Solutions Integration Project Group Update

February 27, 2017

TIP's Solutions Integration project group is delighted to announce contributions by SK Telecom and a collection of other collaborators. As one of the first projects that entered into TIP Community Lab@FB, the group's 4G Unbundling solution shares APIs for an unbundled 4G hardware and software stack.

The Unbundled RAN Architecture project is developing an open RAN architecture for multi-vendor interoperability achieved by partitioning eNodeB into functional components and using open APIs.

The project's objective is to separate the eNodeB into functional components aligned around the LTE protocol layers; define standard interfaces for those components to communicate; and build a test-bed to validate the interfaces as well as the viability of the solution using functional and performance end-to-end testing. To allow fast integration and limit the need for any proprietary hardware, the project relies on the use of network function virtualization (NFV) where many components are deployed as virtual network functions (VNFs) hosted on top of general-purpose hardware.

This partitioning of eNodeB would allow collaboration amongst multiple vendors to provide different components of the access network. We believe that the unbundling moves the industry away from proprietary hardware and instead brings in more software-centric solutions from multiple vendors resulting in a faster roll out of features and lower capital expenses.

The project scope covers two types of RAN deployment models:

- Type 1 - Centralized layer 2 and layer 3 VNFs deployed over an Open Compute Project (OCP) hardware interface with distributed layer 1 and layer 2 functions implemented on small-cell form factor hardware. Communication between the centralized unit and the distributed nodes is over Ethernet.

- Type 2 - Centralized layer 2 and layer 3 VNFs deployed over OCP hardware interface with a second tier of layer 1 and layer 2 functions implemented on generic x86 hardware. This second tier connects to remote radio heads using an adopted open radio interface (ORI).

Milestones for Type-1 and Type-2 Models

The Unbundled RAN Architecture project continues to progress, with the following key milestones:

- The first call using draft interface specifications – Completed 12/2016

- Publish the first version of interface specifications - Completed 1/2017

- Complete end-to-end functional/performance lab testing for Type 1 – On track for 1-4/2017

- Complete end-to-end functional/performance lab testing for Type 2 – Planned for 7/2017

The above milestones describe the development and lab integration within the TIP community. The results of the collaboration will be on display in the Unbundled 4G Demo hosted by SK Telecom at MWC 2017. To sign up for the demonstration and to download a copy of the whitepaper, visit the Solutions Integration page.

The project group is also releasing a white paper describing the 'unbundling' concept and relevance of it for the next generation telecom systems. The white paper introduces the Unbundled APIs and a roadmap to 5G Unbundled RAN.
Lab integration for the first version of Unbundled APIs with a multi-vendor solution is being tested in the TIP Community Lab@Facebook.

With a strong baseline of the 4G Unbundling project, the Solutions Integration project group is now preparing for the formation of a 5G Unbundled group, which hopes to achieve similar results in creating an open ecosystem for 5G RAN architecture.

The Unbundled RAN Architecture project group remains committed to creating a telecom infrastructure for a sustainable future by leveraging open interfaces, virtualization and cloud computing technologies supporting the mission for connecting people across the world. We look forward to more operators and ecosystem partners joining us and taking advantage of the innovative solution and starting live network-friendly trials in late 2017 to early 2018. We're proud of what we've achieved with our partners so far and encourage anyone interested in joining our efforts and becoming a member of TIP to contact us here.