

# NETWORK AS A SERVICE

This Project Group Charter establishes the scope, intellectual property and copyright terms used to develop the materials identified in this Project Group. Only Participants that execute this Working Group Charter will be bound by its terms and be permitted to participate in this Project Group and shall be considered “Contributors” in the Project Group as defined in the Telecom Infra Project Organizational Documents (<https://telecominfraproject.com/organizational-documents/>).

**TIP Board of Directors Approval Date:** July 8, 2020

## 1. PROJECT GROUP NAME, SEGMENT, AND TYPE

NAME: Network as a Service (NaaS)

SEGMENT: Rural

TYPE: Solutions Group

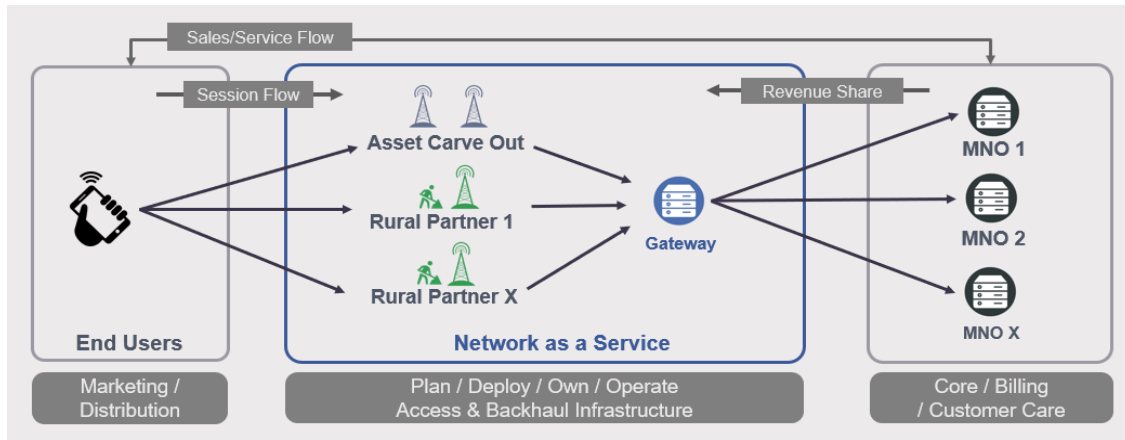
## 2. PURPOSE

More than 1.2B people in rural and peri-urban areas lack internet access. Mobile network operators are unable to expand their networks into these remote areas due to challenging business cases caused by low ARPU and high deployment and operational costs. Available MNO capex is generally invested in urban-based initiatives with more certain return profiles.

NaaS is a promising new business model that addresses these challenges, leveraging shared infrastructure, a lower cost structure and external capital to extend MNO coverage into rural and peri-urban areas – a win for rural inhabitants, MNOs and all stakeholders involved.

The NaaS Solution Project Group offers the following specific benefits to MNOs:

- A framework for trialing and proving scalability of different complimentary investment and sharing models to meet the economics of expanding networks into rural areas.
- An industry-led approach to providing rural coverage as opposed to Government mandates.
- Access to potential investors.
- TIP's build, test, and validate approach to proving interoperability of technology before it goes into the field.



Rural NaaS Operators must design, deploy and operate rural networks that:

- Reduce capex and operational costs
- Support multi-tenancy
- Easily and securely integrate with MNO networks and systems
- Provide a consistent, high quality user experience
- Improve operational efficiency and costs through automation

The industry offers many of the necessary ingredients to design and build these networks, but there is a lack of information about how to utilize these ingredients to develop end-to-end solutions that enable the rural NaaS use case to scale profitably.

This project group provides a forum to promote collaborative discovery and discussion between NaaS industry players toward developing open solutions for solving NaaS planning, deployment, and operations challenges.

### 3. GOAL

The goal of this project group is to collaboratively develop and publish solution reference designs, playbooks, and case studies to catalyze and sustain industry led NaaS field trials, lab trials, and deployments.

### 4. PROJECT GROUP SCOPE

This Project Group covers the following key components of end-to-end NaaS solutions. These components may each have end-to-end solutions or reference other technology areas. As necessary, separate subgroups within the NaaS Project Group may be created and any work completed as part of the subgroups shall be shared with the broader Project Group.

- Network Planning and Architecture
- Passive Infrastructure
- Commercial
- Network Deployment & Operations

Several NaaS components may benefit from collaboration with existing TIP project groups. For example, the NaaS Project Group may align with or reference other Project Groups' Deliverables to define the solutions. In addition, the Project Group may also work with other industry consortia in the creation of the Deliverables. We will work within TIP Bylaws to promote cross-group sharing across TIP members in these areas of collaboration.

Note: Different NaaS use cases may have dependencies on market and regional requirements leading to different end-to-end architectural solutions and a new set of deliverables. These use cases will be evaluated by the project group based on commercial priorities from member companies.

### 5. PROJECT GROUP DELIVERABLES

The Project Group will leverage an end-to-end view to address challenges for rural NaaS deployments, including reference designs, playbooks, and case studies. Development of any product or interface specifications is outside the scope of this Project Group.

The following lists the Deliverables to be developed by the NaaS Project Group:

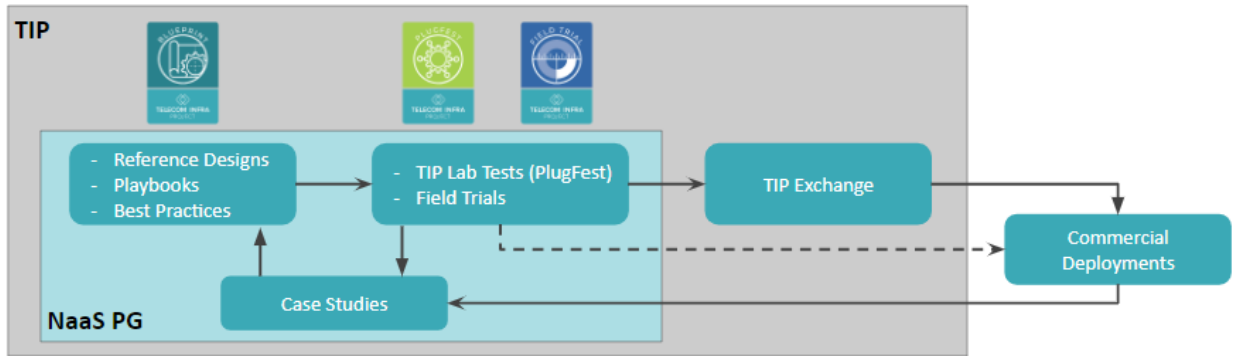
## General Deliverables:

### Definitions:

- Reference Design: Technical diagram, including requirements for features and functionality, that is intended for others to copy.
- Note: These are not reference implementations or specifications.
- Playbook: Comprehensive guide describing strategic and tactical decision-making workflows, including key decision points, options and recommendations.
- Case Study: In depth analysis of solutions tested in a TIP lab or field environment (e.g. Exit Report) or deployed commercially.

Category	Deliverables	Deliverable Timeline
Network Planning and Architecture	Reference Design: Architecture	H2 2020
	Playbook: Architecture	H2 2020
	Playbook: Planning	H2 2020
	Case Study	H1 2021
Passive Infrastructure	Reference Design: Tower	H1 2021
	Reference Design: Power	H1 2021
	Case Study	H2 2021
Commercial	Playbook: Business Model	H1 2021
	Case Study	H2 2021
Network Deployment and Operations	Reference Design: OSS	H1 2021
	Playbook: Deployment	H1 2021
	Playbook: Operations and Maintenance	H1 2021
	Case Study	H2 2021

The NaaS Solutions Project Group will focus on developing content within the defined categories. The goal is to publish content through TIP Exchange and create a feedback loop to further inform content as more commercial deployments occur, as illustrated below.



## 6. DELIVERABLE LICENSING POLICIES

Contributions to Deliverables and any license to use the Deliverable upon its finalization are governed by TIP’s Organizational Documents which may be accessed at <https://telecominfraproject.com/organizational-documents/>. The IPR policies and agreements referenced below are TIP Organizational Documents unless otherwise specified and attached to this Charter.

Deliverable	IPR Treatment	Approval Procedures (Examples only)
Reference Design	Document IPR Policy	Versions by consensus of the SG. Final approval by Technical Committee
Playbook	Document IPR Policy	Versions by consensus of the SG. Final approval by Technical Committee
Case Study		Initial version by consensus of Field Trial or Lab participants or the SG for a deployment case study. Versions by consensus of the SG. Final approval by the Technical Committee

## 7. INITIAL PROJECT CHAMPIONS

60 attendees from 40 companies attended and participated in the NaaS Birds of a Feather session at TIP Summit 2019. All companies listed below have expressed interest in developing NaaS solutions for rural use cases.

<b>Partner</b>	<b>Partner Type</b>
Internet para Todos (IpT)	NaaS Operator
Africa Mobile Networks (AMN)	NaaS Operator
Mayutel	NaaS Operator
Helios	TowerCo, NaaS Operator
Edotco	TowerCo, NaaS Operator
Everis	Systems Integrator
iEngineering	Systems Integrator, NaaS Operator
Atrinet	Software and Services
Parallel Wireless	OEM Vendor
Baicells	OEM Vendor
Telefonica	MNO
Orange	MNO
MTN	MNO
Vodacom	MNO

Note: Additional MNOs have recently expressed interest in rural NaaS use cases. This Solutions Project Group plans to invite those MNOs to participate once formed.

## 8. CHAIR AND(OR) CO-CHAIR OF PROJECT GROUP

### CO-CHAIRS

- Renan Ruiz – Internet para Todos
- Hugo A. Nava G. – Everis
- Philip Liddell – Facebook

# ACCEPTANCE

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Contact Name

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Contact Title

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Email Address

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Telephone Number (Include Country Code)

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Company Name

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Company Address, City, State, Country, Postal Code

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Company Web Page URL

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Primary services or products the company provides

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Signature

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Date

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Signed by (print name)