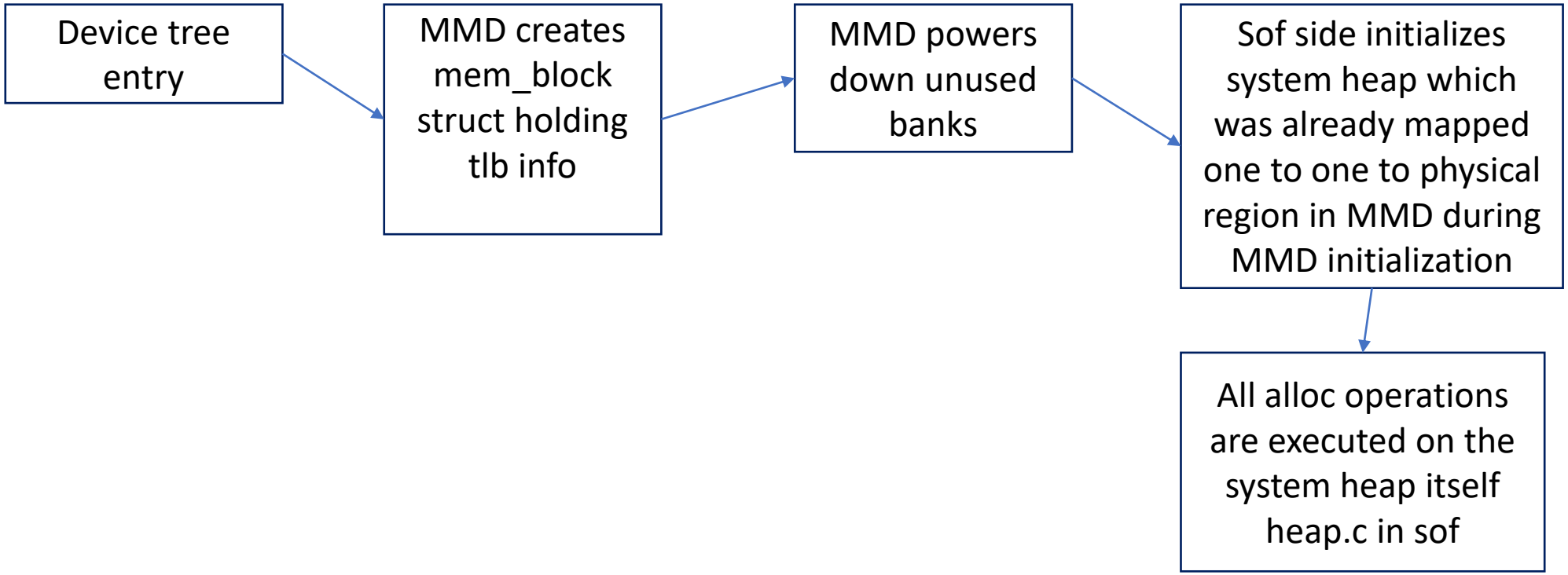
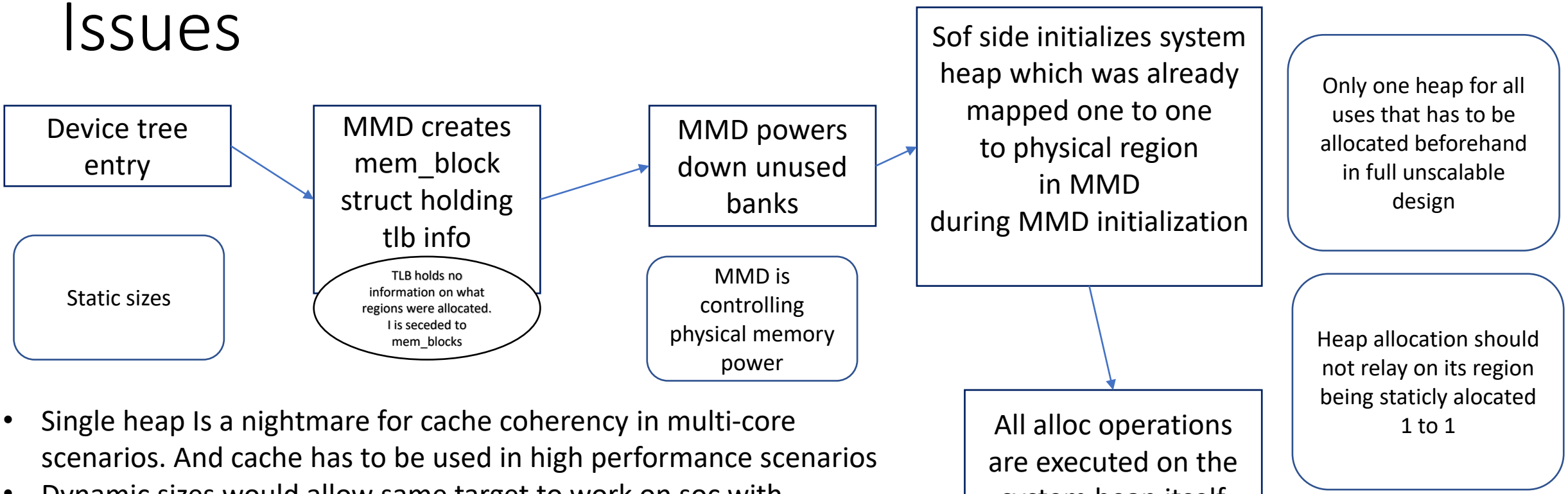
Current allocation flow



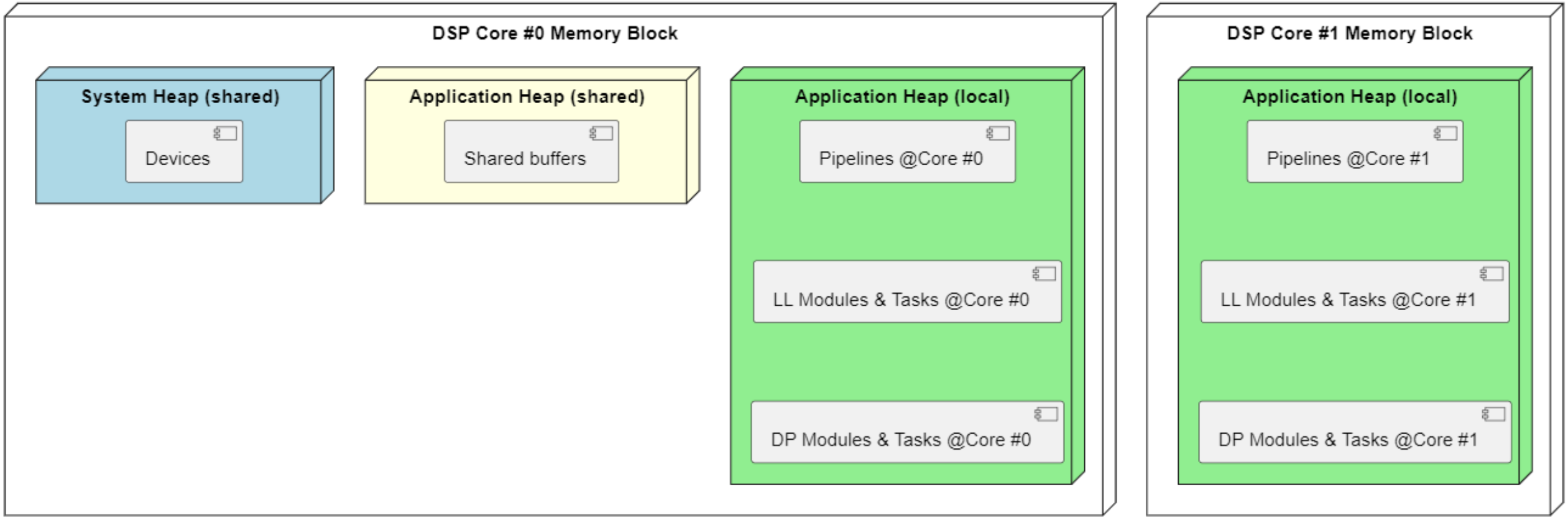
MMD – Memory Management Driver

Issues

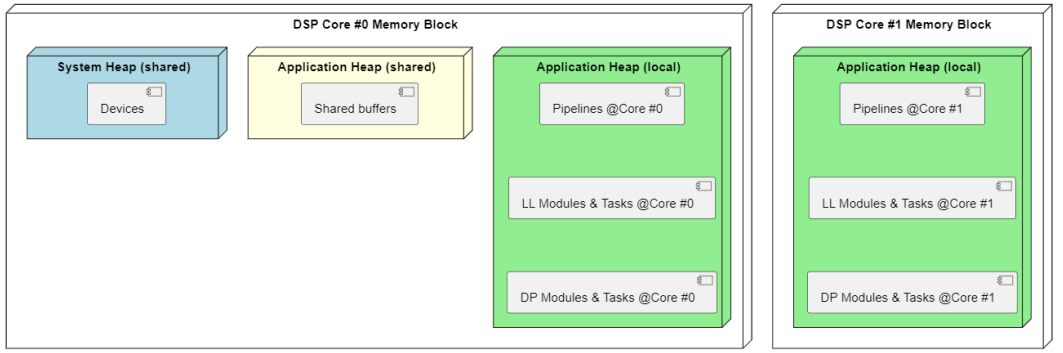


- Single heap Is a nightmare for cache coherency in multi-core scenarios. And cache has to be used in high performance scenarios
- Dynamic sizes would allow same target to work on soc with different available memory
- One heap which is allocated at the bring up wastes power on powering up memory unnecessarily

Proposition



Proposition



Device tree entry describes available virtual memory → Heaps divided as per picture above heap sizes are virtual → Heaps described on sysheap but virtual as base → Mechanism that will allocate more memory if allocated physical memory runs out

- Separate application heaps allow for cache operations such as invalidates to be minimalized since it is a big issue In multi core environment
- Virtual sizes allow for overbooking and greater flexibility for integrators to mess around with topologies on different cores
- Memory mapped by MMD in runtime allows to save the power – we power what we need