Resource Allocation in Cloud Radio Access Network
Presentation on 4th year project progress

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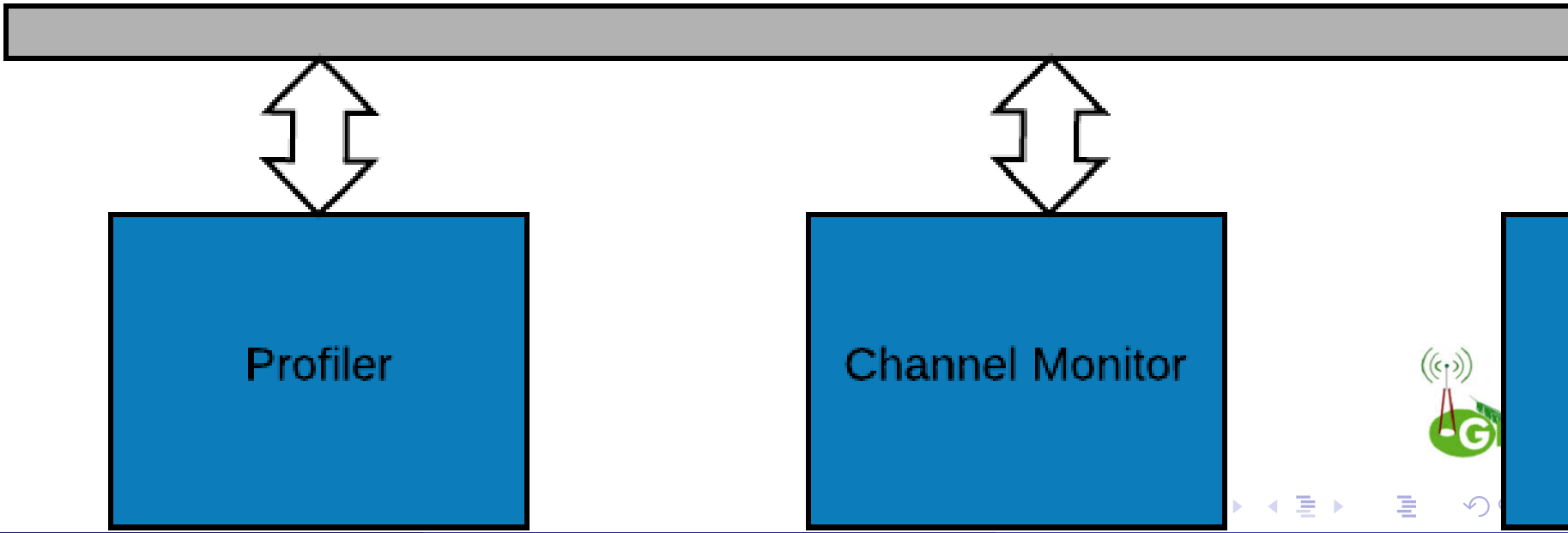
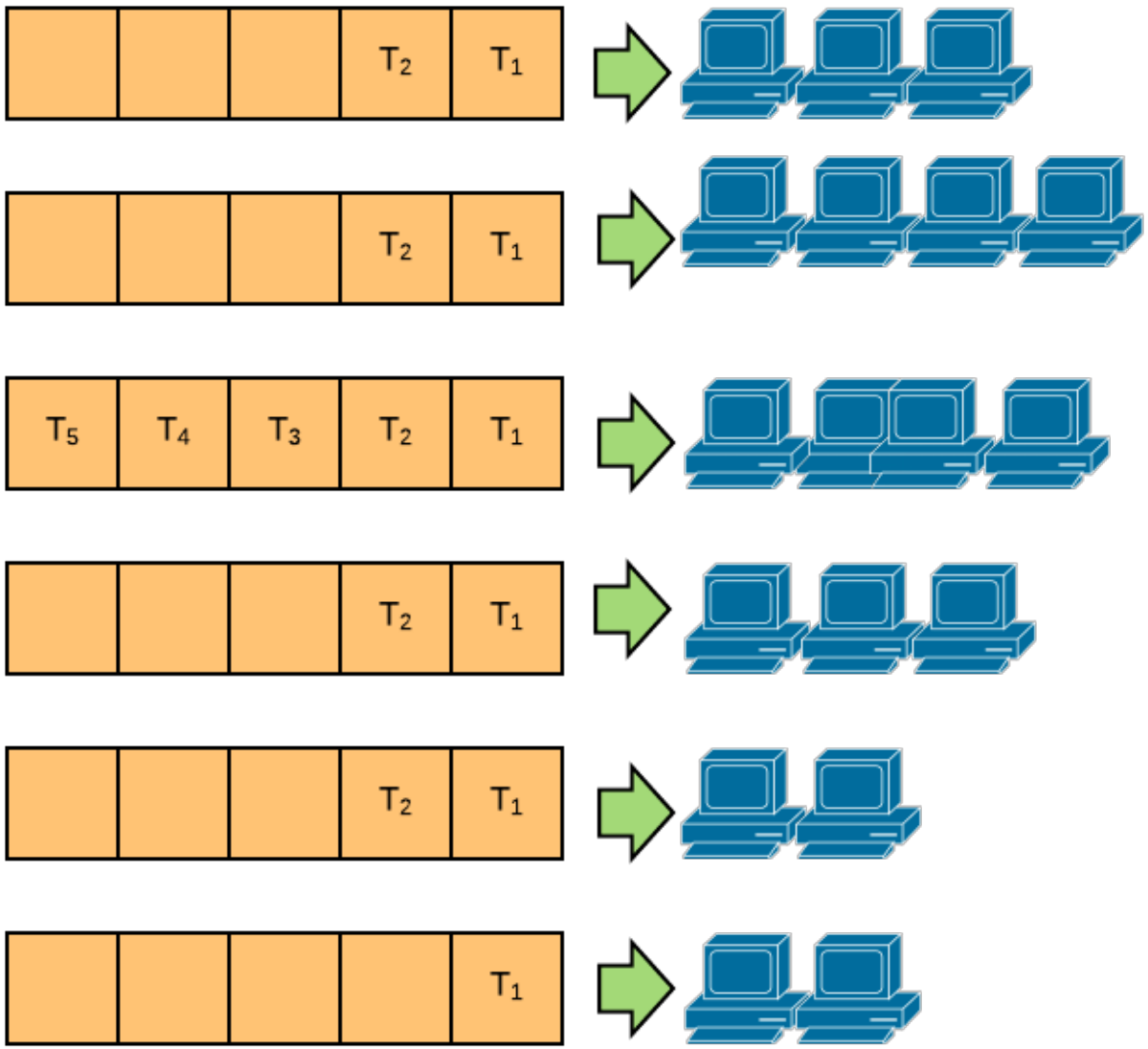
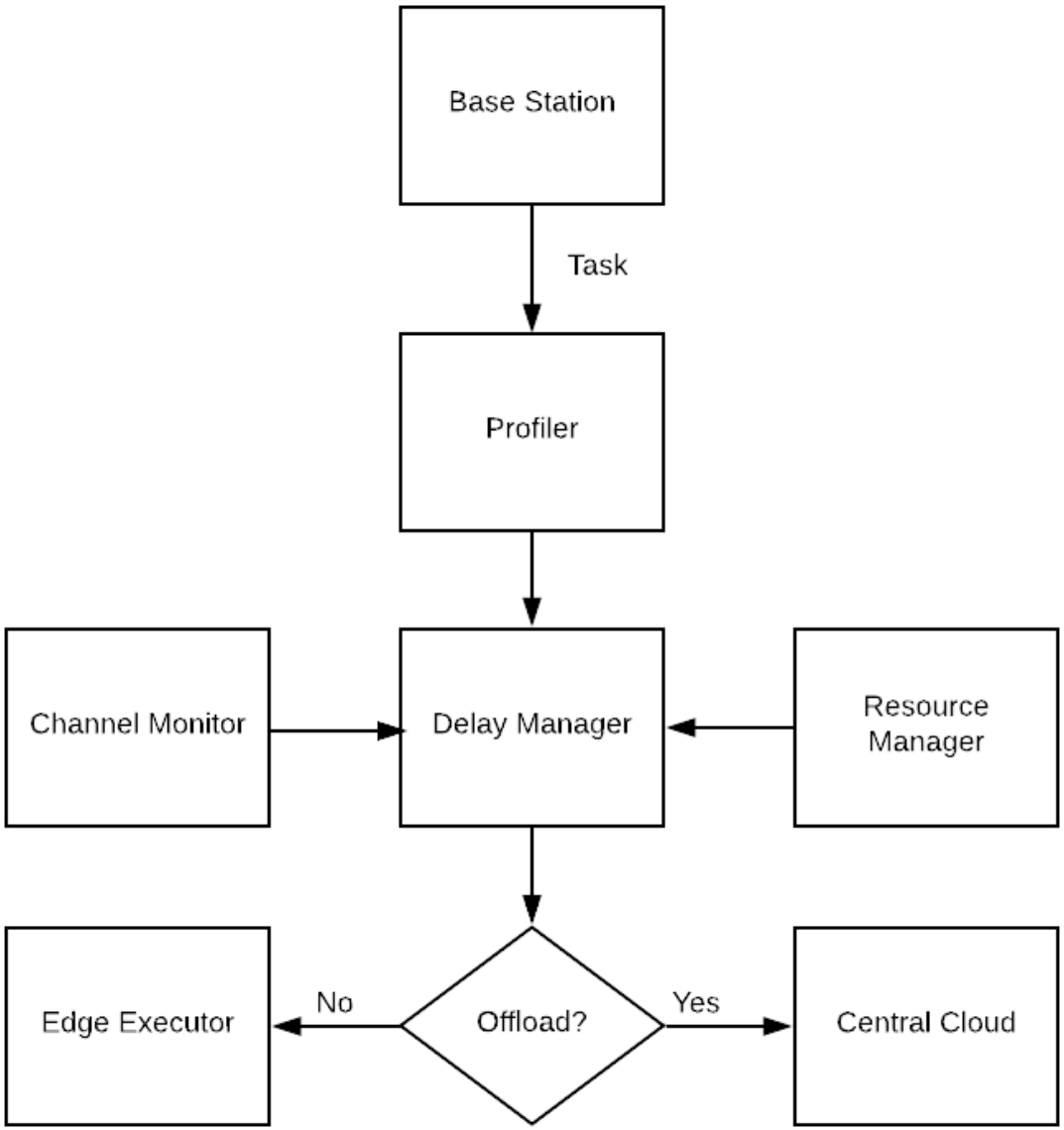
Proposed Model



Queueing Model



Flowchart


Base Station
Task
Profiler
Channel Monitor
Delay Manager
Resource Manager
Edge Executor
No
Offload?
Yes
Central Cloud

Proposed Delay Calculation Formula

$$T_{EC} = t_{exe}^{EC} + t_{waiting}^{EC} + t_{VM\ creation}^{EC}$$
$$T_{CC} = t_{exe}^{CC} + t_{trans}^{CC}$$

We will calculate T_{exe} using the total number of required CPU cycles to complete a task. And $T_{waiting}$ using the Queueing theory.

Proposed Delay Calculation Formula

$$K^{\mathrm{EC}} = \lambda^t t^{EC} + \lambda^e e^{EC}$$

$$K^{\mathrm{CC}} = \lambda^t (t^{CC}_{off} + t^{CC}_{exe}) + \lambda^e e^{CC}_{off}$$

(Computation Cost [**AnnaV.Guglielmiieee2018**])

Where, $\lambda^t, \lambda^e \in [0, 1]$

$$G = (1 - \alpha) \times G_1 + \alpha \times G_2$$

(tradeoff matric [**journals/monet/KhodaRAHAA16**])

Where, G_1 and G_2 is gain/loss achieved in time and energy, respectively.
$0 \leq \alpha \leq 1$

References

Thank You