

Open RAN Minimum **V**iable **P**rofile

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ATIS MVP Principal Technologists



Open RAN Minimum Viable Profile

An ATIS Initiative

Agenda

Introduction

Iain Sharp
ATIS Principal
Technologist

Technical Overview of ATIS' MVP

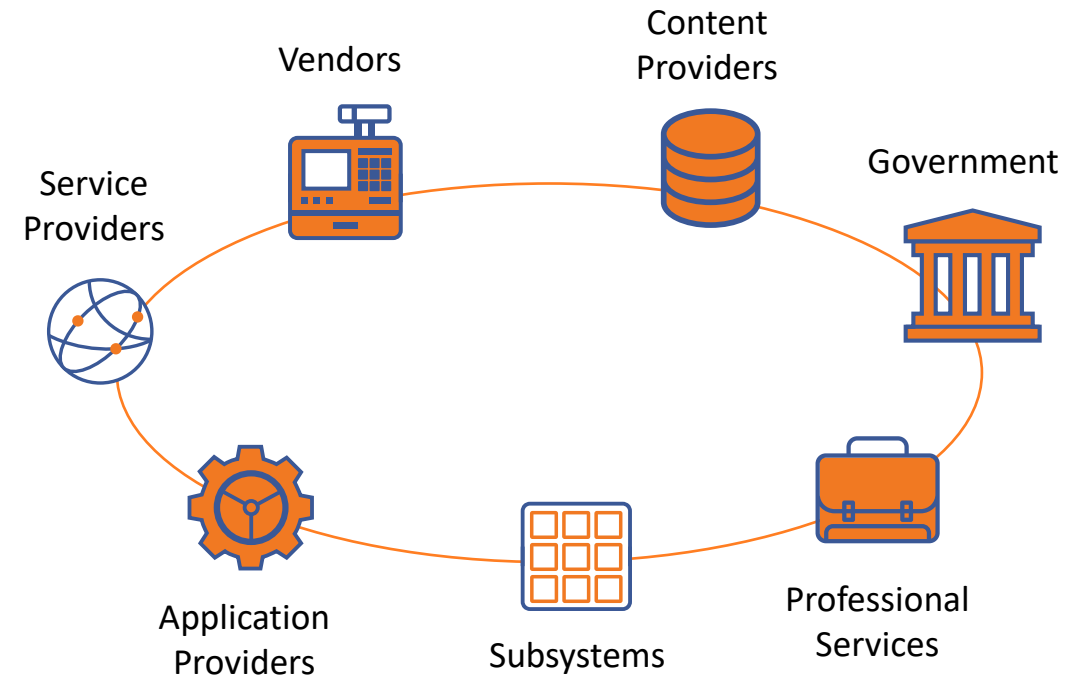
Ojas Choksi
ATIS MVP Principal
Technologist

Q&A

ATIS' Value Driven Mission

ATIS strategic initiatives and solutions/standards work progresses new business opportunities, solves common industry challenges, and creates a platform for collaboration with other industries.

- > Members innovate and compete “on top of” ATIS’ foundational work.
- > Collaborative efforts across industries can lead to greater scale and customer adoption.



Identifying and defining where and how to align and collaborate; sharing resources, effort and cost to develop large-scale, interoperable solutions for a “common industry good” is both critical and beneficial to the industry. ATIS is the catalyst.

Open RAN MVP Introduction

The Open RAN MVP addresses the intersecting desire of NTIA and North American Mobile Network Operators (MNOs) to expand and strengthen the trusted wireless equipment supply chain for solutions that meet MNO technical requirements.



Open RAN Minimum Viable Profile

An ATIS Initiative

NTIA Policy Drivers: Value of Open RAN

- > The current 5G equipment market is concentrated in a few suppliers with global domination by certain suppliers that pose a serious security threat.
- > NTIA sees Open RAN as a new paradigm creating a strong opportunity to enable innovation, security and diversity in the North American supply chain and across the globe.

MVP as Market Stimulus

Enables
**Supplier
Diversity**
by establishing
baseline MNO
requirements

Facilitates
interoperability
and reduce
friction
associated
with
**multi-vendor
deployments**

Accelerates
Open RAN
development
and
“carrier grade”
deployments
in U.S. and other
countries

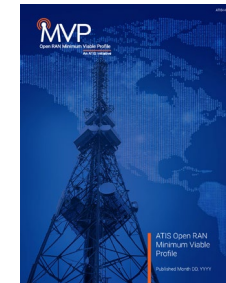
Provides
impetus
for
innovation

Technical Overview of ATIS' MVP

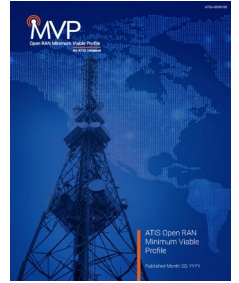
Ojas Choksi
ATIS MVP Principal Technologist



From Concept to Delivery



v1.0



v2.0

2023 / 2024

NTIA and MNOs identify the creation of an Open RAN MVP as a valuable accelerator for Open RAN

Jan '24 / Feb '24

- ATIS MNO members advance proposal to ATIS
- Diverse membership
 - Trusted partner on industry-leading initiatives such as Next G Alliance (6G)
 - 3GPP Organizational Partner
 - Established MoU with O-RAN Alliance

Feb '24 / Mar '24

ATIS works with MNOs and NTIA to develop MVP goals, scope and roadmap to meet the short, critical, timeline

- Invited participants to form the working group (WG)
- WG launched on March 7, 2024 launch

Sept '24

Intensive industry work creates first MVP release 7 months after project start

Dec '24

- Second MVP release incorporates MVP interface requirements and IOT profiles
- Open FH M-Plane
 - Open CUS Plane
 - O1, O2, R1
 - Xn, F1

MVP Goals and Scope

> Goals

- > Identify a set of technical requirements, common across MNOs, to develop, integrate, and simplify baseline Open RAN solutions
- > Provide visibility into MNO current and future needs (18 – 24 months out)
- > Build on established industry work by aligning to existing specifications

> Scope

- > Architecture
- > Feature and functional capabilities
- > Performance requirements that meet MNO needs
- > Interface requirements and profiles to facilitate interoperability

MVP Participants (By Invitation)

Mobile Network Operators



Vendors



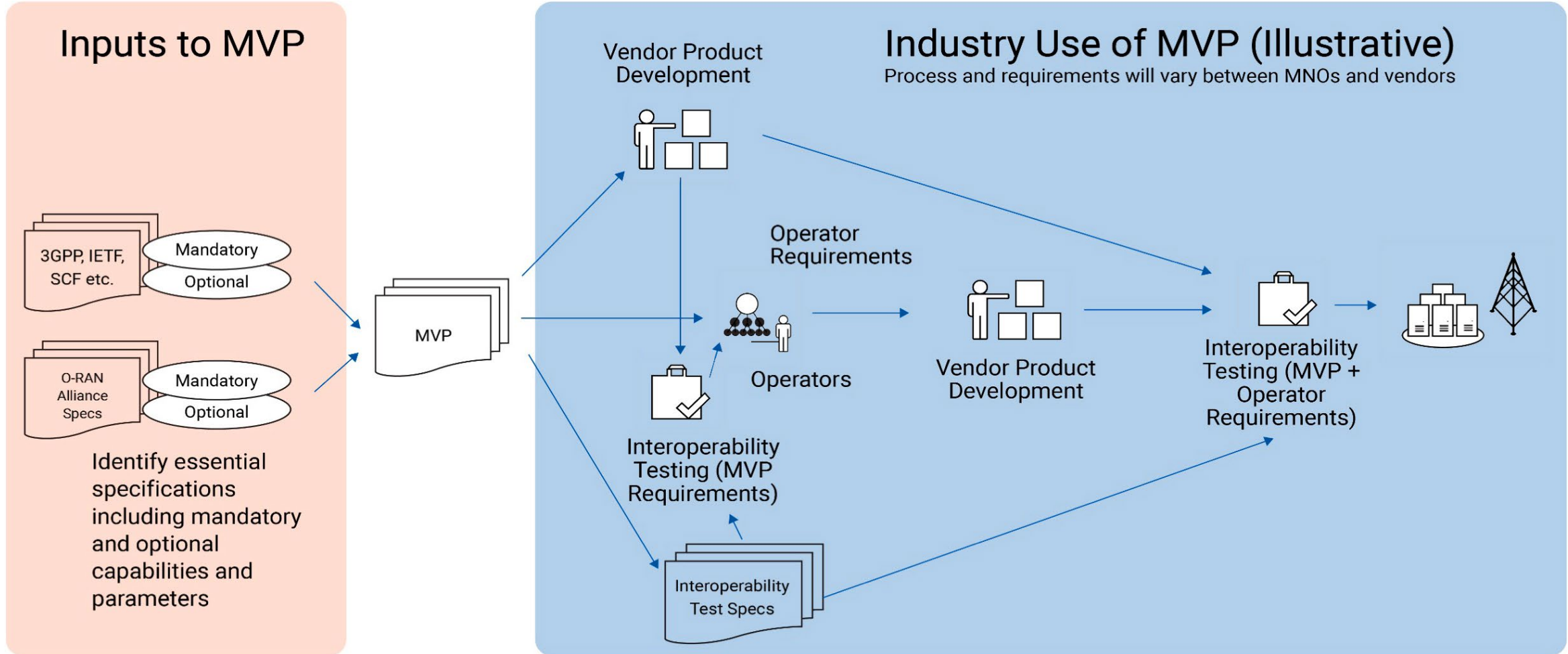
Government



U.S. Department of Defense



MVP Stakeholders and Use



MVP Content

Architecture

Functional/
Feature
Capabilities

Performance

Security

Interfaces

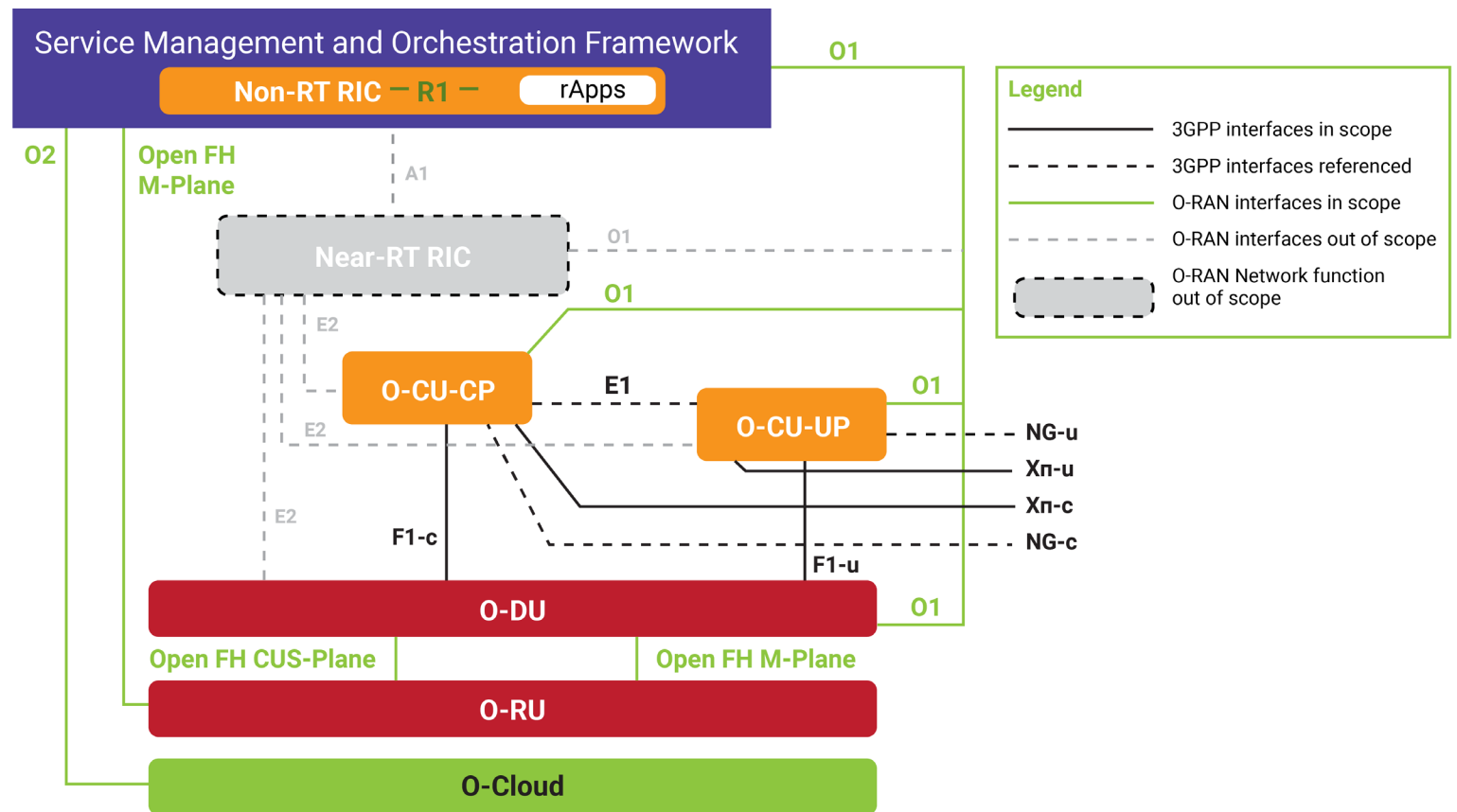
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MVP Architecture

- > Focused on 5G SA deployment using outdoor macro/micro cells
- > Operators are still evaluating how to leverage Near-RT RIC, and continue to monitor development of applicable E2 services
- > O-Cloud and SMO are fundamental for enablement of RAN functions (O-RU, O-DU, O-CU) and operators would very much like further progress to be made on the O2 and O1 interfaces



MVP Functional/Feature Capabilities

- > Includes a subset of radio access related feature/function capabilities specified in 3GPP Rel-16 and Rel-17



- > Includes subset of O-Cloud and SMO requirements specified in O-RAN Alliance

MVP Performance Requirements

- > Includes performance metrics, value ranges*, and references to test methods/configuration:

Accessibility	Retainability	Throughput	Latency
RF	Capacity	Availability	Services-related (e.g., VoNR, etc.)

* Value range is specified for a subset of performance metrics

MVP Security Requirements

Includes security requirements for specific Open RAN network functions and associated interfaces:

- > O-RU, O-DU, O-CU, O-Cloud, SMO

Includes transversal requirements

References best practices articulated by federal agencies for guidance

MVP Interface Requirements

> Includes procedure related requirements based on July train of O-RAN specifications

M-Plane

Encompasses IOT profiles and requirements related to::

- > Hierarchical interface
- > Hybrid interface

Identifies IOT profiles relevant to North American MNOs

CUS-Plane

Encompasses a subset of IOT profiles specified in ORAN specifications, relevant to North American MNOs

Includes additional interface requirements not captured as part of IOT profile, e.g., DMRS-BF for UL

O1

Encompasses mgmt. procedures / requirements related to::

- > Provisioning
- > Performance
- > Faults
- > Trace
- > PNF startup, management, reset
- > CNF registration

O2

Encompasses procedures related to::

- > Deployment Management Service (DMS)
- > Infrastructure Management Service (IMS)

R1

Encompasses procedures related to::

- > Data Management & Exposure (DME)
- > Service Management & Exposure (SME)

F1/Xn

Encompasses C-plane procedures related to:

- > F1
- > Xn

Summary

- > Publication of MVP v2.0 is the culmination of a joint effort involving industry and government to diversify and strengthen the Open RAN supply chain for North American deployments
 - > Captures RAN functionality that MNOs have deployed or are considering for deployment in the near future
 - > Captures performance metrics required by MNOs for commercial deployment consideration
 - > Captures a strong set of security requirements to facilitate multi-vendor deployments
 - > Identifies a strong set of interface requirements and a sub-set of IOT profiles to facilitate interoperability
 - > Identifies a set of R1 interface requirements to facilitate innovations via rApps
- > Ready to be leveraged by the Open RAN ecosystem to accelerate interoperability, deployment and facilitate innovations

MNO Feedback



Expanding common technical requirements for everyone will be a significant enabler of innovation and operational excellence. It will allow us to deliver superior network solutions to our customers and stakeholders, fostering a more interconnected and advanced digital ecosystem.

Rob Soni

Vice President, Radio Access Network Technology, AT&T



EchoStar led the way as the first U.S. company to launch a nationwide cloud-native Open RAN network, and we know the future of Open RAN will benefit from a strong set of common standards to expedite future deployments. This expanded Minimum Viable Profile promotes competition and will further drive Open RAN adoption across North America and beyond. We look forward to continuing our shared efforts to refine and expand this Minimum Viable Profile even further.

Jeff Blum

Executive Vice President, External and Government Affairs, EchoStar



Ongoing collaboration at ATIS and across the industry is key to fostering innovation and ensuring North American leadership in Open RAN. This MVP expansion is another step in our journey towards successful Open RAN solutions that will enhance the wireless experience for our customers.

Narothum Saxena

Vice President, Technology Strategy & Architecture, Uscellular



Continued collaboration around common requirements across the industry is key to ensuring North American leadership in Open RAN. The continued work by ATIS and its members is a great proof point of that and will further drive adoption of Open RAN solutions in the North American marketplace.

Karri Kuoppamaki

Senior Vice President, Advanced and Emerging Technologies, T-Mobile

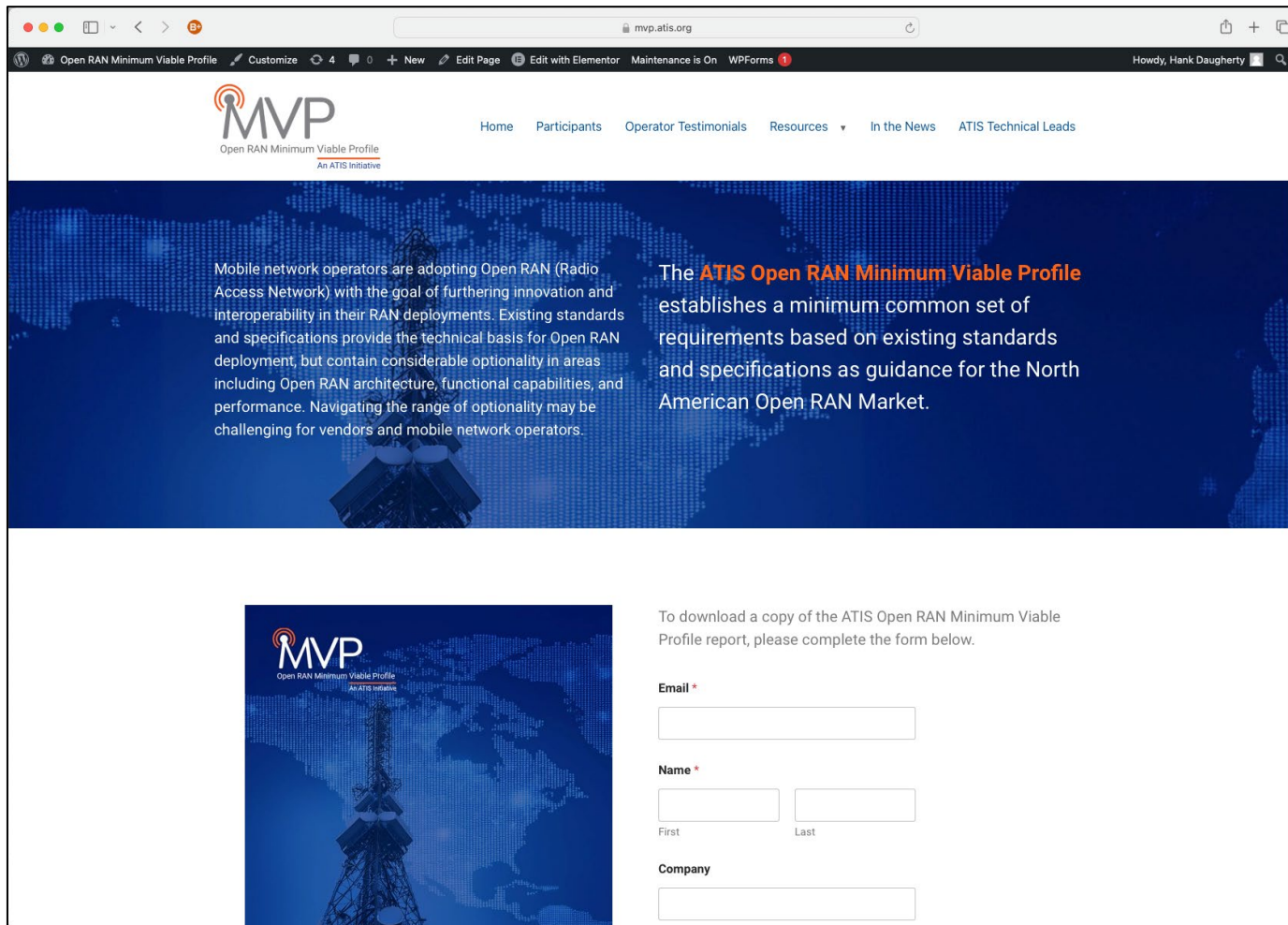


Open RAN holds the promise for deployment flexibility, faster innovation in an open environment, and greater service options by increasing the opportunity for new entrants to provide competitive and advanced solutions. The work ATIS is driving to foster development, collaboration and coordination of technical standards will help accelerate progress in ORAN deployment and adoption. Verizon is pleased with these efforts and is glad to be part of continued innovation in this space.

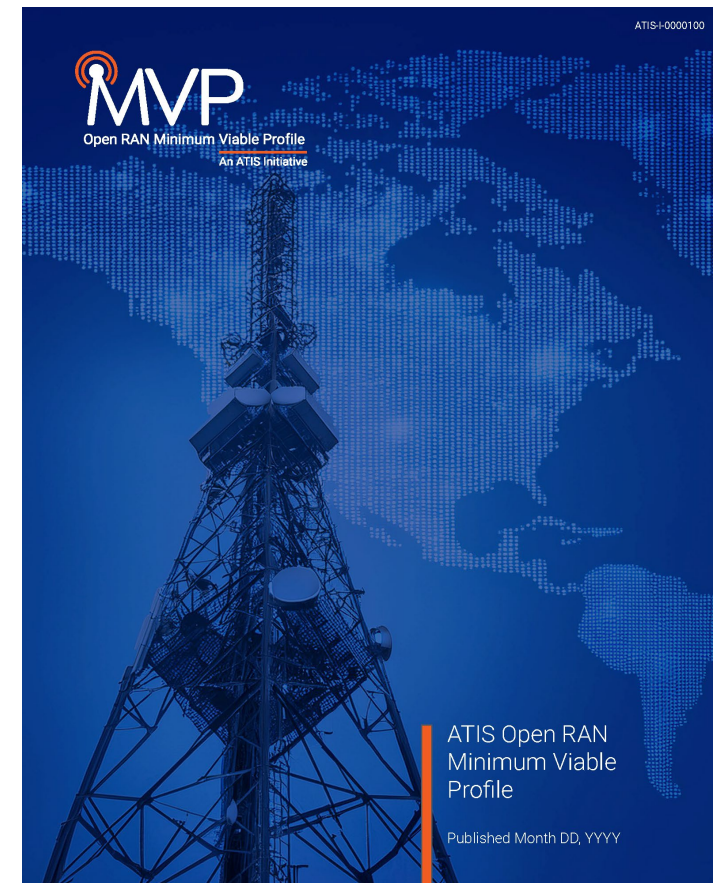
Steven Rice

Vice President of Technology Planning, Verizon

Get The MVP



The screenshot shows the MVP website homepage. At the top, there is a navigation menu with links for Home, Participants, Operator Testimonials, Resources, In the News, and ATIS Technical Leads. The main content area features a large blue banner with a world map background and a radio tower. The banner text reads: "Mobile network operators are adopting Open RAN (Radio Access Network) with the goal of furthering innovation and interoperability in their RAN deployments. Existing standards and specifications provide the technical basis for Open RAN deployment, but contain considerable optionality in areas including Open RAN architecture, functional capabilities, and performance. Navigating the range of optionality may be challenging for vendors and mobile network operators." To the right of this text, it states: "The **ATIS Open RAN Minimum Viable Profile** establishes a minimum common set of requirements based on existing standards and specifications as guidance for the North American Open RAN Market." Below the banner, there is a form to download the MVP report. The form includes a small MVP logo image, a text prompt: "To download a copy of the ATIS Open RAN Minimum Viable Profile report, please complete the form below.", and three input fields: "Email *", "Name *", and "Company". The "Name" field is split into "First" and "Last" sub-fields.



The image shows the cover of the MVP report. It features a blue background with a world map and a radio tower. The MVP logo is prominently displayed at the top left. Below the logo, it reads "Open RAN Minimum Viable Profile" and "An ATIS Initiative". In the bottom right corner, the text reads "ATIS Open RAN Minimum Viable Profile" and "Published Month DD, YYYY". The ATIS ID "ATIS-0000100" is visible in the top right corner.

> mvp.atis.org

