

OpenPhoenix Hacking weekend

Topic: Kernel + QtMoko

by OpenPhoenix.org

supported by Emvolution and Golden Delicious
Computers

4th and 5th June 2016, Munich

Participants

- Andreas Kemnade
- Jakob Drexel
- Jonas Smedegard
- Josua Mayer
- Lukas Märdian
- Marek Belisko
- Nikolaus Schaller
- Sebastian Reinhardt

Time Plan

- Fr: 19:00 - ca. 22:00 „Stammtisch“
- Sa: 10:00 - let's see
- So: 10:00 - tbd

Main Topics

- GTA04 kernel improvements
- User-Space
 - mainly QtMoko / Debian
 - but also Replicant and others

Infrastructure

- Eat & Drink: here and restaurants, pizza service
- WLAN
 - SSID: "muenchen.freifunk.net" - no password
 - SSID: "Emvolution Gast" - password:

What we expect from this workshop

- results
- user space with telephony works together with current kernel
- charger works
- sensors which are still failing work
- power saving
- debian packaging, laying the groundwork for easier development
- make more things streamlined (e.g. bootstrapping scripts, kernel config, ...)
- reproducible builds
- qtmoko pieces linked together
- roadmaps and strategies for upstreaming (kernel) more complicated stuff (1001 anti-gnomes)
- power on/off modem reliably with rfkill driver
- understand how qtmoko builds
- better modularize

What I want to work on

- Andreas: libertas wifi drivers, charging everywhere,
- Jakob: work on user space (e.g. replicant) and integrate with kernel
- Jonas: debian packaging, understand/clean up existing packages, boxer meta packages
- Josua: compiling qtmoko, core debian packages
- Lukas: Replicant and rkill, debian packaging (shr, fso repositories)
- Marek: pick something from kernel, qtmoko modularization
- Nikolaus: ov9655 driver
- Sebastian: bring in QtMoko user perspective, choose qtmoko packages

QtMoko Resources

- Radek's project: <https://github.com/radekp/qtMoko>
- new project: <http://projects.goldelico.com/p/gta04-qtMoko/>
- git repo: <http://git.goldelico.com/?p=gta04-qtMoko.git>
- mirror: <https://github.com/goldelico/gta04-qtMoko>
- domains: qtMoko.net, qtMoko.com (not qtMoko.org!)

QtMoko Evolution

- 3 Options
 - A) **fix** qtmoko sources to build on Debian Jessie (using existing makefiles)
 - B) **refactor** qtmoko sources so that they use 100% native Debian build system
 - C) **rebuild** qtmoko on top of Qt4/Qt5

Some initial thoughts

- Tasks for A (fix)
 - understand structure of build system
 - find out why it does not build
 - fix / hack
 - make applications (e.g. address book, networks setup, telephony) interact with Jessie APIs and latest GTA04 kernels

Some initial thoughts

- Tasks for B (refactor)
 - understand structure of build system
 - refactor Qt into separately built (dev and runtime) packages
 - set up using native debian build for everything
 - set up Debian source repo (apt-get source)
 - make applications interact with Jessie APIs and latest kernels

Apps...

categories

[games](#) [multimedia](#) [dictionaries](#) [applications](#) [utility](#) [input](#) [communication](#) [gps](#) [themes](#)

tags

[mp3](#) [music](#) [codecs](#) [ringtones](#) [puzzle](#) [pdf](#) [viewer](#) [keyboard](#) [vnc](#) [video](#) [jabber](#) [icq](#) [chat](#) [irc](#) [java](#) [sound](#) [volume](#) [gps](#)

all packages



Chess

Frontend for gnuchess



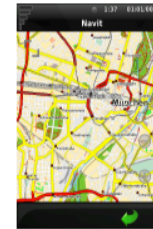
QtMoko codecs

MP3 and other codecs that are patented in US



Cutemaze

Navit

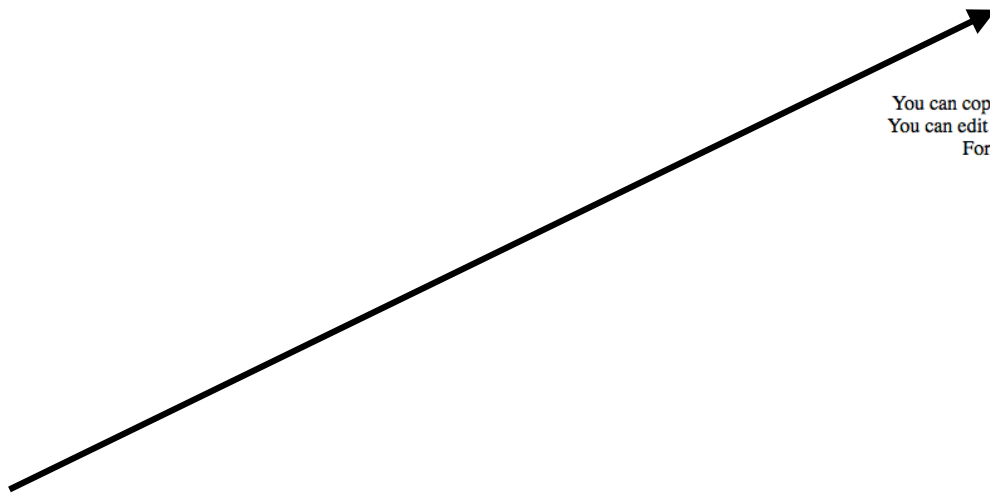


Car navigation system

[Click here to install](#)

Notes

You can copy your maps to `/opt/qtmoko/share/navit/maps`
 You can edit `/home/root/.navit/navit.xml` to configure navit
 For native language speech see [this](#) post



- nice - but why download a .deb and manually `dpkg -i` and not `apt-get install`? => set up a package server and `/etc/apt/sources.list`
- basic libraries and system are not Debian packaged
- no package dependencies?
- there is no `apt-get install qtmoko` meta-package (like LXDE, XFCE4, ...)
- important goal: make installation simple for users

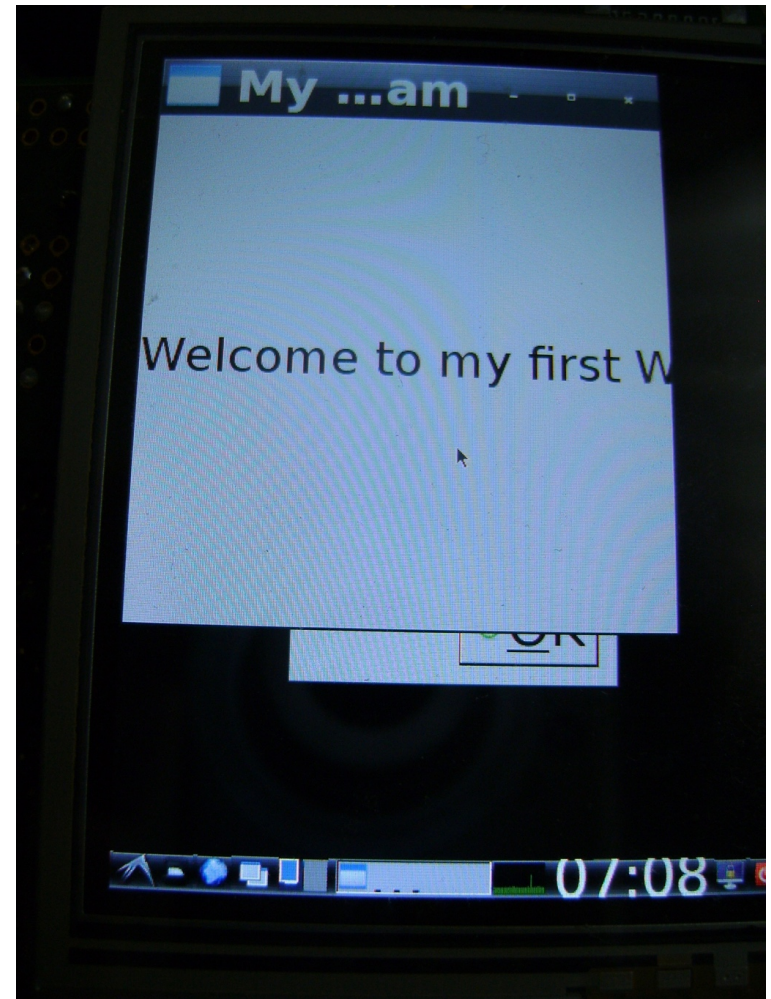


Name	Modified	Size	Downloads / Week
GTA02	2013-12-14		3
GTA04	2013-09-03		4
Experimental	2013-08-06		2
Old	2013-03-25		1
BuildHost	2013-03-05		3
GTA01	2011-04-26		1
README	2013-03-25	407 Bytes	2
Totals: 7 Items		407 Bytes	2

C) Example Rebuild

- <http://git.goldelico.com/?p=gta04-qtmoko.git;a=commit;h=3a8bfbaee6d0fe5a79763ac04152fcb97b5375ee>

```
apt-get install qt-sdk
git clone http://git.goldelico.com/gta04-qtmoko.git
cd gta04-qtmoko/qtmoko2/QtHelloWorld
qmake -project src
qmake
make
. /root/x
./QtHelloWorld
```



Some initial thoughts

- Tasks for C (rebuild)
 - understand the full architecture of QtMoko
 - find all significant classes that have replacements in Qt4/5 or are missing
 - write missing classes from scratch or cherry-pick parts from QtMoko or try to apply Qt migration tools
 - make applications (e.g. address book, networks setup, telephony) use Qt4/5 classes, Jessie APIs and latest GTA04 kernels or rewrite from scratch

- QtMoko: Phone UI using QPE
- Qt Embedded: fork/flavour of Qt3/4/5
- QPE: extensions e.g. AT modem control
- Qtopia: Trolltech QPE + Greenphone/PDA renamed to QtExtended
- Qt 3/4/5: GUI framework

Discussion

- Option C does not lead to quick results
- Option B is not as outdated as it looks if we just repack current QtE and make a qte-sdk
- A viable migration strategy looks to be to start with B and then move package by package to C
- on XII systems both QtE and Qt4/5 could run in parallel
- framebuffer is no longer necessary on GTA04 (XII is fast enough)

Workshop results we have achieved so far

- Andreas: hacked work-around for 4.7-rc1 boot problem
- Marek: generic adc battery state-of-charge driver ready for testing
- Andreas: linear charging fixed
- Andreas: tested WiFi driver on different devices
- Nikolaus: camera driver compiles and finds camera module
- Lukas: fixed wwan-rfkill for gta04a3; understood problem on a4
- Jonas: draft boxer profile for GTA04
- Josua: kernel.deb draft; qt-embedded 4.8.7 package (installing to /opt), qt-demos work on framebuffer; validated touch screen coordinates

Feedback (Sunday afternoon)

- What was good
 - Pizza, Working Environment, WiFi (freifunk), good to meet people, everybody already had some ideas to work on, very fruitful to discuss topics from very different angles, someone near to ask, bavarian accent is not that bad :),
- What could be improved
 - more time, small break, workshop week instead of just weekend, include app developer, include writing documentation (wiki),