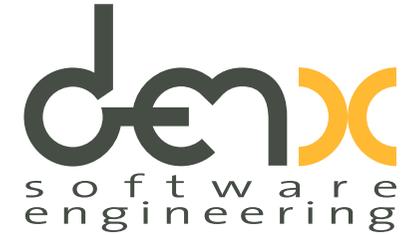


U-Boot „Falcon“ Mode



U-Boot "Falcon" mode

Stefano Babic

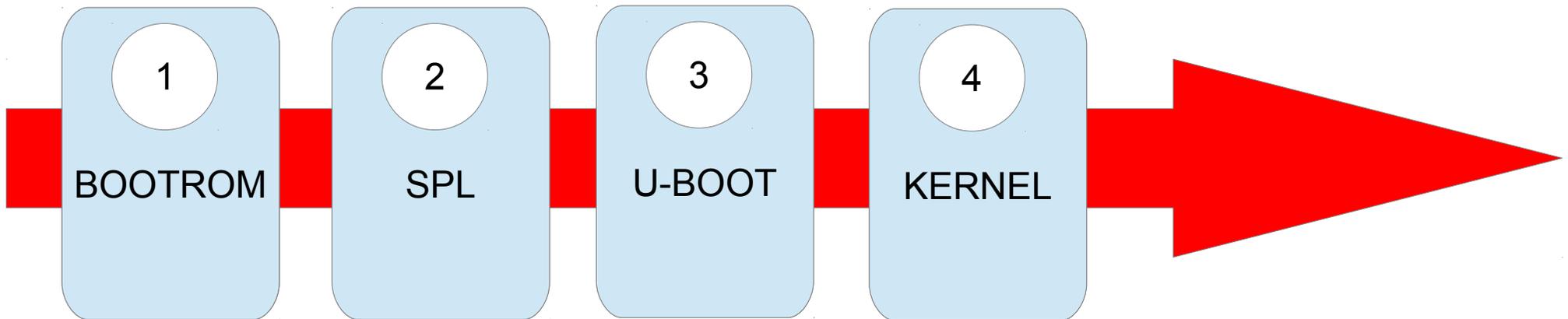
October 2013

Overview

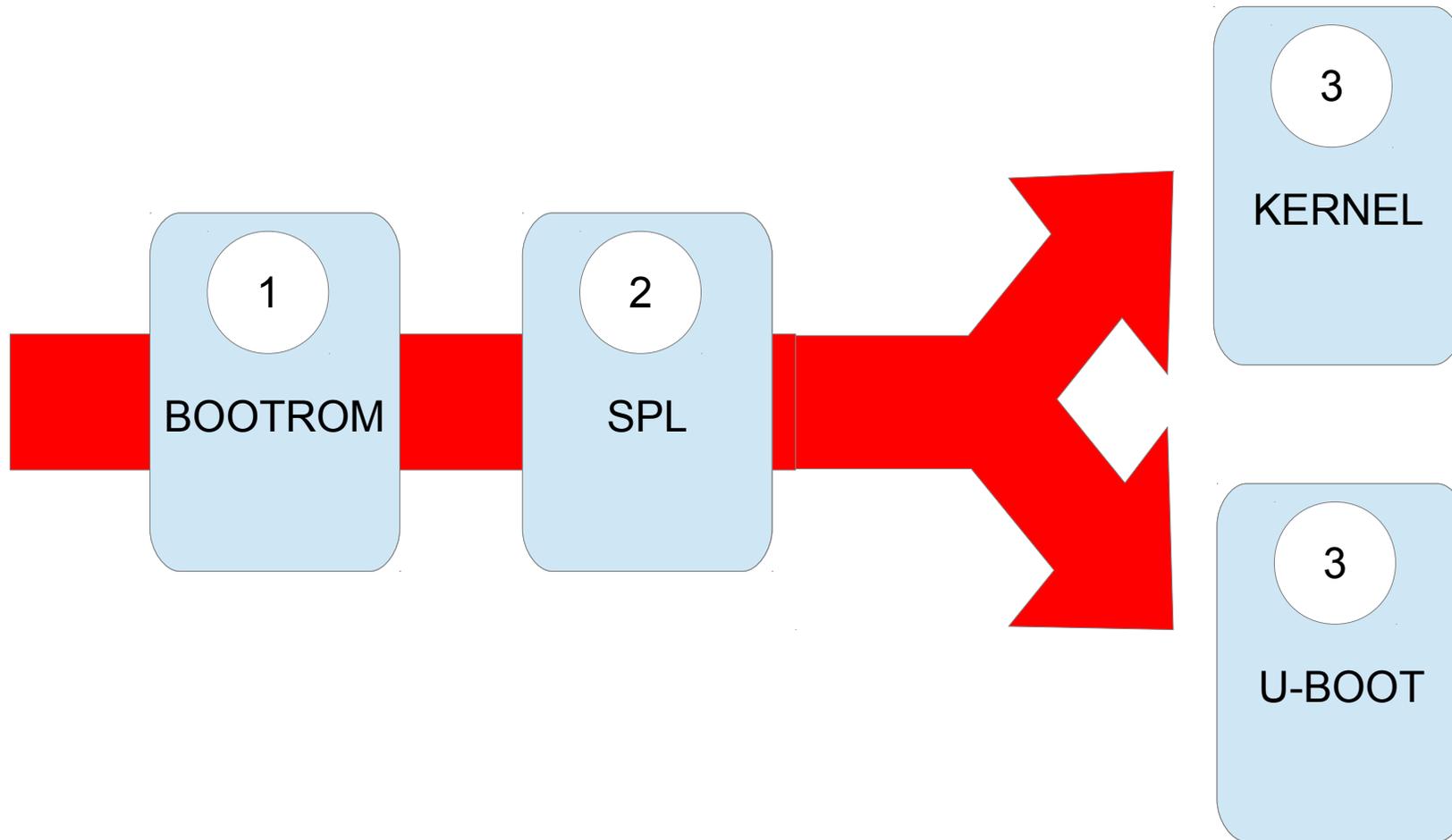


- What is “Falcon Boot” ?
- How does it work ?
- Which is the current status ?
- How to extend for missing platforms ?
- Questions...

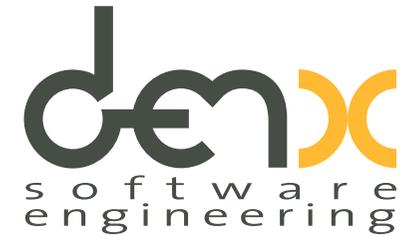
Usual boot



Falcon Boot



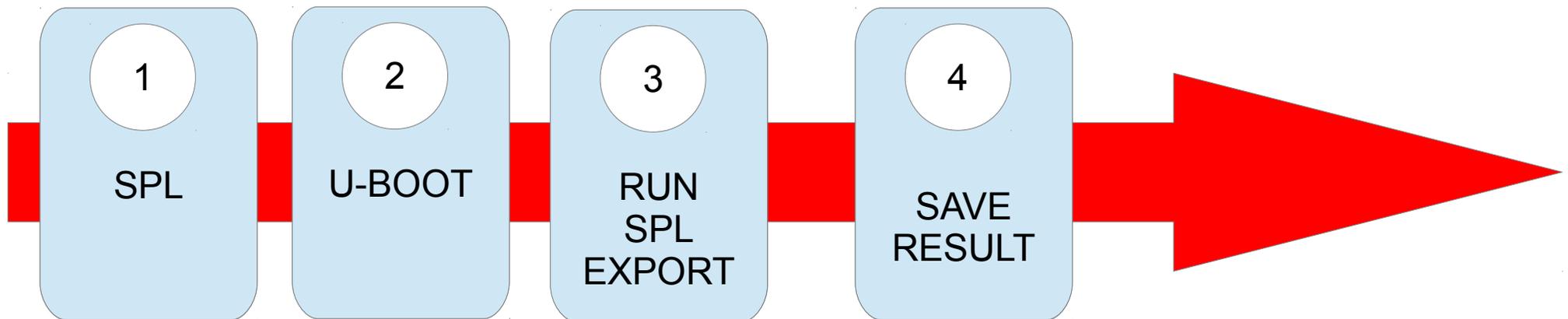
Faster



- Saves time to load U-BOOT
- Saves U-BOOT execution time
- Save time to prepare Boot Parameter Area (legacy kernel) or FDT

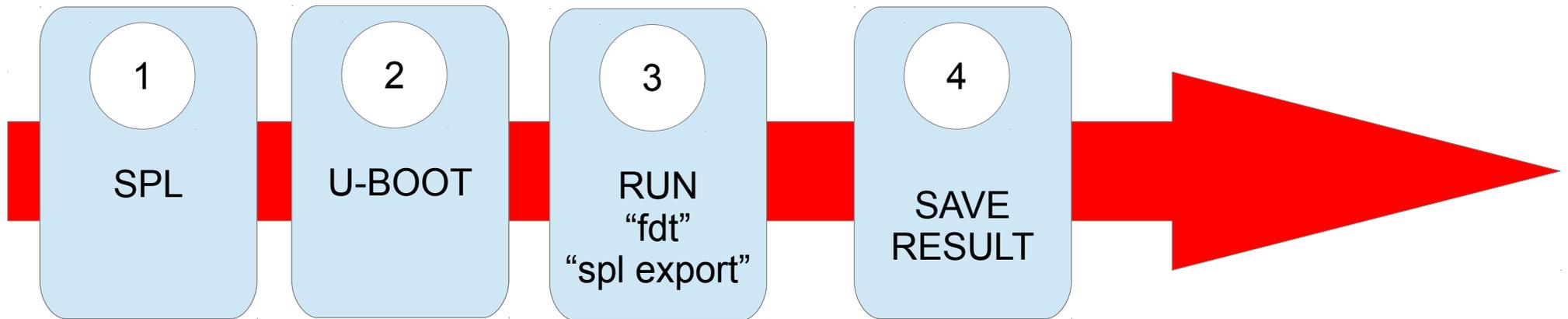
Code is fastest if not executed at all!

SPL export: dry run boot



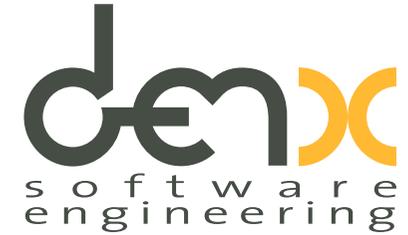
Prepare for legacy kernels

DT kernels



Prepare for "DT" kernels

Falcon Boot



- SPL is executed
- Check which image must be loaded
 - Call `spl_start_uboot()`
- Load Image
- Load parameter area or DT for kernel
- Pass control to image

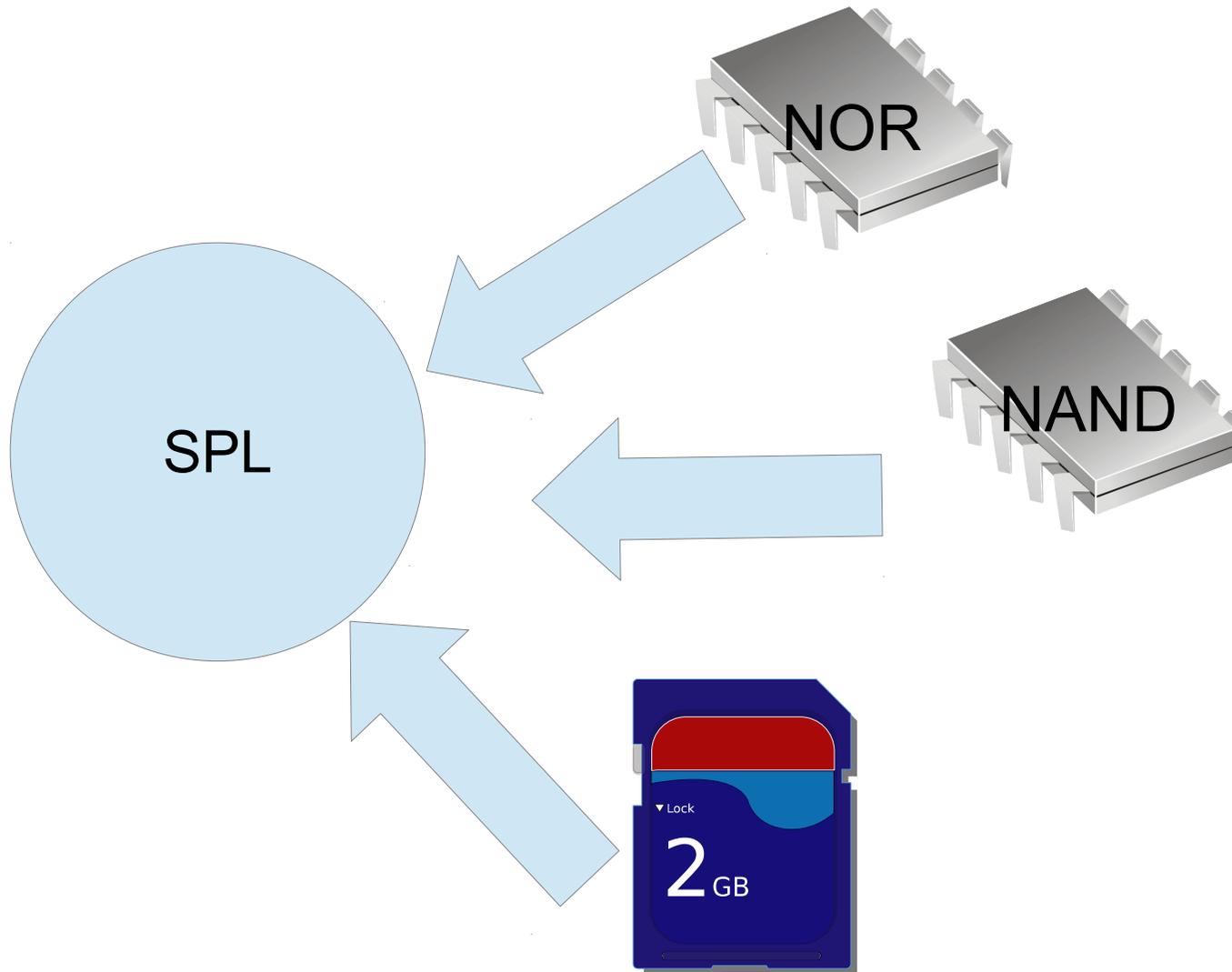
U-BOOT as fallback in case ulmage is corrupted

Supported boards



- A3m071 (PowerPC MPC 5200)
- Lwmon5 (PowerPC 440 EPX)
- Ipam390 (TI davinci)
- TI OMAP5 boards (dra7xx, uevm) NAND only
- Twister, devkit8000 (TI AM3517)
- Am335_evm (TI AM335x)

Supported Storages

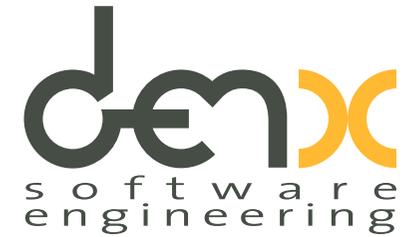


Just a few boards: why ?



- Falcon is part of SPL Framework
- ~30 boards support SPL
- It is maybe unknown

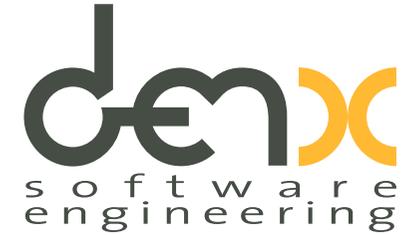
Extending to other arch



```
void __noreturn jump_to_image_linux(arg)
```

- Arg is the address of boot parameters (ATAGS) or FDT
- load address, entry point) ==> SPL global spl_image
- Each architecture could set own things before starting kernel (example: machid for ARM)

Extending to other storages



- SPL storages in common/spl
- Check spl_start_uboot()
- Load image and call spl_parse_image_header()

Support in own board



- Usual CONFIG_set for SPL_FRAMEWORK
- Add CONFIG_SPL_OS_BOOT
- Option to define where kernel is store
 - CONFIG_SYS_NAND_KERNEL_OFFS, etc.
- Add own callbacks
 - spl_start_uboot()
 - spl_board_prepare_for_linux()

Things to do



- Convert more boards to use SPL
- Spread the word about the new capabilities
- Use it !

Questions ...



- It's your turn now...