



# Thermal Aggregation

LPC 2023

# Why do we need it ?

- Initially, I thought it was required for Mediatek LVTS driver
  - But latest changes in LVTS driver make it appear as a workaround
- IPA (power allocator governor)
  - Aggregation could be used to drive the PID loop
- ***Any other use case ??***
  - Support of multiple sensors mentioned in some documentation



# Expected features

- Configurable using DT
  - but API generic enough to be used by ACPI or sysfs
- Create a new thermal zone
  - Use list of sensors to aggregate
  - Use coefficient to compute the temperature (as it was originally documented in bindings)
    - Eventually, define a computing method (max / min / avg)
  - Work as any other thermal zone



# Previous proposals

- Create a driver that aggregates multiple sensor and create a virtual thermal zone
- Update thermal\_of to support aggregation
  - Only supports DT (no generic API)
  - A lot of rework was planned to improve thermal framework
    - aggregation change was making it harder



# Proposed solution

- Create a file with aggregation API
  - export generic API
- Update thermal\_of to support multisensor
  - existing DT text bindings
  - to be completed to select aggregation function



# Difficulties / Blockers

- Too many indirection, too complicated:
  - generic ops that call aggregation that call vendor ops
- One sensor vs multi-sensor
  - Having code for multi sensor in core for regular sensor doesn't make sense
- Multi sensor thermal zone registration
  - Using DT, regular thermal zone registered during driver probe
    - But no such thing to register a multi sensor thermal zone
  - ordering issues

