Are we headed for a complexity apocalypse for embedded SoCs

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Complexity Factors

Squeeze more in

Physical limitations – size, power, thermal

Focused Differentiation

Compute requirements
Complexity variables

More hardware
More Software
More Time

Cost

Time to Market pressure is not shrinking
The Software Problem

– Does everything go upstream?

– Do some features become “product” only?

– How does the kernel evolve to handle this complexity?

– Can it evolve fast enough?

– Who is doing all this work?
What’s the solution?

Change how we think and work
– Software starts earlier
– Hardware and software relationship
– Software led decisions
What’s the solution?

Shared Engineering

- Linux Foundation
  - Linaro
  - Open Engineering?
What’s the solution?

Yes, must continue to upstream
Minor Apocalypse
Minor Apocalypse results

- Device Tree
- Dmaengine
- pinctl
- Common clock framework
- rpmsg
What’s next