

# Management and Orchestration (MANO) Domain

Management and Orchestration (MANO) principles including the proposed Information Model, components and interfaces, and work flows are specified by [ETSI's NFV-MANO document](#). Specifically, these specifications defines objectives and concepts, the management and orchestration architectural framework and information elements, and NFV-MANO interfaces as well.

## NFV Orchestrator

NFV Orchestrator (NFVO): In principal the NFVO is in charge of orchestrating Network Function Infrastructure (NFVI) resources across multiple VIMs and manages the lifecycle of Network Services. For accessing NFVI resources in an abstracted manner the NFVO provides a Resource Orchestration functionality. Moreover, it manages the Network Service deployment templates and VNF Packages, and also the instantiation and management of Network Service instances and its lifecycle. Additionally, it instantiates VNF Managers if applicable and coordinates the work with the responsible VNF Manager.

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## VNF Manager (VNFM)

VNF Manager (VNFM): The VNF Manager is in charge of managing the VNF instances' lifecycle. That is why each VNF instance must be associated exclusively with a VNF Manager. The VNF Manager provides the following functionalities consumed by other NFV-MANO functional blocks or by other authorized external entities: VNF instantiation, software update/upgrade, modification, scaling, collecting performance measurement results and events information, healing, termination, and lifecycle management change notifications.

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## Virtualised Infrastructure Manager (VIM)

Virtualised infrastructure Manager (VIM): The VIM is responsible for controlling and managing the NFVI resources including compute, storage and network re- sources. Therefore, it provides functionalities for allocating, upgrading and releasing NFVI resources, and additionally, it manages the association of the virtualised resources. Moreover, it is in charge of managing VNF Forwarding Graphs in order to create and maintain Virtual Links, virtual networks, subnet, and ports.

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