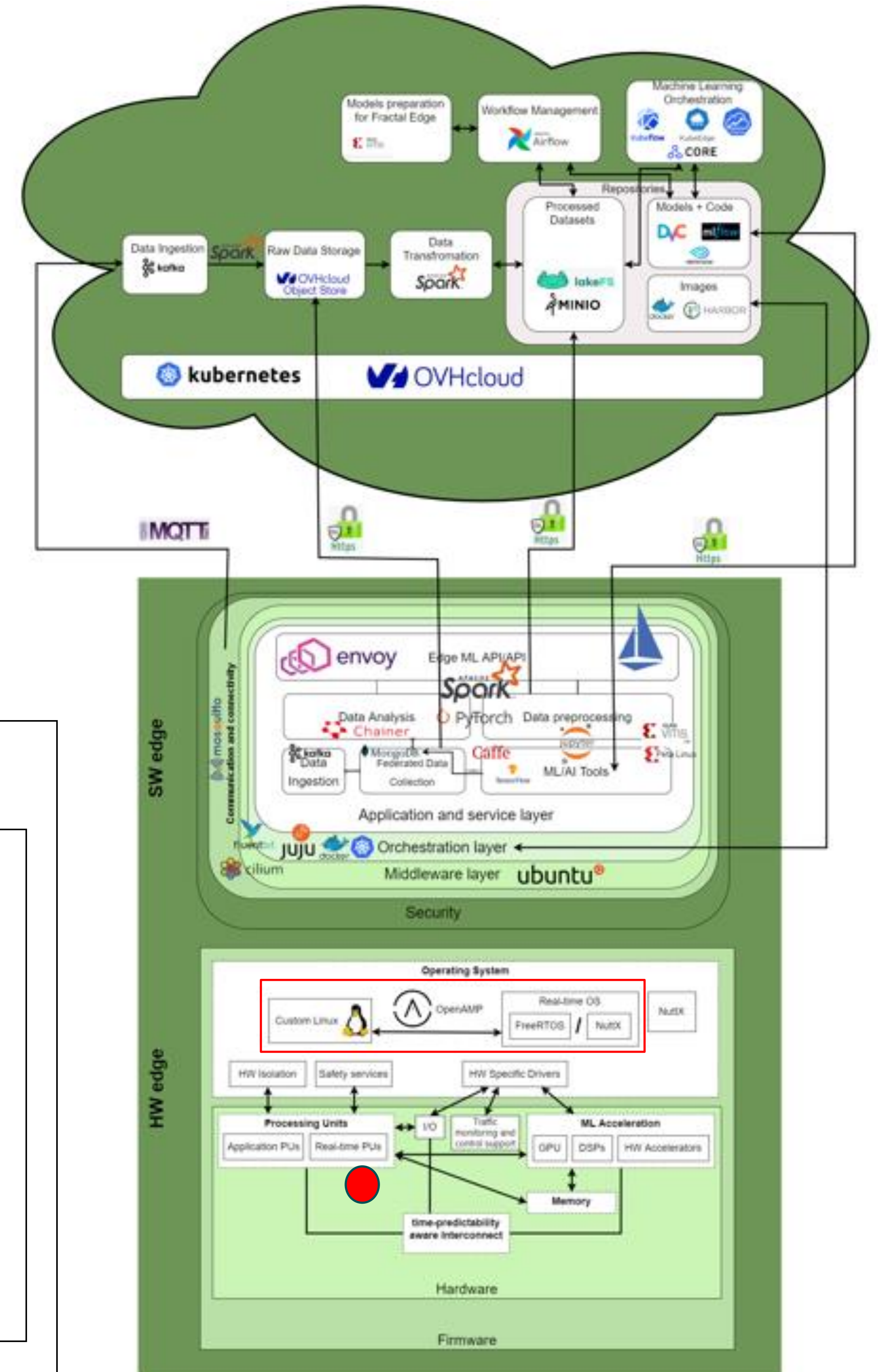




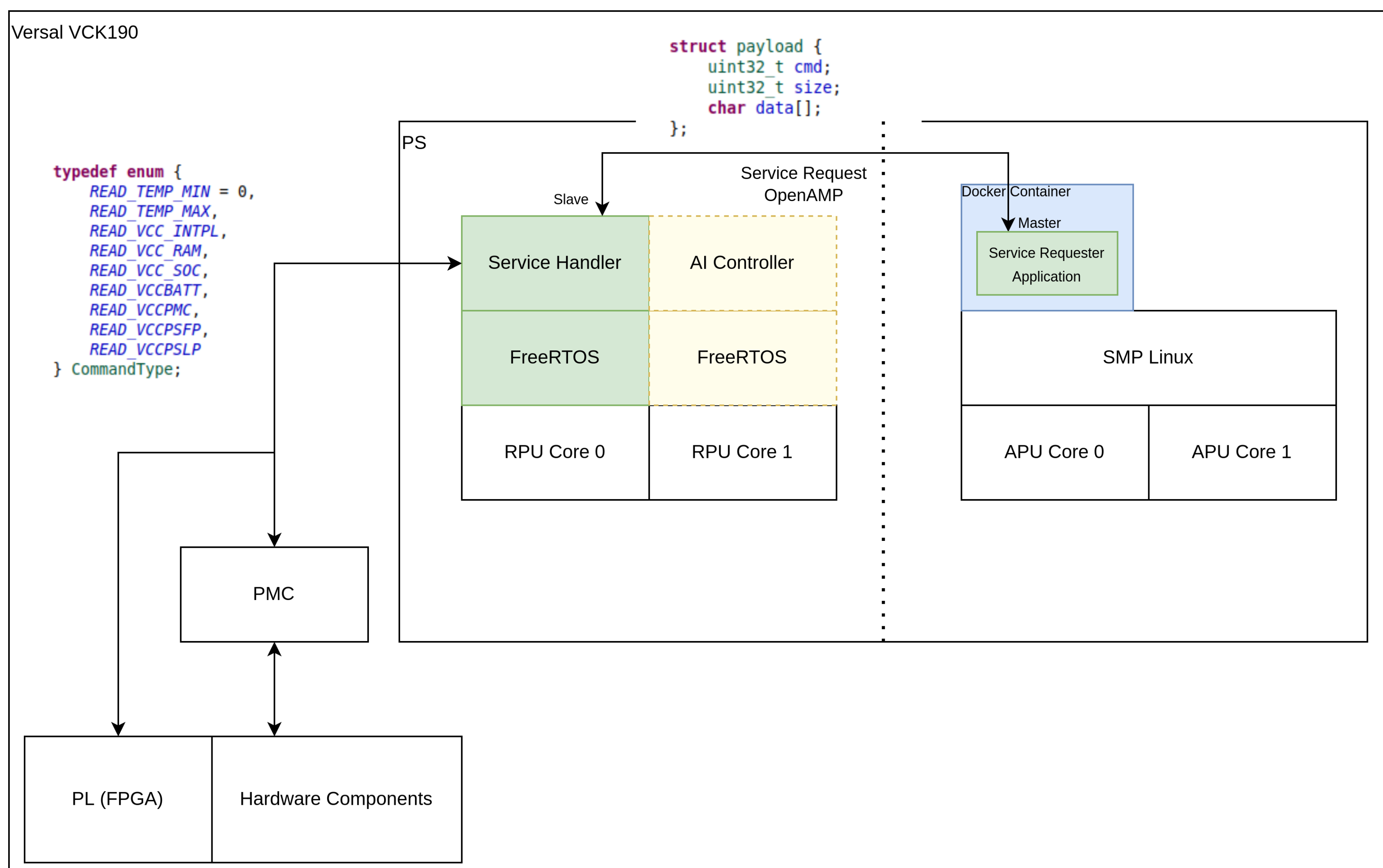
Component description

- Objective of the component:
Access Dynamic Power, Frequency Scaling features on Versal [VCK190] in safety-oriented platform designs.
- Fractal Features associated:
LOW POWER [POWER SERVICES]
SAFETY [MONITORING, CORES]
- Inputs/Outputs:
Requests from microservices on APU
Provide monitoring data and / or generate control steps to switch states
- Integration: [With which components is or could be connected?](#)

Component location



Images/Diagrams to describe the component and its processes



Get started

Two ways to utilize from this component:

- Using prepared system from PLC2 and extending the interface according to UCs needs,
- Replacing own application with a specific component of the system

Option 1:

- Get prepared PetaLinux project,
- Get Vitis project for the RPU Service Node,
- Prepare SD card with boot images,
- Run docker image with proper binding volumes and proper rights,
- Run demo application within Docker container which
 - Sends message from APU to RPU,
 - Receives back the message from RPU with sensor information,
 - Provides the sensor information to the upper layer of software.

Option 2:

- There are several parts which can be replaced with own application:
 - Service node on RPU,
 - Requester node on APU,
 - Linux image,
 - Docker container.

Test steps on Versal VCK190:

```

root@xilinux-vck190-es1-2021_2:~# docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
arm64v8/ubuntu-plc2 20.04 18f37571eebd 15 years ago 105MB
root@xilinux-vck190-es1-2021_2:~# docker run -it -v /dev:/dev -v /lib/modules:/lib/modules/ -v $(pwd):/workspace --privileged arm64v8/ubuntu-plc2:20.04 /bin/bash
root@477b65dbcee0:/# echo -n freertos-openamp-demo-app.elf > /sys/class/remoteproc/remoteproc0/firmware
root@477b65dbcee0:/# echo -n start > /sys/class/remoteproc/remoteproc0/state
root@477b65dbcee0:/# cd /workspace/
root@477b65dbcee0:/# ./demo-openamp-diagnostics

Demo OpenAMP Application start

Open rpsmsg dev virtio0.rpsmsg-openamp-demo-channel.-1.0!
svc_name: rpsmsg-openamp-demo-channel

*****

Getting Temperature Sensor Values

*****
sending cmd: Read Temperature Minimum
temperature: 33.6406
sending cmd: Read Temperature Maximum
temperature: 37.5781
    
```

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