# ONF Strategic Plan
ONF Board
March 2018

## Executive Summary

ONF is at an inflection point in its mission to catalyze a transformation of the networking industry. It has successfully delivered platforms and solutions that leverage disaggregation, merchant silicon, and open source software; and in doing so has provided a disruptive value proposition to service providers. At the same time, that very disruption is challenging vendors/integrator business models upon which operator rely.

The ONF Board, comprised of leading network operators, believes it is time to expand ONF's role from being primarily focused on disruptive technology to also include an ecosystem focus on adoption and deployment.  The Board wants to engage and develop the supply chain in new ways to create a win-win scenario. This strategic plan is designed to address our shared challenges and help drive the ONF and our industry forward, catalyzing the transformation of the networking industry and driving open source based solutions into deployment.

## State of ONF

The Open Networking Foundation (ONF) is a non-profit operator-led consortium with a mission of driving the transformation of network infrastructure and carrier business models. The ONF is an open, collaborative community of communities. It serves as the umbrella for a number of projects building solutions by leveraging network disaggregation, white-box economies and open source software to revolutionize the networking industry.

By working closely with network operators and other stakeholders, the ONF has achieved significant momentum. It has catalyzed the formation of a community of over 100 partners, members, and collaborators. It is releasing both open source components (ONOS, VOLTHA, Trellis, Stratum) and integrated platforms constructed from those components (ODTN, CORD, M-CORD, R-CORD, E-CORD). And it is working with operators to support field trials of these technologies and open source platforms.

Despite tremendous progress on disruptive technologies and platforms, the ONF Board has identified several challenges that threaten to stall this momentum:

- Commercially supported products based on ONF components and platforms are not yet generally available for operators to deploy, the reason being:

    - The vendor community does not see a clear path to monetization of ONF platforms, and in many cases they see it as a threat to their current business.

    - The vendor community wants to see network operators commit to common platforms with shared requirements so vendors can justify the investment necessary to commercialize the platforms and create supported solutions for the operators.

- Operators do not have an easy way to collaborate and build consensus around reference designs and solutions in order to create shared platforms used across the industry.

- Operators do not have an easy way to steer their joint (and community) resources to their priorities.

- Integrated platforms in the ONF portfolio are not always easy to consume on a component-by-component basis.

At the same time, there are reasons to be optimistic. There are a number of new exciting opportunities within reach:

- Operators have seen the potential value in open solutions that both simplify and lower TCO and they are eager to help drive solutions forward.

- Operators want the transformation enabled by ONF platforms, and want to see ONF and its community deliver on its mission and succeed.

- Operators have immediate plans to transform their access networks with X-PON and SDN fabric deployments, and ONF platforms are playing an important role in those deployments.

- Operators see great opportunity leveraging open source solutions for multi-access edge and emerging 5G deployments, and again, ONF platforms are positioned well to play an important role.

- With the emergence of P4, P4Runtime, next-gen silicon, OpenConfig/gNMI, and gNOI that are a result of almost ten years of SDN experience, ONF is well positioned to truly deliver on the vision for "software-defined".

Recognizing the significance of both the challenges and these opportunities, the ONF Board is moving forward with a strategic plan to transition ONF into the next phase of bringing disruptive transformation to the networking industry in close collaboration with a broader supply-chain of like-minded suppliers.
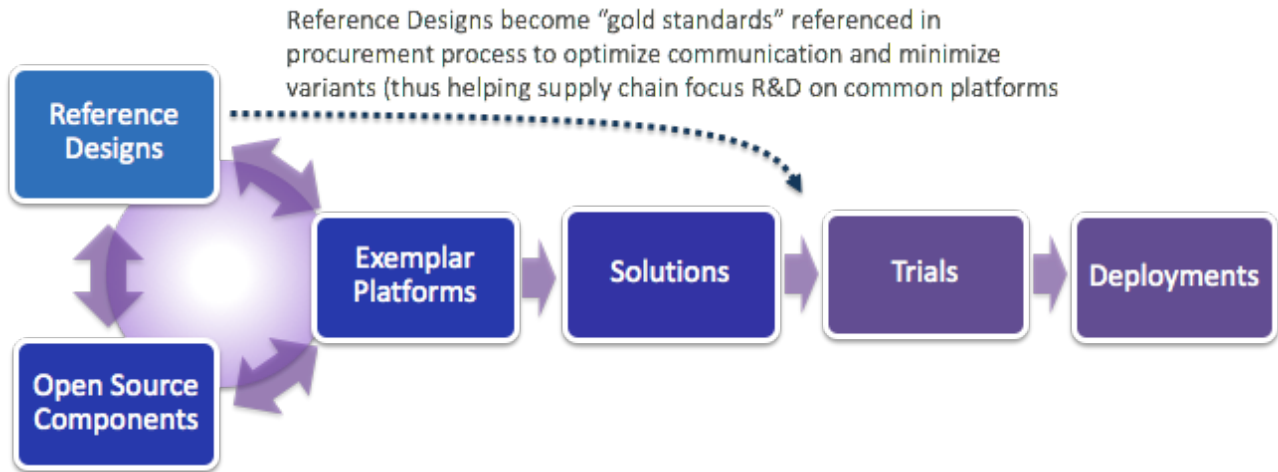
## Strategic Plan

The operator leadership of the ONF has worked diligently to develop a new strategic plan to help the industry move forward decisively at this critical juncture. To this end, the ONF board has unanimously agreed to the following principles:

- To work together to create common/shared reference designs and open source platforms.

- To take ONF platforms and solutions based on these platforms to production.

- To rally and align the supply chain so it can deliver solutions based on ONF platforms.

- To continue investing in and leading SDN transformation with a new generation of interfaces (e.g., P4, P4Runtime, OpenConfig/gNMI, and gNOI).

# New Process Flow to Support Deployment

The plan calls for augmenting the ONF's working model to embrace some new concepts.



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|---|---|
| Reference Designs | RDs are a new concept for the ONF, encapsulating a group of operators interested in a particular assembly of components to build a platform. Components can come from inside the ONF or elsewhere, can be open or closed source, and multiple options might be identified for any component. |
| Open Source Components | These are ONF projects like ONOS, Stratum, Trellis |
| Exemplar Platforms | By assembling to together a set of selected components to build an example platform based on a reference design, Exemplar Platforms provide a proof-of-concept and make it easy to trial a Reference Design.<br><br>CORD, [R,M,E]-CORD, ODTN are exemplar platforms. |
| Solutions | Solutions are built by operators or vendors, building on a platform to create a deployable distribution. For rough scoping, think of 80% of a solution as open source platform and 20% as special innovations or capabilities added on top of the platform. |
| Trials & Deployments | Operators taking a solution into their production networks with the support of a supply chain aligned with the operator's vision for an open source centric solution. Reference Designs can be referenced, optimizing clarity and minimizing variants across the industry. As a result supply chain organizations can more effectively focus their investments, ensuring they can repurpose R&D to address a multitude of opportunities with different operators. |

In support of this agenda, the plan also involves revising the ONF's governance as follows:

## Technical Leadership Team (TLT)

Establish a global ONF TLT composed of operator leaders tasked with:

- Setting the technical direction for the ONF community and setting priorities
- Identifying specific Reference Designs to be pursued under the ONF
- Rallying resources from the ecosystem: operators, ONF, and supply-chain partners

The TLT will instantiate a small collection of Reference Design teams, each to pursue a particular Reference Design. The TLT is tasked with recruiting resources to support each team, drawing from both operators and the broader ecosystem. The operators have committed to increasing their investment in the ONF to support this new plan, and operators will be working with identified supply chain partners to further build up capabilities to execute against this new plan.

## Reference Design Team(s)

Reference designs will focus on particular usage scenarios, and will highlight a choice of both open source and closed source options for the various components to be used when assembling platforms and solutions. Each reference design is to serve as a blueprint for the industry, backed by specific operator interest. More mature RDs will also be backed by operator plans to move an implementation of the RD towards production.
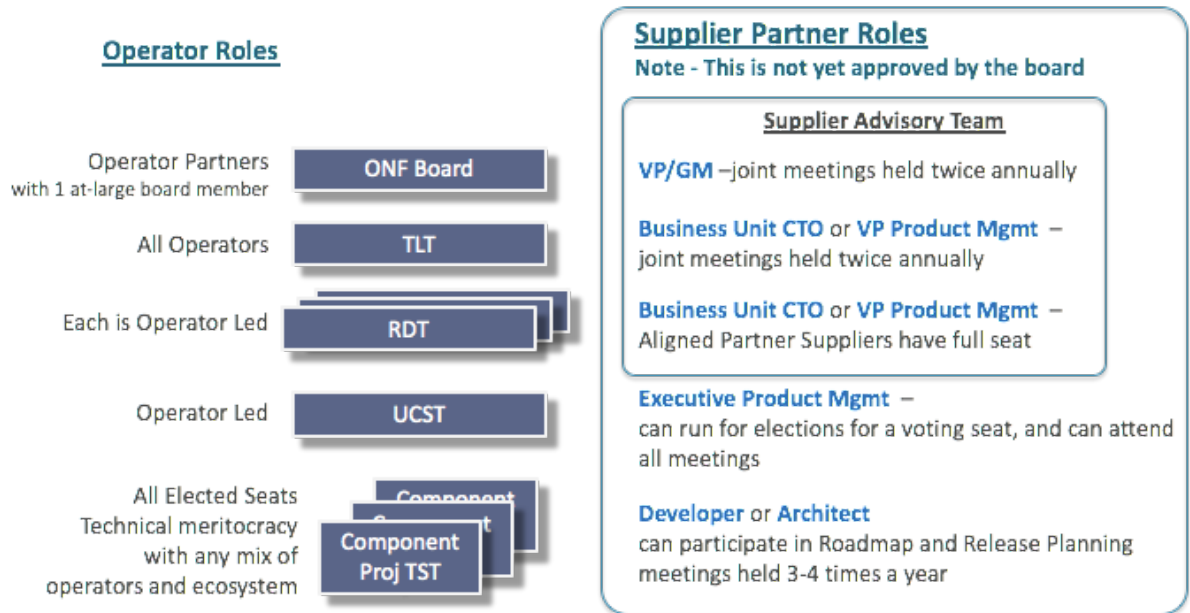
To be clear, the RDs are to be done under the ONF, but each RD may include components from anywhere in the ecosystem. In practice it is expected each operator will assemble a solution to best suit their needs based on an RD using a combination of open and closed source components and the assistance of vendors, integrators and other supply chain participants.

## Supplier Advisory Team

The Supplier Advisory Team is a new proposed team with executive membership from a selection of forward-looking ONF Partner companies who are actively investing in the creation of a new open source supply chain. The ONF's operator leadership intends to incent and increase the velocity at which the industry is bringing open source based solutions to market. To address this, the SAT will be comprised of selected ONF Partners that ready to invest and play a role as a silicon, ODM, VNF and/or integration suppliers in this burgeoning open source era. Details of this important function will be worked out by the TLT and with supply chain partners as this plan is operationalized.

## Complementing Existing ONF Operations

These new teams are designed to complement existing ONF structure, namely the Board, the Use Case Steering Team (UCST) and the Technical Steering Teams (TST) leading each component project. The UCST solicits, discusses, selects, and prioritizes use cases for the ONF community to consider - taking these forward to the TLT or Project TST as most appropriate. Project TSTs are responsibility for the technical decisions necessary for each project to successfully deliver a component.

**Operator Roles**

| | |
|---|---|
| Operator Partners with 1 at-large board member | ONF Board |
| All Operators | TLT |
| Each is Operator Led | RDT |
| Operator Led | UCST |
| All Elected Seats Technical meritocracy with any mix of operators and ecosystem | Component Proj TST |

**Supplier Partner Roles**
Note - This is not yet approved by the board

**Supplier Advisory Team**

**VP/GM** –joint meetings held twice annually

**Business Unit CTO** or **VP Product Mgmt** – joint meetings held twice annually

**Business Unit CTO** or **VP Product Mgmt** – Aligned Partner Suppliers have full seat

**Executive Product Mgmt** – can run for elections for a voting seat, and can attend all meetings

**Developer** or **Architect** can participate in Roadmap and Release Planning meetings held 3-4 times a year

*TLT and Project TSTs will provide hierarchical technical leadership for projects, with the TLT taking on the responsibility of finding the resources to help projects be successful, and the TLT/RDTs taking on the responsibility of defining end-to-end reference designs for solutions constructed from the components produced by the projects*

*NOTE - Supplier roles are still being honed. This component of the Strategic Plan has not yet been approved by the board.*

# Anticipated Impact

Increased emphasis on modular reference designs—in addition to the focus on open source platforms and solutions—is the cornerstone of the new plan. With the operators on the TLT taking the lead in soliciting reference designs at all levels, the end goal is for ONF to create modular open reference designs and specifications leveraging white boxes and open source platforms that are sourced from the broader ecosystem. In doing so, these reference designs will play a significant role in addressing the challenges that have been impeding adoption:

● Operators will be able to steer both resources and outcomes towards their priorities through active and robust leadership of and participation in the TLT and Reference Design Teams.

● Operators will collaborate and build consensus around modular reference designs, while providing wide latitude in how each operator elects to source production-grade components from the broader ecosystem. Operators are expected to focus ONF activities on software defined broadband access, leaf-spine fabric, multi-access edge, 5G solutions at the edge and continue to push SDN so our industry can realize the full potential of software-defined. The TLT may adjust these priorities as it sees fit.

● Open reference designs will be used by operators in the procurement process, optimizing communication and minimizing variants. This will help supply chain organizations more

effectively focus their investments, ensuring they can repurpose R&D to address a multitude of opportunities with different operators.

- Operators will identify and recruit key supply-chain partners who are committed to the ONF vision, and who are willing to commit resources to create platforms based on reference designs and realize solutions for production deployment based on these platforms.

# Call to Action

## Operators

This is an operator-led movement, and the timing is perfect for new operators to join. Operators from across the Cloud, Telco, and MSO space can leverage tremendous value by working with their peers and the broader ecosystem to affect transformation.   Operators joining now have an opportunity to both lead and benefit from this movement.  By championing Reference Designs suited to their particular market needs, new operators can be assured they are on the leading edge and best positioned to benefit from this movement towards open source based solutions.

## Supply-Chain Partners

The ONF operator leadership has identified the need for a new open source supply chain, backed by companies prepared to cooperatively deliver production-ready solutions based on open source and white boxes.

The operators envision a new ecosystem emerging that embraces these new approaches to building and deploying solutions.  The operators leading the ONF are committed to showing a path forward and a road to revenue for companies that step up to play a role in this new open source era.  To this end, the Board is actively seeking Partners to play key roles in these areas:

- Silicon Vendors
- White Box ODMs
- Platform Software
- VNF Vendors
- System Integrators
- OEMs

These supply-chain partners will have a unique opportunity to work closely with operators and the ONF TLT.  They can participate in Reference Design Teams and contribute to creation of RDs.  Most importantly, these participants can be on the forefront of building commercial products and solutions that operators plan to deploy.

## ONF Member Community

All ONF projects will continue to be open source and they will continue to follow the best open source practices. ONF will continue to support and nurture the broader community and find ways to engage and enable different stakeholders so they can bring their innovation and unique value proposition to this transformation and to the operators.

# Conclusion

This journey, like all big undertakings, has taken some time. Although we are not done, it is remarkable to see what we have accomplished from our modest beginnings. There is now broad agreement that the transformation towards open source and white boxes is inevitable. The only question is a matter of time. How much longer will it take?

We expect the next couple of years to be exceptionally exciting as ONF operators come together with a new resolve and commit to transforming their access and edge infrastructure with ONF and its community - leveraging disaggregation, merchant silicon, and open source software to achieve true transformation of the networking industry.

## ONF Board