WHAT IS CLAIMED IS:

1. A method for network functions virtualization (NFV)-management and orchestration (MANO) comprising:

receiving, by a processing system, a customer request for a network service, the customer request comprising a checklist of network components or network service requirements;

constructing, by the processing system, a network service (NS) using the checklist included in the customer request; and

generating, by the processing system, a virtualized network function (VNF)-forwarding graph (FG) according to the constructed NS using a network service catalog, the VNF-FG comprising a plurality of VNFs and a link connecting two of the VNFs in the plurality.

2. The method of claim 1, further comprising:

determining a NFV infrastructure (NFVI)-point of presence (PoP) for each of the plurality of VNFs in the VNF-FG.

3. The method of claim 1, further comprising:

transmitting, by the processing system, an instruction to instantiate the plurality of VNFs using a virtual infrastructure manager (VIM) and a virtual network function manager (VNFM).

4. The method of claim 1, further comprising:

constructing, by the processing system, a network service (NS) request comprising the constructed NS and the generated VNF-FG.

5. The method of claim 4, further comprising adding the constructed NS request to a NS catalog.

6. The method of claim 1, further comprising:

sending, by the processing system, a command requesting determination of NFVI-PoPs for the plurality of VNFs in the VNF-FG.

7. The method of claim 6, further comprising:

receiving, in response to the command, a message indicating determination of the NFVI-PoPs for the plurality of VNFs in the VNF-FG.

8 The method of claim 2, further comprising:

sending, in response to the customer request, an acknowledgement message indicating generation of the VNF-FG and determination of NFVI-PoPs for the plurality of VNFs in the VNF-FG.

9. The method of claim 1, wherein the VNF-FG comprises a VNF that is related to network performance assessment and enhancement.

10. An apparatus, comprising:

a processor; and

a non-transitory computer readable storage medium storing programming for execution by the processor, the programming including instructions for:

receiving a customer request for a network service, the customer request comprising a checklist of network components or network service requirements;

constructing, by the processing system, a network service (NS) using the checklist included in the customer request; and

generating a virtualized network function (VNF)-forwarding graph (FG) according to the constructed NS using a network service catalog, the VNF-FG comprising a plurality of VNFs and a link connecting two of the VNFs in the plurality.

11. The apparatus of claim 10, wherein the programming comprises further instructions for:

determining a NFV infrastructure (NFVI)-point of presence (PoP) for each of the plurality of VNFs in the VNF-FG.

12. The apparatus of claim 10, wherein the programming comprises further instructions for:

transmitting an instruction to instantiate the plurality of VNFs using a virtual infrastructure manager (VIM) and a virtual network function manager (VNFM).

13. The apparatus of claim 10, wherein the programming comprises further instructions for:

constructing a network service (NS) request comprising the constructed NS and the generated VNF-FG; and

sending the constructed NS request for determination of a NFVI-PoP for each of the plurality of VNFs in the VNF-FG .

14. The apparatus of claim 13, wherein the programming comprises further instructions for adding the NS request to a NS catalog.

15. The apparatus of claim 10, wherein the programming comprises further instructions for:

sending a command requesting for determination of NFVI-PoPs for the plurality of VNFs in the VNF-FG.

16. The apparatus of claim 15, wherein the programming comprises further instructions for:

receiving, in response to the command, a message indicating determination of the NFVI-PoPs for the plurality of VNFs in the VNF-FG.

17. The apparatus of claim 16, wherein the programming comprises further instructions for:

sending, in response to the customer request, an acknowledgement message indicating generation of the VNF-FG and determination of NFVI-PoPs for the plurality of VNFs in the VNF-FG.

18. A computer program product comprising a non-transitory computer readable storage medium storing programming, the programming including instructions to perform the method of any one of claims 1 to 9.