V4L2 & memory accounting

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Cgroup memory accounting is limited

- Most (all?) DMA-ish buffer allocations in Linux isn't tracked through memcg
- Affects DRM, KMS, dma-buf heaps... and v4l2
  - ... but user pointers buffers and udmabuf
- A big part of the issue is that you don't really know the allocators you are allocating from when using dma_alloc_*
- .... And some might be from carved-out regions, or allocators outside of Linux control

dmem cgroup controller

- dmem has been introduced in 6.14 to account for “device memory”, ie carved-out regions, VRAM, etc.
- But then, when calling dma_alloc_*, you don’t know if you would allocate from a memcg or dmem backend
- Affected by DT, so it can change with a firmware or kernel update

WiP for DRM

- TODO List here
- TL; DR:
  - Heaps know what allocator they are allocating from, so accounting is easy solvable
  - Devices will expose to userspace the heaps it can accept buffers from
  - Devices or heaps will expose which cgroup they use
- Plus additional fun, to deal with DRM-specific use cases like VRAM eviction or “proxy” allocations

Does that work for v4l2? Anything else to take into account?