follow the timetable. Arrival notification is very handy in cases when the user is busy with something (reading a book, browsing Internet), feels sleepy (late in the evening after work, early in the morning after a night club) or going to a place where he/she has never been.

Another notable feature of OmaReitti is location tracking. Its main idea is crowdsourced public transport monitoring. When the user is in a bus, train, tram or metro, OmaReitti sends current coordinates to the server, which keeps the last known position of the vehicle. In order to preserve user anonymity, user IDs are generated randomly and the history of user movements is not stored. Moreover, user coordinates are transmitted to the server only if the user gave explicit consent at the first application start. The service shows the position of traveling person in real-time, but since OmaReitti was not released yet, currently it displays only footprints left during application tests. Vehicle location tracking can be useful to other users, who can see e.g. where the bus they are waiting for is currently located. HSL or other companies can use the data from the server to monitor transport movements and collect statistics.

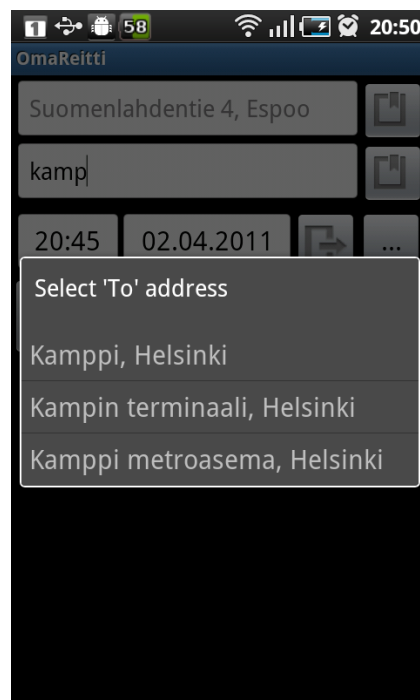
User Interface Overview



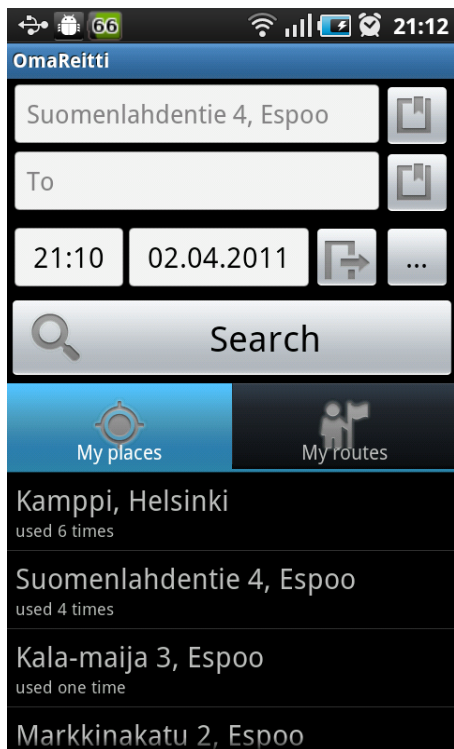
First application run



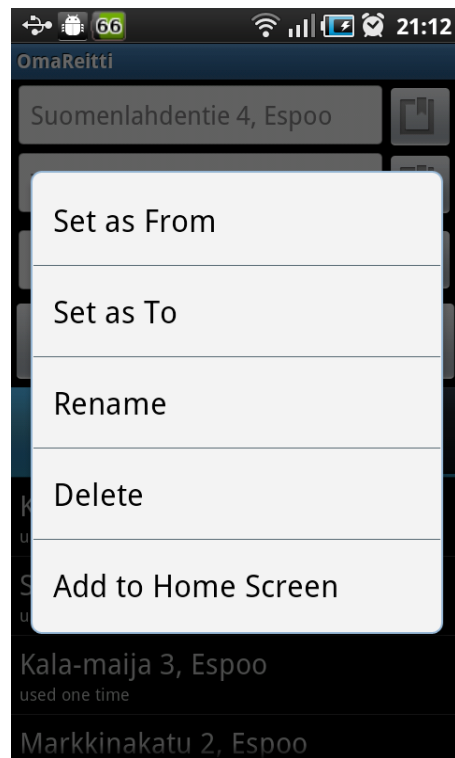
Current location is set automatically
(Suomenlahdentie 4, Espoo)



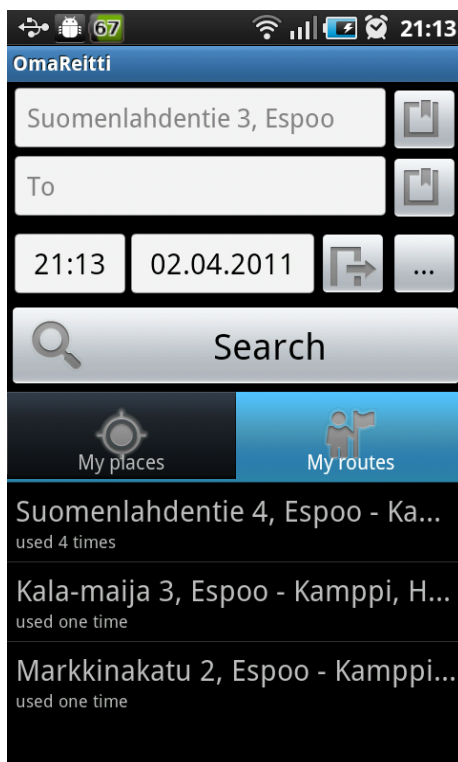
Multiple locations were found



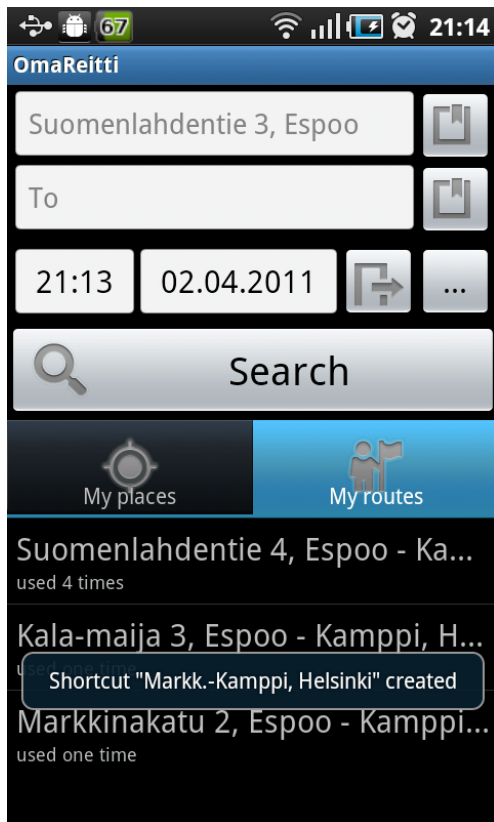
Previous locations are conveniently sorted by number of uses



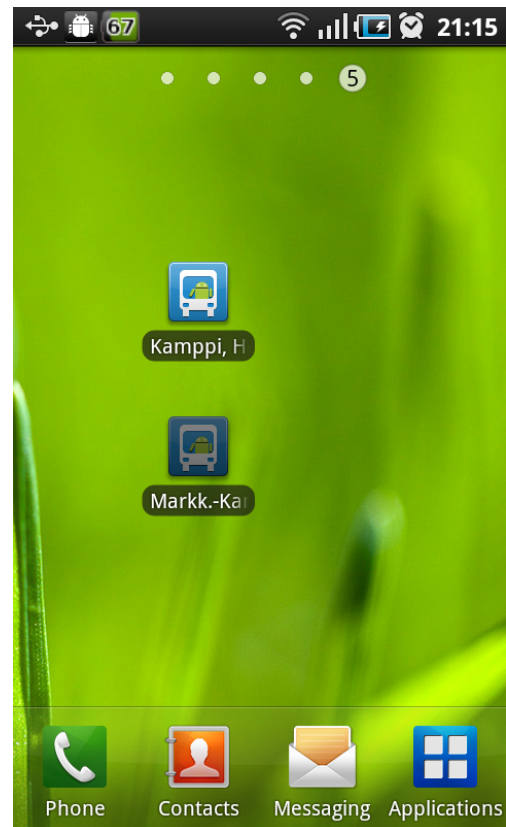
Previous location menu



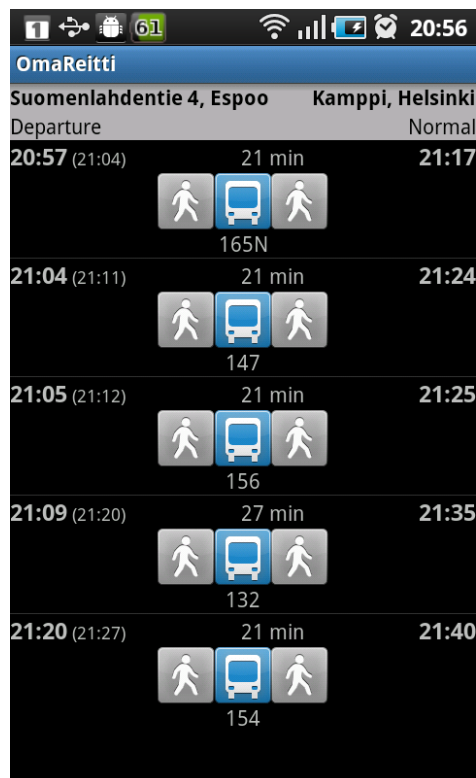
List of previous routes



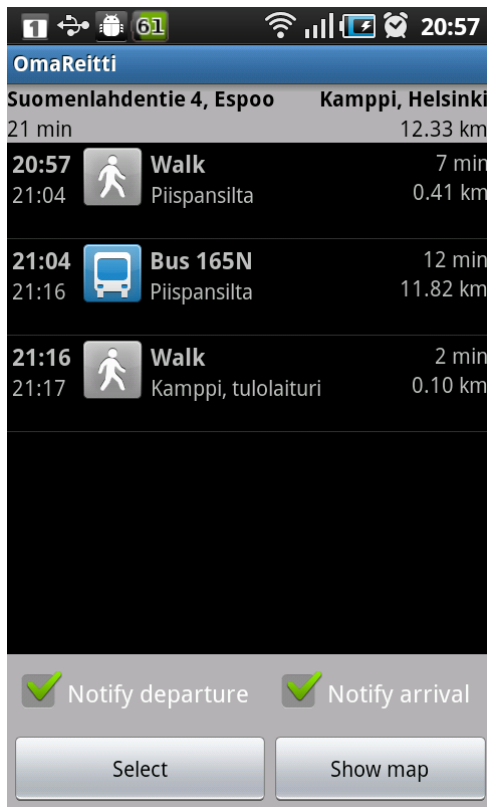
Previous route can be used to create a shortcut on the home screen



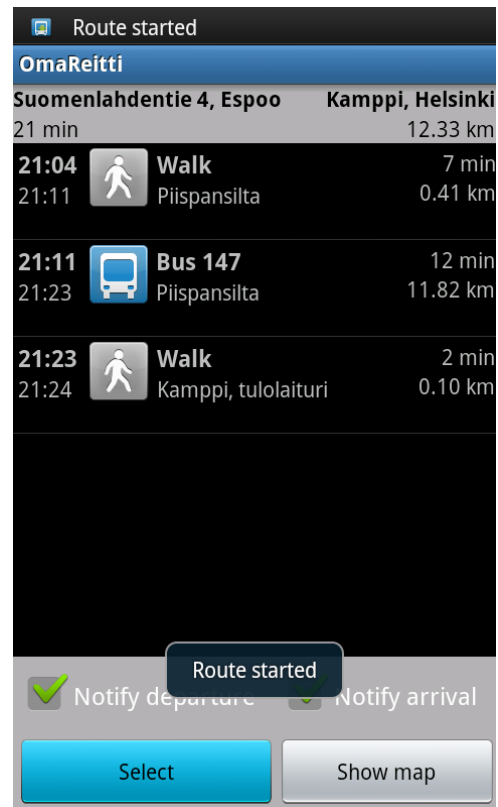
Clicking on a route shortcut launches the application and immediately looks up the route



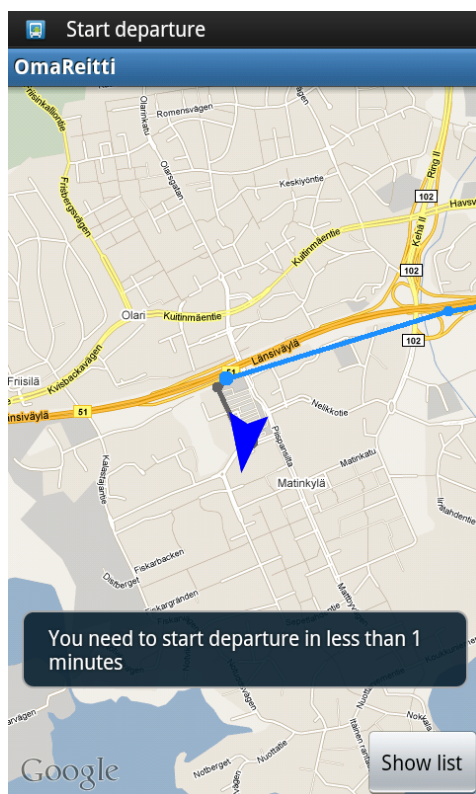
Screen with choices of route



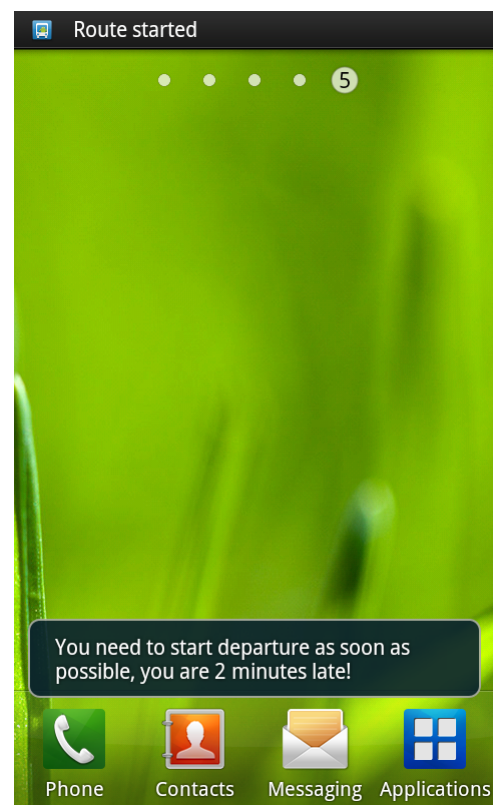
Information about the route



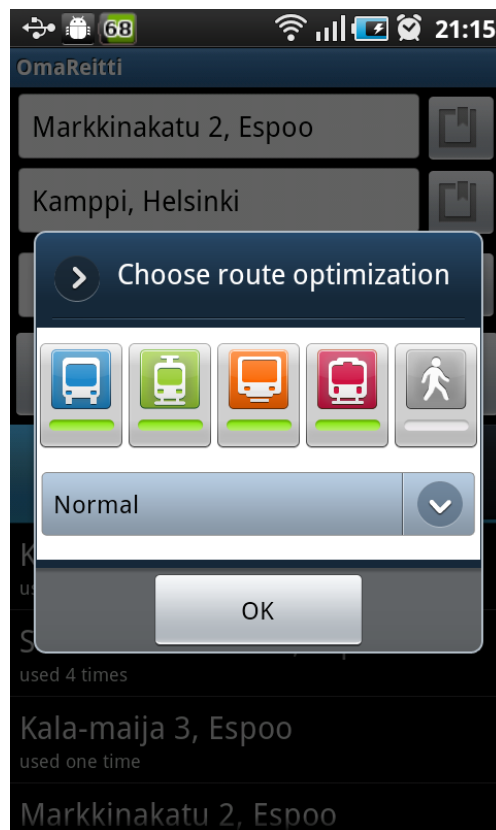
Selecting the route starts reminder timers and location tracking



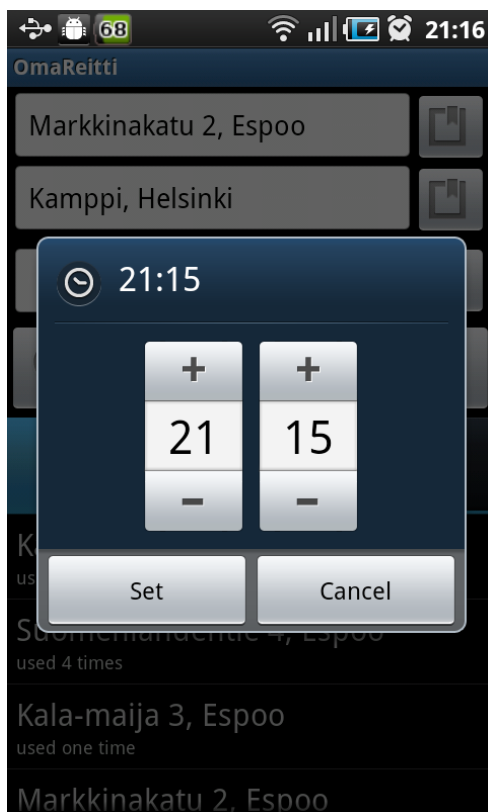
Departure notification (no time to finish your coffee!)



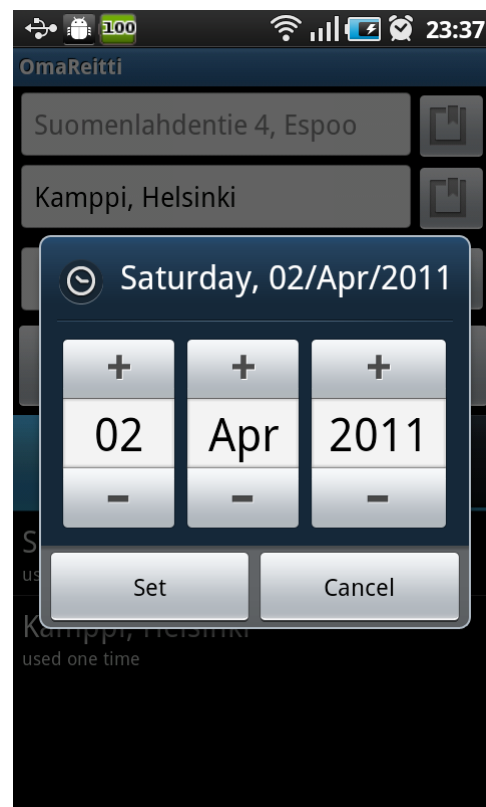
Oops, too late! (I told you, no time for coffee!)



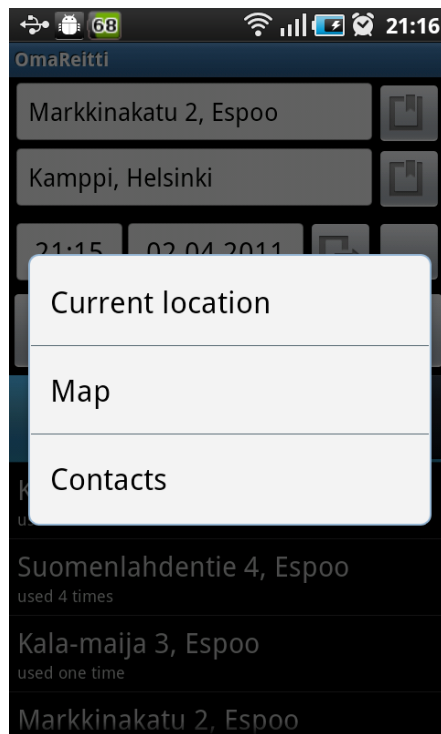
Route optimization settings



Choosing time

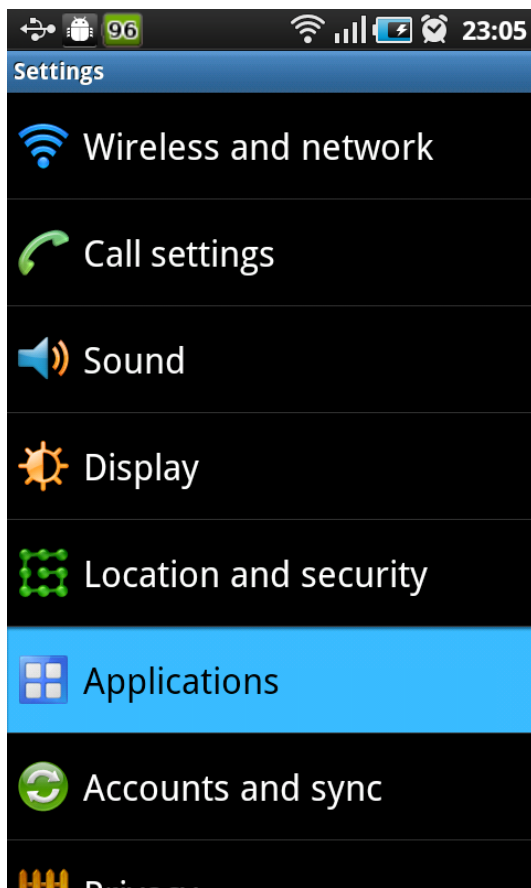


Choosing date

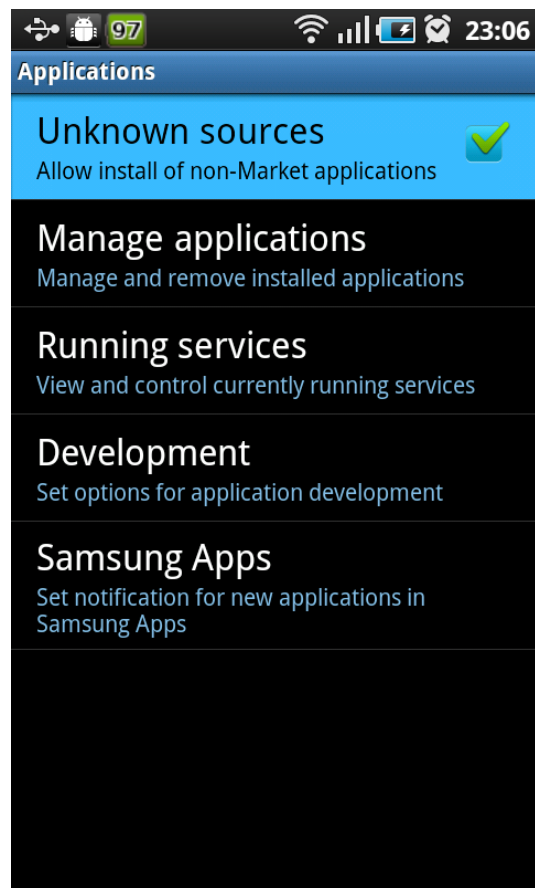


Location can be selected using
GPS, map or phone contact

Installation



In order to install OmaReitti from the apk file, go to Android Settings



and check the “Unknown sources” checkbox

then download the apk from <http://oma-reitti-android.googlecode.com/svn/trunk/omareitti/bin/omareitti.apk> to your phone and install it.

Future prospects

Even though all functionality is already implemented, OmaReitti is still in beta stage. In addition to fixing minor non-critical bugs, arrival reminder logic needs some more testing and adjustments. Tracking server functionality must be extended to accommodate several important features.

In future, when the application will be used by many people, it will become possible to make departure notifications not by schedule, but using real-time transport location reported by other users. In order to increase the user base, OmaReitti must be implemented on other platforms - iPhone, Symbian, Maemo, etc.

Currently we are working on fixing minor bugs, implementing more accurate position tracking logic, adding usage analytics and route selection for cycling. The application source code licensed under GNU GPL v3 can be found at <http://oma-reitti-android.googlecode.com/>.