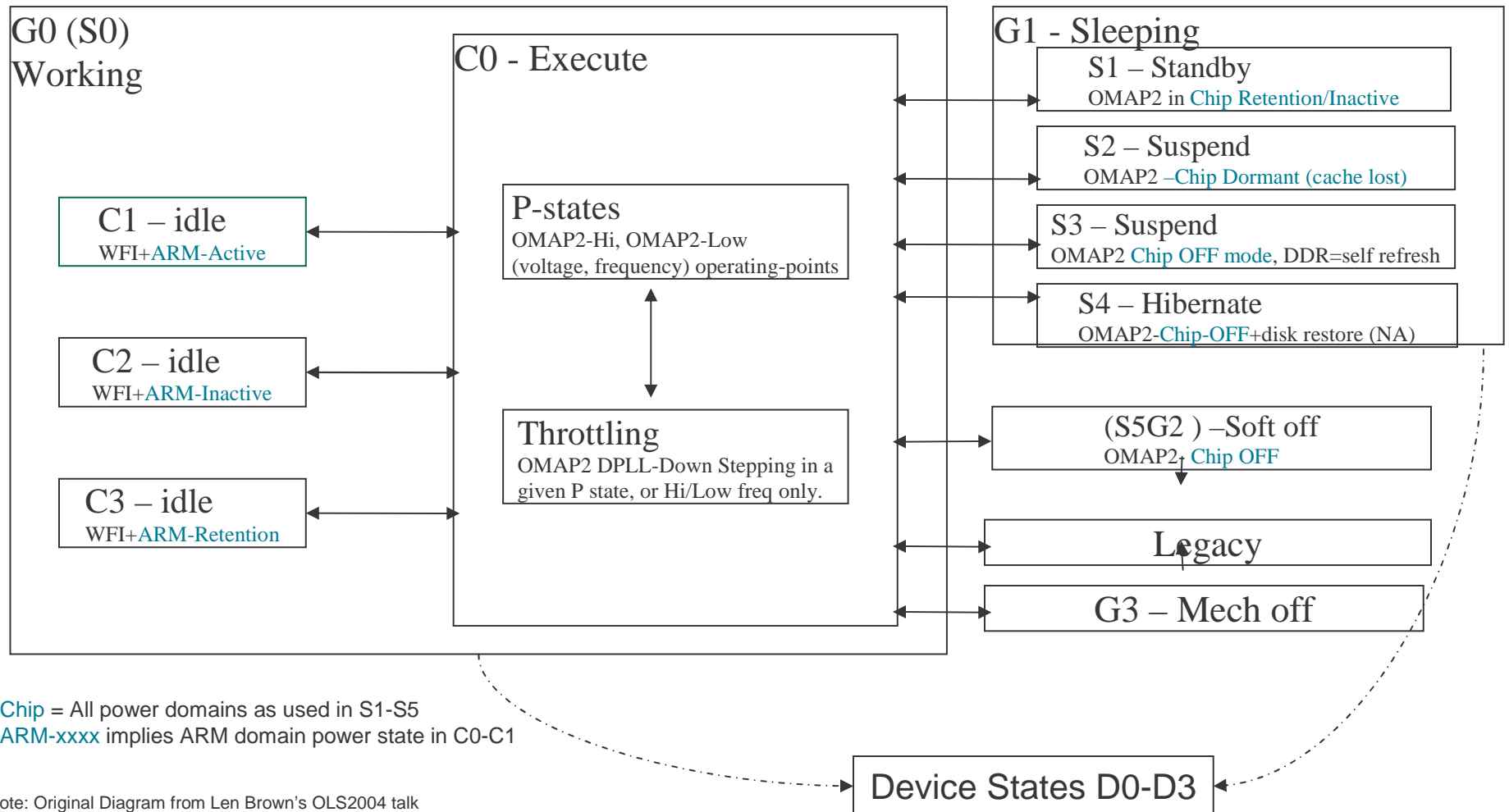


Approximate ACPI States to OMAP2

ACPI (Advanced Configuration and Power Interface Specification) power mainly is a PC centric standard. However it does shape much of the Linux kernel power related metaphors. This simple translation may help in concept mapping in the code.



Note: Original Diagram from Len Brown's OLS2004 talk

General ACPI State Description

- **G-States – Global states which apply to the entire system and are user visible.**
 - G0: Working (S0) : Threads active, The devices and the CPU can dynamically change performance
 - G1: Sleeping : Threads not executing, System context is saved and can be restored
 - G2: Soft off (S5): Minimum power, no context saved, reboot needed, Don't disassemble hardware
 - G3: Mechanical Off: No power to system, no context, reboot needed, safe to disassemble hardware
- **S-States – System States**
 - S0: Working (G0), Processor in C0-C3, Full context saved, RAM maintained
 - S1: Sleeping with processor context maintained, Ram maintained
 - S2: Sleeping processor content NOT necessarily maintained, RAM maintained, most devices in D3
 - S3: Sleeping lower than S2, Ram maintained, most devices in D3, wake up devices move system to S0
 - S4: Sleeping lower than S3, ram NOT maintained, most devices in D3, wake up devices move system to S0
 - S5: Sleeping lower than S4, NO Context saved, reboot necessary
- **C-States – Processor power state (CPU state perhaps)**
 - C0: Processor executing instructions
 - C1: Non-executing state, Low latency return to execution
 - C2: Non-executing state, larger latency return to execution
 - C3: Non-executing state, longest latency return to execution, (cache not responding to snoops).
- **P-States – Processor State information**
 - P0: Max power and frequency
 - P1: Voltage/Frequency scaled, performance less than P0
 - Pn: Voltage/Frequency scaled, performance less than P(n-1)
- **T-States – Throttling State**
 - T0 : Max frequency
 - T1: Reduced frequency (simple reduced duty cycle for PC) less than T0
 - Tn: Reduced frequency (simple reduced duty cycle for PC) less than T(n-1)
- **D-States – Device States**
 - D0: Full-On, functioning, full context always available
 - D1: Device class defined, save more power than D2, preserve more context than D2
 - D2: Device class defined, save more power than D1, preserve less context than D1
 - D3: Off, highest power savings, re-init and full context restore may be necessary