Fine Architects of Enterprise Software.
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Proof of concept

Road Alarm
From roadblocks to speed traps

A free, white-label, community-driven platform for reporting and automatic alerts about well… "interesting" locations along roads like speed traps, accidents or road works, primarily to be used as an app on smartphones and tablets

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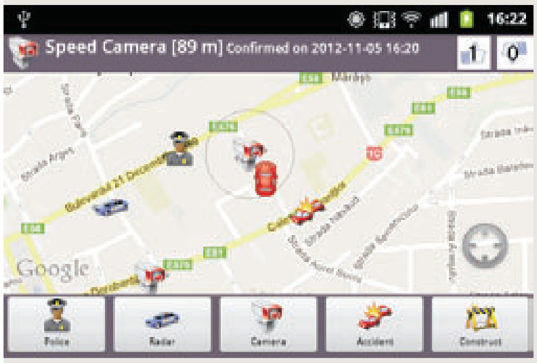

On the road again…

With the proliferation of GPS-enabled mobile devices, drivers can nowadays blissfully rely on affordable gadgets to avoid speed tickets, traffic jams and unfortunate encounters with men in black.

This generic client/server platform allows any user to easily and yet flexibly report newly discovered, location-based incidents along roads. Naturally, manual input is kept at a minimum for reporting. A central server stores and prunes reports by duplicate-checking, automatic decaying and a voting mechanism with customizable thresholds.

Most importantly, the system automatically warns users when they approach a pre-defined vicinity of a road incident, by visual and audio signals in various languages. Ongoing analysis of the user's location changes ensure that updates are only pulled in if necessary, thus avoiding excessive bandwidth usage.

Tools of the trade

Android API, Swing framework, Jackson JSON library, Google AppEngine, Google Maps API, PKI, jQuery library

Deployment platforms

HTML

Person days

10

Lines of code

6,500 (Java, XML and HTML)

Duration

3 weeks

Not so fast, please…

The platform was set up as a generic client/server architecture to make the implementation of various clients particularly easy. The Android app uses standard Android APIs, the Spring and Jackson frameworks to communicate with the Server via REST calls and JSON objects.

An HTML5 client is also available, implementing all basic functions via jQuery. A port to the iOS platform with Objective-C could be ready in a matter of weeks.

As for any community-driven platform, effortless scalability on the server-side is king. Therefore, the persistence layer and request handler were set up in a PaaS cloud, namely the Google AppEngine.

To ease user adoption, no user accounts and logins are needed to access the system. The problem of garbage input or malicious access was side-stepped by introducing a simple PKI infrastructure where the server only handles requests which were signed by a client with a known key. Other requests are simply dropped.