AIST

Panel Discussion
RISC-V Day Tokyo (2019/September/30)

Position

# TEE on RISC-V

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# Do you know TEE?

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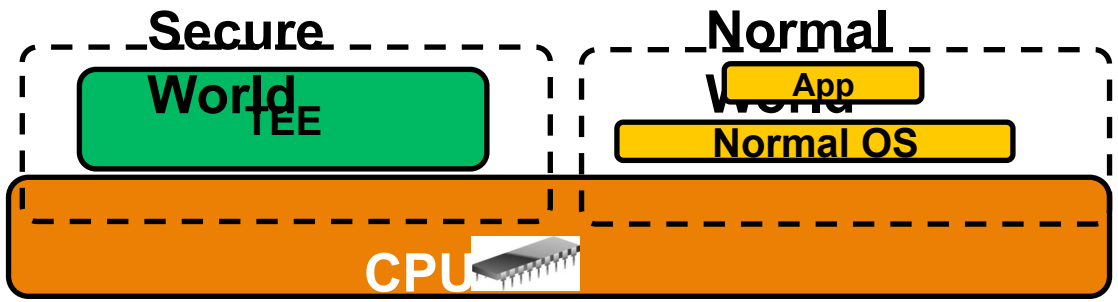
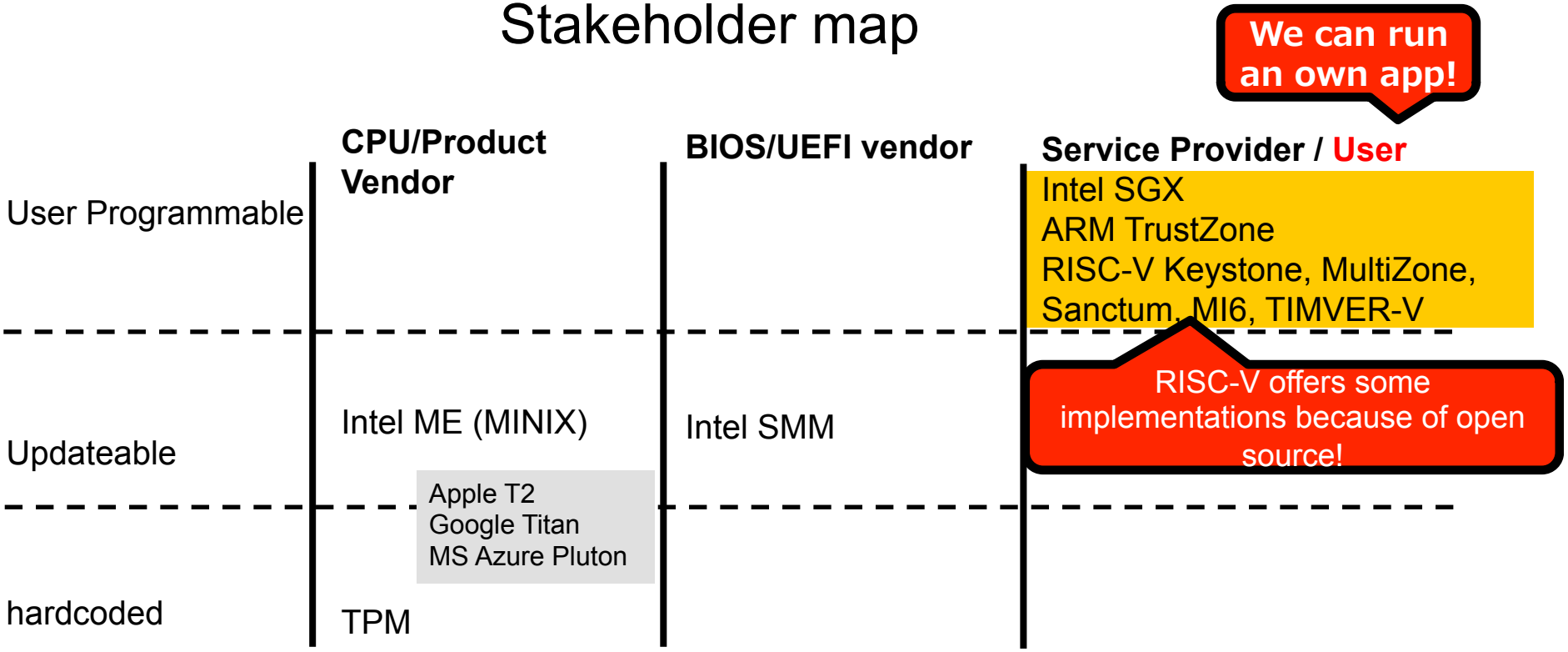
- TEE means “Trusted Execution Environment”.
- TEE offers a Hardware-assisted Isolated Execution Environment from normal Operating system.
  - Intel SGX (Software Guard eXecutions)
  - ARM TrustZone
  - RISC-V offers some implementations because of open source!
    - Keystone, MultiZone, Sanctum, MI6, TIMVER-V
    - RISC-V Foundation has TEE Working Group (AIST is a member!)

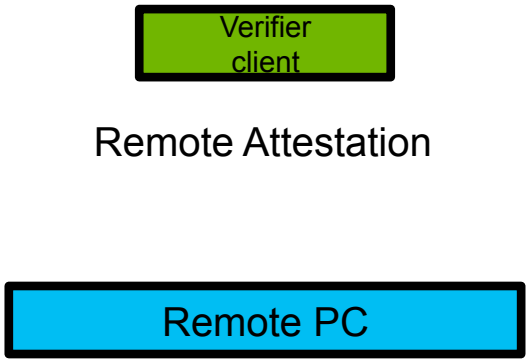


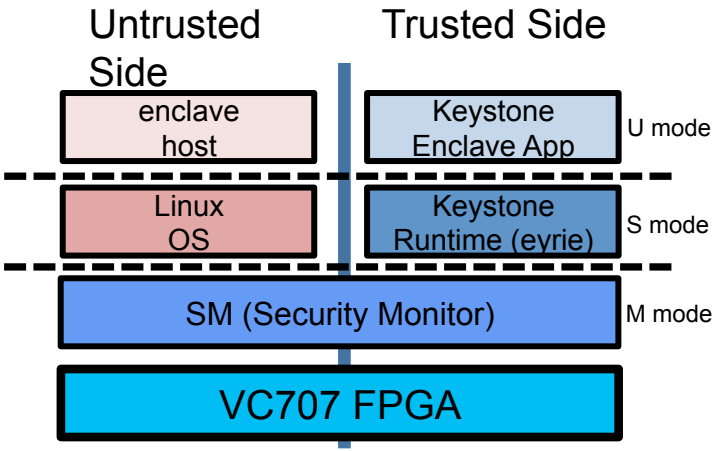
# What is different from other isolated execution?

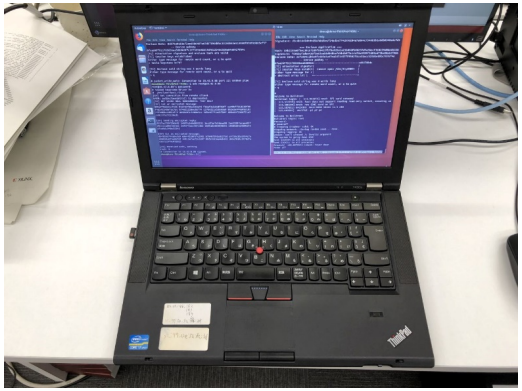
## Stakeholder map

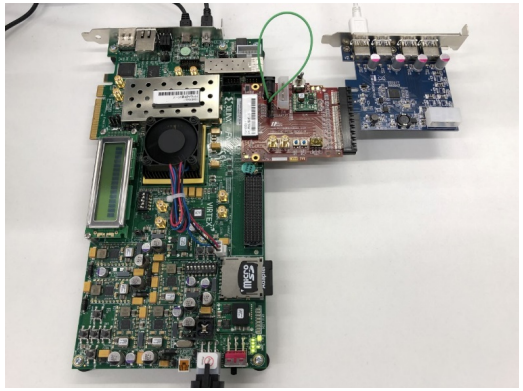


# We customized Keystone on FPGA.





# RISC-V TEE Research Map

RISC-V Foundation has **TEE Working Group**
IETF discusses a new protocol **"TEEP (Trusted Execution Environment Provisioning)"** to manage Trusted Application in TEE (AIST works for TEEP) .


Key person

この成果は、国立研究開発法人新エネルギー・産業技術総合開発機構（ＮＥＤＯ）の委託業務「高効率・高速処理を可能とするAIチップ・次世代コンピューティングの技術開発/革新的AIエッジコンピューティング技術の開発/セキュアオープンアーキテクチャ基盤技術とそのAIエッジ応用研究開発」の結果得られたものです。