Generic Kernel Image
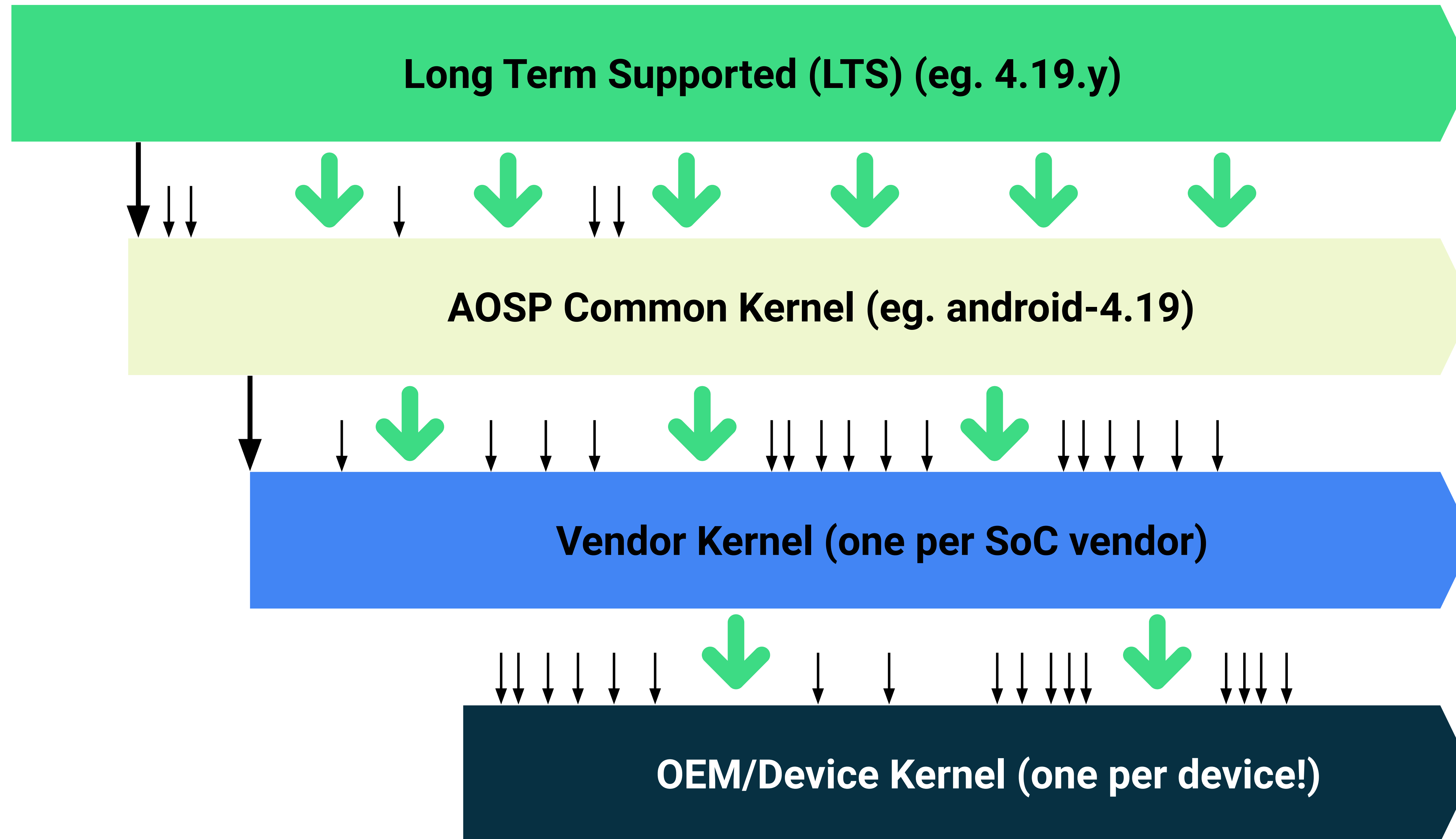
Linux Plumbers Conference 2020
Android Microconference
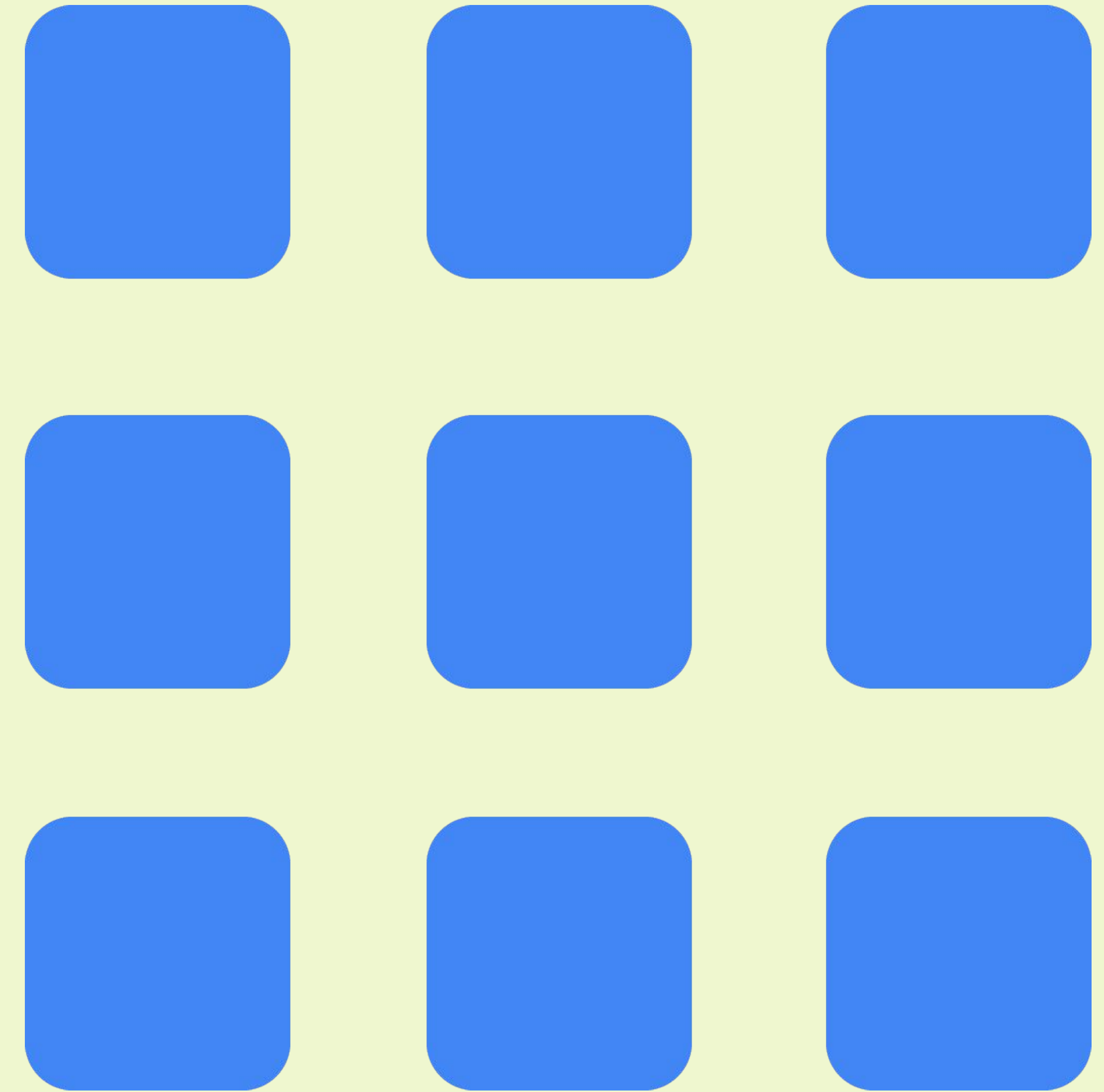
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Android Kernel Hierarchy

Long Term Supported (LTS) (eg. 4.19.y)

AOSP Common Kernel (eg. android-4.19)

Vendor Kernel (one per SoC vendor)

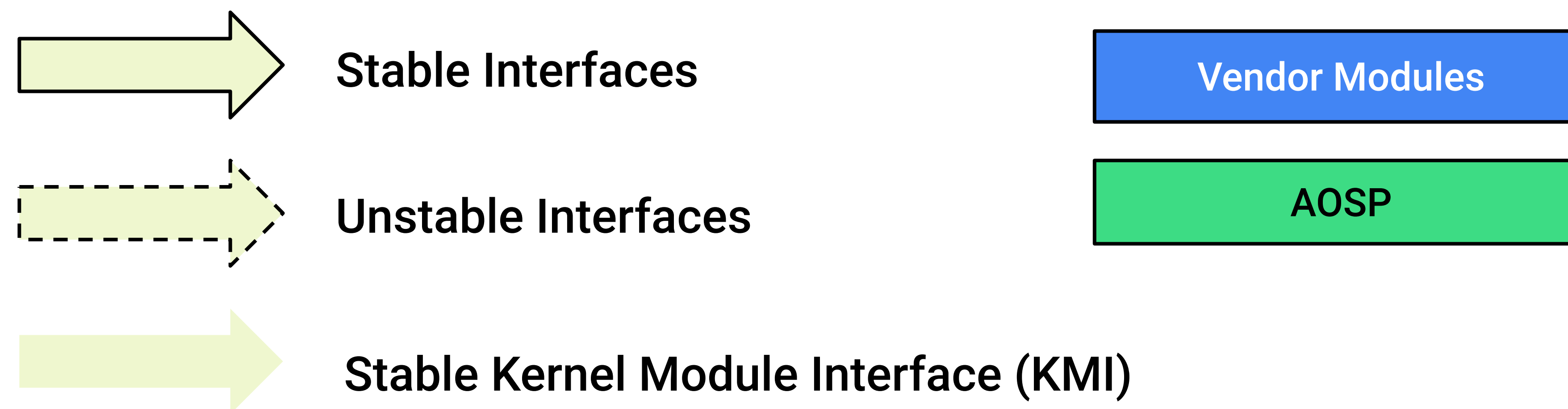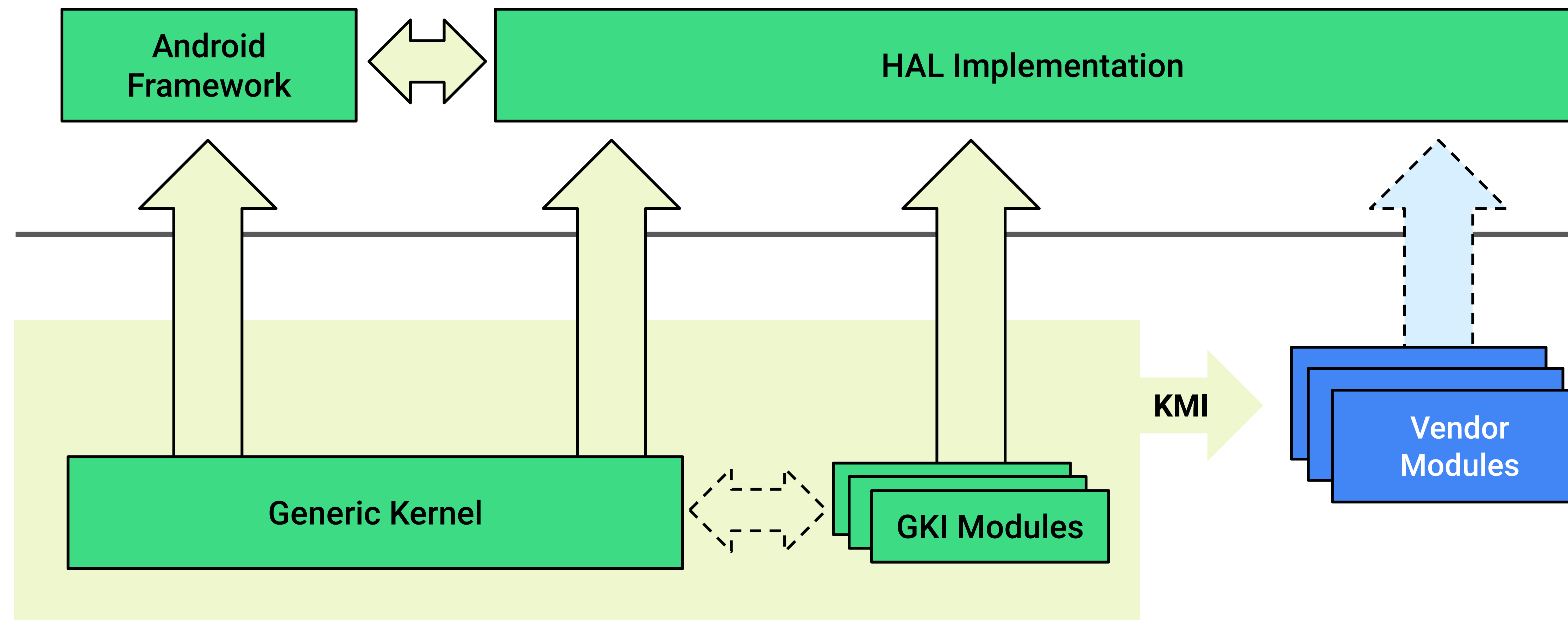OEM/Device Kernel (one per device!)

Clone → Merge → Cherry-Pick →

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Cost of Kernel Fragmentation

- Security updates are labor intensive

- Difficult to merge long-term stable updates

- Inhibits Android Platform release upgrades

- Difficult to contribute kernel changes back to upstream Linux

android

GKI is About Fixing Kernel Fragmentation

Android Framework ↔ HAL Implementation

Generic Kernel ⇢ GKI Modules

KMI → Vendor Modules

Stable Interfaces

Unstable Interfaces

Stable Kernel Module Interface (KMI)

Vendor Modules

AOSP

android

GKI Deployment

Android 11 (2020)

- Devices continue to ship with device kernel
- Project Treble compatibility testing done with GKI
  - VTS, CTS-on-GSI

Android 12 (2021)

- Devices ship with GKI
- All testing done with GKI

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