

TIP OpenRAN Release 2 Roadmap



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Introduction

TIP's OpenRAN Project Group (OpenRAN PG) is focused on scaling up productization of Open RAN technology driven by an ecosystem of technology suppliers, including hardware and software vendors, along with system integrators and service providers ...

1. Introduction

TIP's OpenRAN Project Group (OpenRAN PG) is focused on scaling up productization of Open RAN technology driven by an ecosystem of technology suppliers, including hardware and software vendors, along with system integrators and service providers. The overarching goal of the OpenRAN PG is to streamline the industry's efforts on OpenRAN development and to accelerate OpenRAN adoption.

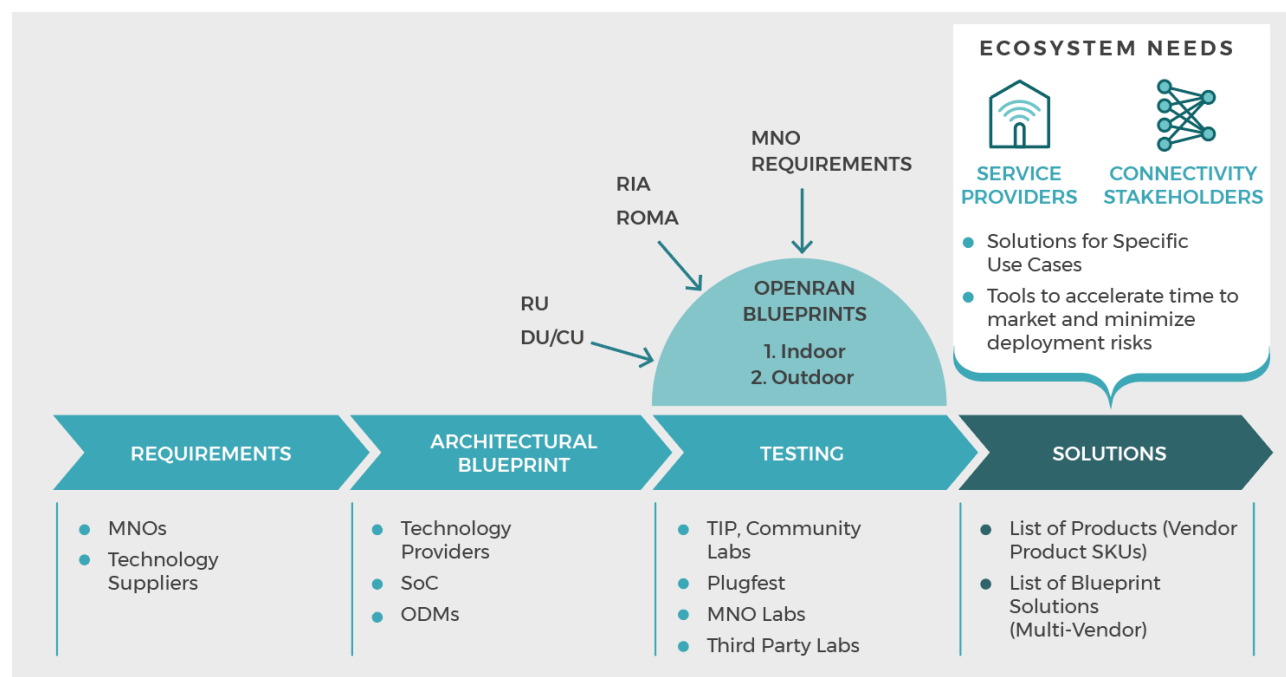


Fig 1 – TIP OpenRAN - Focused on Productization

The activities within the project group have been categorized as per the release procedures defined in this document.

The OpenRAN PG activities include, but are not limited to:

- Gathering and consolidation of prioritized technology requirements for MNOs
- Identification and engagement with vendors that will deliver the various hardware and software components for OpenRAN solutions that meet harmonized MNO requirements.

- Publishing an OpenRAN Release Definition document mapping the prioritized features to a roadmap of releases.
- Creation of the resulting harmonized OpenRAN Product Requirements documents and definition of Product Test Plans utilised in the Test & Validation framework within TIP.
- Definition of OpenRAN Product Blueprint documents and Blueprint Test Plans utilised the Test & Validation framework within TIP.



Fig 2 – OpenRAN Release Framework

The OpenRAN PG is introducing a release framework to manage the execution efficiently. This release framework will define a consistent process for aligning major activities that lead to the successful deployment of OpenRAN solutions. Through its release framework TIP enables vendors to align their roadmaps and deliver on MNO's priorities across various TIP OpenRAN releases over time. Thus, the release framework enables TIP to efficiently align the disaggregated OpenRAN vendor ecosystem against MNO's requirements, thereby delivering product requirements, blueprint definitions and associated test plans to be utilized in TIP's Test and Validation framework.

Through this process, the TIP OpenRAN PG is driving an industrialised approach to accelerate OpenRAN towards commercialization, defining a value-proposition for the ecosystem.

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OpenRAN Release Framework

The goal of the Release framework is to break down the consolidated Open RAN requirements into multiple TIP Releases based on MNO's priorities and vendor's readiness...



2. OpenRAN Release Framework

The goal of the Release Framework is to break down the consolidated Open RAN requirements into multiple TIP Releases based on MNO's priorities and vendor's readiness.

The OpenRAN PG will have multiple major releases in parallel and multiple minor releases, with different levels of maturity and capabilities. The releases will address the feature roadmap as the ecosystem solutions become available and progress through TIP's Test & Validation framework.

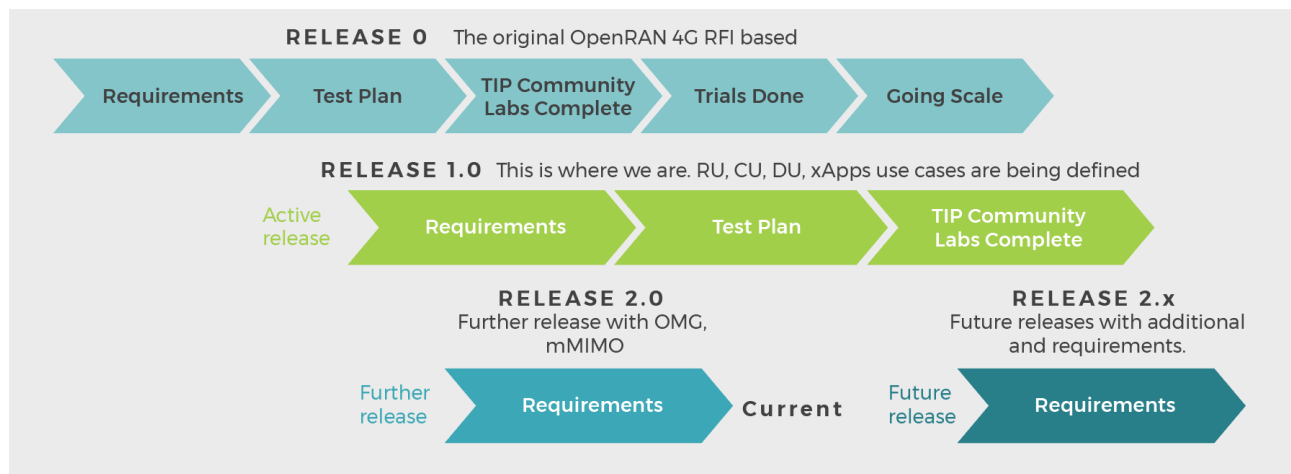


Fig 3 – OpenRAN Releases

2.1 Releases

1. TIP OpenRAN Release 0: Initial baseline release for 2G-4G

- Requirements drafted in 2018 as part of original 4G RFI and published in PG
- Multiple lab and field trials, as well as deployments are active in many regions, especially for rural use case
- Integrated RU+BBU architecture with disaggregation at HW and SW level
- Products awarded with badges/ribbons listed on TIP Exchange for participation in test and validation activities

**2. TIP OpenRAN Release 1: Currently ongoing within various subgroups and with a range of MNOs**

- a. Published Product Requirements Documents 1.0 for RU, DU/CU, Indoor and Outdoor
- b. Test Plans under development and being published within each subgroup
- c. Vendors are participating in new badging process for 'Requirements Compliant ribbon and 'Supplier Validated Product' badge as well as 'TIP Validated\tested Product' badges
- d. Multiple trial opportunities in pipeline enabling various badges on TIP Exchange
- e. ORAN 7.2 specifications based architecture with RU, DU/CU split

3. TIP OpenRAN Release 2: Latest release kicked off using the OpenRAN MoU Group (OMG) Technical Priorities Document

- a. Aggregates vendor requirements mapping to OMG release R2 as well as other MNO input
- b. Initiates TIP roadmapping process to define the delivery of required features across multiple releases and timeframes
- c. Adheres to TIPs Test and Validation framework and resulting ribbons and badges on TIP Exchange
- d. Delivers multiple OpenRAN blueprints

1. TIP OpenRAN Release 3: Next release mapping to OMG release R3

- a. Aggregates vendor requirements mapping to OMG release R3 as well as other MNO input
- b. Initiates TIP roadmapping process to define the delivery of required features across multiple releases and timeframes
- c. Adheres to new badging process in TIPs Test and Validation framework and resulting ribbons and badges on TIP Exchange
- d. Delivers multiple OpenRAN blueprints
- e. Includes RIA and ROMA advanced requirements and use cases

2.2 Release 2 - Roadmap

OpenRAN PG has kicked off a new release - Release 2 using the OpenRAN MoU Group (OMG) Technical Priorities Document. The requirements considered for this release are aligned with OMG MNO's priorities and split into a series of minor releases 2.x based on vendor readiness.

The Release 2 features and requirements will form the basis for issuing ribbons and badges to vendor products and subsequently list them on TIP Exchange, which is TIP's marketplace.



Fig 4 – Release 2 Roadmap

TIP OpenRAN PG will continue to advance the requirements gathering and road-mapping process with a regular cadence. As part of the framework, the window for requirement contribution will open for MNOs for subsequent minor releases R2.1, R2.2, and so on. The requirements input from MNOs will be harmonized into requirements documents and shared with the vendors for input and compliance.

The MNOs can bring their requirements for every minor release when the requirements gathering window is open. Once the minor release is frozen, new requirements can only be provided in subsequent minor releases. The PG will announce a call to action for vendors to participate in specific minor releases.

The vendor input will be reviewed and mapped against the MNO requirements to build the release roadmap. Each of the requirements will be evaluated against the priority assigned and the readiness of the related vendor products.

2.2.1 Release 2 - Deployment Scenarios and Features

Release 2 roadmap identifies key features and functions to address the use cases and deployment scenarios required by the MNOs and categorizes them into different minor releases on a six-month cadence.

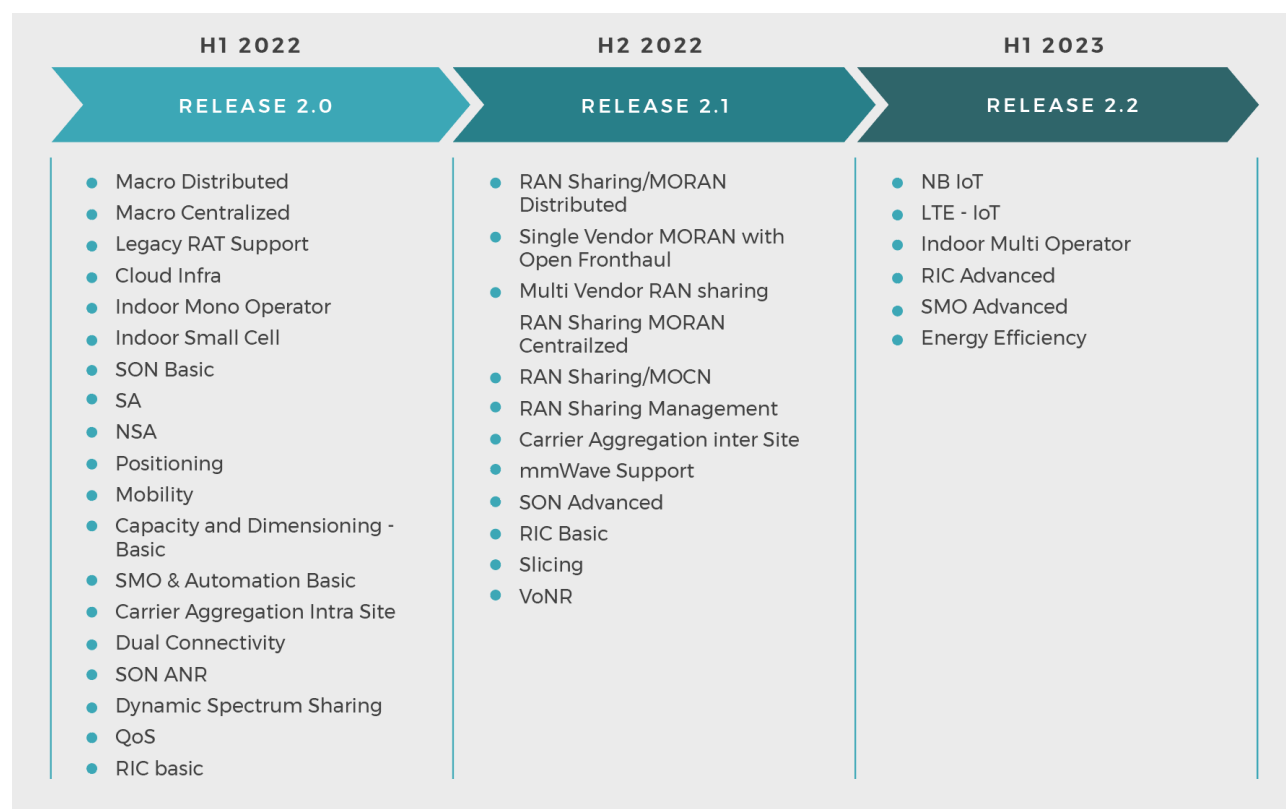


Fig 5 – TIP OpenRAN Rel. 2 Roadmap

2.2.2 Release 2 – OpenRAN PG Subgroup Roadmaps

In addition to publishing the overall roadmap, the roadmap and feature allocation is also published for the individual RU, DU/CU, RIA and ROMA OpenRAN PG subgroups as shown in the figures below.

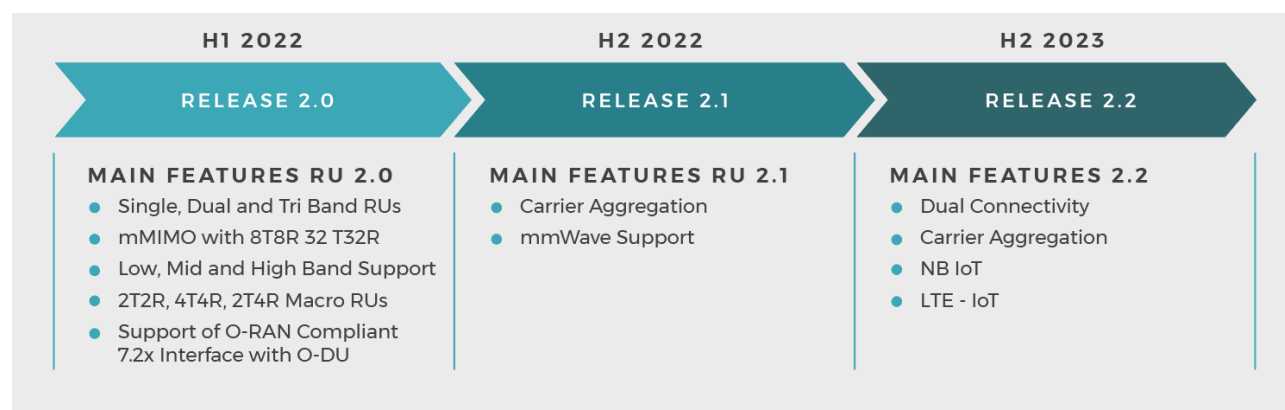


Fig 6 – TIP OpenRAN Rel 2 RU Roadmap

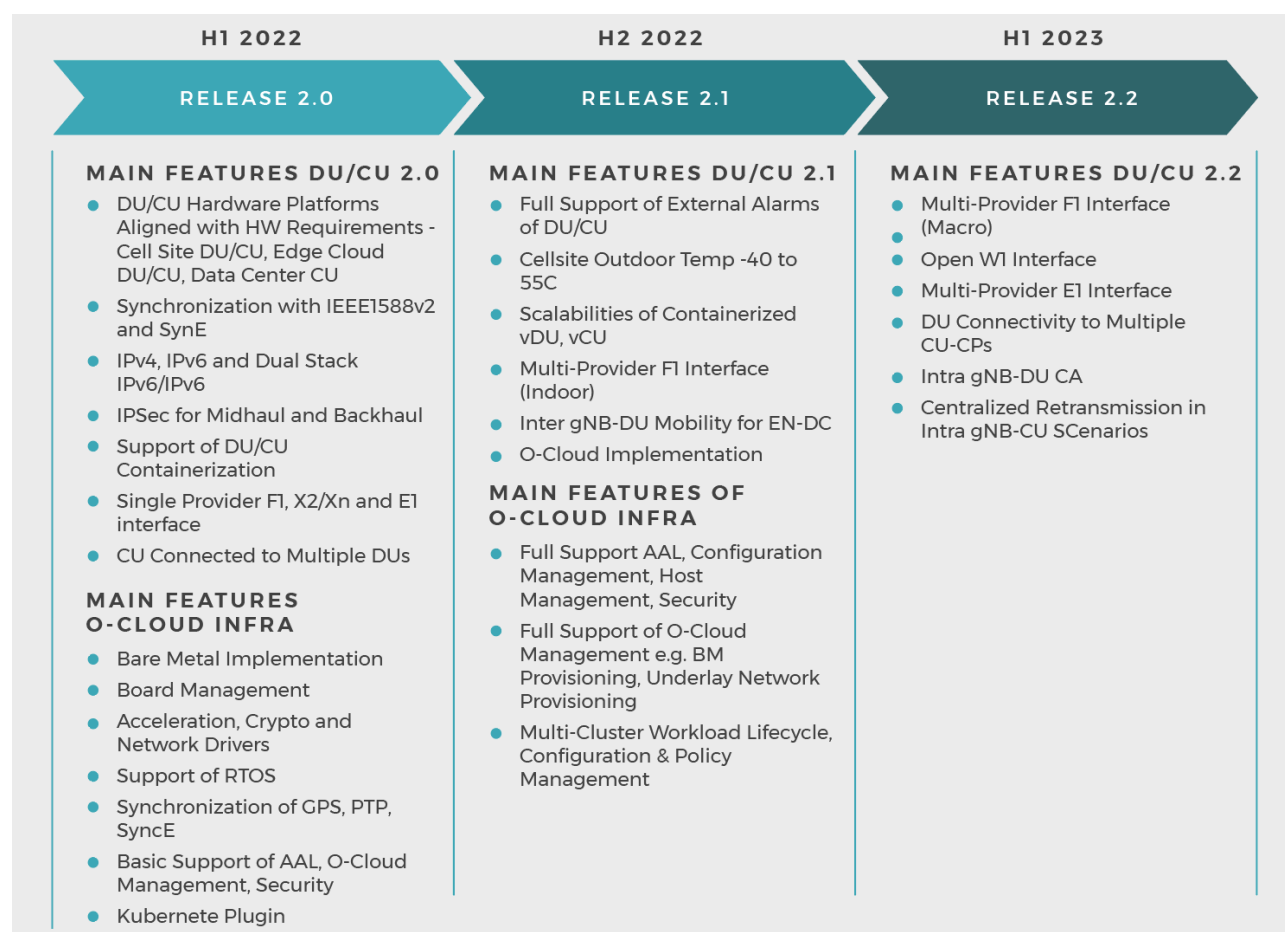


Fig 7 – TIP OpenRAN Rel. 2 – DU/CU Roadmap

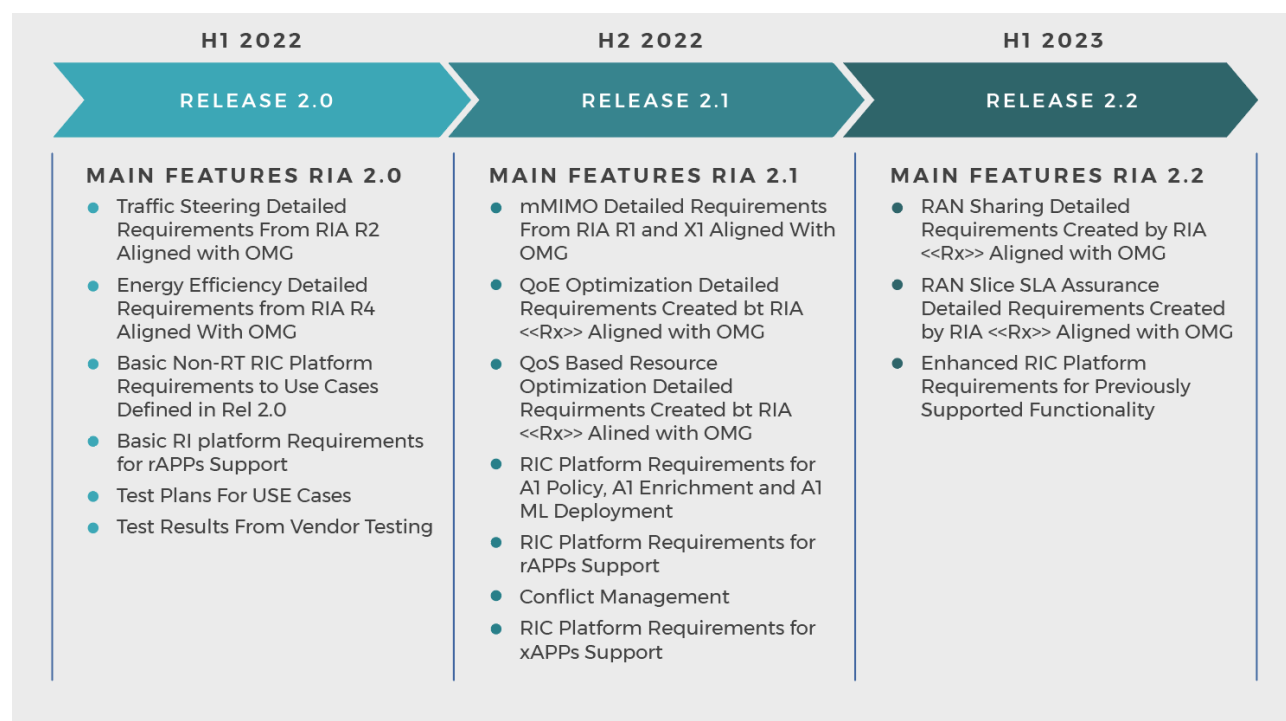


Fig 8 – TIP OpenRAN Rel. 2 – RIC Use Cases (RIA) Roadmap

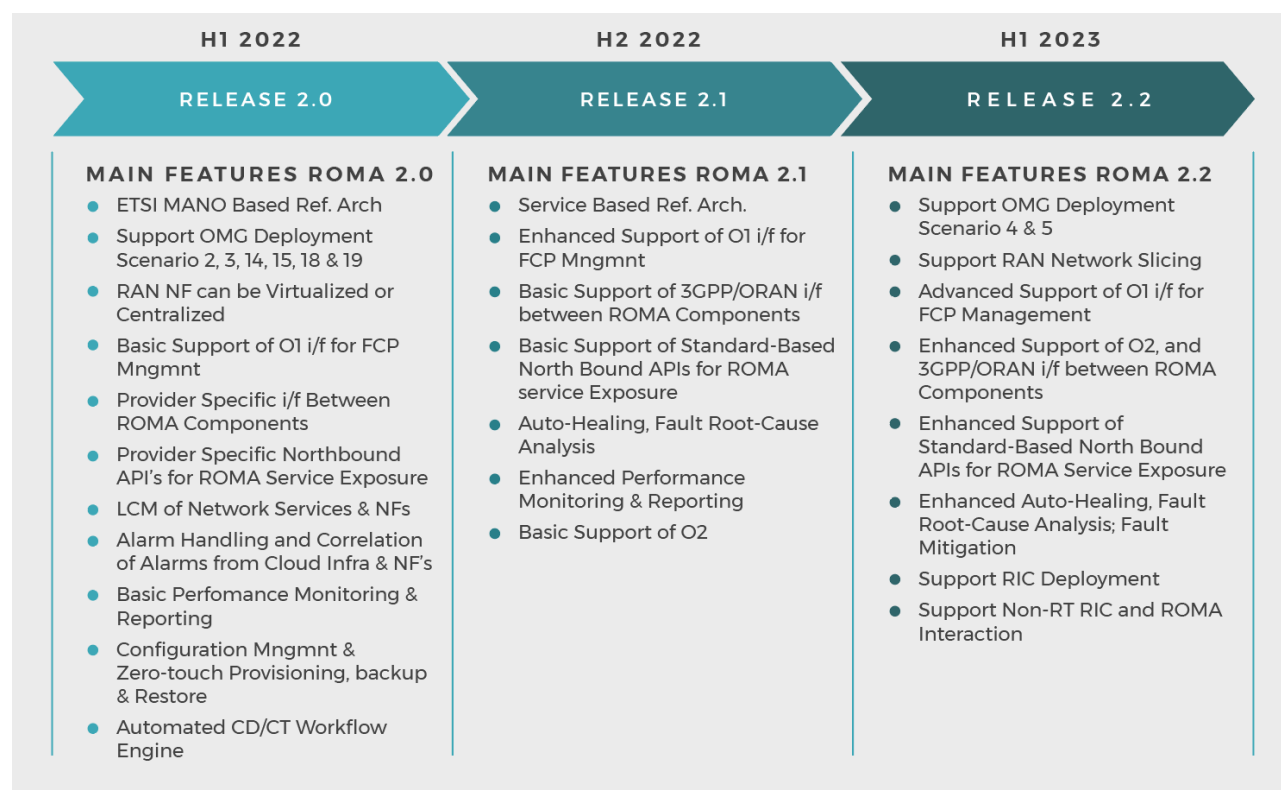


Fig 9- TIP OpenRAN Rel. 2 - SMO (ROMA) Roadmap

2.2.3 Release 2 – OpenRAN PG Release Definition

In addition to publishing the high-level roadmaps shown above, the detailed release definition content is available in the link below *

<https://telecominfraproject.atlassian.net/wiki/spaces/OPRN/pages/1597374479/Newly+Released+TIP+OpenRAN+Release+Definition+Document+Roadmap+2.0>

*Available to TIP OpenRAN PG participants only.

2.3 Product Requirements and Validation

The component subgroups - RU, DU/CU, RIA and ROMA build on the features and requirements in the OpenRAN Release Definition, and define Product Requirements

documents for each minor release. New versions of the product requirements documents will be created within a new minor release to ensure that products are keeping up to date with new developments in standards organizations, reflect the commercial requirements of the service providers & connectivity stakeholders, and product readiness from the technology supplier ecosystem.

Product maturity is proven through badges and ribbons. Upon publication of the product requirements documents, technology suppliers will be invited to claim compliance of their product against a defined criteria that has been agreed by the OpenRAN project group. A product that is compliant with the defined criteria will be issued with a 'Requirements Compliant' ribbon and displayed on TIP Exchange.



Requirements Compliant

- As a minimum requirement to get listed on TIP Exchange, individual network components or products are compliant with the requirements set by the associated project group
- For the initial listing on TIP Exchange, components and products do not need to be formally tested

Fig 10 – 'Requirements Compliant' Ribbon

The component subgroups focus on validating the hardware and software components. In this respect, each subgroup defines a Product Test Plan to individually validate products that make up the RAN subsystem. New versions of the Product Test Plans are issued per minor release to ensure up to date testing of the latest product requirements that have been defined.

Upon definition of a product test plan, technology suppliers are invited to perform testing against the test plan in their own environment, and provide TIP with test results. If the test results meet the criteria defined by the project group, the product will be issued a 'Supplier Validated Product' badge and displayed on TIP Exchange.



Supplier Validated Product (Bronze)

- Awarded to products that technology suppliers test in their own labs after approval of the test results by the relevant project group
- Applicable primarily to individual network components and products. Potentially also to integrated network layers and end-to-end solutions
- Products need to be commercially available (early stage)
- A summary test report indicating the test cases attempted, passed, and failed is contributed by the product provider to the leadership of the applicable project group

Fig 11 – Supplier Validated Product (Bronze)

TIP Badges reflect the maturity and capability of products and solutions for these subsystems against the technical requirements after having progressed through TIP's Test & Validation framework and serve as a guide to MNOs as they choose solutions for deployment. The TIP badging scheme for products and blueprints is intended to simplify the MNO's vendor selection process.

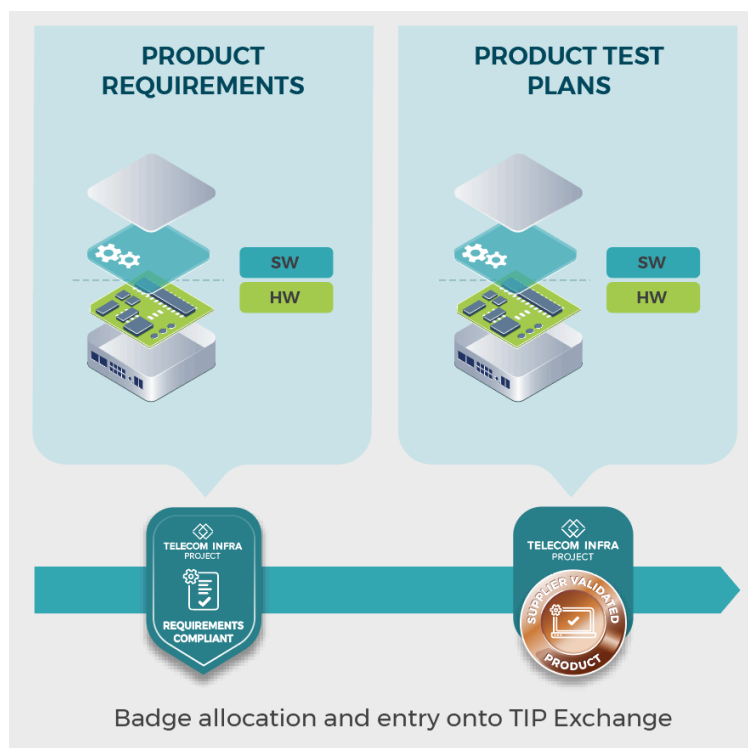


Fig 12 – TIP OpenRAN Test & Validation

2.4. Blueprint Definition and Validation

Blueprints are a key output of the TIP OpenRAN Project Group and the final piece of the release framework.

TIP OpenRAN PG defines Blueprints that are driven by specific use cases and deployment scenarios that need validating of specific features and requirements. Effectively, each deployment scenario will lead to a different blueprint, and for each blueprint, different configurations, i.e. list of products, will be validated as shown in the figure below.

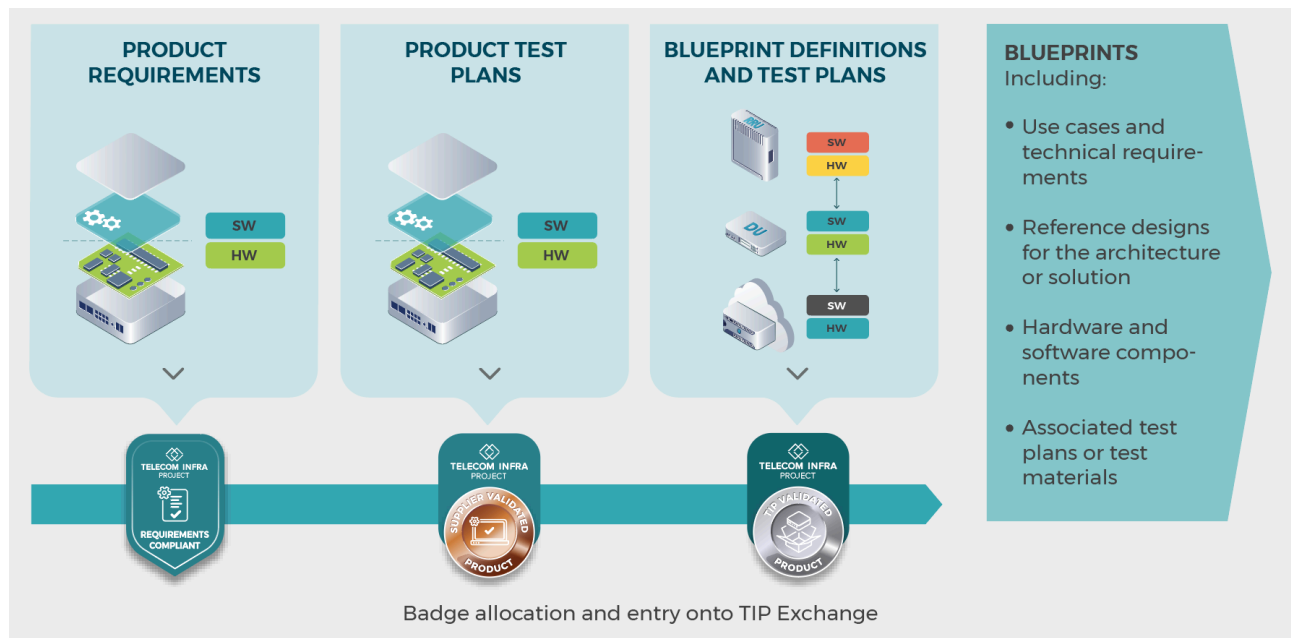


Fig 13 – TIP OpenRAN Test & Validation

To complement the badges showing product maturity for a given minor release, the blueprint and validated configuration are designed to show which products have been tested together and thus can be more easily consumed by the MNO.



The TIP OpenRAN segment Subgroups for Outdoor and Indoor will focus on validating various blueprints which will evolve across two key areas:

1. Feature set, per the associated release
2. Level of integration, e.g. single RU, DU, CU for basic validation or an advanced integration with multiple RU, DU, CU

On successful validation the individual products in the configuration would all get a 'TIP Validated Product' badge. The products will then be displayed on TIP Exchange. The blueprint will also be associated with a given release, and thus each product, in each validated configuration, would be proven to be at the capability level dictated by a given release.

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Summary

The TIP OpenRAN Project Group is focused on scaling up productization of OpenRAN technology driven by an ecosystem of technology suppliers, system integrators and service providers. The Project Group streamlines the industry's efforts on OpenRAN development and accelerates Open RAN adoption ...



3. Summary

The TIP OpenRAN Project Group is focused on scaling up productization of OpenRAN technology driven by an ecosystem of technology suppliers, system integrators and service providers. The Project Group streamlines the industry's efforts on OpenRAN development and accelerates Open RAN adoption.

The publication of the OpenRAN Release 2.0 Roadmap harmonizes the prioritized operator requirements with vendor's product readiness, categorized in key features and functions, mapping them into a roadmap of TIP Releases.

In addition to publishing the overall roadmap, a detailed feature allocation and roadmap is also published for the RU, DU/CU, RIA and ROMA OpenRAN PG subgroups.

The Release 2.0 features and requirements will form the basis for issuing ribbons and badges to vendor products - once they have progressed through TIP's Test and Validation framework - with their subsequent listing on TIP Exchange.

Join TIP and the OpenRAN Project Group to participate in existing and future releases. Click on our [website here](#).



Glossary

API	Application Programming Interface
BBU	Baseband Unit
BP	Blueprint
CU	Control Unit
DU	Distributed Unit
KPI	Key Performance Indicators
MVP	Minimum viable product
OMG	OpenRAN MoU Group
PG	Project Group
RAN	Radio Access Network
RIC	RAN Intelligence Controller
ROMA	RAN Orchestration and Automation
RU	Radio Unit
SI	System Integrator Environment

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