RENESAS VIETNAM UPSTREAM ACTIVITY

JULY 12, 2016
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AGENDA

- Introduction
- Motivation
- Current activities
- Proposal for next activities

INTRODUCTION (1/2)

- Full name: Nguyen Trong Khiem
- Service Year in RVC: 8 years (Joined RVC in Sept. 2008)
- Experiences
  - In-house BSP development
    - Device driver development and maintenance
      - On Symbian OS for SH-Mobile G4 (Cortex-A8)
    - Power Management subsystem development and maintenance
      - On Linux and Android OS for SH-Mobile G5 (Cortex-A9), R-Car Gen2 (Cortex-A15 & Cortex-A7) and R-Car Gen3 (Cortex-A57 & Cortex-A53).
    - Memory management development (MMNGR, IPMMU)
      - IPMMU: on Linux for R-Car Gen2 (Cortex-A15) and R-Car Gen3 (Cortex-A57).
      - MMNGR: on Linux for R-Car Gen3 (Cortex-A57)

INTRODUCTION (2/2)

- Experiences
  - Upstream kernel development involvement
    - Backport patches from upstream
      - For R-Car Gen2 BSP
    - Join the discussion to review and test new kernel patches
    - Small development for Power Management
      - Suspend-to-RAM for R-Car Gen2, CPUFreq on R-Car Gen2 and Gen3, Thermal on R-Car Gen3)

MOTIVATION TO JOIN UPSTREAM ACTIVITY

- Follow-up the ‘big image’ of each power management module and prepare for the kernel upgrade in in-house BSP.
- Backporting necessary patches to maintain kernel generic implementation.
  - e.g cherry-pick from LTS kernel
- Reduce the workload and redundancy of developing short-term in-house drivers, while waiting for upstream drivers.
- Design better drivers from the start (following upstream viewpoints).

CURRENT ACTIVITY

1. R-Car Gen3 CPUfreq support

- Status
  - Sent 1st version into May 10th.
  - Got review feedback from Upstream developers.
- Next
  - To fix the comments and send next versions
  - Plan to complete it for kernel v4.9.

2. R-Car Gen3 Thermal support

- Status
  - Sent 1st version into June 19th.
  - Got review feedback from Upstream developers.
- Next
  - To fix the comments and send next versions
  - Plan to complete it for kernel v4.9.

PROPOSAL FOR NEXT ACTIVITIES

- Develop or co-develop below power management features
  - R-Car Gen3 CPUIdle support

    e.g initial support, maintain CPUIdle support following latest kernel implementation.
  - R-Car Gen3 Suspend-to-RAM support

    e.g implement the suspend/resume handler for some drivers, fix bugs report related to Suspend-to-RAM operation

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