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TF-A Tech Forum
A Class Architecture Automotive Enhance (AE) support

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January 2021

Introduction

Goals

- To use TF-A in Safety critical platforms
- Support AE variants of Arm HW IP, primarily GIC and CPU
- Understanding partner's use cases
- Based on feedback, prioritizing and planning
- Generic implementation as much as possible
- Co-development with partners and possibly validating on their platforms
- Setup regular sync-up with interested partners

GIC-600AE

- GIC-600 + Fault Management Unit
- FMU accessible to R-Class processor in platform
- TRM available publicly but no support in TF-A yet

Story So far

- Mailing list discussion started https://lists.trustedfirmware.org/pipermail/tf-a/2021-January/000946.html
- Platform not available
- Identified tasks which can be carried out without availability of platform
- Feature parity between GIC-600 and GIC-600AE
- Disable GICR frames for fused-off cores, patches under review https://review.trustedfirmware.org/c/TF-A/trusted-firmware-a/+/8150/6

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Identified tasks

- Feature Parity between GIC-600 and GIC-600AE (Finished)

- GIC FMU RAS Extensions
  - FMU detection by detecting GIC-600AE part number(Arm)
  - FMU initialization
  - Error injection

- Dual Core Lock-Step (DCLS) mode
  - Number of PEs statically defined, need to make it dynamic (Arm)
  - Any changes in GIC to support Lock mode?

- Enhancements of existing GIC Driver
  - Read trace and PMU records (Arm)
  - Keep RAS error records alive across a reset (Arm)
  - Disable GICR frames of fused-off cores (Patches under review)
  - Support for message signalled interrupts
  - Saving/Restoring additional GIC registers during PM events (Arm)

  * (Arm) : Arm will start working on it

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Thank You

Danke

Gracias

谢谢

ありがとう

Asante

Merci

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Kiitos

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