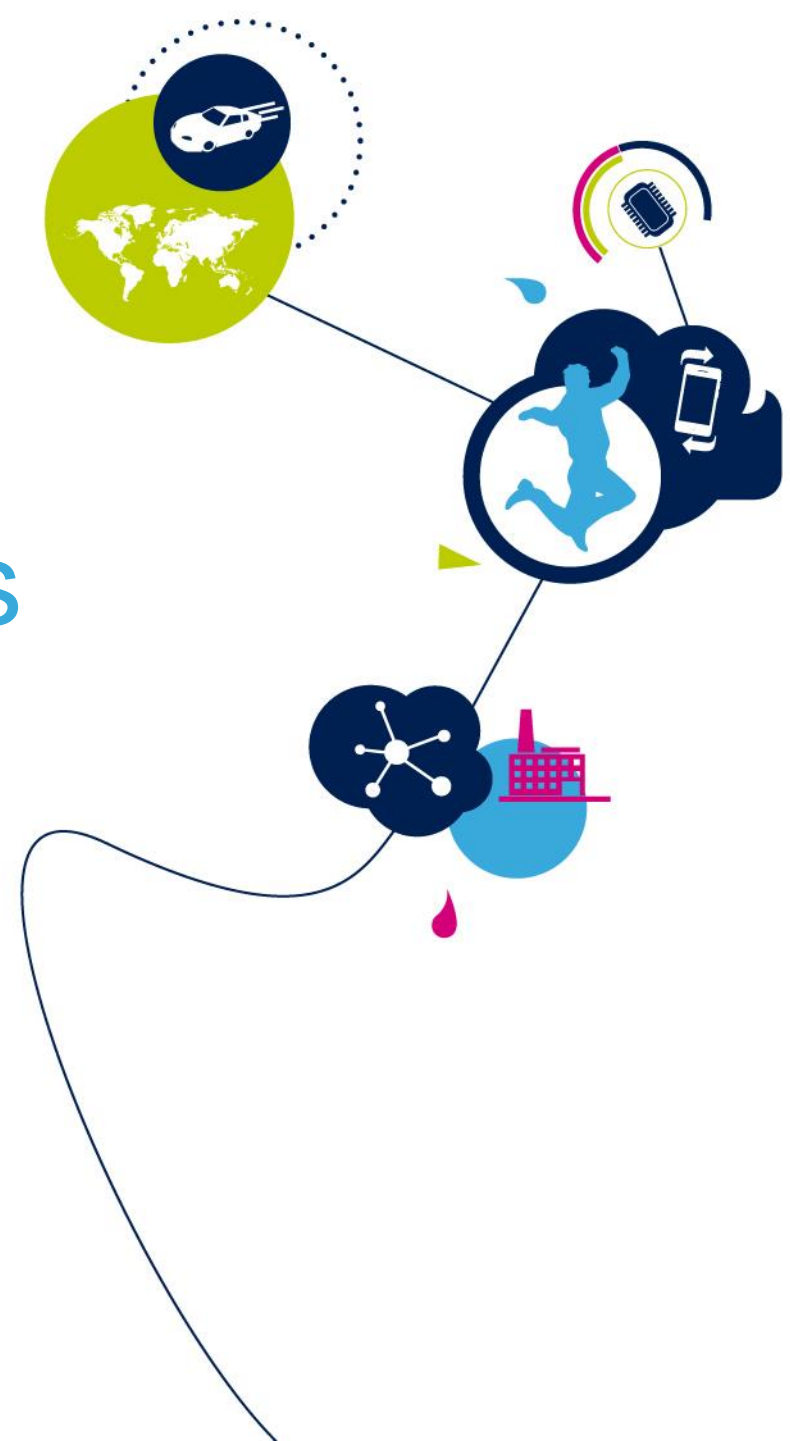# Remoteproc short term topics

life.augmented

Carveout management

- ## Status:

  - V3 series pushed – need to be reviewed

- ## Next:

  - Update resource table format to add:

    - Status per resource

    - Specific name for vrings and vdev buffers

    - 64bit compliance

Coprocessor associated peripherals management

- How to initialize system resources requested by peripherals assigned to a coprocessor
  - Clock, pinctrl, regulator

- RFC shared on ML by Arnaud
  - Need to agree on needs
  - Need to agree on Device Tree definition

- Next
  - Add dynamic resource management: coprocessor can request a resource or change a configuration (timer, dma channel, clock…)
  - What about TI solution ?

Coprocessor boot modes support

- Current remoteproc is loading and starting coprocessor at boot time

- Need to add support of coprocessor started before kernel execution (by bootloader for example)

- How to get loaded resource table? (kernel command line parameter?)

- How to start RPMsg? Allocate and initialise resources and then kick…

Coprocessor power management

- Different uses cases to support

- Coprocessor is not only a slave from main processor
  - Host decide to start, stop, suspend and resume coprocessor

- Once running, coprocessor could have its own power life cycle.

- Coprocessor could suspend/resume by itself
  - Need way to notify Linux host

Secure coprocessor support

- Create secure coprocessor generic ops to be able to support secure coprocessor services based on
  - OP-TEE
  - Qualcom secure solution
  - ...

- This secure coprocessor support could be a generic one, just registering secure ops.

- Need to agree on hooks as ops may not be the right split from security point of view
  - Security will be in charge of firmware verification, loading and coprocessor start (all in a single step?)
  - How to access resource table to update resource status if part of secure RAM?

- Userland interface
  - How to expose RPMsg endpoints to userland application without dedicated driver?

- Buffer sizing to fit different coprocessor memory constraint: 512kB is too large for control only message, but not enough data exchange.

- Zero copy support to improve performances

- Code size reduction
  - 3-4kB for RPMsg slave mode support

- RPMsg/Remoteproc decoupling, provided as independent stacks part of OpenAMP project.