

Fyuz 2022: TIP members want a more collaborative and diverse community

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Analysys Mason attended the 3-day Fyuz 2022 event in Madrid in October. The first day was an Open RAN summit held by the Telecom Infra Project (TIP) and the O-RAN Alliance, the second day was TIP's own summit and the final day was the Metaverse Connectivity Summit hosted by Meta. The event was attended by a diverse mix of organisations including operators, vendors, system integrators, satellite providers, regulators and investment funds, all of which are either interested in, or actively involved in, open and disaggregated networks and enabling technology and policy.

The event had a clear focus on the metaverse, specifically how emerging open network platforms (for RAN, Wi-Fi, fixed broadband and transport networks) will be able to support its demanding connectivity requirements. The first 2 days were particularly tailored towards providing an understanding of the current and planned efforts of various groups (all of which fall under the TIP umbrella) to drive open and disaggregated platforms that could underpin the metaverse as well as other, nearer-term use cases. The overarching message throughout the event was that more collaboration and diversity is needed within the TIP community, particularly in emerging and strategic regions, such as Asia-Pacific, that are currently outside of TIP's domain.

TIP members stressed the need for a more comprehensive and collaborative Open RAN testing and validation process

Collaborative processes for robust testing will be a key success factor for open networks. TIP announced its Open RAN Release 2 Roadmap in February 2022, which provides a path to Open RAN commercialisation and includes a testing and validation framework. The roadmap claims to take into account both operators' requirements and vendors' product readiness, which are particularly important in the integration, and hence scaling, of Open RAN. However, participants at Fyuz reported that they are still struggling with the complexity and variability of Open RAN deployment models and emphasised that there must be more commonality between the architecture and integrations used if Open RAN is to be a widespread success.

Members of the TIP community believe that more investment is required in developing a robust common testing portfolio for Open RAN. This would include transparent lab and field data, increased automation, more cloud-based testing and greater collaboration. Shared testing would increase throughput while driving down costs. Members also discussed the need for a common testing blueprint that could help to underpin collaborative processes. They noted that hyperscaler/public cloud provider involvement is valuable, particularly for the integration of AI/ML within the RAN layer.

Naturally, the power consumption of Open RAN was another key theme, and there were interesting discussions about supply chain emissions. Speakers claimed that around 80% of emissions come from third-party vendors, so there is a need for improved transparency to enable Open RAN operators to quantify their energy efficiency.

TIP's Fixed Broadband project group has developed and launched new sub-groups and technologies

TIP's Open Optical and Packet Transport (OOPT) and Fixed Broadband project groups held multiple sessions at Fyuz to discuss their current work and future plans. The OOPT and Fixed Broadband groups concentrate on building, testing and deploying open and disaggregated transport (IP and optical) solutions and fixed-line networks, respectively, and help operators to move away from monolithic legacy network architecture.

In the past 2 years, the Fixed Broadband group has launched a new Open Fixed Access Networks sub-group and has further developed its OpenBNG (broadband network gateway) sub-group. These two initiatives cover the following.

- The **Open Fixed Access Networks** sub-group considers gigabit-capable access technologies, transition architecture, white-box optical line terminals (OLTs), software-defined networking (SDN) and programmability. It was founded by Telefónica, TIM and Vodafone. Members are currently working on their first use case: a 'pizza box' OLT that can be deployed in a local exchange environment.
- The **OpenBNG** sub-group is interested in hardware/software disaggregation, disaggregated network architecture and network and service convergence. Edgework and Ufispac have both recently introduced OpenBNG-compliant products. Testing is a priority for this group.

In one session, the Head of Transport Network Strategy and Architecture at Telia discussed the architectural future of the transport network and the benefits of a leaf-spine fabric topology and SDN control. A leaf-spine design provides scalability and modularity and is optimised for dealing with traffic growth. Telia is a member of OOPT's Mandatory Use Cases for SDN Transport (MUST) sub-group, together with eight other operators. This sub-group looks at the design of SDN transport, as well as open and standard interfaces between each architectural element to support various operator use cases.

Satellite providers discussed the use of Open RAN in non-terrestrial networks

TIP's Non-Terrestrial Connectivity Solutions (NTCS) project group also held a session and discussed the integration of satellite constellations and high-altitude platform systems (HAPS) with terrestrial networks. Speakers included representatives from satellite providers Inmarsat and Omnispace, along with those from space research and technology firm Aalyria.

The panel considered the benefits of deploying Open RAN in non-terrestrial networks (NTNs). They highlighted the RAN intelligent controller (RIC) as an important technology that could help to manage non-stationary satellites. They also noted that the RIC could help to tackle the complexity of routing in a space environment via the development of custom NTN xApps and rApps.

However, challenges include a lack of high-quality new silicon (which is verified for space use) and the inclusion of unqualified and non-compliant parts in many nano-satellites. This is a problem for network longevity.

The NTCS group vocalised their support for the 3GPP Release 17 standards for 5G (the first standards to include input from NTN groups), though there was scepticism among the panel members on whether 3GPP processes are really sufficient for building an interoperable satellite and terrestrial network platform.

There is still a considerable amount of work to be done in this area. TIP has an opportunity to become more influential in the NTN space by incorporating more significant players and organisations into the NTCS group.