

The  
#qt  
#wayland  
#systemd  
#btrfs  
phone  
...  
The  
Jolla phone



m@r

Sailfish 

Sailfish 

m@r

jolla

David Greaves

lbt on #mer #sailfishos ...

Co-founder of the Mer Project

## Who am I?

work at Jolla

systems and infrastructure (OBS, QA,  
gitlab, bz ... VMs)

HA Documentation

Mer tools



**This is not a  
Jolla pitch**

...

**but**

Sailfish 

mēr 

*jolla*

Good case study

**This is not a  
Jolla pitch**

...

**but**

Nexus 4

Galaxy S3

Sailfish on Android



# This is not a Jolla pitch

...

but

## HADK ToC:

- Prerequisites
- Preparing Your Device
- Setting up the SDKs
- Building the Android HAL
- Setting up Scratchbox2 Target
- Packaging Droid HAL
- Creating the Sailfish OS root fs
- Getting In
- Flashing the rootfs image
- Manual Installation
- List of Repositories
- Tweaks and Patches
- Building a new Device
- List of Supported Devices

# Talk about Technology

Sailfish 

mēr 

jolla



5.2

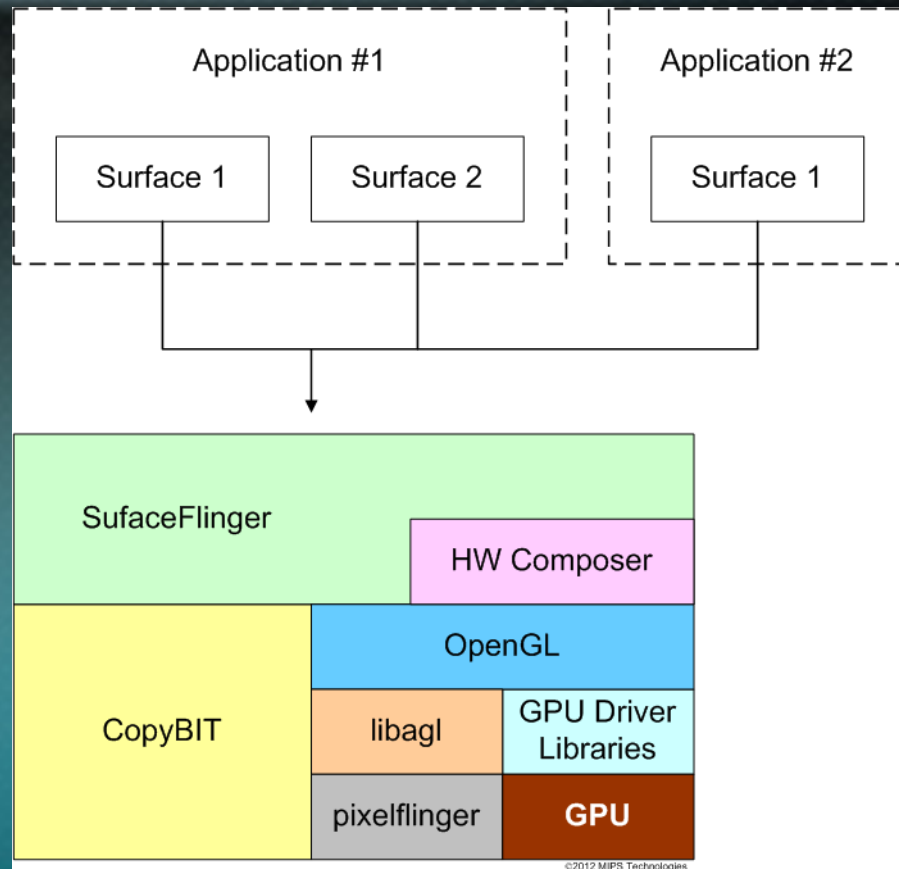
# Talk about Technology

Qt 5.2

Why?

- QML
- Performant
- Open
- Not Java
- Huge developer base

# Talk about Technology



## Qt 5.2

Qt replaces SurfaceFlinger  
Still more to come using  
hwcomposer.



# Talk about Technology

systemd



Love it ?

Hate it ?

# Talk about Technology

systemd

- Fast
- Simple / documented
- Predictable
- Journal

User Sessions

- UI
- Act dead

Problems:

- tracks kernel too tightly
- Various WTFs

# Talk about Technology

btrfs

Reliable  
Featureful  
Dynamic subvolumes

Wishes:

- Priority quotas

“we'd choose it again next  
time”<sup>[1]</sup>

“Writing ifup/ifdown by hand would have been even worse”

## Talk about Technology

connman

- Difficult issues – simply expressing requirements is hard.
- Real upstream improvements recently (eg: usb)

# Talk about Technology

ofono /  
pulseaudio

Not been a problem

Hard to find good  
people

Martti is talking in depth  
about it.

**Talk about  
Technology**

wayland

Compositing

Technically not insanely  
hard

Share a GPU buffer to  
the compositor

# Talk about Technology

libhybris

Shim between GNU libc  
and bionic libc

Enables use of glibc  
stack on top of Android  
BSP

# Talk about Technology

libhybris

Patches to bionic -  
relatively few:

- Thread local storage
- pthreads
- errno
- hard vs softfp
- /dev/log



```
android_dlopen("libEGL.so");  
  
myeglCreateWindowSurfaceFP =  
android_dlsym("eglCreateWindowSurfa  
ce");  
  
*myeglCreateWindowSurface(....)
```

# Talk about Technology

libhybris

Gets you

- libEGL.so
- libGLESv2.so

as wrappers which  
present to glibc space

# Talk about Technology

libhybris

Rinse and repeat for:

- Gralloc
- OpenGL ES 1.1/2.0
- NFC
- Hardware HAL
- OpenCL
- SurfaceFlinger
- OpenMAX
- Camera
- Hwcomposer
- and so on ...

# Talk about Technology

git

dbus

rpm

kernel

Sailfish 

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jolla 

**Open Source**

**Open Working**



Maemo

MeeGo

**Open Source**

We've been on the  
outside

**Open Working**

It's hard



# How?

## Open Source

## Open Working

- Internal Policies
- Eg: commits must have a suitable external bug reference

"When you as a Jolla employee are participating in open source projects, you are participating as yourself, not as Jolla."

## Open Source

- Be transparent externally
- To respect open source community contribution
- Respect other people's work and expertise
- Respect customers and partners (especially OSS ones!)
- "doing it together"
- Be diplomatic

## Open Working

**Open Source**

**Open Working**

Mer

- Core & some MW
- Systems
- Community

Code is not enough



# Talk about Technology

Not covered:

- Many 'on-device' packages
- OBS/Build system
- SDKs and Tools
- Cross building
- Image building
- System updates
- Process Automation
- Test Automation
- Documentation
- Release Engineering
- Issue handling
- Open co-development
- Concurrent HA support

# Not that hard

80 people made this:

## Unlike



Sailfish 

m<sub>e</sub>r 

jolla 

Unlike

Not that hard

freenode:

#mer

#sailfishos

github/  
mer-hybris

merproject.org

80 people made this:



Sailfish 

mer 

jolla 