Improvements on Thermal Sensors

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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:

```
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 = <1200-345 890>;
```

Aggregations: DT

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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.