Qualcomm

Co-processor thermal management

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Co-processor thermal management

Problem statement

Co-processors *not running Linux*

- Modem, NPU, GPU, DSP, Video accelerators
- Different definitions of performance states: dropping framerates, reducing resolution, idling of radios
- Multiple states for each co-processor – graceful degradation
- Communication via SoC-specific transport interfaces e.g. QMI, rpmsg
- Temperature sensors near all co-processors

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Proposal

- qmi-tmd posting from 2023
- dtpm + powercap lacking traction…
- remoteproc_cooling_register similar to devfreq_cooling_register?
  - Performance state-index – 1, 2, 3, 4, …
  - Remote processor registers with:
    - device name
    - list of states
    - callback fn (transport protocol)
  - Trip-point picks desired state index on co-processor (message)

Thank you

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