

ALSA
and
Media Controller

ALSA char devices

- SNDRV_DEVICE_TYPE_CONTROL
 - **“/dev/snd/controlC%i”**, card->number
- SNDRV_DEVICE_TYPE_PCM_PLAYBACK
 - **“/dev/snd/pcmC%iD%iP”**, card->number, pcm->device
- SNDRV_DEVICE_TYPE_PCM_CAPTURE
 - **“/dev/snd/pcmC%iD%iC”**, card->number, pcm->device
- SNDRV_DEVICE_TYPE_COMPRESS
 - **“/dev/snd/comprC%iD%i”**, card->number, compress->device
- SNDRV_DEVICE_TYPE_HWDEP
 - **“/dev/snd/hwC%iD%i”**, card->number, hwdep->device
- SNDRV_DEVICE_TYPE_RAWMIDI
 - **“/dev/snd/rawmidiC%iD%i”**, card->number, rawmidi->device

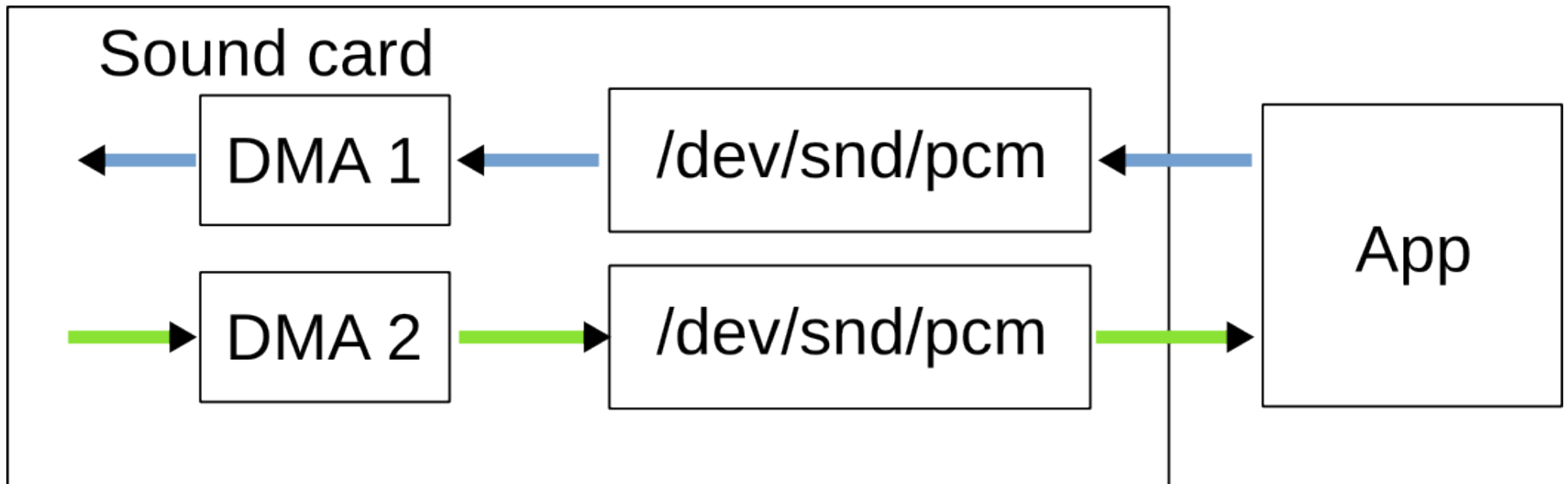
Control Device

- One for each sound card
- Provides access to ALSA controls
 - Can affect muxing
- Does lots of other things too

PCM device

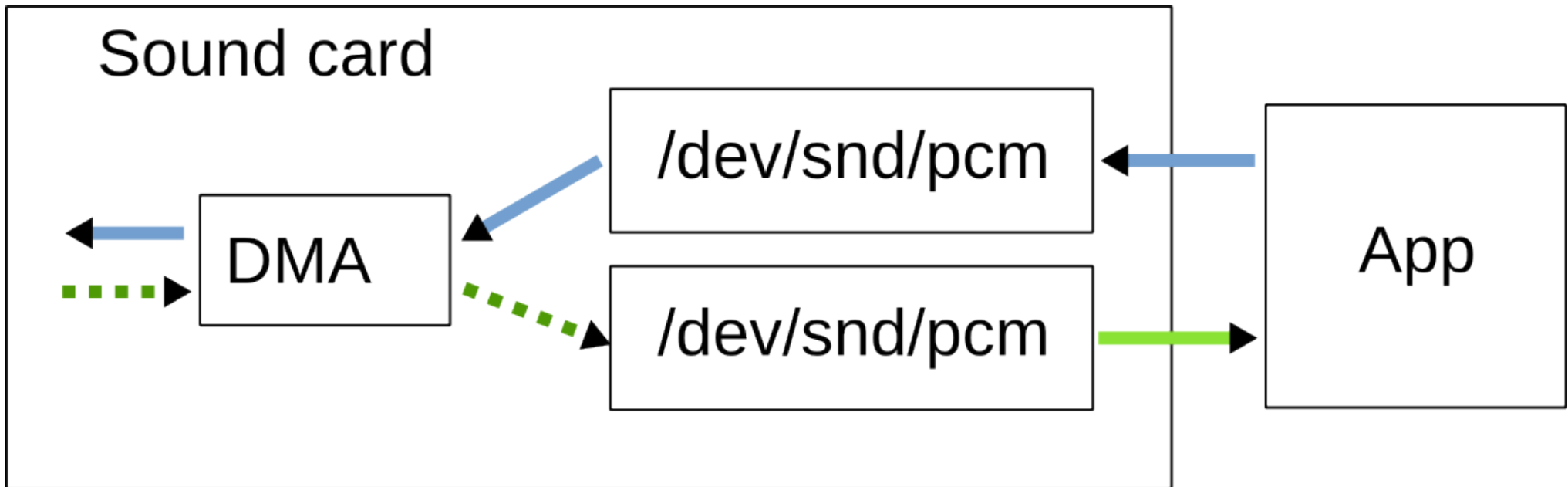
- 0 or more PCM streams per sound card
 - Two types Capture, Playback
- One PCM device for each stream
- 1 to many substreams for each stream

PCM - Simple Case



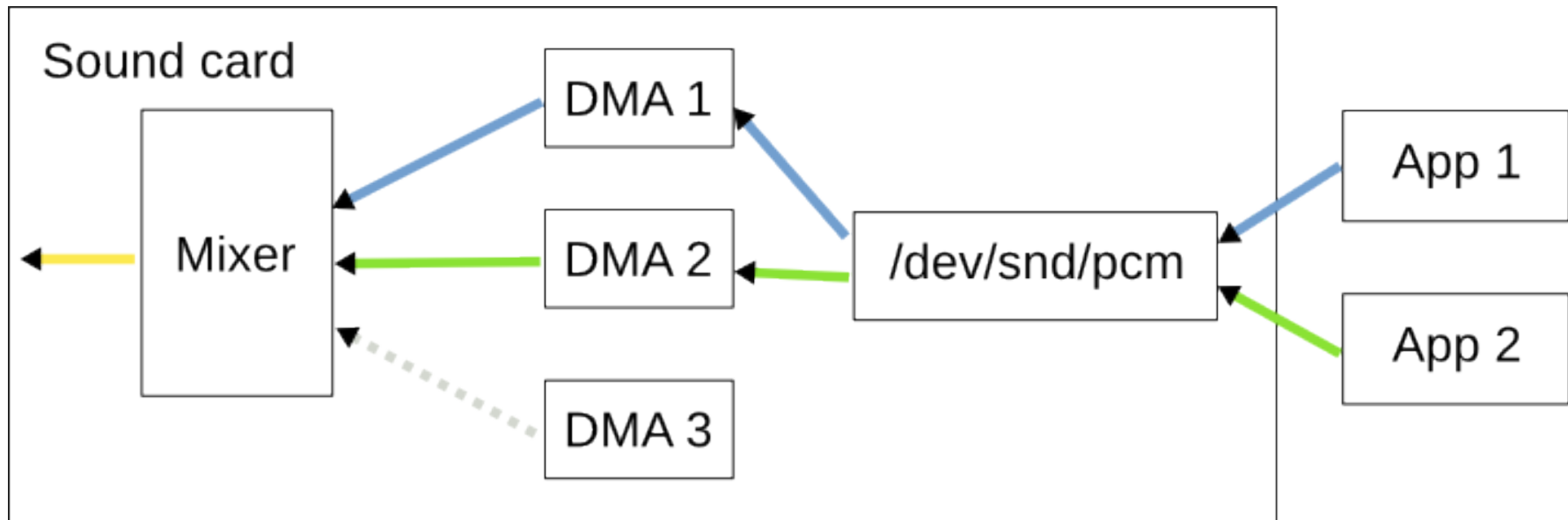
- 1 DMA per PCM device

PCM – Half Duplex



- One DMA, multiple PCM devices
- Either capture or playback is active

PCM - Hardware mixing



- One PCM device, multiple DMAs

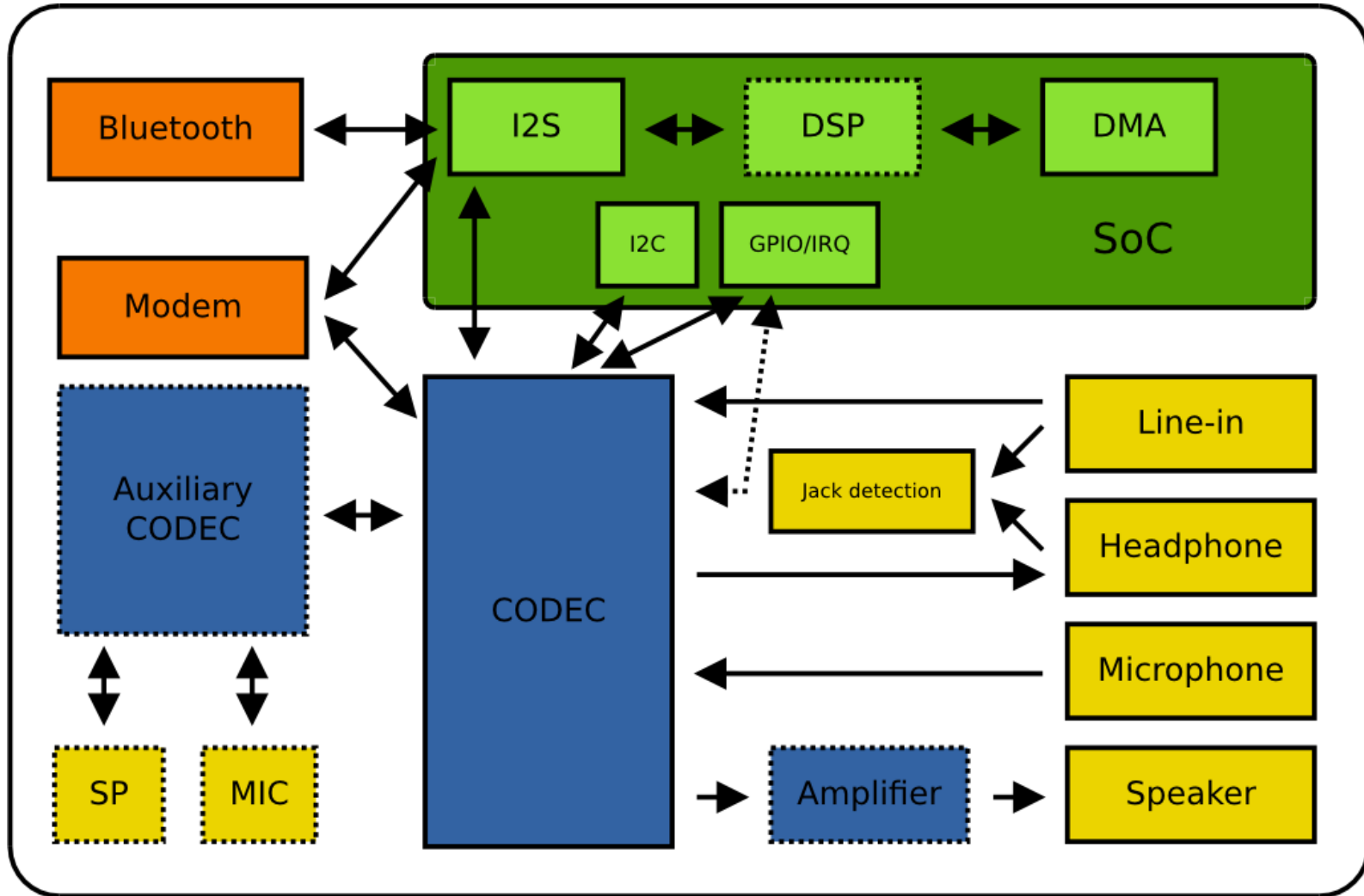
What changes with ASoC?

- Nothing actually

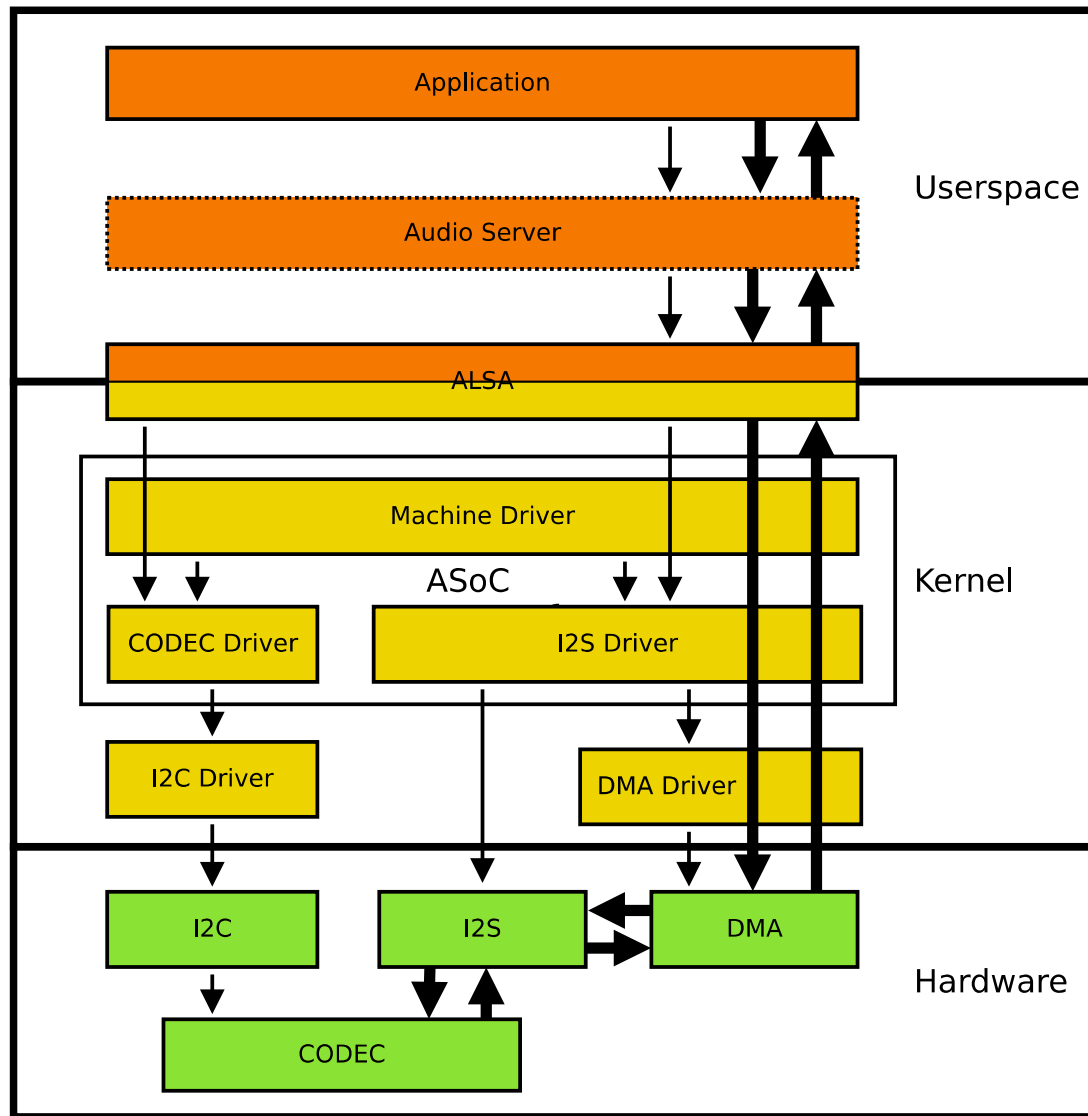
What changes with ASoC?

- Nothing actually
- At least for the userspace interface

ASoC



ASoC



ASoC – DAPM

- ASoC has dynamic audio power management
- DAPM has information about the topology
 - From a power management perspective
 - Dataflow is used for power management decisions