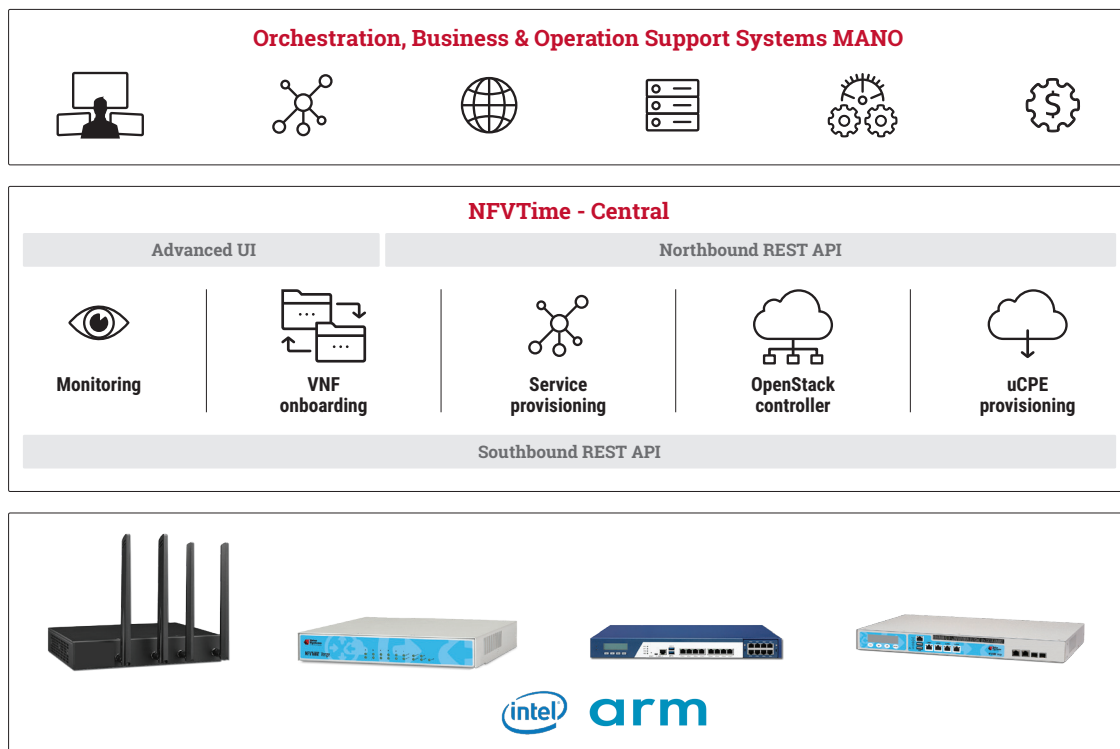# NFVTime™- Central

uCPE MANO Solution
End to end automated uCPE deployment, management and operation

Telco Systems' NFVTime Central is a complete remote management and control system for modern NFV edge deployments. It provides Zero Touch Provisioning, Disaster Recovery (Backup/Restore) and **u**CPE Controller for devices and services deployed with the NFVTime solution. It is natively integrated with Telco Systems CloudMetro™ 10/100 vCPE (Integrated CE NID and x86), Verge 1000/2000/3000 uCPE (pure x86 platform) and third party certified White Boxes (Bring your own device business model for x86 platforms), all based on NFVTime-OS, a robust, open source, comprehensive NFVi-OS.

The NFVTime management and operations solution starts with the zero-touch deployment of a device and follows with automatic activation, authentication, and upgrade of software components. The ability to define service templates with multiple VNFs and network profiles by the customer or by customer site, dramatically reduces deployment time, operational support costs, and provides for rapid reaction to create and offer new services.

NFVTime simplifies, accelerates, and automates the lifecycle procedures with Home Calling, Remote Backup and Restore, Remote Upgrade, and Customer-Service management features.

Orchestration, Business & Operation Support Systems MANO

NFVTime - Central

| Advanced UI	Northbound REST API
Monitoring	VNF onboarding	Service provisioning	OpenStack controller	uCPE provisioning

Southbound REST API

Main Features

- uCPE and VNF Deployment automation
- uCPE Zero touch provisioning management
- VIM (Openstack) controller
- VNF automatic service chain deployment
- VNF on-boarding

- Device and service monitoring
- VNF service LCM operations
- uCPE Backup, Restore and Hardware Replacement
- Advanced dashboard
- Easy integration through RESTFUL northbound interface

Service auto provisioning

Telco Systems uCPE manager allows the service provider to drop ship a COTS whitebox directly to the end customer and provision it automatically upon first plug into power and network. The auto provisioning works over Layer 2/3 transport networks, broadband, or wireless connectivity such as LTE. The uCPE manager supports automated plug & play in three simple steps:

1. Connect: The customer simply connects the device to the network or alternatively just power up the device in case of LTE based provisioning. The device automatically acquires network settings and connects to the uCPE manager.

2. Provision: The device is authenticated by the uCPE Manager and upgraded to the latest software version and configuration based on customer pre-defined or default profile. At the end of this stage, the uCPE is configured and ready to install and run the VNFs.

3. Service activation: Once the device is added, service chain provisioning is launched either from uCPE Manager or through 3rd party orchestrator, via the uCPE manager NBI or directly using Openstack APIs. At this state the VNF service chain and uCPE are ready for service.
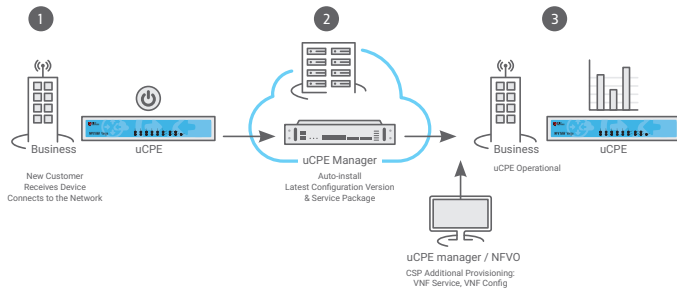
Easy integration

The uCPE Manager is designed to easily integrate with 3rd Orchestrators and BSS/OSS through the NBI that provides a standard interface to manage all aspects of the uCPE and VNF service provisioning and monitoring, including: uCPE creation and configuration, VNF service launch, VNF LCM, Alarms, Events and PM export and notifications.
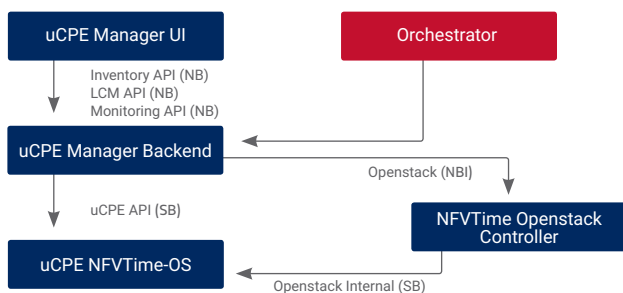

Monitoring and operation

Advanced dashboard and operation tools allow NOC and operation teams simple ways to monitor and operate the uCPE cloud and add new services remotely in minutes.

The uCPE Manager constantly monitors the uCPE device and VNF services, allowing operations to have a view of the different layers:

- Hardware monitoring (temperature, Fan, reboots, etc.)
- Software infrastructure: NFVTime-OS (including Linux and Telco modules) and Openstack modules (Openstack agents and Local Controller)
- Compute Resources & Virtualization: vCPU/vMEM/vDisk, vNet, VMs
- Service chain monitoring, including virtual functions
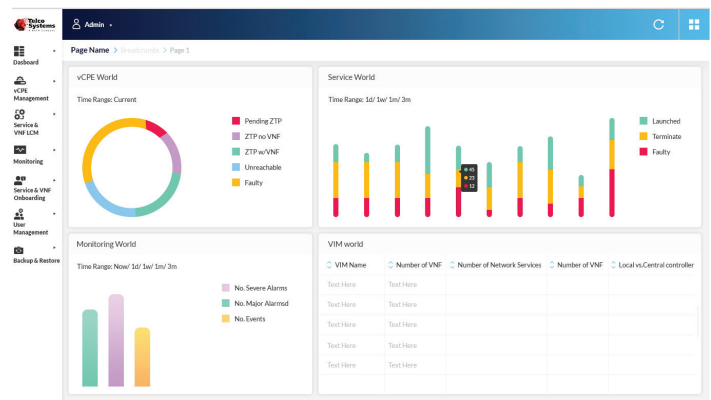
Disaster recovery management

The uCPE Manager provides Disaster Recovery features such as Backup and Restore and high availability management.

The disaster recovery functionality can be used for restoring the service on same hardware, new hardware, hardware upgrades or office geographical relocation.