Modem mitigation cause data/call drop

Applicable platform:

MSM8953, MSM8952,MSM8996,MSM8998,SDM660,SDM630,SDM450 / Generic

Issue/problem description:

Modem/data throttling is targeted to mange modem thermal risk and tradeoff during modem high-performance use cases. In extreme condition, modem mitigation might cause data/call drop or even limited service(i.e: E911) only. Perhaps, you could see data detach during LTE Lab test with modem mitigation enabling.

Example QXDM log:

```
// receive Thermal Emergency event
08:52:36.589,cmtask.c,10340,H,=CM= MSGR RXD: CFCM_THERMAL_EMERG_EVT,,
08:52:36.589,cmcfcm.c,125,H,=CM= TH EMERG Recvd CFCM Evt Monitor_mask: 385 Consolidated action:
0,,
08:52:36.589,cmaccessctrl.c,974,H,=CM= CMAC is in state 0, emerg reason 2,,
08:52:36.593,cmtask.c,10340,H,=CM= MSGR RXD: CFCM_THERMAL_EMERG_EVT,,
08:52:36.593,cmcfcm.c,125,H,=CM= TH EMERG Recvd CFCM Evt Monitor_mask: 385 Consolidated action:
0,,
08:52:36.593,cmaccessctrl.c,974,H,=CM= CMAC is in state 8, emerg reason 2,,
// Remove LTE
08:52:37.069,cmph.c,45338,H,=CM= force_pref_on_the_fly(): ss=4, act_type=2, orig_mode(computed
new)=4 orig user_mode_pref 2, update_reas 5, mode_pref 47,,
08:52:37.069,cmmsc.c,2339,H,=CM= DS: SUB 1 MSC->MMOC pref_chgd: cm_ss=4, pref mode_pref=47,
is_new_policy_tobe_read=0,,
```

Issue Analysis:

Above, client start access control because of unsafe temperature(2: CM_AC_REASON_UNSAFE_TEMP) and LTE detach.

Via log package 0x14D8 –Temperature monitor log, it is clearly to monitor temperature rising/falling.

```
2017 Sep 14 08:52:35.389 [C6] 0x14D8 Temperature Monitor Log
Version = 1
Number Of Samples = 1
---------------------------
| | |Sensor|Temperature|
|# |SSID|ID |Reading |
---------------------------
| 0| 0| 0| 50|
```

Still, logcat would shows more about ThermalEngine behavior.

```
09-14 16:52:17.579 I/ThermalEngine( 747): ACTION: MODEM - Modem mitigation succeeded for level 3.
09-14 16:52:17.580 I/ThermalEngine( 747): Mitigation:Modem:3
09-14 16:52:17.584 I/ThermalEngine( 747): Mitigation:modem_proc:3
09-14 16:54:47.633 I/ThermalEngine( 747): ACTION: MODEM - Modem mitigation succeeded for level 2.
09-14 16:54:47.633 I/ThermalEngine( 747): Mitigation:Modem:2
09-14 16:54:47.637 I/ThermalEngine( 747): Mitigation:modem_proc:1
```

In this case, please output thermal configuration via "adb shell thermal-engine -o". you would get the
modem and modem_proc mitigation from the actions/action_info. Try to add "disable" into
corresponding section, and push back, and restart thermal-engine to make sure modem mitigation is
disabled before verification.

- adb shell thermal-engine -o > <file location>/thermal-engine.conf

- adb shell push <file location>/(changed)thermal-engine.conf system/etc/thermal-engine.conf

- adb shell stop thermal-engine

- adb shell start thermal-engine

- adb shell thermal-engine -o // confirm [Modem_xxx_mitigaiton] rules disabled before test.

[MODEM_PA_MITIGATION]
#algo_type monitor
sampling 10000
sensor case_therm
thresholds 72000 75000
thresholds_clr 70000 72000
actions modem modem
action_info 2 3
disable

[MODEM_PROC_TEMP_MITIGATION]
#algo_type monitor

sampling 10000
sensor case_therm
thresholds 71000 75000
thresholds_clr 70000 72000
actions modem_proc modem_proc
action_info 1 3
disable

More details about action_info of modem and modem_proc, please refer to chipset thermal management overview doc. It would be important to know the detailed flow control in it.

If it works, please discuss with your thermal/Protocol team and related Key Poc to decide whether you would remove it directly or fine tune trigging threshold.

For MDM chipset, please get thermal over doc, Like: 80-P2200-19(MDM9x07_SW_Thermal_Mgmt_Overview), to get the thermal config files instead.

It is highly recommended that you could capture tsens log(KBA-170719022250) if you need file issue to QC for further assistance.