

The Lima Driver: Liberating the ARM Mali GPU (pt. 2)

Luc Verhaegen

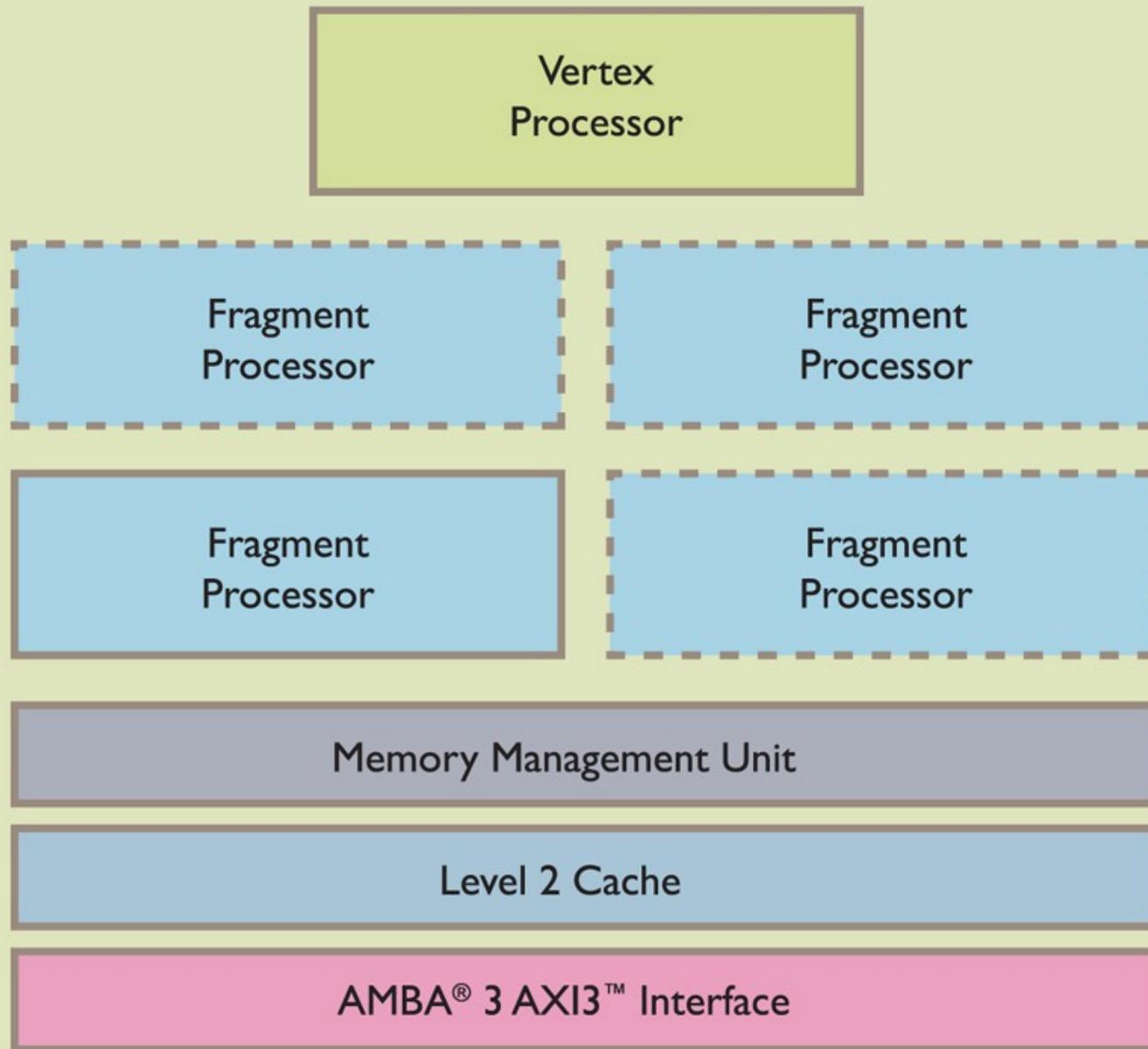
libv@codethink.co.uk



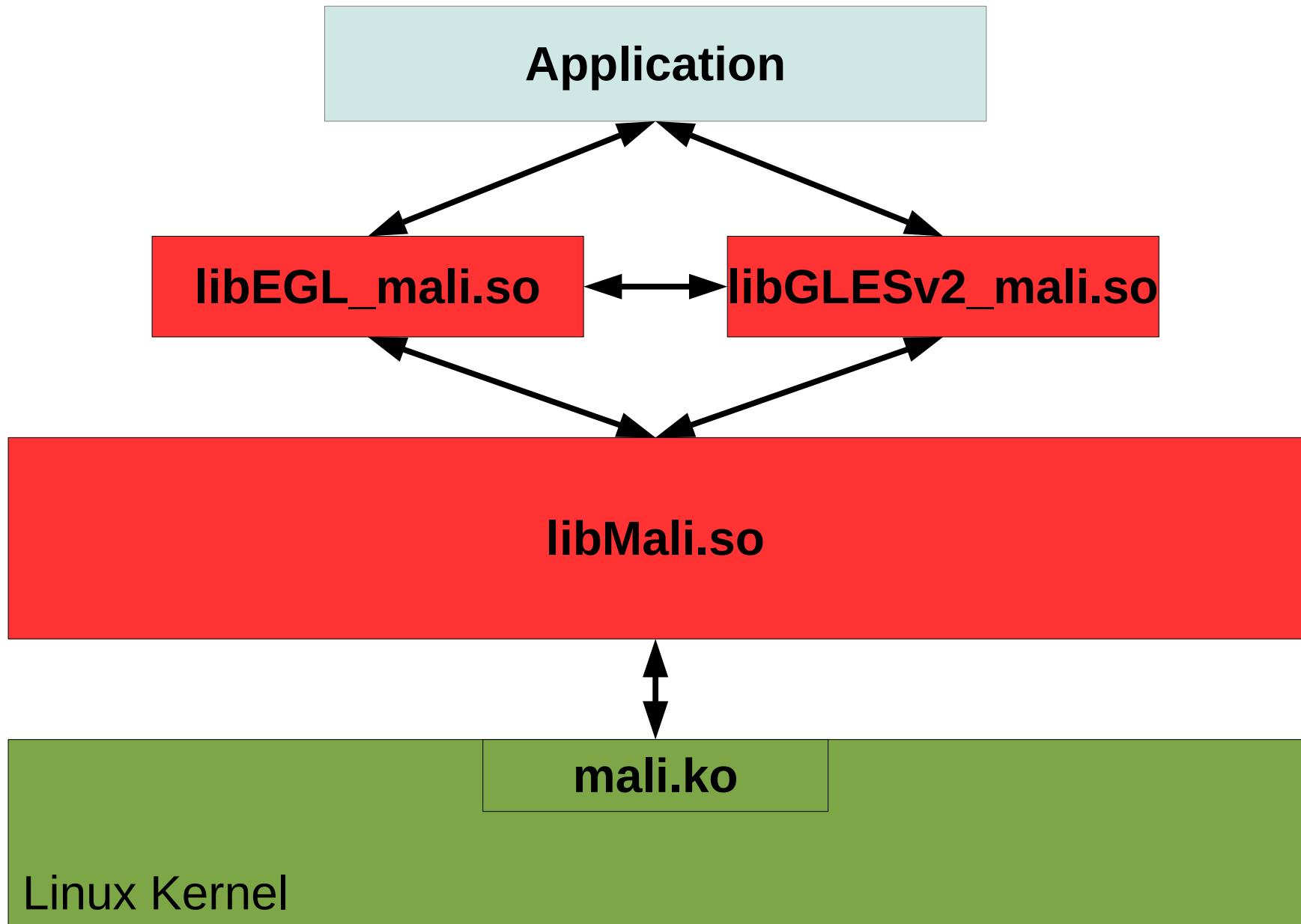
The plan.

- Free ARM GPUs
- Pick best candidate: ARMs own Mali!
- Divide:
 - Infrastructure / command stream
 - Compiler / shaders
- Easy!

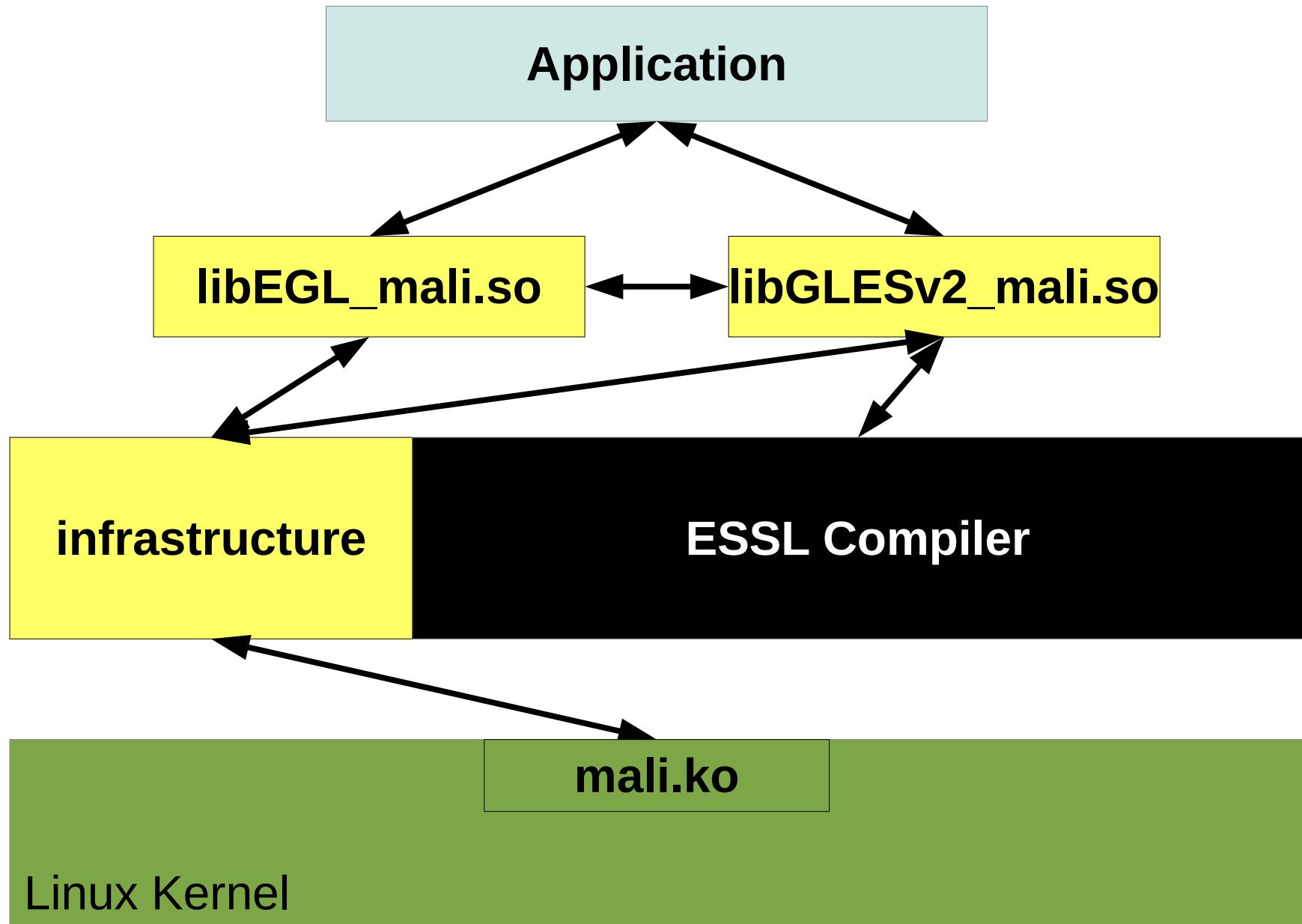
Mali™-400MP



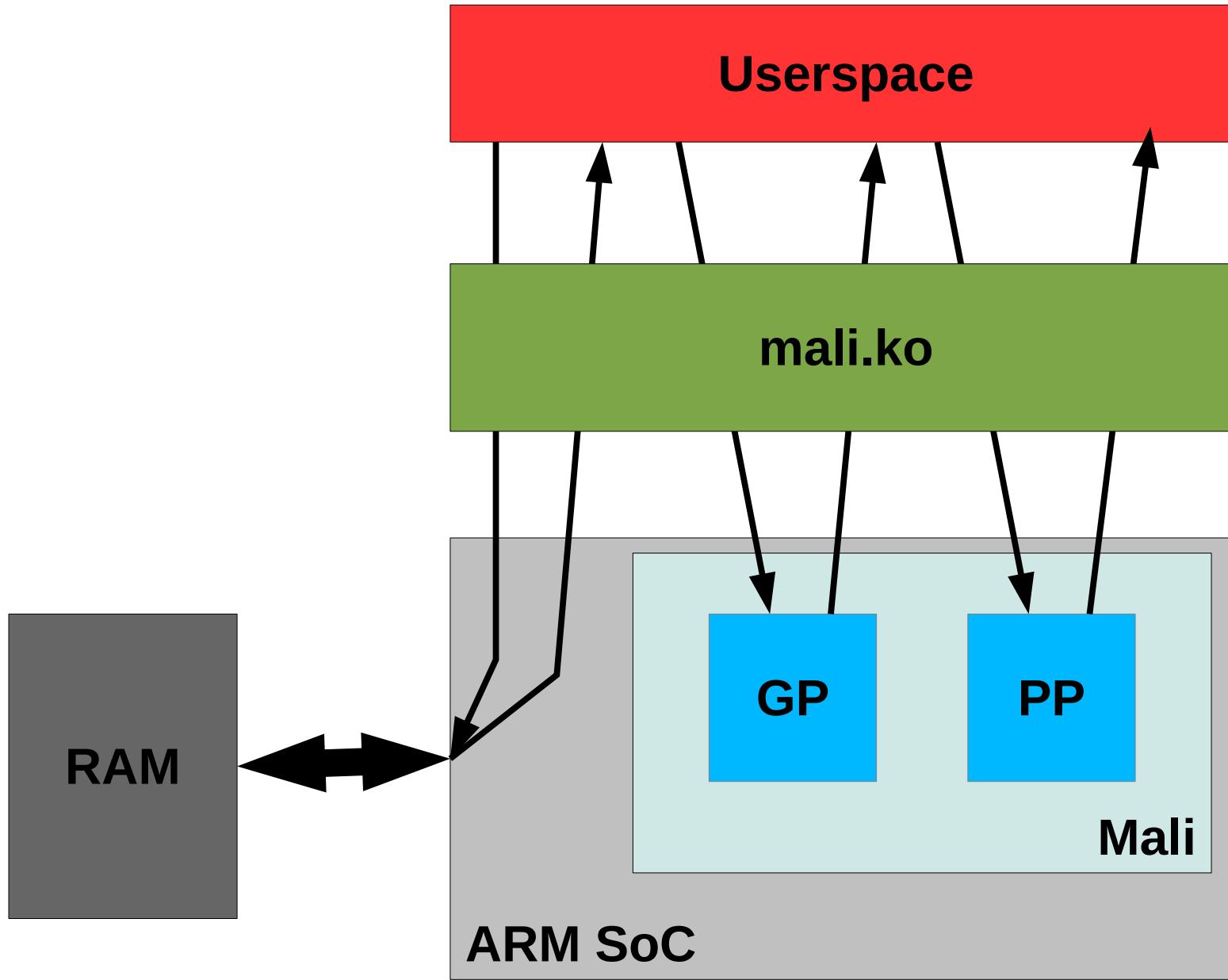
ARM's Mali driver stack



Infrastructure vs Compiler



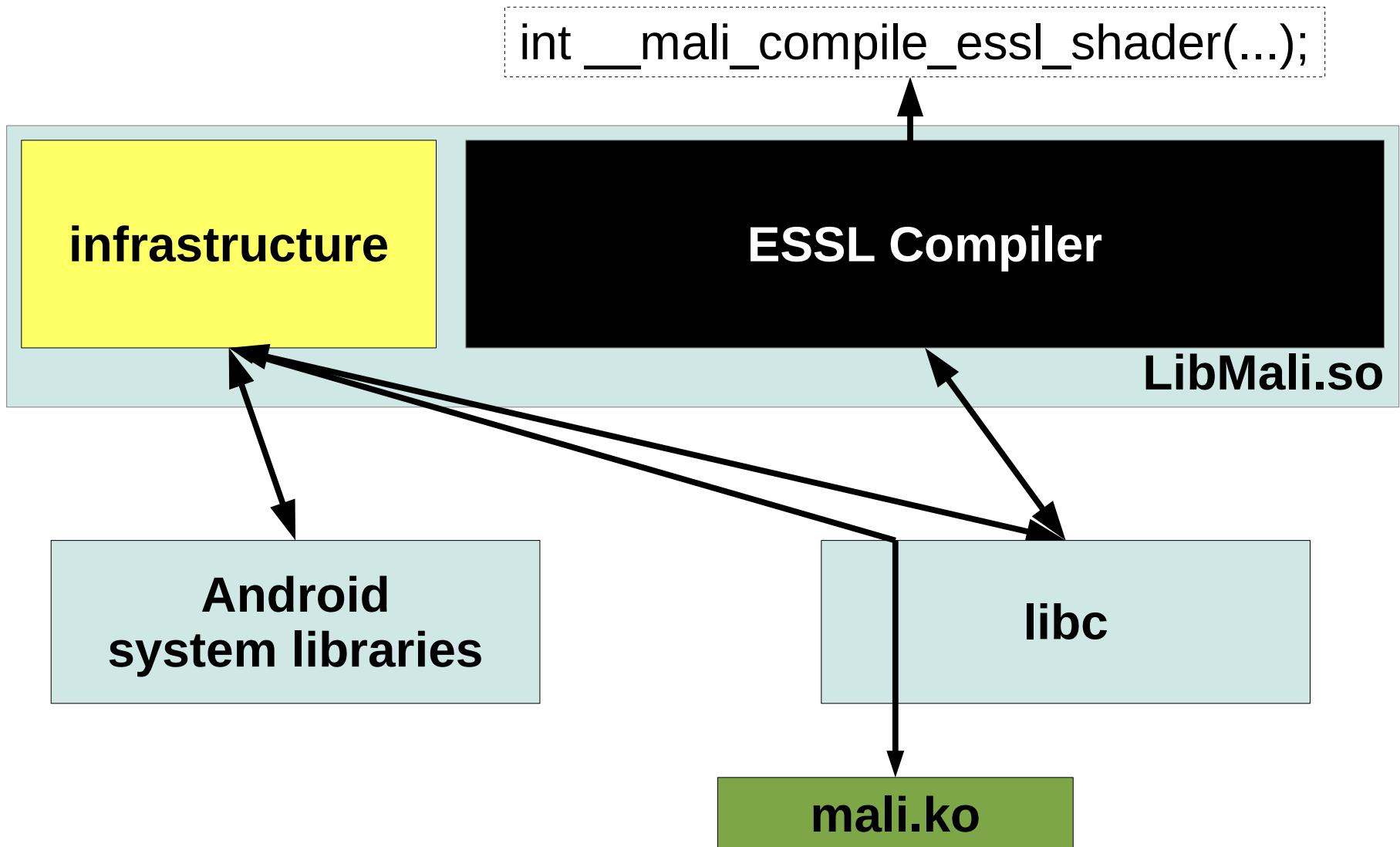
Userspace-Kernel Interaction



Status: Working

- Mali-200 and Mali-400
- Shader linking
- Assignment of uniforms, attributes, varyings
- Multiple draws
- High triangle count
- Textures
- Android demo app (patience!)
- ...

Compiler





Connor Abbott



Ben Brewer

Fragment shader (PP)

- VLIW
- Status:
 - Instruction set: fully known.
 - Shader disassembler: fully implemented.
 - Shader assembler: fully implemented!
 - Compiler: todo

Vertex shader (GP)

- Transport triggered architecture (TTA)
- Status:
 - Instruction set: 80%
 - Shader disassembler/rudimentary decompiler.
 - Working on assembler/rudimentary compiler.

Contribute!

- Site: <http://www.limadriver.org>
- Mailinglist: lima@limadriver.org
- irc: #lima on freenode
- Get a device (cheap and portable!)
- Start playing!

(Limare Demo)

<http://www.limadriver.org/>

