**NVA Terminology**

1. “Virtual”

Virtualisation

Abstraction of network or service objects to make them appear generic, i.e. disassociated from the underlying hardware implementation specifics.

(internal definition)

1. “architecture”
2. [virtual] object
3. [virtual] Class or Type or Service Definition
4. Instantiation / Instance
5. Realization
6. Domain (service domain, admin domain, etc.)

Domain

A collection of network infrastructure under the administrative control of the same organisation.

(internal definition based on ITU-T Y.110 TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU (06/98); SERIES Y: GLOBAL INFORMATION INFRASTRUCTURE; General Global Information Infrastructure principles and framework architecture (https://www.itu.int/rec/dologin\_pub.asp?lang=e&id=T-REC-Y.110-199806-I!!PDF-E&type=items))

1. Isolation
2. Insulation
3. Deterministic
4. Technology agnostic
5. Abstraction
6. “Well Bounded”
7. Micro-service

Microservices

Microservices is an approach to software architecture that builds a large, complex application from multiple small components that each perform a single function, such as authentication, notification, or payment processing. Each microservice is a distinct unit within the software development project, with its own code base, infrastructure, and database. The microservices work together, communicating through web APIs or messaging queues to respond to incoming events.

(https://www.nginx.com/learn/microservices/)

1. container
2. Virtual machine
3. Virtual Circuit
4. VIMs
5. VNFs

Virtualized network function (VNF) - virtual network function

Virtual Network Function (VNF) is a network task written as software that can be provided in a virtualized manner (i.e. firewall, router, switch).

* (internal definition based on https://www.sdxcentral.com/networking/nfv/definitions/virtual-network-function/
* https://www.webopedia.com/TERM/V/virtualized-network-function.html)

1. Topology
2. Functional Service Graph
3. Resource

Network resource

Physical or logical network component of hardware, software or data in the data, control or management planes within an organization's infrastructure.

(internal definition)

1. Infrastructure
2. Composite / composable

Composite service

A composite service is an assembly of one or more elements into an end to end service. It may be recursive so a composite service may become a component of yet another service.

(based on TM Forum Reference, TMF071 ODA Terminology, TMF071, Release 19.0.1, October 2019 and TR274 DSRA Guide R17.5 Reference R02)

1. Atomic. (“Basic” or “black bx” or “opaque”)
2. Composable, composite
3. Decomposition and Refactoring (in context of virtualization)
4. SDN

SDN

A programmable network approach that supports the separation of control and forwarding planes via standardized interfaces.

(IRTF, RFC 7426: Software-Defined Networking (SDN): Layers and Architecture Terminology, January 2015, https://tools.ietf.org/html/rfc7426)

1. SDX

Software defined exchanges

Software Defined IXP (SDX) is an internet exchange that utilizes SDN to do interdomain routing. In addition, SDX design incorporates high levels of programmability, open APIs, shared resources across multiple domains, dynamic provisioning, resource discovery, quick resource integration and configuration, and granulated control of resources.

(internal definition based on https://sdx.cs.princeton.edu/ and J. Mambretti, J. Chen, F. Yeh, Software-Defined Network Exchanges (SDXs): Architecture, services, capabilities, and foundation technologies, 2014 26th International Teletraffic Congress (ITC), DOI: 10.1109/ITC.2014.6932970 [Add to Citavi project by DOI] .)

1. P4
2. OpenFlow

OpenFlow protocol

OpenFlow protocol is a protocol defined by the OpenFlow Switch Specification that allows separation of the network control plane by providing access to the forwarding plane.

(internal definition based on: OpenFlow Switch Specification - Open Networking Foundation https://www.opennetworking.org/wp-content/uploads/2014/10/openflow-switch-v1.5.1.pdf and https://www.opennetworking.org/sdn-definition/?nab=1)

OpenFlow (standard)

OpenFlow is an open standard that enables you to control traffic and run experimental protocols in an existing network by using a remote controller. The OpenFlow components consist of a controller, an OpenFlow or OpenFlow-enabled switch, and the OpenFlow protocol.

(https://www.juniper.net/documentation/en\_US/junos/topics/concept/junos-sdn-openflow-support-overview.html)