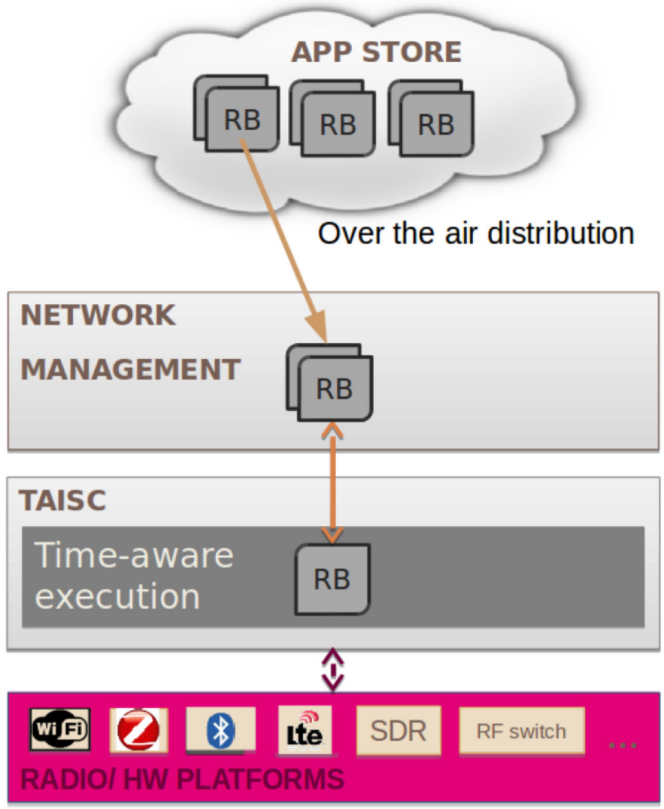
Orca

Orchestration and Reconfiguration Control Architecture

ADVANCED SDR CONTROL AND MANAGEMENT FUNCTIONALITY

Live reprogramming

Live reprogramming of MAC



- Signal world wide support is possible to all deployed devices without any cost or overhead.
- Ability to update a device, solving various other issues like bug fixes, security updates on the MAC level etc.
- Supported devices will never be deprecated due to inability to be upgraded to the latest MAC (RB: Radio Binary) protocol implementations.

ADVANCED SDR CONTROL AND MANAGEMENT FUNCTIONALITY

Live reprogramming: Live reprogramming of MAC

CONTEXT

Research and development in MAC is trying to keep up with highly changing requirements of applications and dynamic environments especially in the context of 5G where multiple radio technologies will occupy the same spectrum and collaboration and coexistence techniques embedded in the MAC layer are highly required.

Even with a variety or preinstalled MACs in a device, the time will come that a new more efficient protocol will emerge that can handle a newly defined application requirement. Support to upload this new MAC protocol to a device wirelessly and inject it in the list of predefined MAC protocols is highly needed and if offered, will provide life-wide update support for the deployed devices without the need of decommissioning in order to be upgraded.

UNIQUE SELLING POINT

- World wide support is possible to all deployed devices without any cost or overhead.
- Ability to update a device, solving various other issues like bug fixes, security updates on the MAC level etc.
- Supported devices will never be deprecated due to inability to be upgraded to the latest MAC protocol implementations .

OPPORTUNITIES

- This offer will put an end to the dilemma most end-users face: Decommission their devices to upgrade them to a newer firmware or specific MAC with a high cost now, or let their devices be slowly deprecated.
- Offer day-1 support of newest MACs due to minimum procedural-administrative overhead to deploy new solutions. Simple click-and-deploy strategies will be available.

REFERENCES

Following git repositories consist of the Contiki tree, and the existing MAC creation framework (TAISC):

- TAISC is free of charge for academic usage, for more information please refer to [1] and http://www.wishful-project.eu/taisc

1 Jooris, B., Bauwens, J., Ruckebusch, P., De Valck, P., Van Praet, C., Moerman, I., & De Poorter, E. (2016). TAISC: A cross-platform MAC protocol compiler and execution engine. Computer Networks, 107, 315-326.