

# Descriptors Cooperation between Standard and Opensource

Presenting: DENG Hui  
denghui12@huawei.com

# It is the time to consider this

- OSM and OPEN-O just had their 1<sup>st</sup> releases (in Oct. and Nov. 2016)
- ETSI NFV ISG published its stage 2 work recently, in the progress of working on stage 3.
- Oasis plans to start to work on NFV v2 recently.

# Goal

- The alignment of the Open Source and Standard data modeling since that will be implemented within our products. If the data models are different, we have to develop different products to match the specific data model. If the data models are aligned then a substantial part of the invested code may be reused.
- The data models shall be based on the NFV Information Model.

# Comparison of open source with ETSI NFV ISG spec – In general

ETSI				OPEN-O	OSM
Working Group	No.	Version	Title		
MAN	GS NFV-MAN 001	v010101	Management and Orchestration	✓	✓
SWA	GS NFV-SWA 001	v010101	Virtual Network Functions Architecture		
	GS NFV 001	v010101	Use Cases	✓	✓
	GS NFV 002	v010201	Architectural Framework	✓	✓
	GS NFV 003	v010201	Terminology for Main Concepts in NFV	✓	✓
	GS NFV 004	v010101	Virtualisation Requirements	✓	✓
IFA	GS NFV-IFA 005	v020101	Management and Orchestration; Or-Vi reference point - Interface and Information Model Specification	✗	
IFA	GS NFV-IFA 006	v020101	Management and Orchestration; Vi-Vnfm reference point - Interface and Information Model Specification	✗	
IFA	GS NFV-IFA 007	v020101	Management and Orchestration; Or-Vnfm reference point - Interface and Information Model Specification	✓	
IFA	GS NFV-IFA 008	v020101	Management and Orchestration; Ve-Vnfm reference point - Interface and Information Model Specification		
IFA	GS NFV-IFA 009	v010101	Management and Orchestration; Report on Architectural Options		
IFA	GS NFV-IFA 010	v020201	Management and Orchestration; Functional requirements specification		
IFA	GS NFV-IFA 011	v020101	Management and Orchestration; VNF Packaging Specification	✗	
IFA	GS NFV-IFA 013	v020101	Management and Orchestration; Os-Ma-Nfvo reference point - Interface and Information Model Specification	✓	
IFA	GS NFV-IFA 014	v020101	Management and Orchestration; Network Service Templates Specification	✗	
OASIS					
Document Name	Version	Chapter	Title		
TOSCA NFV	v1.0	8	TOSCA Template for VNFD	✓	
		9	TOSCA Template for VLD	✓	
		10	TOSCA Template for VNFFGD	✓	
		11	TOSCA Template for NSD	✓	
TOSCA Simple Profile YAML	v1.0	3.9	Service Template Definition (NSD)	✓	
		6	TOSCA Cloud Service Archive (CSAR) Format	✓	
Openstack					
			Restful API (Or-Vi) interface	✓	✓
			Restful API (Vi-Vnfm) interface	✓	✓
TM Forum					
OPEN API			FCAPS and VNF Onboarding	✗	✗
3GPP					
SA5			FCAPS between EMS and NMS	✓	✓

# Comparison of open source with ETSI NFV ISG spec – VNFD (1)

MANO Release 1 (base)	IFA011 (base)	ETSI OSM	TOSCA NFV Profile / OPEN-O VNFD (topology template / node template)	Comments
id	vnfdId	id	Id	
	vnfProduceName	name		new
vendor	vnfProvider	vendor	vendor	name change but similar meaning
		logo		
descriptor_version	vnfdVersion	version	version	
version	vnfSoftwareVersion			
	vnfProductInfoName			
	vnfProductInfoDescription	description	description	
	vnfmInfo			new
	localizationLanguage			
	defaultLocalizationLanguage			
vdu	vdu	vdu	tosca.nodes.nfv.VDU [ETSI GS NFV-MAN 001 v1.1.1]	
	virtualComputeDesc			
	virtualStorageDesc			
virtual_link	intVirtualLinkDesc	internal-vld	tosca.nodes.nfv.VDU [ETSI GS NFV-MAN 001 v1.1.1]	semantics is different
connection_point	vnfExtCpd	connectionpoint	tosca.nodes.nfv.VDU [ETSI GS NFV-MAN 001 v1.1.1]	semantics is different

## Comparison of open source with ETSI NFV ISG spec – VNFD (2)

MANO Release 1 (base)	IFA011 (base)	ETSI OSM	TOSCA NFV Profile / OPEN-O VNFD (topology template / node template)	Comments
lifecycle_event	lifeCycleManagementScript		interface	
dependency		vddependency	Relationship template or Plan	not present in IFA011
monitoring_parameter		monitoringparam		specified as part of VNF flavour, VDU and VL descriptions
deployment_flavour	deploymentFlavour (including dependency, monitoring parameter)			
auto_scale_policy	autoScale			
manifest_file	Included in the VNF package			
manifest_file_security	Included in the VNF package			
	configurableProperties	vnfconfiguration		new
				new
	elementGroup	placementgroups	Group	new
	vnfIndicator			new
	modifiableAttributes			new
		Servicefunctionchain		Type of node in sfc architecture. Supported types: UNAWARE (default) CLASSIFIER, SF, SFF
		servicefunction-type		
	(testAccess in VL) a lot similar	mgmtinterface		

# Comparison of open source with ETSI NFV ISG spec – NSD (1)

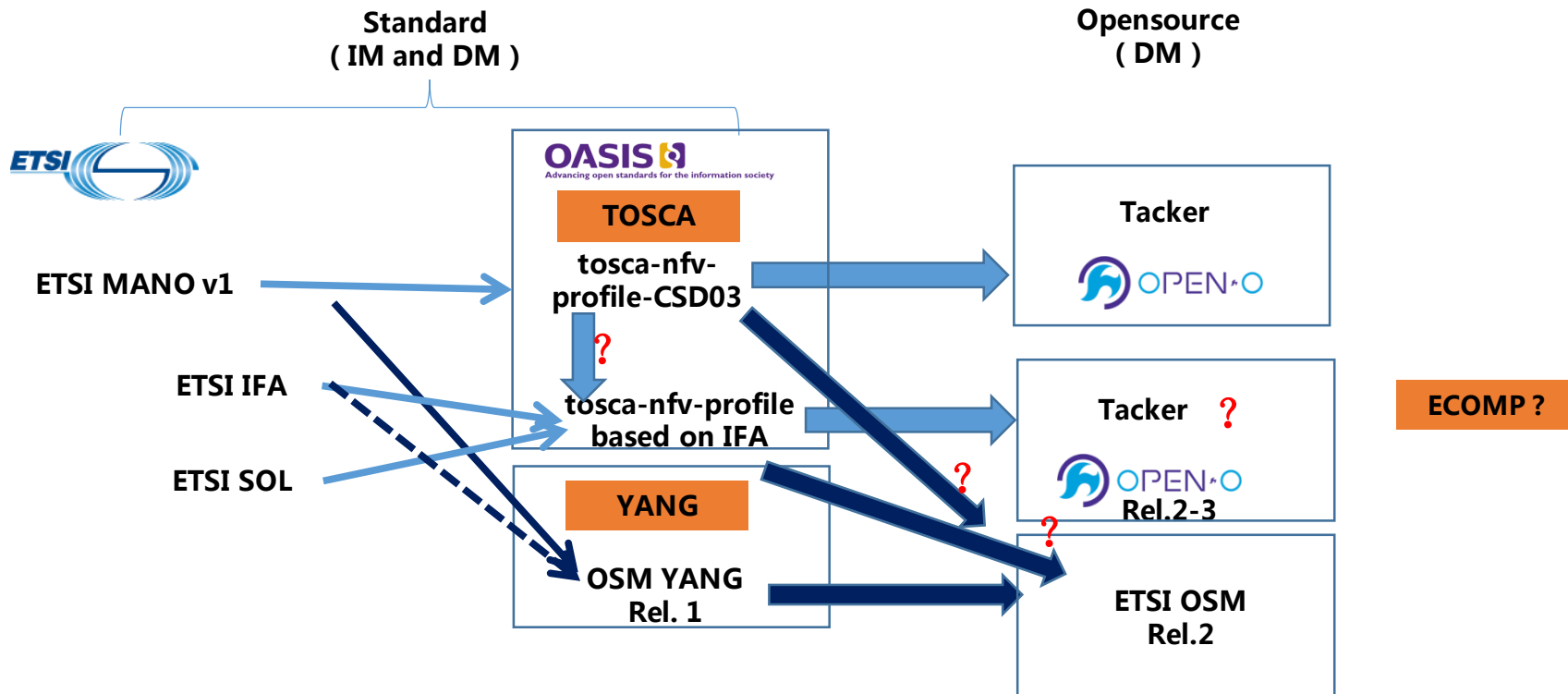
MANO Release 1	IFA014	ETSI OSM	TOSCA NFV Profile (Open-O)	Comments
id	nsdIdentifier	Id	ID	
vendor	designer	logo	vendor	slight change in semantics
version	version	version	version	
	nsdName	name		
	nsdInvariantId	Short_name		Not the same meaning
	nestedNsd			new
		description		
vnfd	vnfdId	Constituent-vnfd	VNFD (topology template / node template)	by reference (and not by value) in IFA014
vnffgd	vnffgd	vnffgd	tosca.groups.nfv.VNFFG as defined by [ETSI GS NFV-MAN 001 v1.1.1]	
		ip-profiles-list (parameters related to VL)		
vld	virtualLinkDesc	Vld	tosca.nodes.nfv.VL as defined by [ETSI GS NFV-MAN 001 v1.1.1]	
lifecycle_event	LifeCycleManagementScript		Interface	The description in MANO says: Defines NS functional scripts/workflows for specific lifecycle events, So this seems to match

## Comparison of open source with ETSI NFV ISG spec – NSD (2)

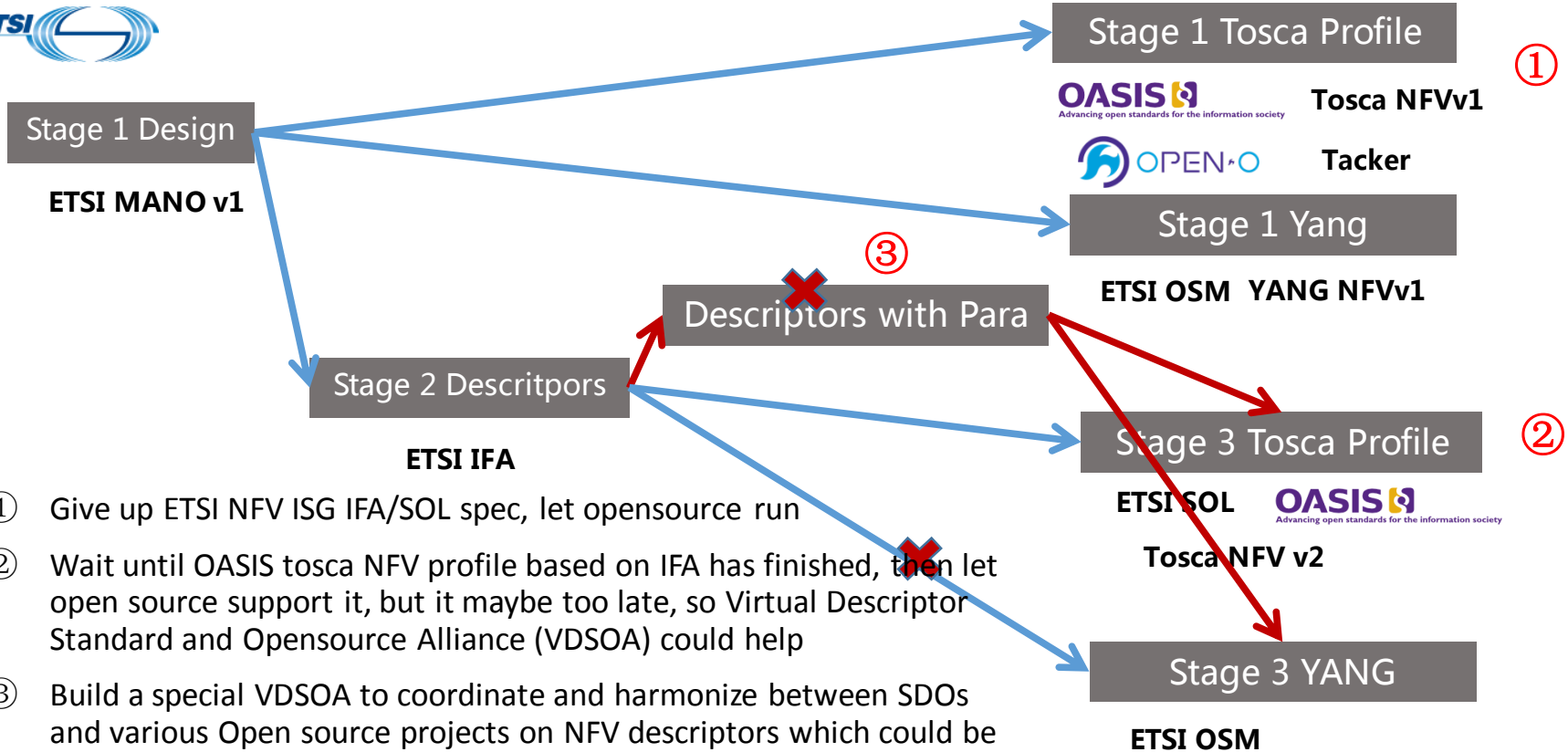
MANO Release 1	IFA014	ETSI OSM	TOSCA NFV Profile (Open-O)	Comments
vnf_dependency		vnf-dependency	Relationship template or Plan	
monitoring_parameter	monitoredInfo	monitoring-param		
service_deployment_flavour	nsDeploymentFlavour (including VNF dependency, scaling aspect, affinityOrAntiAffinityGroup)	scaling-groupdescriptor		
		placement-groups	Group	
auto_scale_policy	autoScalingRule			
connection_point	sapd	Connection-point	tosca.nodes.nfv.CP as defined by [ETSI GS NFV-MAN 001 v1.1.1]	appears to be the same but the name has changed.
pnfd	pnfdId	Not supported in the current release	PNFD (topology template / node template)	by reference (and not by value) in IFA014
nsd_security	security			appears to be the same but the name has changed
		input-parameterxpath	input	
		parameter-pool	DSL_definition	
		service-primitive		
		initial-configprimitive		
		terminate-configprimitive		



# Whether TOSCA NFV v2 could get support from open source communities?

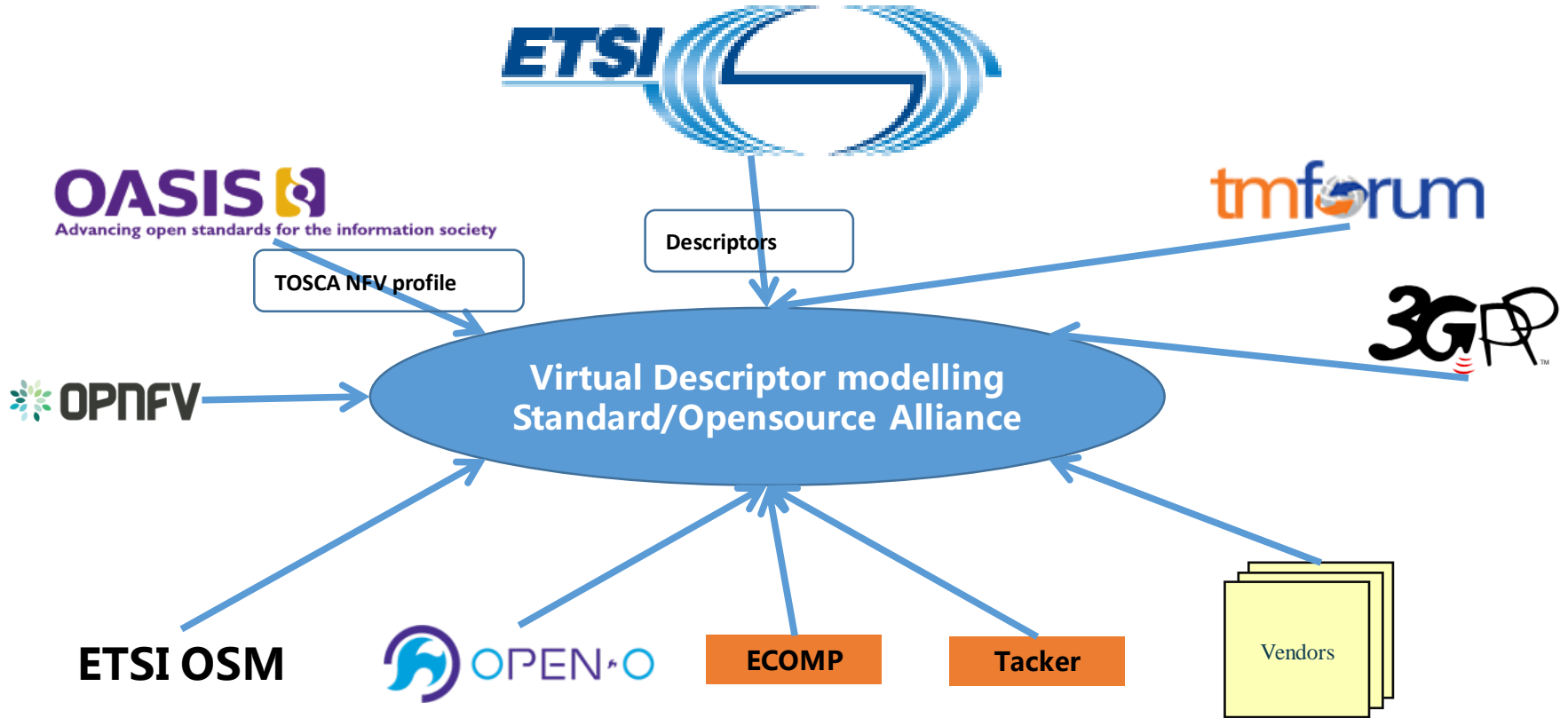


# Future 3 choices for NFV template modelling language

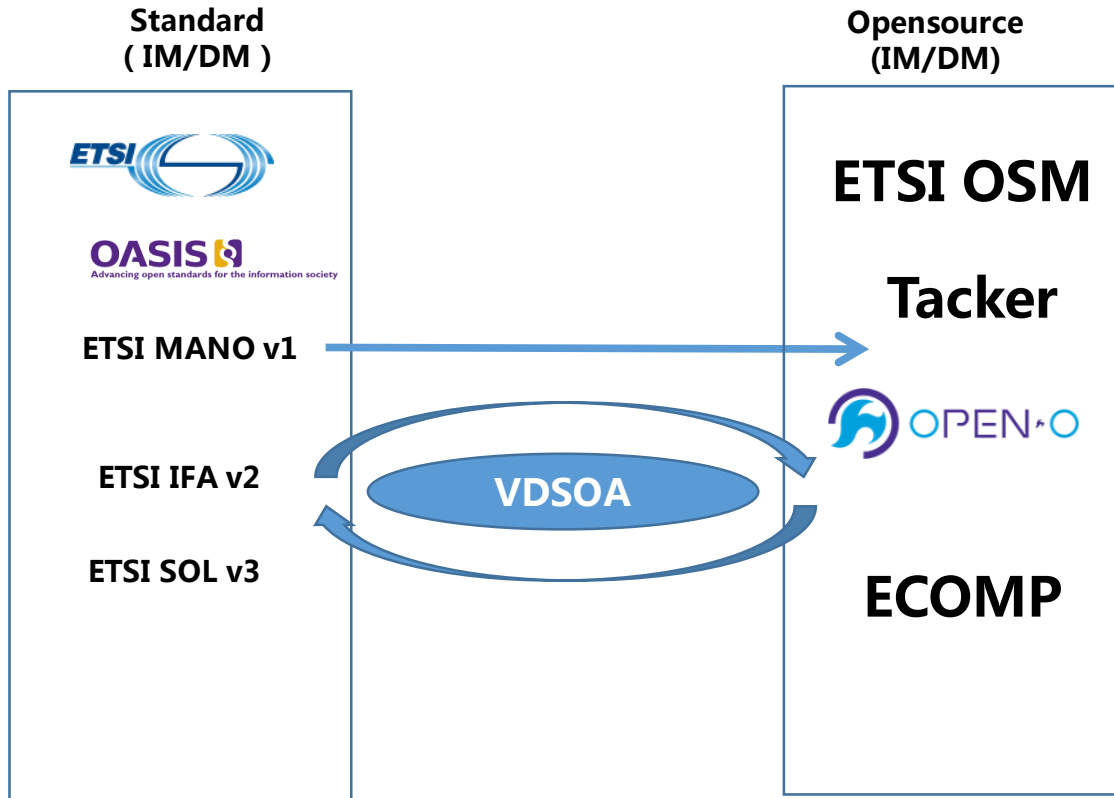


- ① Give up ETSI NFV ISG IFA/SOL spec, let opensource run
- ② Wait until OASIS toasca NFV profile based on IFA has finished, then let open source support it, but it maybe too late, so Virtual Descriptor Standard and Opensource Alliance (VDSOA) could help
- ③ Build a special VDSOA to coordinate and harmonize between SDOs and various Open source projects on NFV descriptors which could be written in either Tosca or YANG

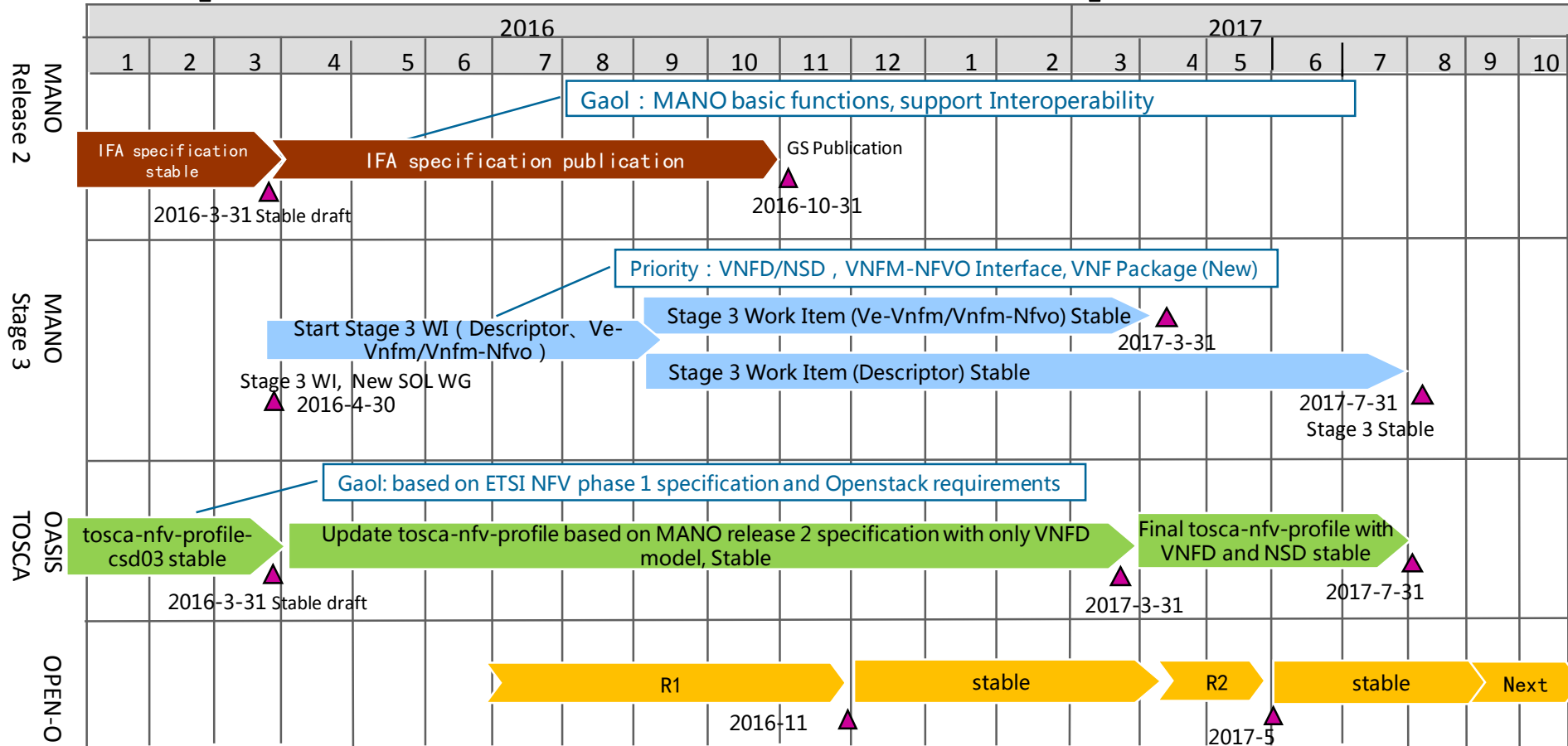
# VDSOA



# Closed loop collaboration



# Roadmap ETSI NFV MANO/ OASIS TOSCA / Open O



# Way to move forward

- ❑ VDSOA will not generate a new spec, but try to coordinate S/O to better shape their own IM/DM.
- ❑ Because standard and opensource have different IPR policies, so virtual committee may work out (similar to “openconfig” launched by google).
- ❑ Composed of individual participants from each standard and open source communities to avoid issues.
- ❑ Scope is very narrow, targeted to align with opensource and standard about descriptors.
- ❑ Service and application Data models are totally out of scope.
- ❑ Mailing list working style, a simple management website, individual participate