

LAB-CENTRIC KEYNOTE

Beyond the Blueprints: The Lab-Centric Approach to Open RAN Implementation

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TELECOM INFRA PROJECT

Beyond the Blueprints: The Lab-Centric Approach to Open RAN Implementation

i14y Lab Summit 2023

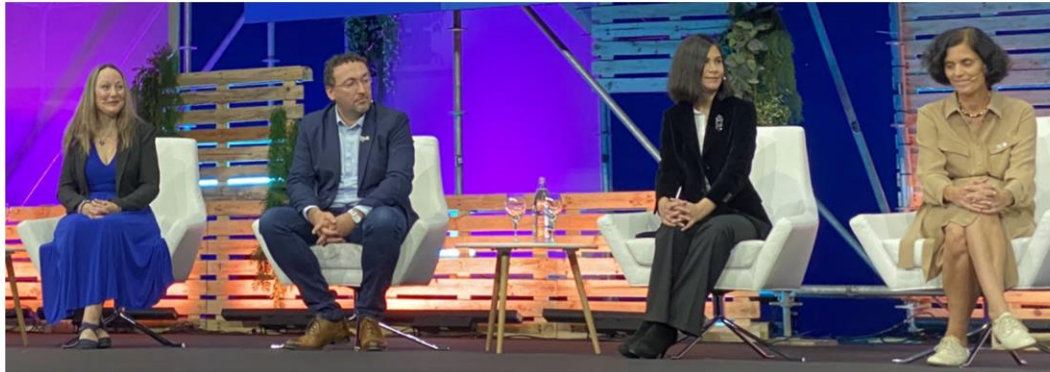
What is the Telecom Infra Project?

Telecom Infra Project (TIP) is an **independent US-based non-profit organization** enabling a global community of service providers, technology partners, and other connectivity stakeholders.

The TIP **community** work together to develop, test and deploy open, disaggregated, and standards-based solutions (e.g., Open RAN, Open Wi-Fi, Open Optical, etc.) that deliver the high-quality connectivity

TIP is governed by a Board consisting of BT, Dell, DT, Intel, Meta, MTN, Orange, Telefonica, and Vodafone

Together We Build, Test & Deploy.



The Timeline

The Evolution Open RAN

POC in Lab

POC in Field

Scaled Lab
Trials

Systems &
Blueprints

SCOPE

2018

Proving out
technology in
the lab

2019-2020

Proving out
technology in an
Operators
commercial
network
environment

2021

Product Interop
and Integration
Testing Plugfests

2022

Blueprint Definition
and System
Integration Testing

2023+

System
Certification **O**pen
RAN **P**rocurement
Engine (SCOPE).
Establish purchaser
confidence by
enabling a
community-driven
lifecycle process
that turns operator
requirements into
certified RAN
systems.

Ecosystem, productization and commercialization



IDEATE

DEFINE

BUILD

TEST

RELEASE

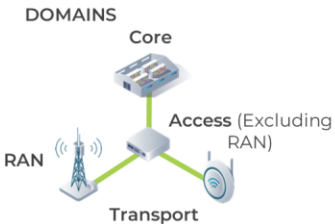
DEPLOY

Release Roadmaps

Test & Validation

Marketplace

Building, testing and validating open network products at scale



Facilitator

- **Product releases** defined by common pool of industry requirements & vendor readiness and conformance

Accelerator

- **Common test plans**
- **Continuous testing and lab trials** to validate products and solutions
- **Best practice sharing** and collaboration on field trials

Enabler

- **TIP Exchange** is a marketplace of validated products and Blueprints enabling a path to deployment
- **TIP Badges** to reflect carrier-grade

Building, testing and validating open network products at scale

Project Group Deliverables informing product listings

Trials in which vendors and SIs are eligible for product listings

Product listings

In 2022

~55

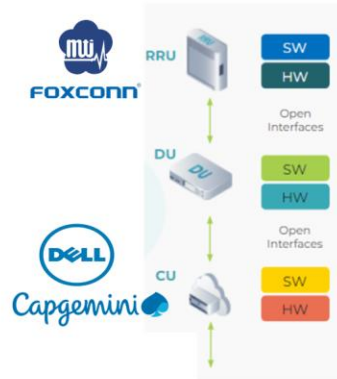
35+

~90

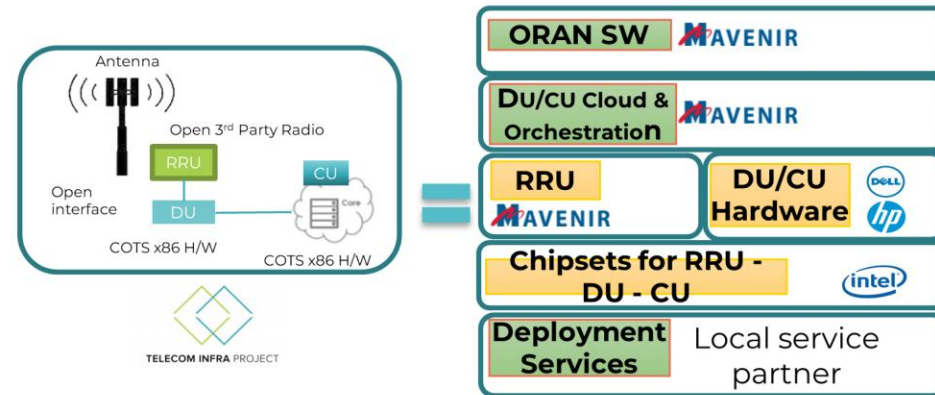
Blueprints

Anchoring Open RAN Integration

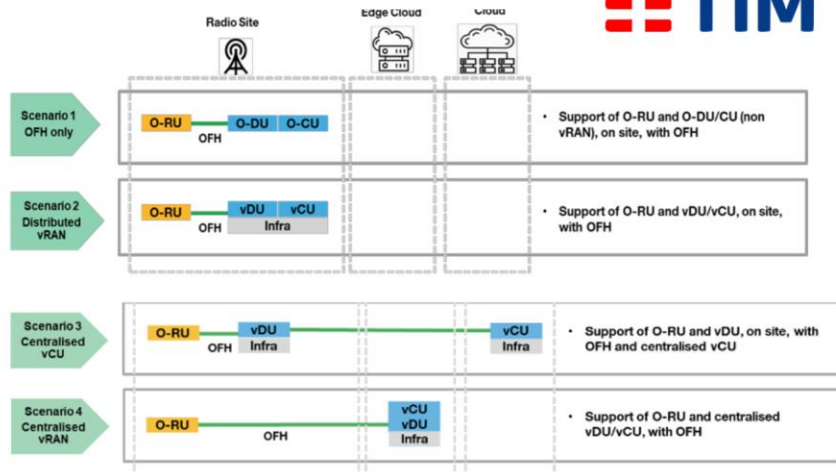
Outdoor Macro 5G NSA



Macro 4G/5G Blueprint



Outdoor Macro 5G NSA



RIC project with United Kingdom DCMS

Goal : Test and measure performance of 5G RAN (in lab and near field setting) for Energy efficiency, Spectral Efficiency, Interference (in Massive MIMO setting)



Blueprint Objectives: Assess Commercial Readiness

- Reference RAN architectures, including CU, DU, and RU components, container platform, and RAN SW functions
- Reference test plan that validates the requirements, KPIs and feature set, for the use case that the blueprint is addressing
- Develop configuration files and architectures for multi-vendors' interoperability based on industry specifications, for the validated configurations.
- Create playbooks and test reports to accelerate the productization of the validated OpenRAN configurations
- Publish blueprint and validated configuration on TIP Exchange, showing products that meet the defined use case, and their maturity level through the TIP badges awarded to them

New TIP Test & Validation Proposition

Make TIP Test & Validation the preferred telecom industry framework for ensuring technical readiness of open and disaggregated connectivity solutions



Product/Solution MATURITY
based on TIP Test Plan & TIP defined Criteria

TIP Exchange MARKETPLACE TIP BADGES SOLUTIONS RFI TEMPLATES

OOPT (Open Optical Packet Transport)
DCSG (Disaggregated Cell Site Gateway)

Access Backhaul Core Internet

AWARD	USE CASE DESCRIPTION	HW	SW	RESOURCE LINKS
November 2021	Cell site gateway in a production network serving and aggregating 2G, 3G, 4G and 5G mobile, fixed access and enterprise traffic.	DELTA Product Name: Cell Site Gateway (HW) Model: ACCV208SACCV208S Version: AX Data Sheet >	Capgemini Product Name: NOS for Access Aggregation and Backhaul Model: N/A Version: 10.4.2.14 Data Sheet >	Use Case > Technical Requirements > Detailed Technical Requirements > Test Plan > Exit Report >
June 2022	Cell site gateway in a production network serving and aggregating 2G, 3G, 4G and 5G mobile, fixed access and enterprise traffic.	ufiSpace Product Name: Cell Site Gateway (HW) Model: 39500-30XS Version: 30XS Data Sheet >	ipinfusion Product Name: OcNOS Model: 5.0 MR Version: 187 Data Sheet >	Use Case > Technical Requirements > Detailed Technical Requirements > Test Plan > Exit Report >

LAB: TIP Community Lab @ Meta, California | Validated by: TIP Participants

LAB: TIP CL ITRI lab in Taiwan | Validated by: Test & Validation Committee/ITRI/Test & Integration and OOPT Technical Leads

Full-system view - Results presented on TIP Exchange

TIP: Ecosystem, productization and commercialization

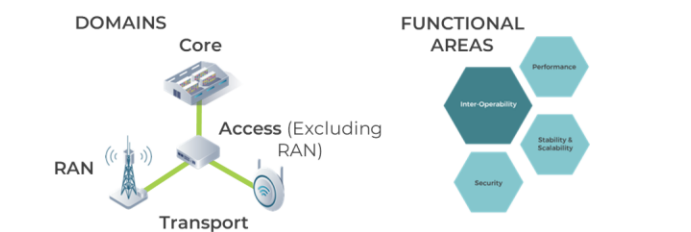


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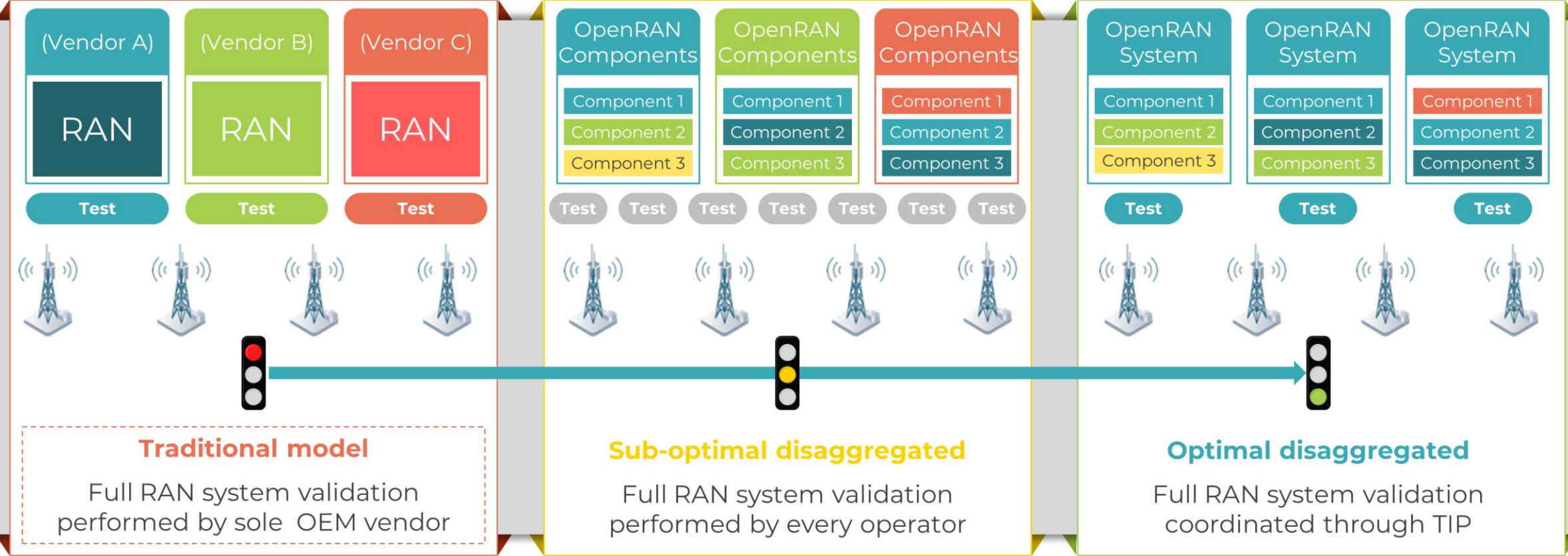
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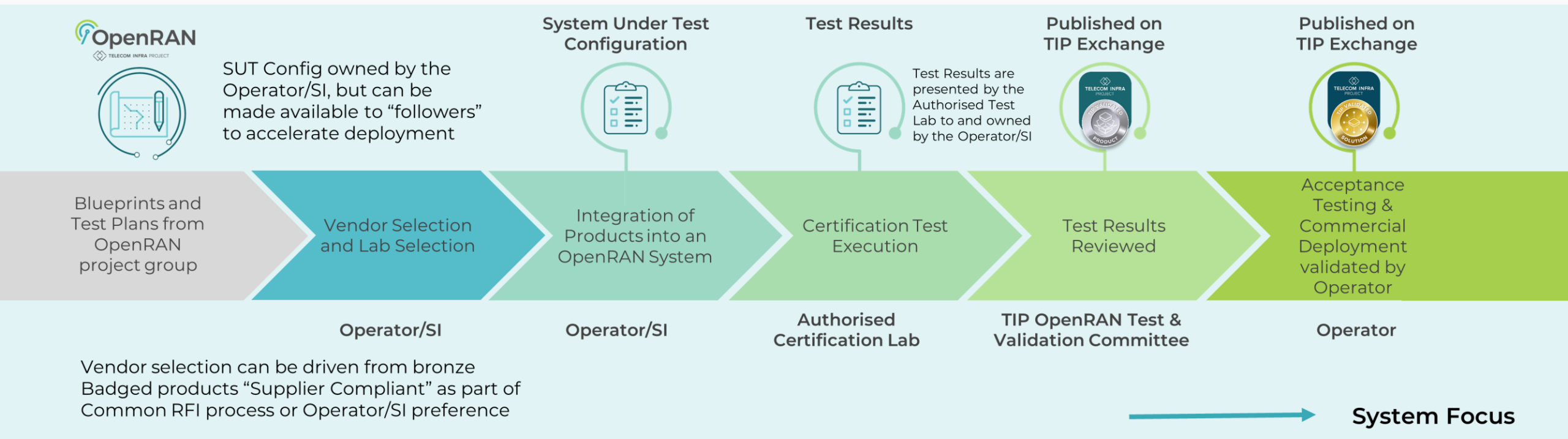
Drive Delivery Efficiency with the Open RAN Innovation Hub



TIP Open RAN Innovation Hub system validation — “Test once; Deploy many times”

TIP Process Flows

SCOPE Certification Phase



Come Join TIP's Global Community

A Growing list of Open RAN supporters

OPERATORS



TECHNOLOGY SUPPLIERS



SI & Labs



Thank you!

