

# Turnium: Disaggregating SASE to build Telecom Service Provider Brand and Solution Differentiation

Service Providers deploy integrated, bundled solutions to meet customer business and technical requirements while delivering on Service Provider needs for differentiation, market share and profitability.

To deliver maximum value, SASE and SD-WAN platforms must leverage a provider's existing security portfolio, enable global reach, preserve control over customer experience, and ensure the Service Provider is not threatened by a duplicate, price-driven offer from competitors or the SASE/SD-WAN provider itself.

Reselling one-size-fits-all SASE or SD-WAN stacks is inherently competitive to a Service Provider's position as an integrated solution provider. In-market and global competitors resell the same brands and Service Providers have made capital, training, and support investments in unique and best-of-breed technologies that fit their market, vertical, and customer needs.

Deploying a disaggregated SASE or SD-WAN platform that integrates with a Service Provider's existing provisioning, orchestration, support, billing, and security solutions enables Service Providers to create their own SASE bundles, control the customer experience, and maintain customer control.

**65%** of enterprises are forecast to **adopt SD-WAN** by 2025, up from 30% in 2020.

**40%** of enterprise locations are forecast to use **Internet-only WAN** by 2024, compared to less than 15% in 2020.

Gartner, Critical Capabilities for Network Services, Global. 03 March, 2021.

# Build your own customizable SASE offering.

Service Providers have multiple security solutions and skill sets in-house to support different customers, markets, and segments. Service Providers also have existing network management, monitoring, provisioning, and orchestration tools.

Instead of managing customer retention on a platform that you don't control, Turnium gives you a vendor-agnostic, disaggregated SD-WAN platform that is a foundation on which Service Providers can build their own unique SASE or managed service offerings, including voice, video, contact center, and managed desktop.

Turnium complements Service Provider existing wired and wireless networking portfolios, extends reach to public and private clouds across multiple geographies, and gives Service Providers critical brand and margin growth.

Leverage your existing security portfolio and managed services capabilities, extend your in-house service stack with new capabilities, and integrate with your existing network management, monitoring, provisioning, and orchestration tools. Layer all these capabilities on top of a software-only Layer 3 networking platform that enables you to build multiple Managed Service and SASE bundles uniquely shaped to satisfy the needs of your installed base, your markets, and your existing skill sets.

# Turnium's disaggregated SD-WAN enhances service provider value

Deploy Turnium's Cloud Native Function (CNF), certified on Red Hat OpenShift2, to benefit from a software-only platform that helps you build new services based on uCPE, Edge Compute, Cloud Extension. Enhance your unique value proposition by selling your own vertically integrated stacks of solutions over top of a managed connectivity platform you control and brand, using your IP addressing, anywhere on the globe.

Build New Virtual Networks	Extend Existing Infrastructure	Connect Multi-Cloud	Deploy microCPE	Deliver uCPE and Edge Compute
Extend your reach into new geographies and support customers with multi-national networks without reselling competitive network you don't manage. Enable customers to use any available wired or wireless connection. Bond them all into a single, logical network you manage, with your IP addresses everywhere.	Your networks are everywhere, almost. Service Providers have areas where coverage is not complete or insufficient to support customer requirements. Turnium extends your reach into these areas and integrates with existing L2 networks. Deliver an integrated network with built-in failover and business continuity.	Turnium Cloud Extension enables you to connect multiple clouds with our CNF-certified software. Deploy cloud instances quickly and easily. Leverage relationships with IBM Cloud to deploy customer instances and leverage IBM's global backhauls.	Effective for unmanned sites, vehicles, or remote workers, this low-cost, single purpose solution delivers multi-carrier, multi-link bonding that sends only corporate traffic to the Service Provider or corporate network while diverting consumer household traffic to the public internet using the gateways of the underlying ISPs.	Turnium's solution can be deployed on bare metal, or in virtual or container environments to enable you to build uCPE solutions and deploy and manage applications at the Edge as required.

# A business model built for service provider growth and profitability

Turnium's business model makes it easy for Service Providers to build and launch their own SASE, SD-WAN, uCPE, Cloud Extension, and other network-based solutions.

Flat-rate monthly licensing	Active site costs only	Updates, upgrades, and support included	One-time upfront charge gets you started	Multi-tenant	Non-proprietary hardware	Unlimited, no-charge core node licenses
A fixed, flat-rate license cost per site, charged monthly. No contracts. All-inclusive pricing. No bandwidth charges.	Pay only for active sites deployed that are generating revenue.	Software updates and technical support included in your license costs. No extra charges.	Includes full, shoulder-to-shoulder deployment support, technical and sales training.	Support multiple customer networks on a single core node instance for economies of scale.	Buy your own CPE to optimize per site costs and eliminate support hardware support subscriptions.	Deploy as many core nodes as you need, wherever you need them. No charge. Why pay for infrastructure before it generates revenue?







In addition to a highly flexible business model, Turnium is built to support flexible deployment models. Turnium enables Service Providers to use any x86-based white-box CPE device, enabling additional margin and branding opportunities. Core nodes are no-charge and available for unlimited deployments, enabling Service Providers to scale in a cost-effective fashion.

# Uniquely flexible deployments that support customer performance

Service Providers can take advantage of Turnium's unique technology, business model, and partnerships to add Turnium's Layer 3 SD-WAN platform to their service stacks and layer Service Provider managed services over top to deliver advanced networking, managed service, and SASE solutions.

White-box, non-proprietary OS and Hardware	CNF-Certified on Red Hat OpenShift	Multi-link aggregation and managed connectivity	Sub-second failover	Per-packet link load balancing and secure data in-transit	Service Provider-hosted management portal
Debian, OpenSUSE, Leap, Red Hat Enterprise Linux	Turnium SD-WAN is containerized for Red Hat OpenShift, enabling use of tools including Ansible for flexible deployment	>90% efficient bonding of multiple circuits from multiple carriers	<300ms failover across all circuits in the SD-WAN tunnel at each site	Multi-link packet distribution across circuits from multiple carriers delivers survivability and security	Real-time monitoring and control outside of data plane. Automatic configuration distribution
KVM, Hyper-V, vSphere		Single Service Provider IP address used on all WAN links at all customer sites	Single IP per site means uninterrupted voice, video, secure sessions	AES128/256 encryption options	See circuit health, anywhere: jitter, latency, packet loss, circuit failure, flapping
NSPAWN, Podman, Docker with Kubernetes or Red Hat OpenShift orchestration			Failover across multiple wired or wireless circuits including LTE, 4G, 5G. Configurable as active/active/active or active/standby		Full REST API to integrate with existing NMS, Orchestrators, Reporting, Billing

# Documents

-  **Turnium Cloud Extension Solution Brief:**  
<https://app.box.com/s/pbbh2djh7qh7rygvqu1kxtrukhoir2qr>
-  **Turnium Secure Architecture Solution Brief:**  
<https://app.box.com/s/shc47gdtps7c0tcflajcao4ebp7dwhpx>
-  **Cloudifying the Enterprise Edge – An Architecture:**  
<https://app.box.com/s/3frlrs1b8h3jajvbwtsj1wabe3amutg>
-  **Red Hat Turnium Solution Brief:**  
<https://app.box.com/s/mt2v6fn1yftdt18r9i4zcdr0m3fw6bap>
-  **Groundbreaking Enterprise Edge Solution:**  
<https://app.box.com/s/mmw0uwi0vna6y578cup2n8biwsnbi817>
-  **Lanner & Turnium uCPE Solution Brief:**  
<https://app.box.com/s/pudxugtme4fmjrf11ht2jymcvx9ioprop>

# Partnerships

