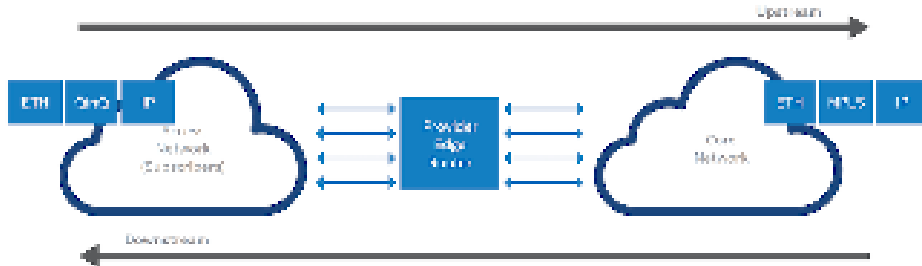


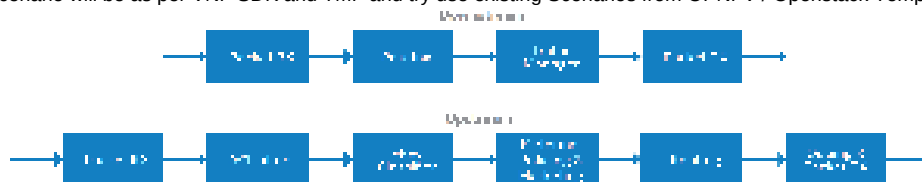
Virtual Provider Edge

- vPE

- **Name of Use Case:** Virtual Provider Edge
- **Use Case Authors:** R.Prakash
- **Description:** Virtual Provider Edge Router (vPE) is a VNF serving as an edge router. This VNF could be a part of Network Services related to the edge cloud segment. The vPE VNF typically located between two networks such as the provider core network and the provider access network. The customer edge router sits in the provider access network and cloud network, representing the provider core network. The edge router processes the traffic in both directions. The functionality of the edge router varies while processing each direction of traffic. The packets to the core network will be filtered, classified, and metered with Quality of Service (QoS) parameters. The packets to the access network will be shaped according to the subscription policy. The following minimum features of a carrier-grade vPE system will be configuring on [Vyyata](#) open source router to achieve the requirement. Any unmet requirement for Edge will be supplemented through additional software APIs and code such as Application State Management.



- To Provide a command-line interface for each component of the edge router
- To provide North Bound Restful Admin and User APIs to be exposed for Network and Storage units to be programmed by applications.
- The edge router should support stateless and state managed sessions
- The upstream and downstream sessions may have different work flows.
- Design and VNF Deployment will be through TOSCA / HEAT templates and follow closely align with VNF SDK ONAP project.
- The testing part for vPE VNF can be considered over OPNFV/Openstack depending on upstream chosen to use for different component enhancements for edge.
- Functional implementation will be first priority for getting APIs right for Control Plane.
- However Performance Throughput, latency, packet error rates and Reliability aspects can be part of Network Service Benchmark (NSB).
- Support for OVS DPDK, NUMA and CPU pinning requirements can be incorporated for carrier grade in Data Plane.
- **Users and Benefit:** End user Carriers will be able to support common APIs for Edge Service delivery State Management. Besides this can help Network Dimensioning and Traffic Engineering for Edge to core based on demand.
- **VNF:** Opensource [Vayyata](#) for vPE routing and other Docker containers for [Statelet](#).
- **Work Flows:** Functional Upstream and Downstream Flows are as follows: Courtesy [Intel vPE / NSB](#)). The Installation and Deployment Scenario will be as per VNF SDK and TMF and try use existing Scenarios from OPNFV / Openstack Tempest.



- **Control Automation:** Auto-scaling, Reliability and Fault tolerance depend on NB API definition and usage of layers and will need to await assessment for now.
- **Project Impact:** This is targeted for Casablanca release as use case to enhance ONAP for Edge Service Deployment and Delivery/
- **Work Commitment:** TBD. (Work-in-Progress)

- Proposal 2

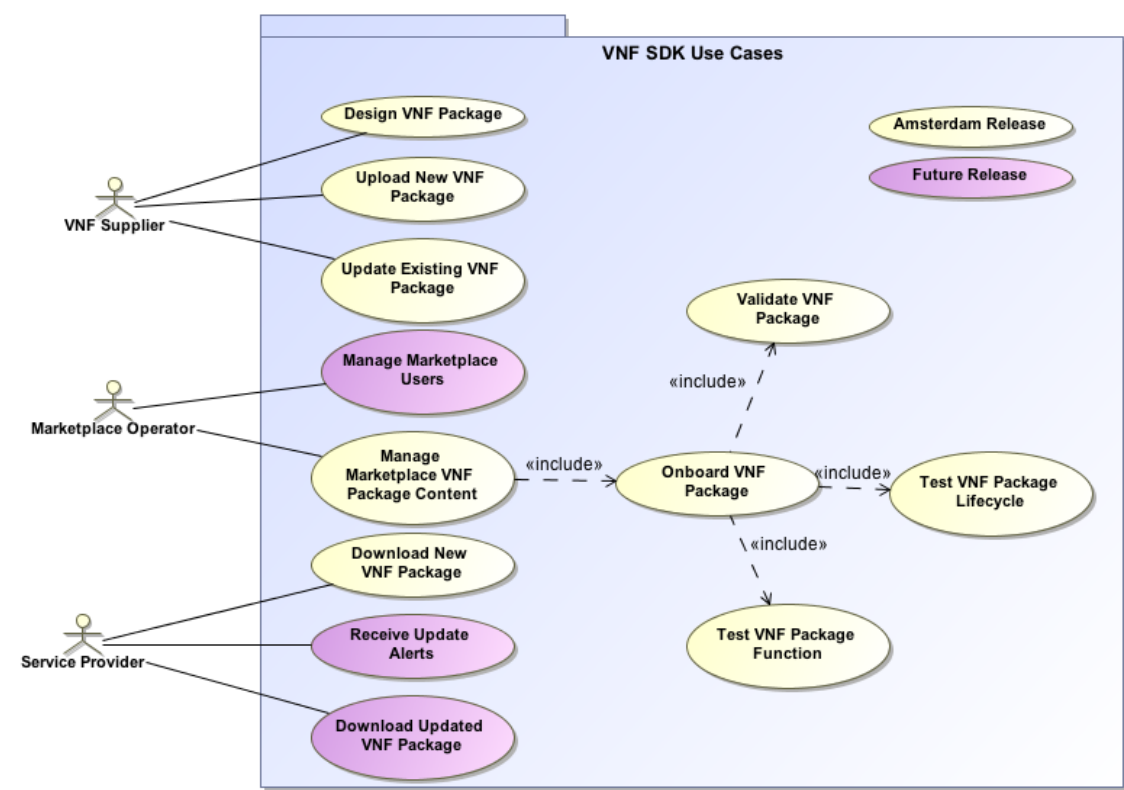
- Use Case UML Diagram
- Use Case Definitions
 - <Use Case Title>

Proposal 2

Use Case UML Diagram

<Insert UML Use Case Diagram>

Use cases define how different users interact with a system under design. Each use case represents an action that may be performed by a user (defined in UML as an Actor with a user persona).



Use Case Definitions

Each Use Case from the UML Use Case Diagram is defined in this section.

<Use Case Title>

Section	Description
Section	Description
ID	
Title	
Description	
Primary Actor	
Preconditions	
Main Success Scenario	
Alternate Scenarios	
Exception Scenarios	
Post Conditions	
JIRA Traceability	