🧩 DRIVER SUPPORT COMPARISON

Kernel Version	GPU (Mali)	VPU (MPP / H.264/265)	NPU (RKNN)	HDMI / PCIe	USB 3 / Type-C	Camera	Notes
5.10 (Legacy)	✅ Stable	✅ Fully supported	✅ RKNN 1.x	✅	✅	✅	**Best supported** by Rockchip BSP
6.1 (BSP)	✅ Mali	✅ VPU (MPP, GStreamer OK)	✅ RKNN 2.x	✅	✅	✅	**Officially supported by Rockchip from 2023**
6.11 (Mainline)	⚠️ Early / experimental	❌ No VPU by default	⚠️ WIP	✅	✅	⚠️	**Cutting-edge**, but **missing key media drivers** (no `mpph264enc`)

⚙️ PERFORMANCE

Kernel	Performance	Notes
5.10	⚡ Fast and stable	Optimized for RK3588, lowest latency, best power handling
6.1	⚡⚡ Faster on multi-core, newer scheduler	Better I/O throughput, still with full driver support
6.11	🏎️ Experimental	Might feel smoother with desktop GUI but **lacks codec support**

Based on research we will be using these 2 images as base image linux version 6.1

It is found 5.1 is legacy and have older user space abd
6.11 is lacking drivers and not stable .
For overlay App 6.1 is finalized to use .

https://drive.google.com/file/d/1hz_0ap6kDR5hGNAYQQ-xgS-8UcdBeYvf/view?usp=sharing

https://drive.google.com/file/d/175jhoSSkkiVlHZgq51LwpqvHPtwUBT2q/view?usp=sharing