



Code less.  
Create more.  
Deploy everywhere.



# QtMobility: Qt API for mobile development

Pavel Zubarev,  
Open Source & Linux Lab

FRUCT-7, Saint-Petersburg, April 28, 2010

# QTMobility

- Project's goal:
  - Provide cross-platform QT API, which often available for mobile devices
- Project's team:
  - Qt developers + Nokia devisions
  - OpenSource community
- Target platforms:
  - Nokia mobile devices(Maemo, Symbian)
  - Desktop systems(Linux, MacOS, Windows)

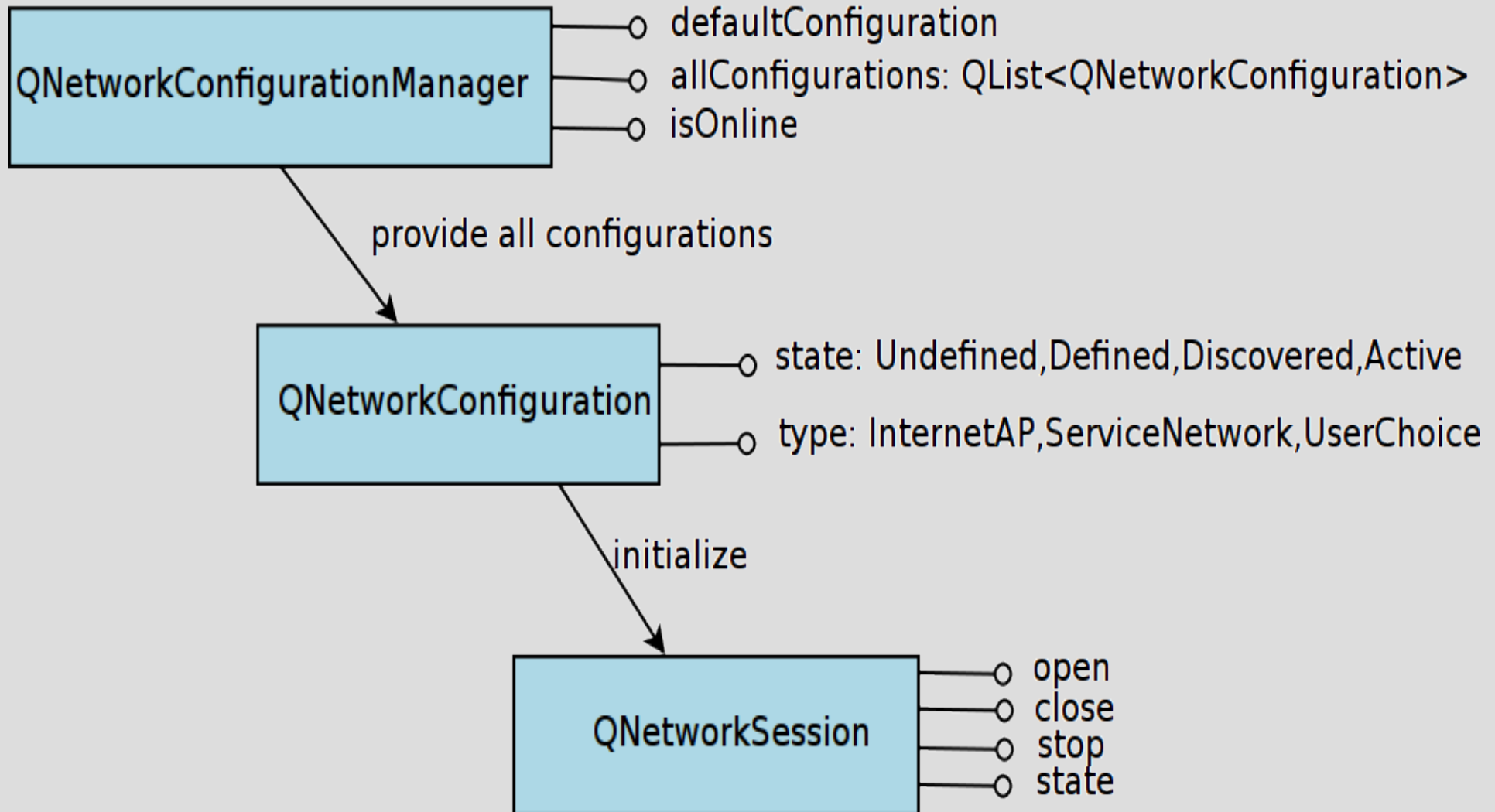
# Components

- Bearer Management
- Contacts
- Location
- Messaging
- Multimedia
- Publish and Subscribe
- System Information
- Sensors

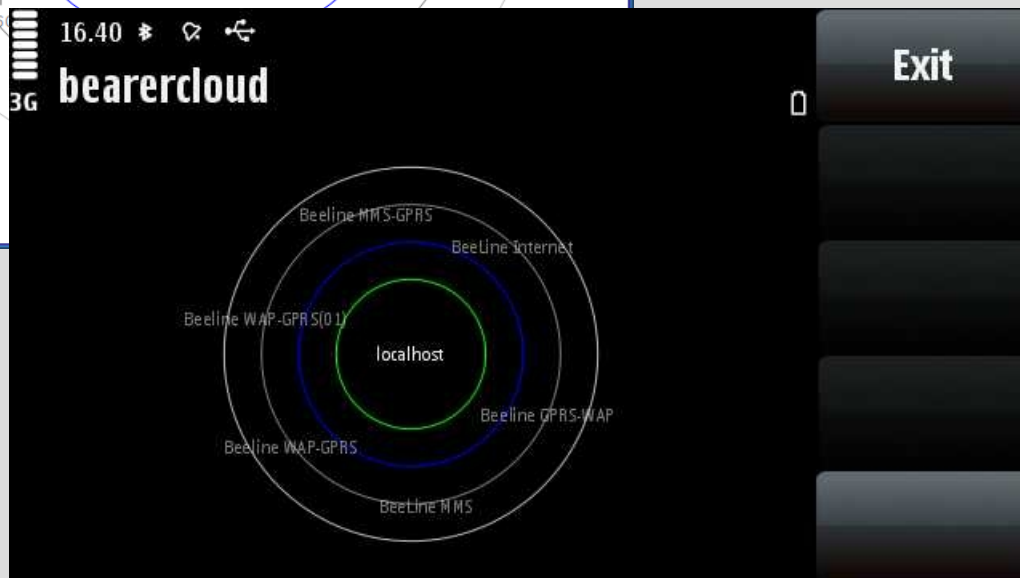
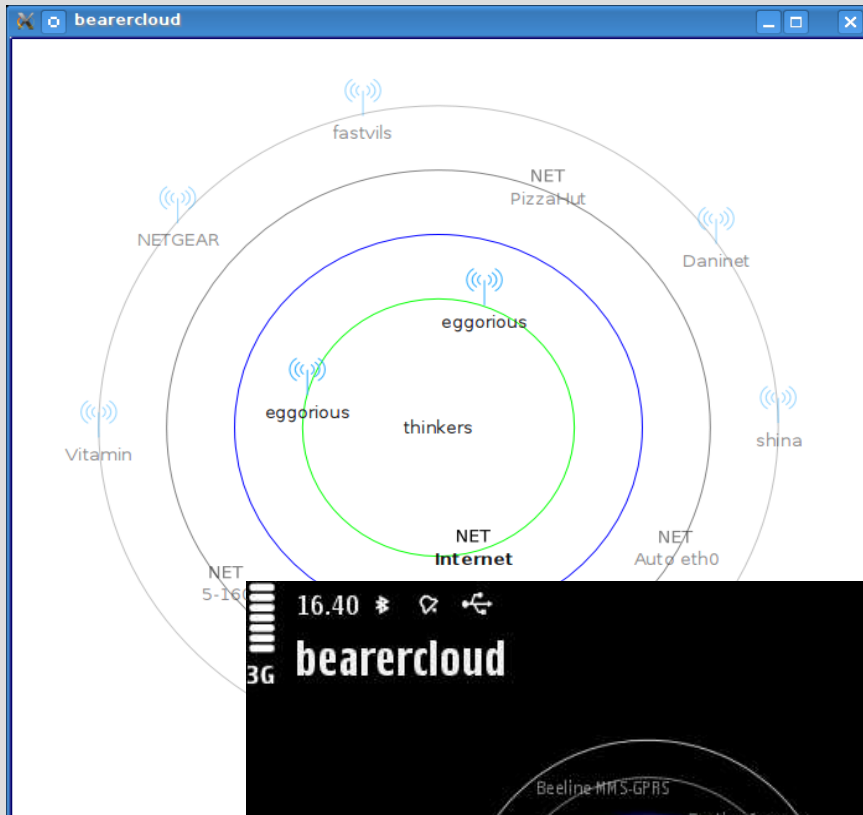
# Bearer Management

- Provide access to:
  - Network connection switching
  - Choosing network connection
  - Connections management
- Applications examples:
  - WiFi scanner
  - Network Manager

# Bearer Management API



# Bearer Management demo

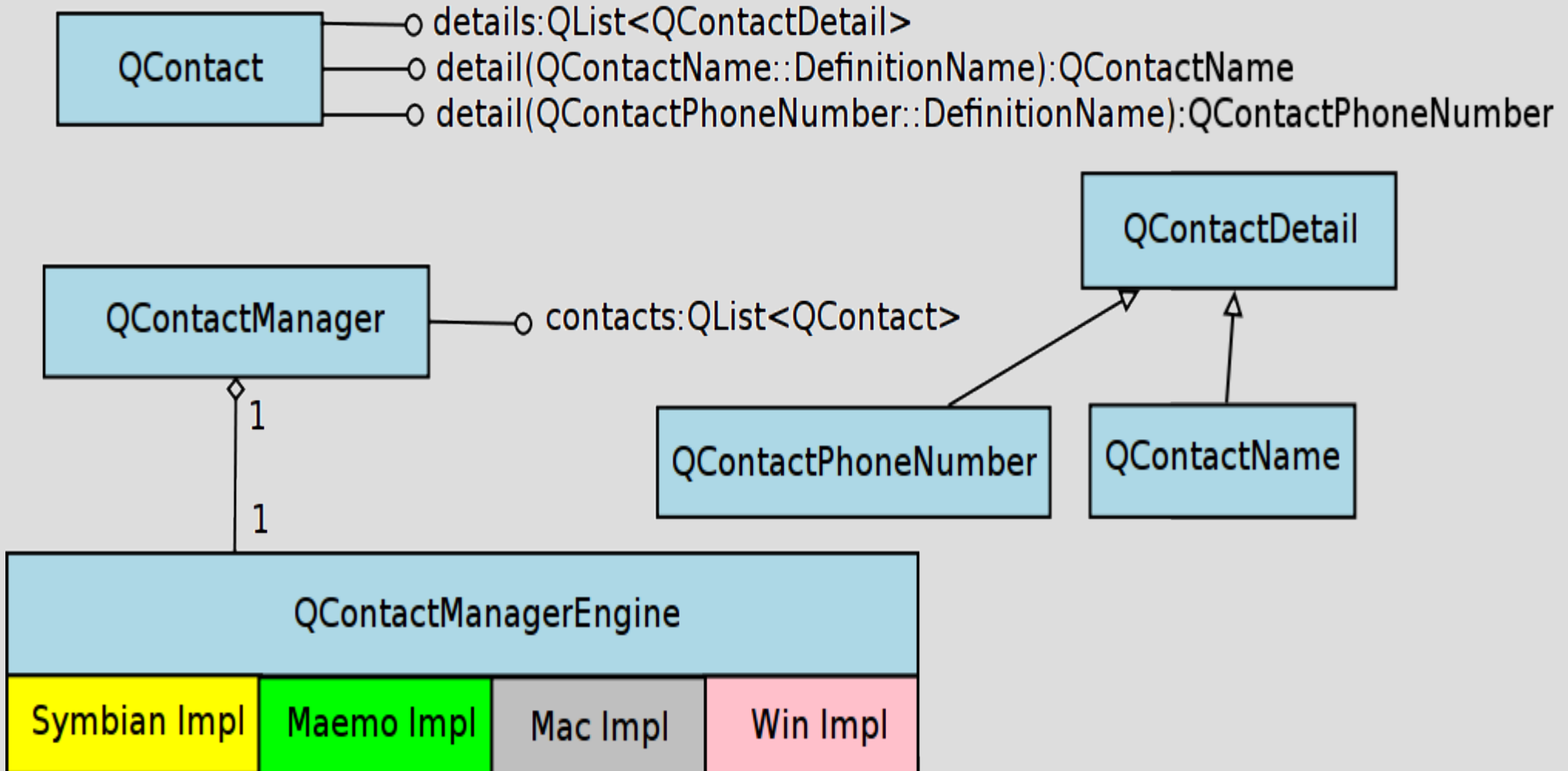


A mobile application interface for 'Form'. It shows system state information: 'System State', 'Online State: Offline', 'Configurations', 'Name:', 'State:', 'Type: Invalid', 'Purpose: Unknown', 'Identifier:', 'Roaming:', and 'Children:'. The interface includes a status bar with '16.40' and '3G', and a sidebar with buttons for 'Exit', 'New Session', 'Delete Session', 'Scan', and 'Exit'.

# Contacts

- Provide access to phone's address book at sim-card or internal mobile phone's memory
- Customization for address book contacts with adding new fields
- Applications examples:
  - Email client
  - Contacts synchronizer with some external Internet-service

# Contacts API





# Contacts demo

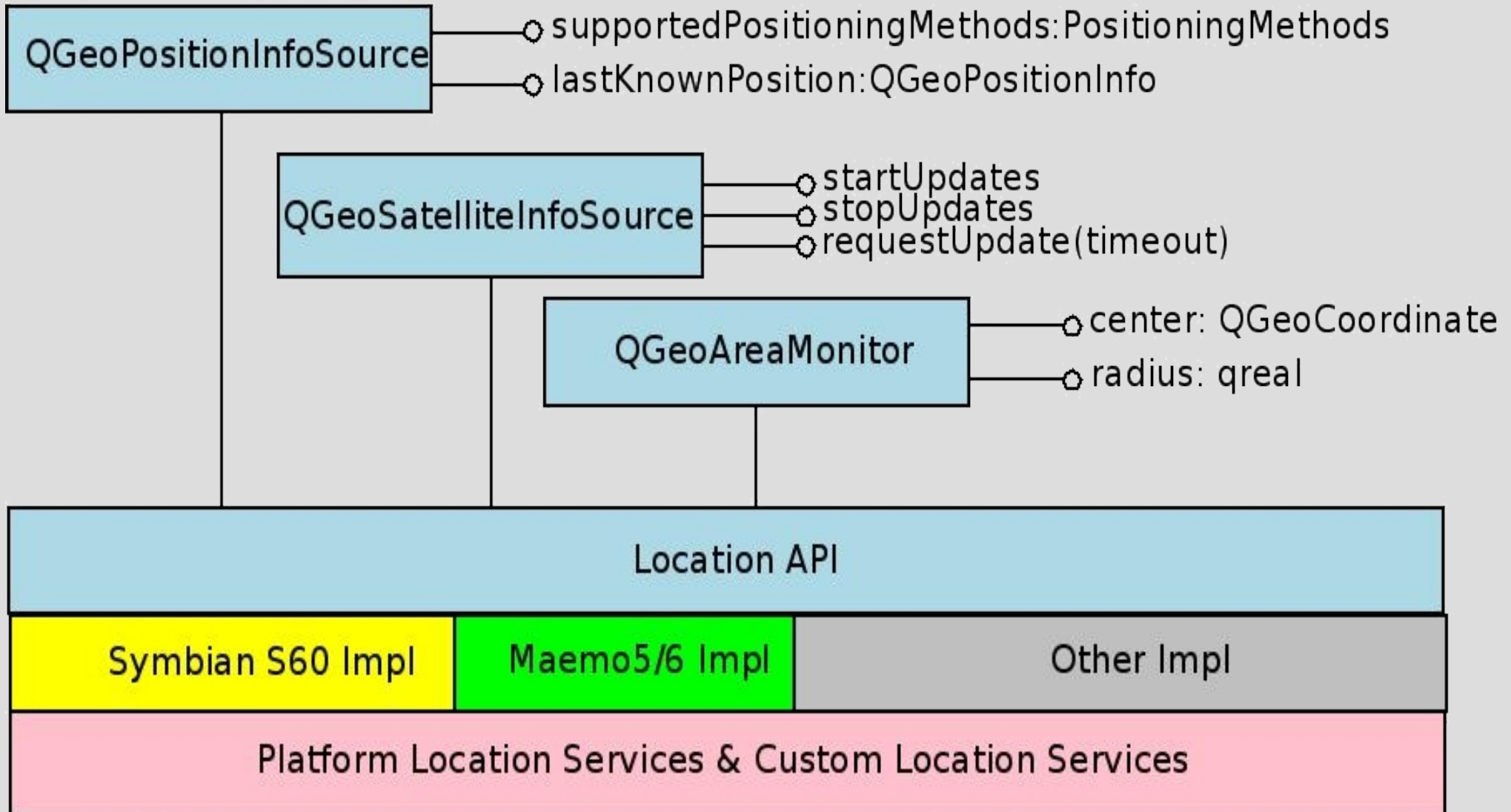
The image displays three overlapping screenshots of a mobile application titled "Sample Phone Book".

- Top-left screenshot:** Shows the main application interface. The status bar at the top displays the time 17:45, 3G signal, battery, and connectivity icons. The app title "samplephonebook" is visible. Below the status bar, there is a "Store:" dropdown menu set to "memory", a "Filter: Inactive" indicator, and a contact name "Pavel Zubarev". At the bottom, there are three buttons: "Add", "Edit", and "Delete".
- Bottom-left screenshot:** Shows a "NOTICE" dialog box. The name "Pavel Zubarev" is highlighted in blue. Below the name are input fields for "Phone" (containing "911") and "Email" (containing "zps@osll.spb.ru"). A "Save" button is at the bottom.
- Right screenshot:** Shows a detailed contact form for "Freddy Gumboots". The form includes:
  - Name: Freddy Gumboots
  - Avatar: A photo of a penguin plush toy.
  - Email: r.freddy.william.preston.gumboots.esquire@isp.com
  - Home Phone: (empty)
  - Work Phone: 012345
  - Mobile Phone: 123456789
  - Address: 1 Fantasy Avenue, Utopia, QLD, 4506Buttons for "Add", "Save", "Remove", "Find", "Import", "Export", and "Quit" are on the right. At the bottom, it says "Current Backend: memory" and "Contact 2 of 3 (Saved)".

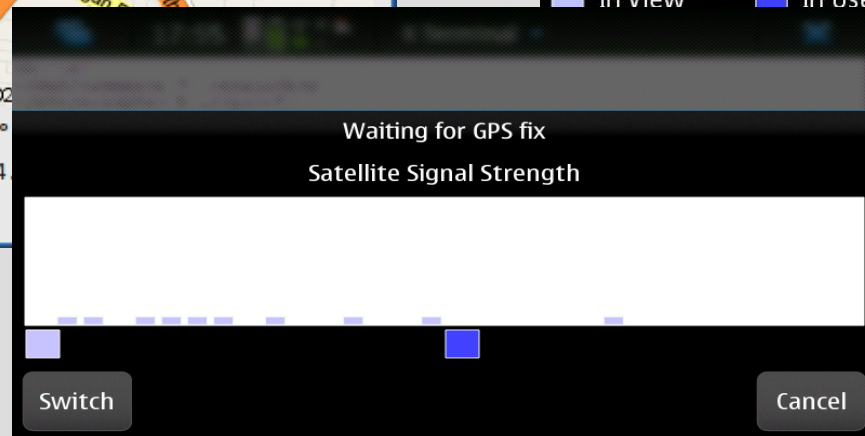
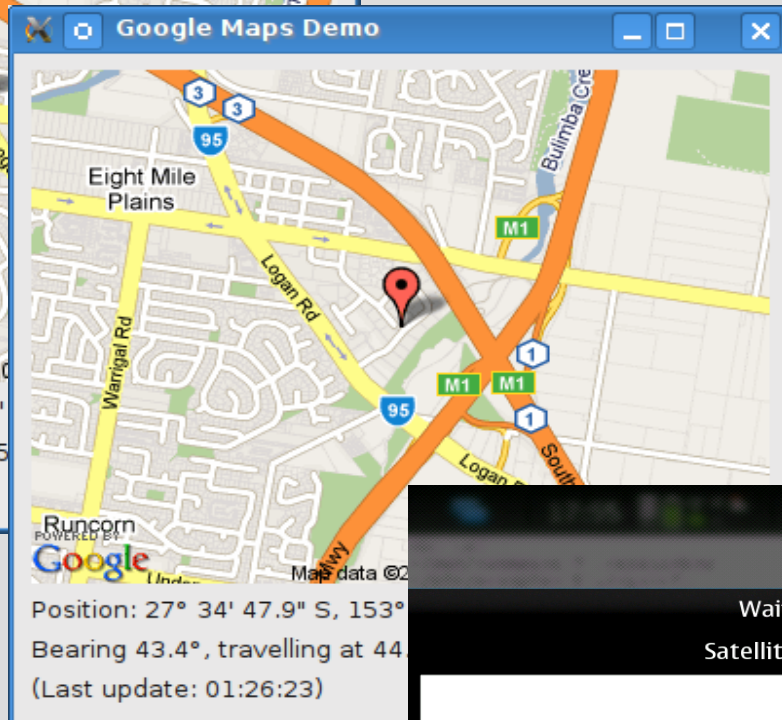
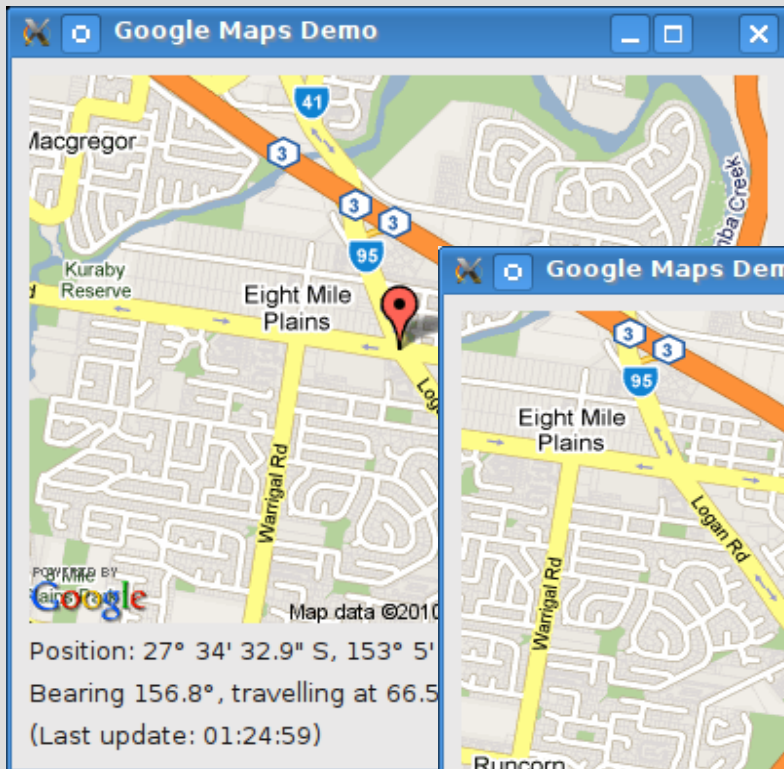
# Location

- Provide access to location-oriented information
- Application examples:
  - GPS note
  - OpenstreetMaps updater

# Location API



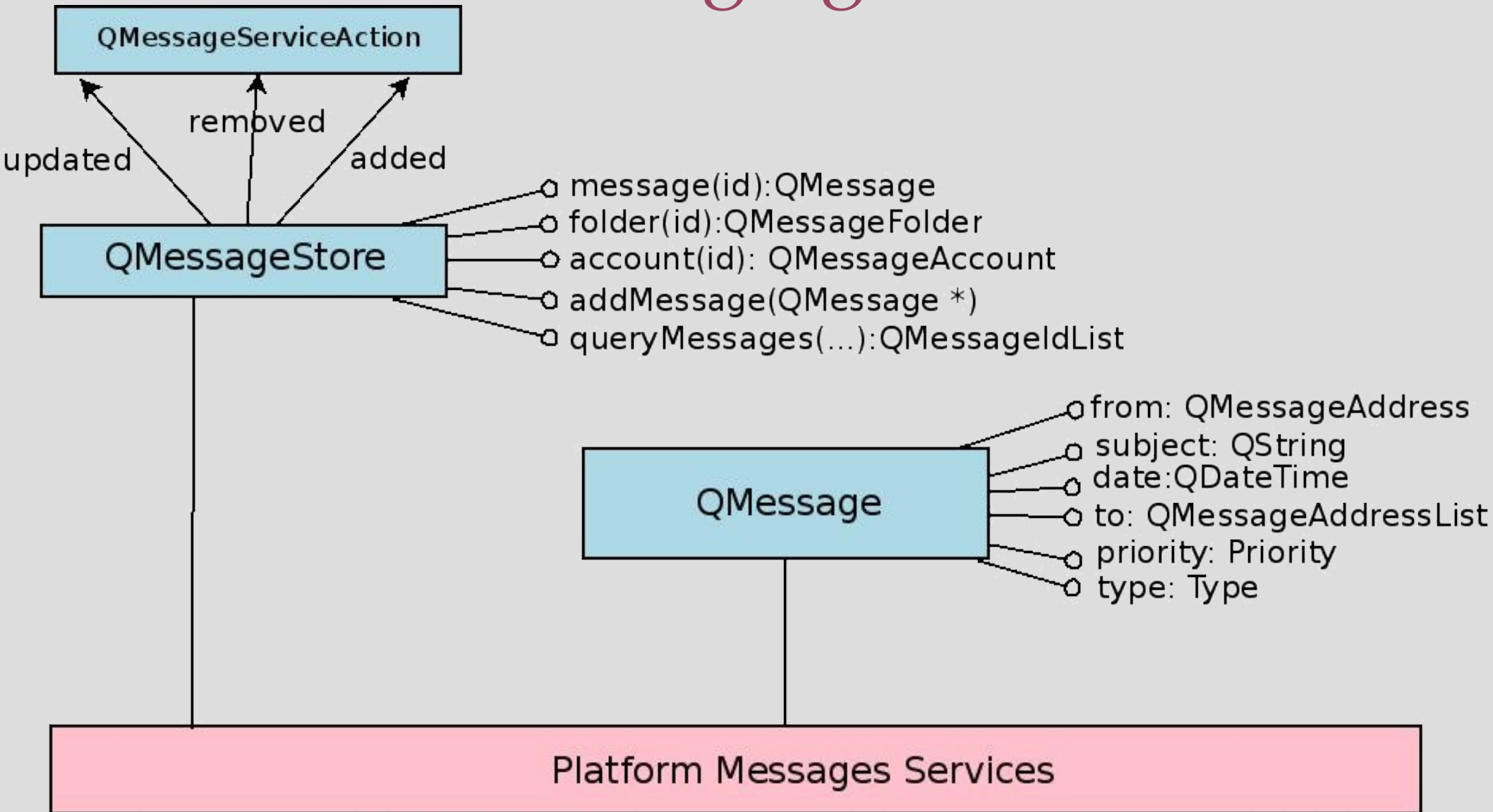
# Location demo



# Messaging

- Provide sending/receiving functionality for emails, sms, mms
- Processing for already stored messages, for example, searching in email-box
- Application example:
  - Application “I’ll be late. I’m on Nevsky station now.” (Location + Messaging)

# Messaging API



# Multimedia

- Playing audio/video content
- Audio recordering
- Working with FM-radio receiver (playing, recording)
- Application example:
  - “Pausing” your favorite live radio station, while you are talking with your best friend

# Multimedia demo

The image displays a multimedia demo interface. At the top, a window titled "slideshow" contains a "Google Maps Demo" window showing a map of the Macgregor, Kuraby Reserve, and Eight Mile Plains area. Below this, there are two video player windows. The top video player shows a historical map of the Pacific Ocean with a decorative globe and navigation controls. The bottom video player shows a constellation chart titled "DE INTEGRO MULTEPIS" with navigation controls. Both video players have a status bar at the top showing the time as 11:05, 3G connectivity, and battery level.



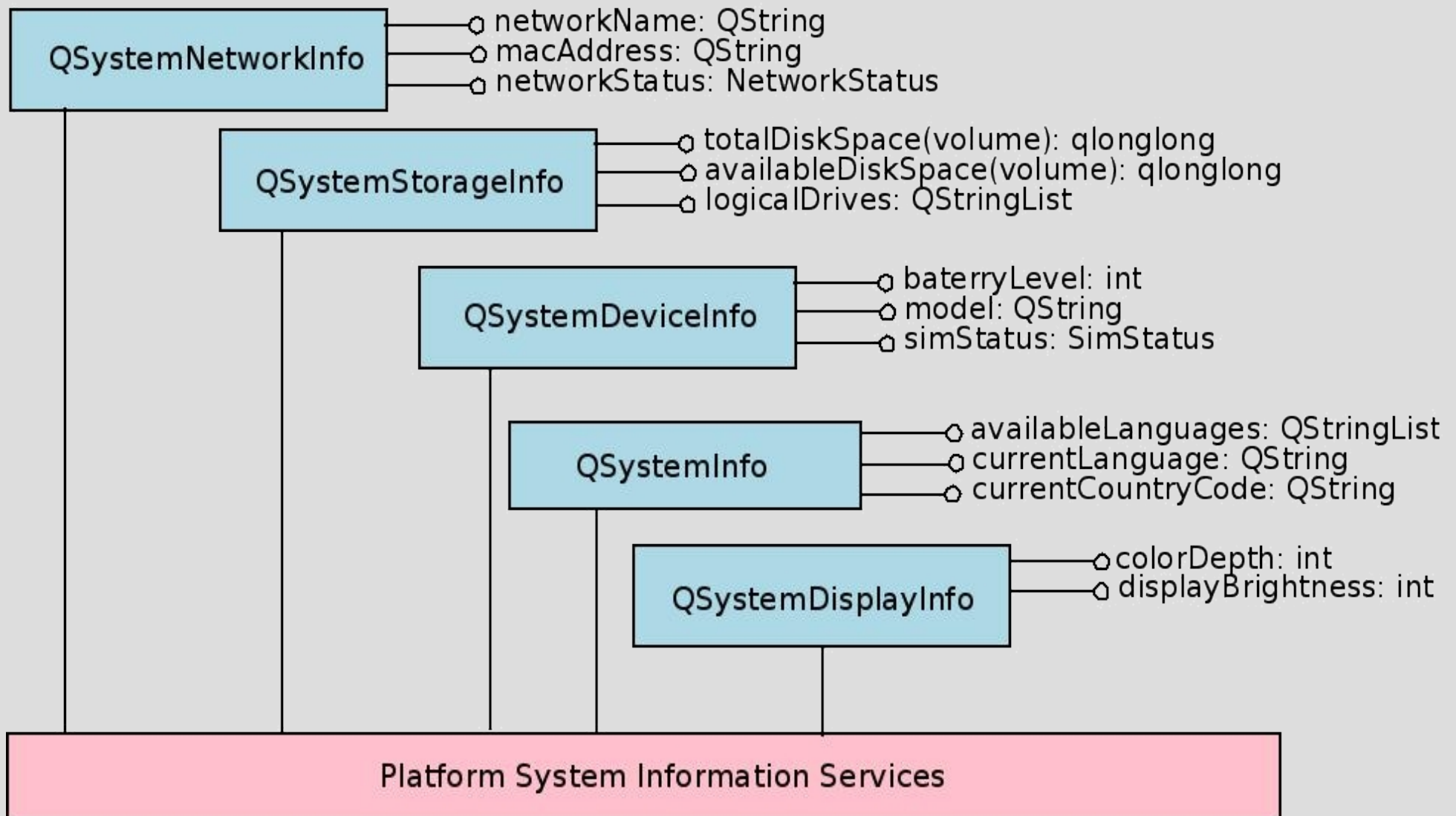
# Publish and Subscribe

- Provide new IPC mechanism based on “trees”, which is similar to MS Windows registry
  - Navigation on the tree values
  - Reading/Writing values
  - Notification mechanism allows to process values, when they were changed.
  - Both: Local or Remote communications are possible

# System Information

- Provide full information about your system and device:
  - IMEI, Manufacturer,
  - Network connection status, Storage capacity / usage
- Application examples:
  - Desktop applet with system resources usage
  - PieChart with disk / storage utilization

# System Information API



# System Information demo

System Information

General Device Display Storage Network S

98%

IMEI: Sim Not Available

IMSI: Sim Not Available

Manufacturer: LENOVO

Model: x86\_64 Notebook

Product: Computer

Device lock

Sim status: Sim not available

current Profile: Unknown

Input method: Keys Keypad Ke

System Information

17:42 3G

General General2 Device Device2 Device3 Display Storage

IMEI: 356938030037445

IMSI: 250021020561910

Manufacturer: Nokia

Model: armv7l

Product: Computer

System Information

16:38

3G

General General2 Device

QtCore

Version: 4.6.2

Sim

Feature supported: true

Exit

System Information

17:17 3G

Storage Network Network2 Network3 S

Wlan

Network Status: Connected

Network Signal Strength: 72

MAC address: 18:86:ac:43:31:f4

Interface Name: wlan0

Network Mode: None

# Sensors

- Access to sensors are integrated into device and provided by platform
  - Accelerometer
  - Light sensor
  - Compass
- Application examples:
  - Calories meter(calculating how many steps you did when you are walking)

# Using QtMobility

- Maemo:
  - Scratchbox
  - Xephyr
  - MAEMO SDK
  - **libqtm- deb-packages are available**
- Symbian:
  - Carbide.C++
  - Symbian SDK
  - Symbian emulator
  - **.sis packages for S60 3<sup>rd</sup>,5<sup>th</sup> are available**
- Project's url:
  - <http://labs.trolltech.com/page/Projects/QtMobility>
- Source code:
  - <http://qt.gitorious.org/qt-mobility>
- Documentation:
  - <http://qt.nokia.com/doc/qtmobility-1.0>



# Questions & Answers

Pavel Zubarev,

*[zps@osll.spb.ru](mailto:zps@osll.spb.ru)*

Open Source & Linux Lab,

*<http://osll.furct.org>, [osll@fruct.org](mailto:osll@fruct.org)*