Improvements on Thermal Sensors

Eduardo Valentin
edubezval@gmail.com
evalenti@kernel.org
eduval@amazon.com
Aggregations: APIs

• Thermal zones composed by more than one sensor:
  - thermal_zone_add_zone(): adds to sensor to a zone;
  - thermal_zone_remove_zone(): removes sensor from a zone;
  - thermal_zone_get_temp(): returns aggregation of sensors;
  - thermal_zone_set_aggregation(): selects how the aggregation is done: MAX, AVG, WEIGHT_AVG, etc.
Aggregations: sysfs

- /sys/class/thermal/thermal_zone*
  - aggregation_function: user interface to thermal_zone_set_aggregation()
  - add_zone: user interface to thermal_zone_add_zone()
  - remove_zone: user interface to thermal_zone_remove_zone()
  - subtz*: link to slave zones
Aggregations: DT

- Example:

```c
board_thermal: board-thermal {
  polling-delay-passive = <1000>; /* milliseconds */
  polling-delay = <2500>; /* milliseconds */

  /* sensor       ID */
  thermal-sensors =<&adc_dummy 0>, /* pcb top edge */
               <&adc_dummy 1>, /* lcd */
               <&adc_dummy 2>; /* back cover */

  /*
  * An array of coefficients describing the sensor
  * linear relation. E.g.:
  * z = c1*x1 + c2*x2 + c3*x3
  */
  coefficients =<1200-345890>;
```
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Aggregation: Challenges

• The sysfs interface may require additional:
  – Trip points definition;
  – Cooling device association.

• The aggregation may be simply a thermal driver:
  – Not available on all zones;
  – But may allow multiple device loads (multiple representation of aggregations).
Discussion
Thank you.