Views on XGVela's Roles in the

Network Management Landscape

XG Vela

Glossary

- **Management Domain**: scope of management that federates together management services, that enables their exposure towards external service consumers and that is delineated by a business, administrative, technological or other boundary

- **Management Function (MnF)**: logical entity playing the roles of service consumer and/or service producer

- **Management Service (MnS)**: set of offered management service capabilities

- **Service Capability**: specific part of a management service

- **Managed Entity**: managed resource (PNF, VNF, MnF) or managed service (CFS, RFS, MnS)

- **Managed Object**: a managed data point within a managed entity

Zero-touch Network and Service Management (ZSM)

ETSI ZSM

ETSI GS ZSM 002 V1.1.1 (2019-08)

GROUP SPECIFICATION

**Zero-touch network and Service Management (ZSM);
Reference Architecture**

*Disclaimer*

ETSI ZSM Reference Architecture (ZSM002)

The ZSM reference architecture employs a set of architectural principles, and a service-centric architectural model, to define at a high level a set of management services for zero-touch network and service management. It also defines means of management service integration, communication, interoperation, and organization.
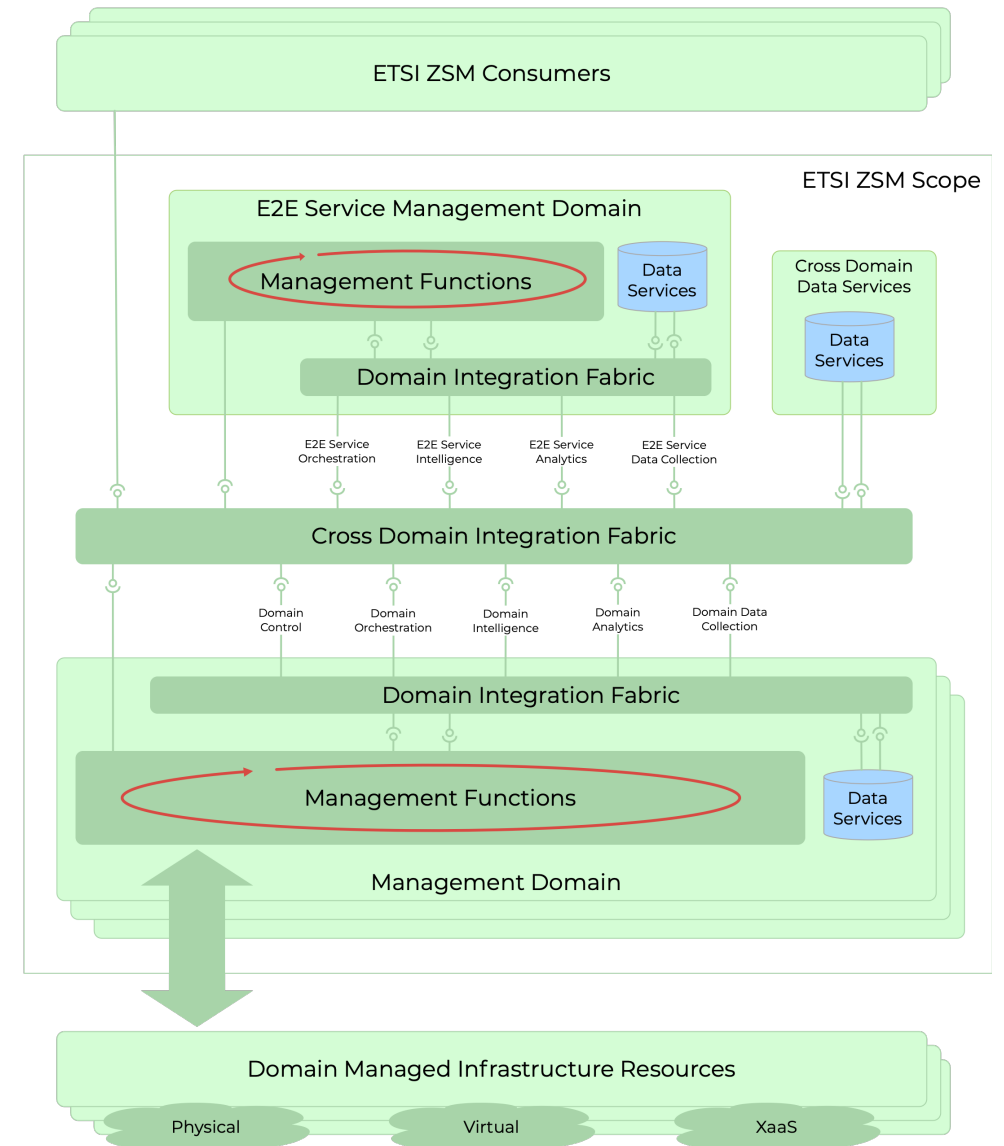
ETSI ZSM Integration Fabric
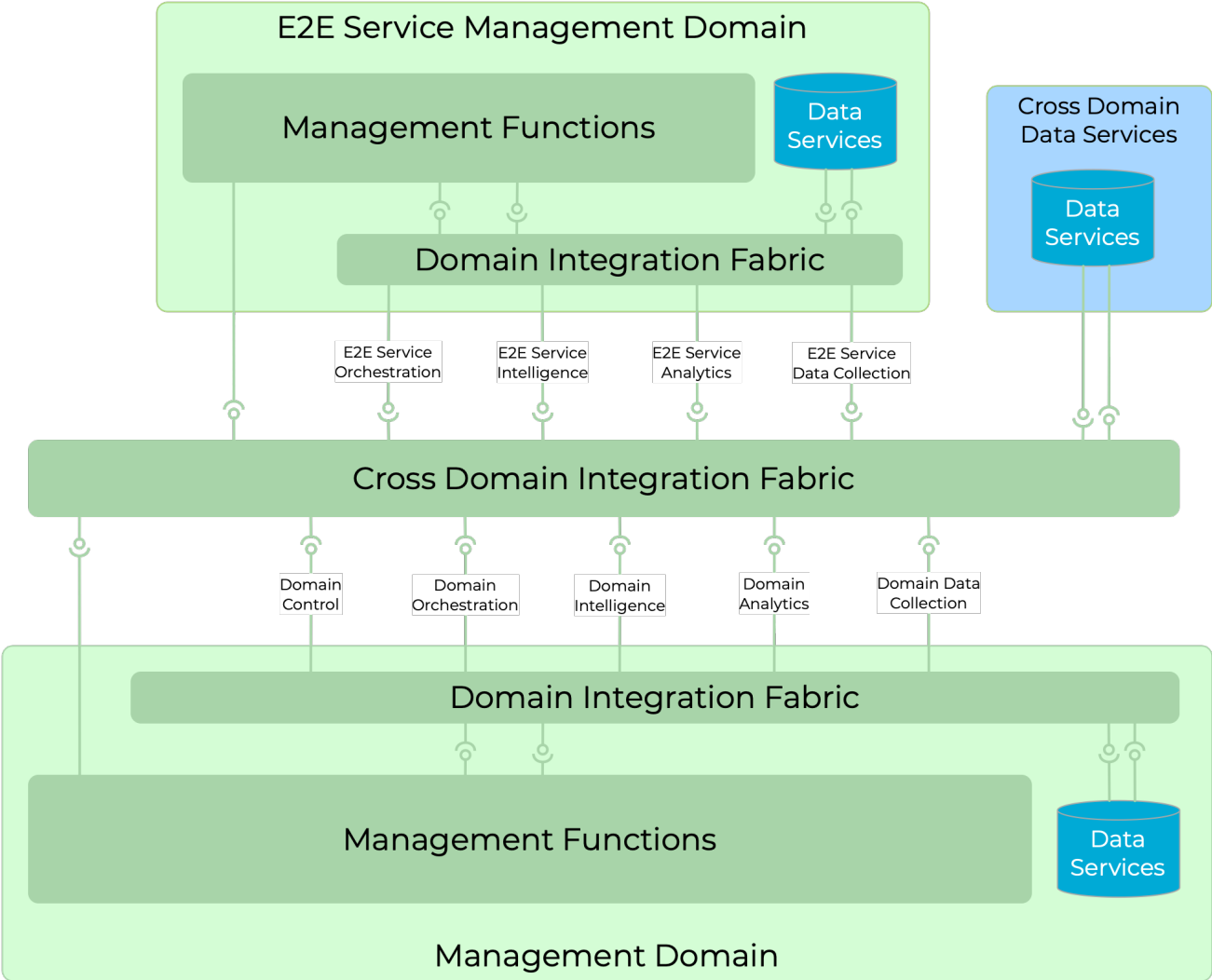
Management Services:

- Registration
- Discovery
- Communications
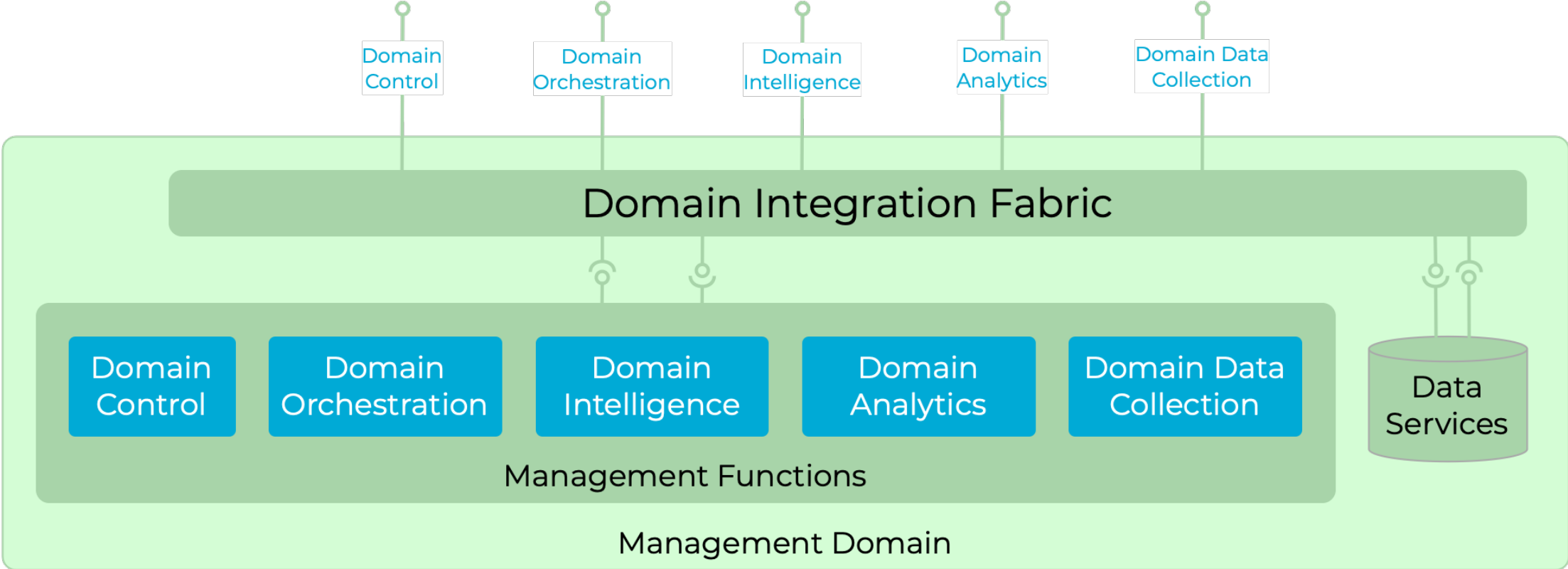- Invocation Routing
- Capability Exposure
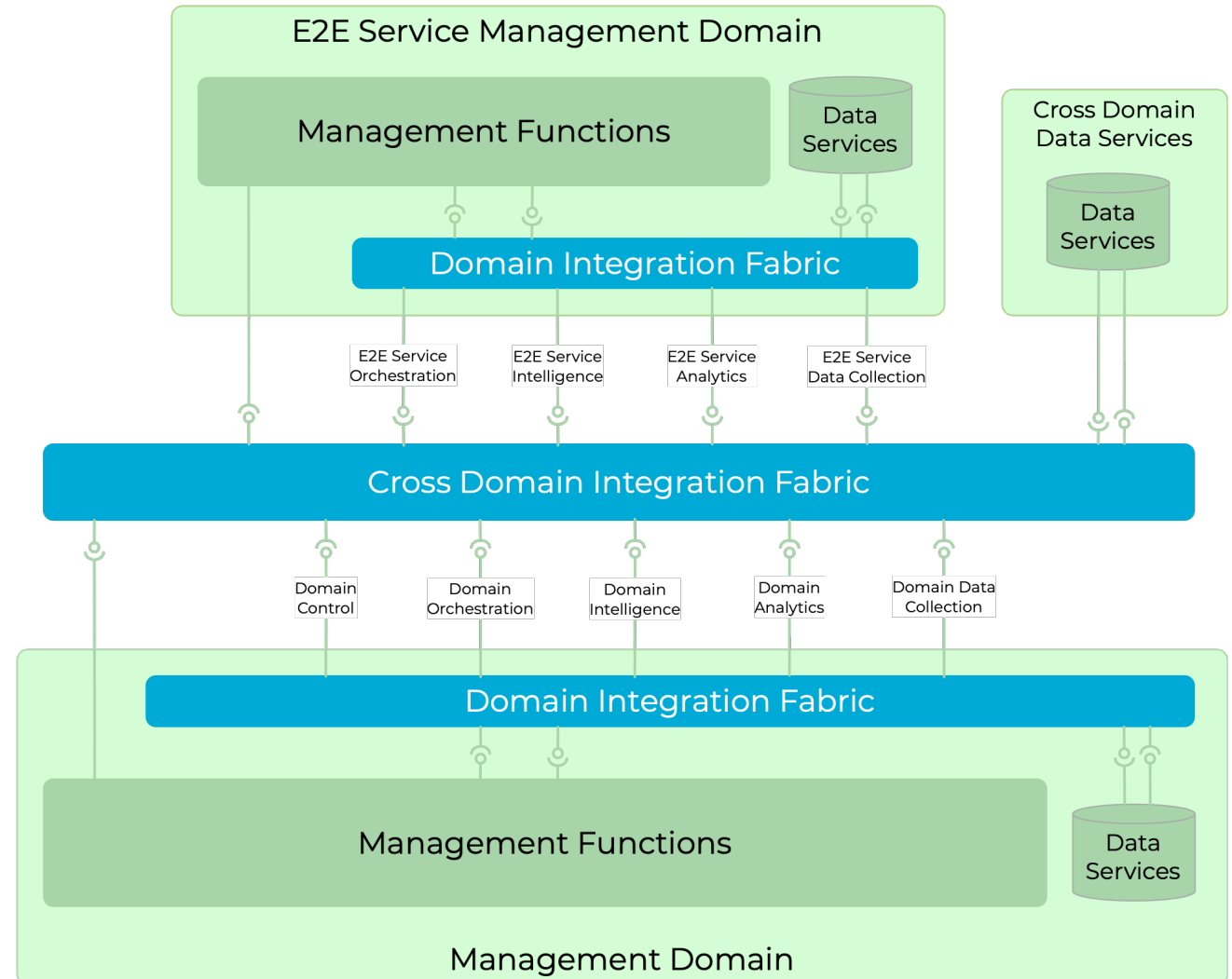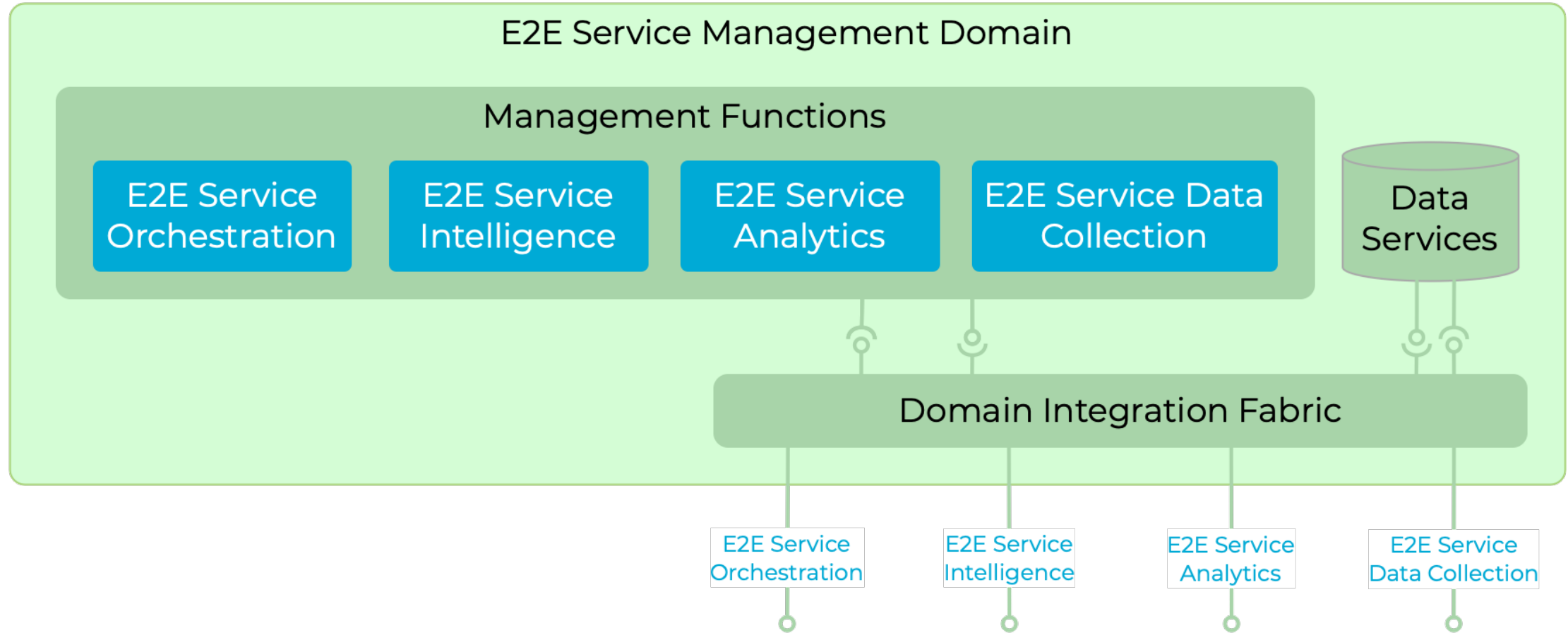
ETSI ZSM Data Services

Data Services:

- Data Store Management
- Data Persistence
- Data Processing

ETSI ZSM Management Domain

ZSM End-to-End (E2E) Service Management

XGVela Platform for ZSM

XGVela **Provides**:
- Integration Fabric
- Data Services
- Domain Control
- Domain Orchestration
- Domain Data Collection
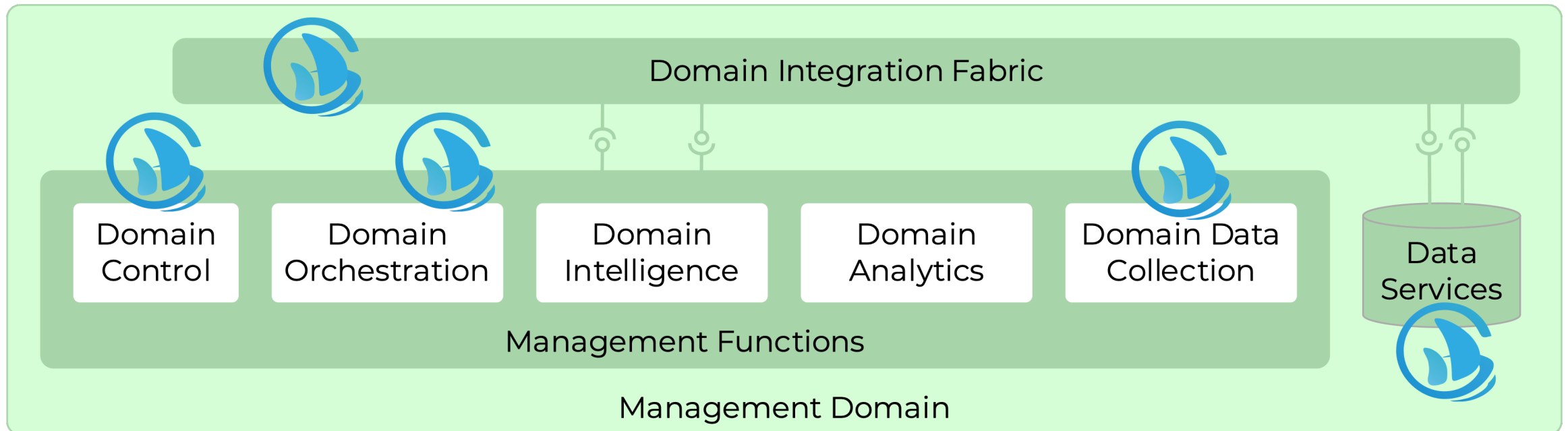
ZSM Integration Fabric

Management Service	XGVela Roles	
Management Services Registration	Producer	Consumer
Management Services Discovery	Producer	Consumer
Management Communication	Producer	Consumer
Management Service Invocation Routing	Producer	Consumer
Management Capability Exposure Configuration	Producer	Consumer

ZSM Data Services

Management Service	XGVela Roles	
Data Store Management	Producer	
Data Persistence	Producer	
Data Processing		

ZSM Domain Control

Management Service	XGVela Roles	
Resource Configuration Management	Producer	
Generic Resource Lifecycle Management	Producer	
Virtualized Resource Lifecycle Management	Producer	
Configuration Data Generation	Producer	

ZSM Domain Orchestration

Management Service	XGVela Roles	
Domain Orchestration		
Feasibility Check		
Managed Services Catalogue Management		
Testing		
Domain Inventory Information	Producer	
Domain Inventory Management	Producer	
Domain Topology Information	Producer	

ZSM Domain Data Collection

Management Service	XGVela Roles	
Generic Event Notification	Producer	Consumer
Fault Events	Producer	Consumer
Security Events	Producer	Consumer
Performance Events	Producer	Consumer
Performance Measurements Streaming	Producer	Consumer
Performance Measurements Collection	Producer	Consumer
Log Collection	Producer	Consumer

ZSM Domain Analytics

Management Service	XGVela Roles	
Generic Analytics		
Anomaly Detection		
Deployed AI Model Performance Evaluation		
Proactive Incident Analysis		
Reactive Incident Analysis		
Proactive Network Optimization		
Domain Condition Detection		
Generic Data Optimization		
Redundancy Removal		
Irrelevancy Removal		
Data Aggregation		

ZSM Domain Intelligence

Management Service	XGVela Roles	
AI Model Management		
Deployed AI Model Assessment		
AI Training Data Management		
Knowledge Base		
Health Issue Reporting		

Service Based Management
Architecture (SBMA)

3GPP SBMA

3GPP TS 28.533 V16.7.0 (2021-03)

Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Management and orchestration;
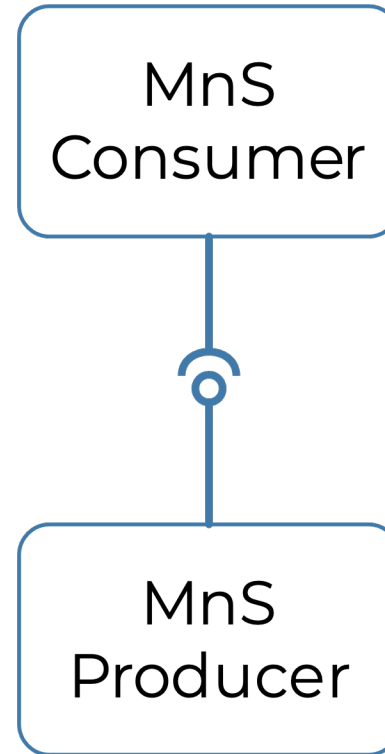Architecture framework
(Release 16)**

Management Service (MnS)

The fundamental building block of the Service Based Management Architecture (SBMA) is the Management Service (MnS).

An MnS is a set of offered capabilities for management and orchestration of network and services

Management Function (MnF)

A management function is a logical entity playing the roles of MnS consumer and/or MnS producer.
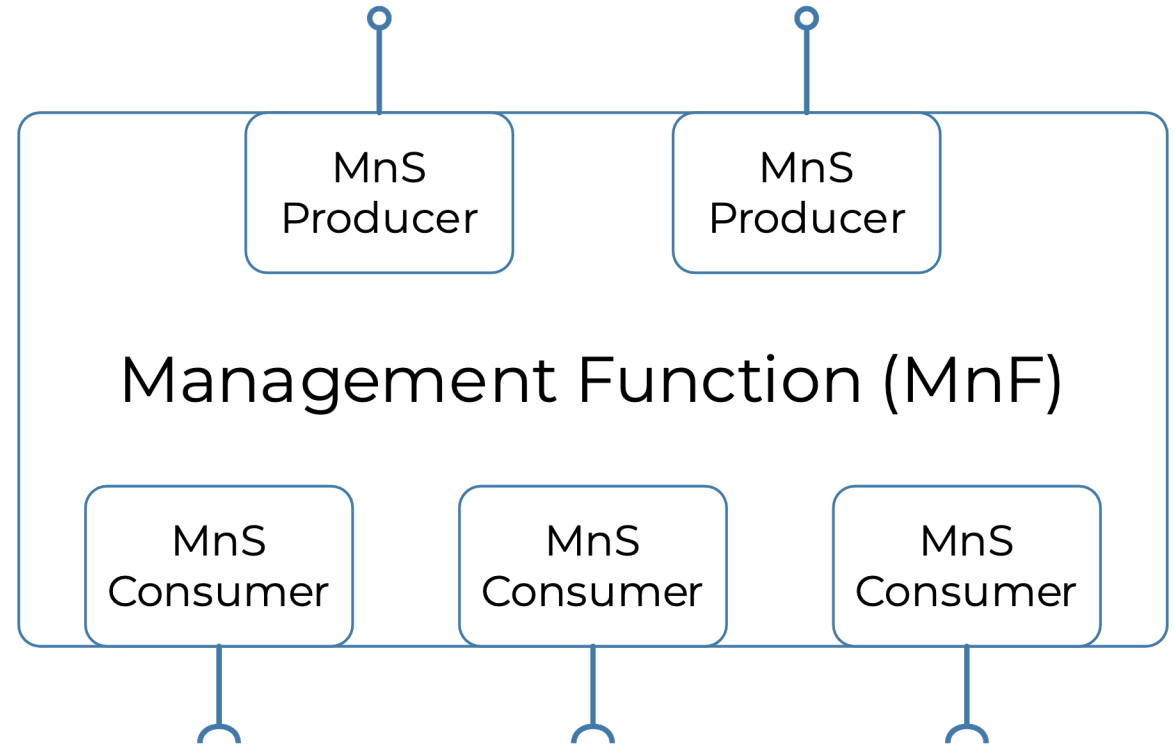
Management Function (MnF)

A Management Service (MnS) produced by MnF may have multiple consumers. The MnF may consume multiple MnS from one or multiple MnS producers.
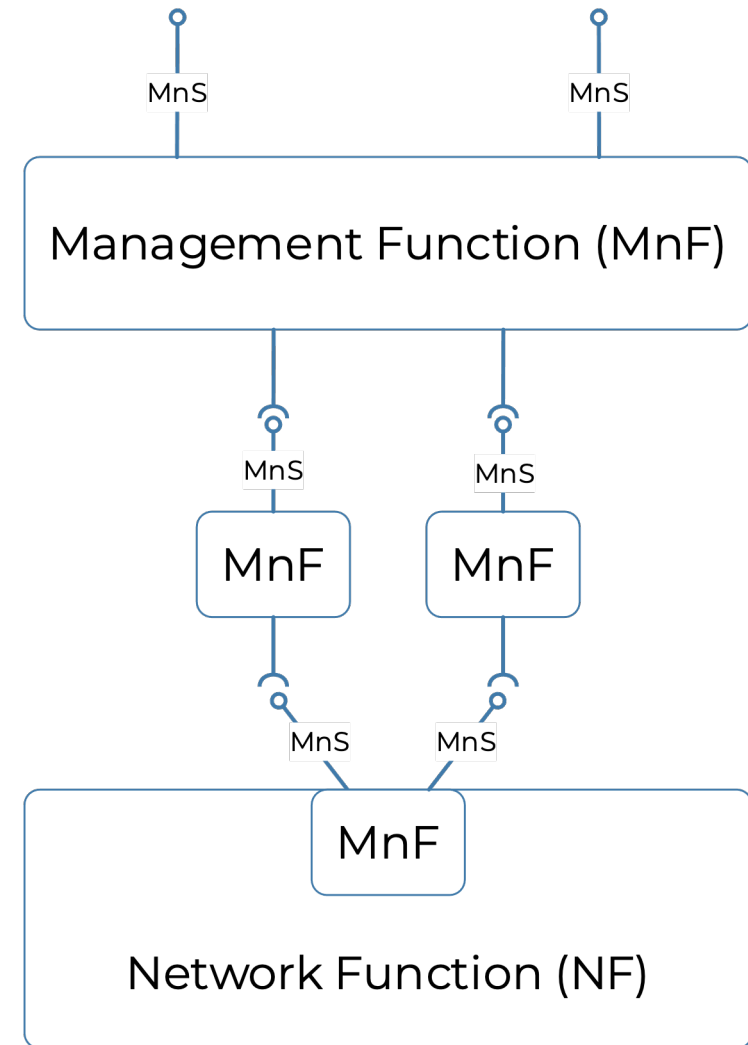
3GPP SBMA with ETSI ZSM Architecture

3GPP Cross Domain is part of ZSM E2E Service Domain.

Closed control loop SLS assurance (COSLA) may run in each domain.

3GPP Management Network Consumers (e.g. OSS/BSS)

3GPP Cross Domain

Management Functions

MnS

MnS   MnS

Cross Domain Integration Fabric

MnS   MnS

MnS   MnS

Management Functions

Radio Access Network (RAN) Domain

Management Functions

Core Network (CN) Domain
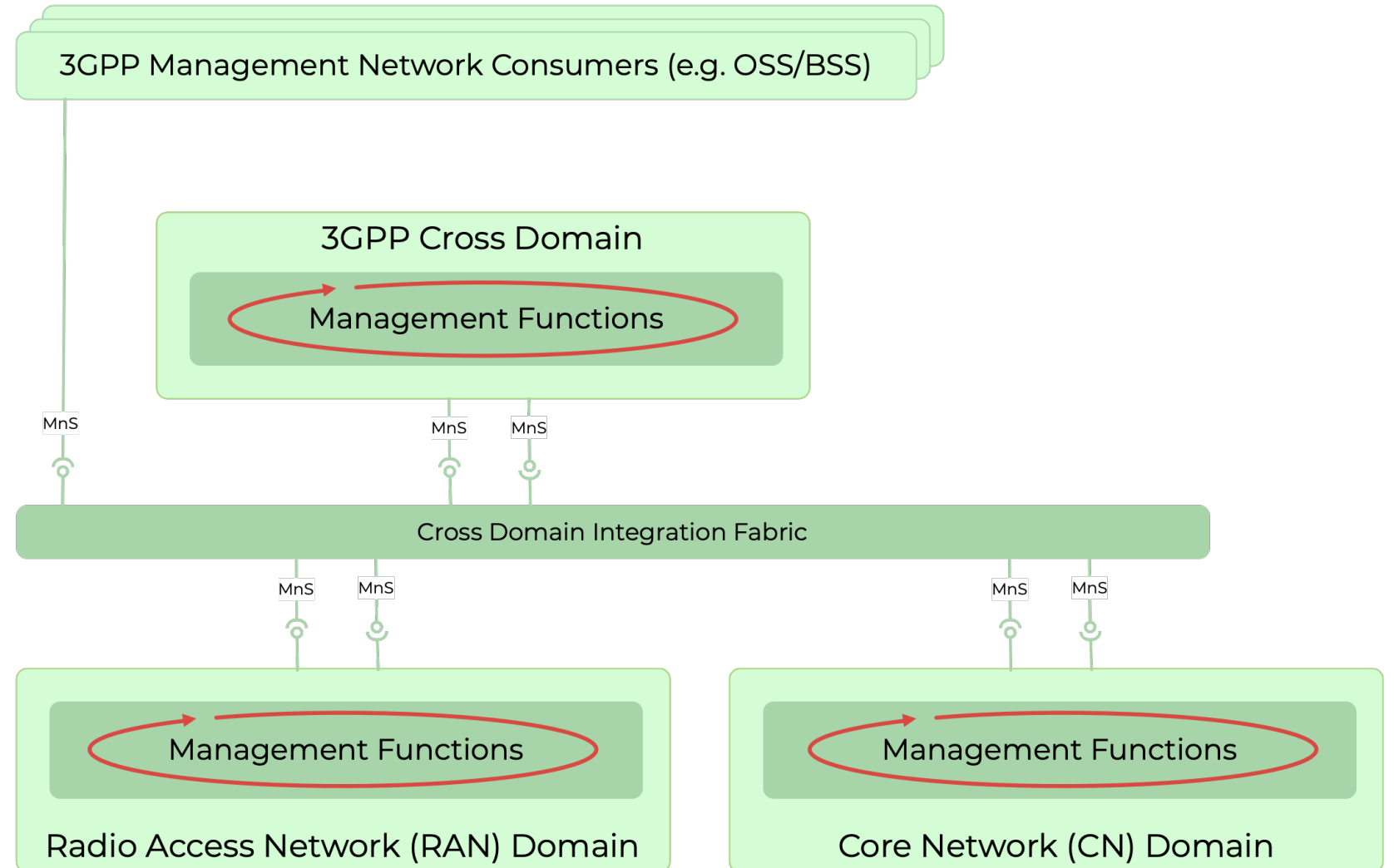
3GPP SBMA 5G Management Functions

CSMF is part of ZSM E2E Service Domain

NSMF is part of 3GPP Cross Domain

NSSMF and NFMF are part of CN Domain
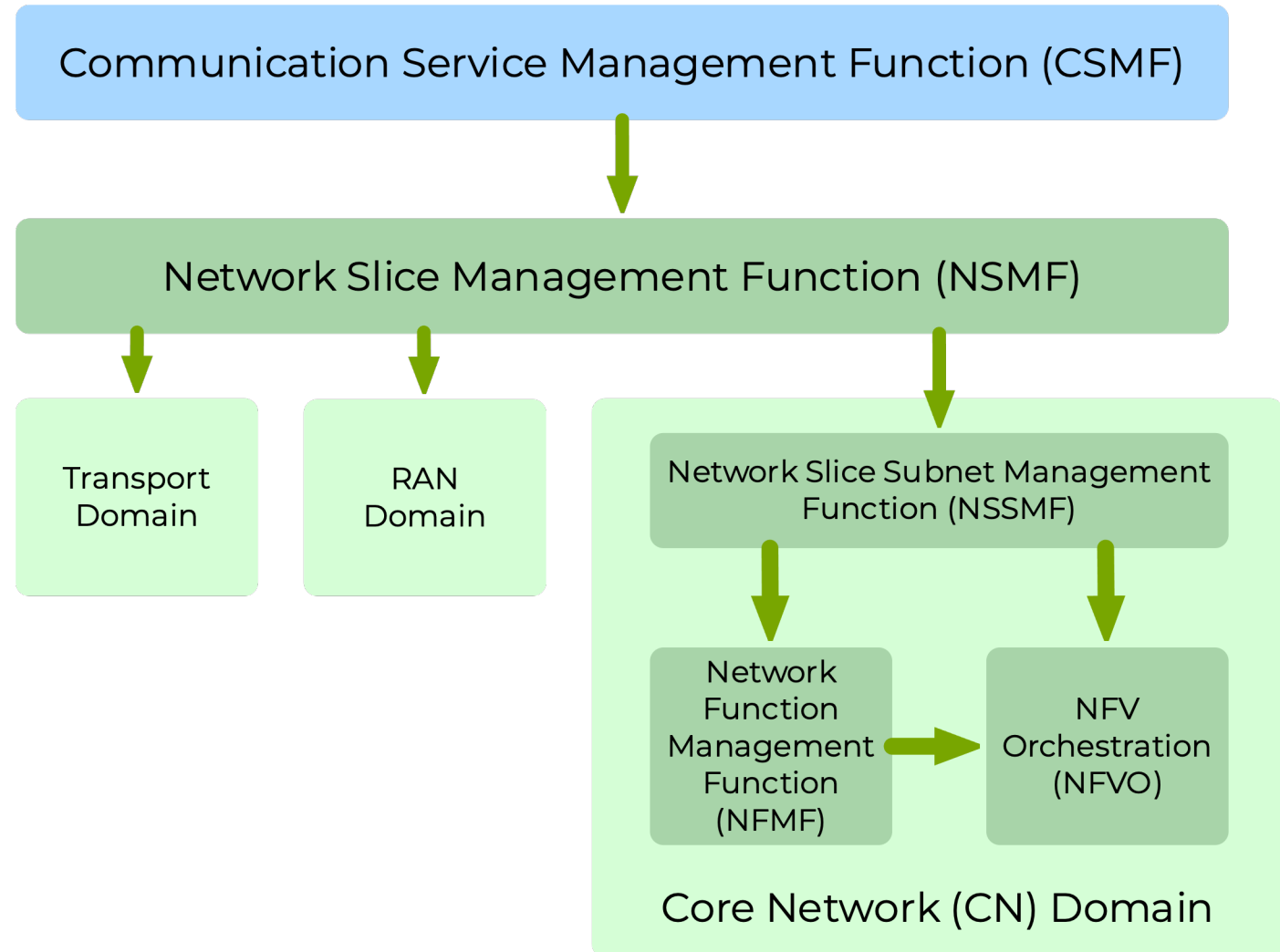
5G Management Functions

3GPP TS	Management Function (MnF)	XGVela Roles
28.533	Network Slice Management Function (NSMF)	Optionally Hosts
	Network Slice Subnet Management Function (NSSMF)	Optionally Hosts
	Network Function Management Function (NFMF)	Provider
	Exposure Governance Management Function (EGMF)	Provider
	Communication Service Management Function (CSMF)	Optionally Hosts
28.536	Closed Control Loop SLS Assurance (COSLA)	Optionally Hosts

5G Management Services

3GPP TS	Title	Service
28.531	Provisioning	Provisioning for NSI; NSSI; NF; Network and Sub-networks
		Provisioning Data Report for NSI; NSSI; NF; Network and Sub-networks
		Provisioning Exposure for NSI
		Provisioning Data Report Exposure for NSI
28.532	Generic Management Services	Generic Provisioning
		Generic Fault Supervision
		Generic Performance Assurance
		Heartbeat
		Streaming Data Reporting
		File Data Reporting
28.536	Service Assurance	Communication Service Assurance (COSLA)
28.545	Fault Supervision	Fault Supervision Data Report for NSI; NSSI; NF
		Fault Supervision Control for NSI; NSSI, NF
28.550	Performance Assurance	Measurement Job Control Service for NSI; NSSI; NF; Network and Subnets
		Performance Data File Reporting Service for NSI; NSSI; NF; Network and Subnets
		Performance Data Streaming Service for NSI; NSSI; NF; Network and Subnets
		KPI Job Control

3GPP 28.531: 5G Provisioning

Service	XGVela Roles	
Provisioning for NSI		
Provisioning Data Report for NSI		
Provisioning Exposure for NSI		
Provisioning Data Report Exposure for NSI		
Provisioning for NSSI		
Provisioning Data Report for NSSI		
Provisioning for NF	Producer	
Provisioning Data Report for NF	Producer	
Provisioning for Network and Sub-networks		
Provisioning Data Report for Network and Sub-networks		

3GPP 28.532: Generic Management Services

Service	XGVela Roles	
Generic Provisioning	Producer	
Generic Fault Supervision		Consumer
Generic Performance Assurance		Consumer
Heartbeat		Consumer
Streaming Data Reporting		Consumer
File Data Reporting		Consumer

3GPP 28.545: Fault Supervision

Service	XGVela Roles	
Fault Supervision Data Report for NSI		
Fault Supervision Control for NSI		
Fault Supervision Data Report for NSI		
Fault Supervision Data Report for NSSI		
Fault Supervision Control for NSSI		
Fault Supervision Data Report NSI		
Fault Supervision Data Report for NF		Consumer
Fault Supervision Control for NF		Consumer
Fault Supervision Data Report for NF		Consumer

3GPP 28.550: Performance Assurance

Service	XGVela Roles	
Measurement Job Control Service for NSI		
Performance Data File Reporting Service for NSI		
Performance Data Streaming Service for NSI		
Measurement Job Control Service for NSSI		
Performance Data File Reporting Service for NSSI		
Performance Data Streaming Service for NSSI		
Measurement Job Control Service for NF		Consumer
Performance Data File Reporting Service for NF		Consumer
Performance Data Streaming Service for NF		Consumer
Measurement Job Control Service for Network and Subnets		
Performance Data File Reporting Service for Network and Subnets		
Performance Data Streaming Service for Network and Subnets		
KPI Job Control	Producer	

TM Forum Open Digital Architecture (ODA)

TMF ODA

TM Forum How To Guide
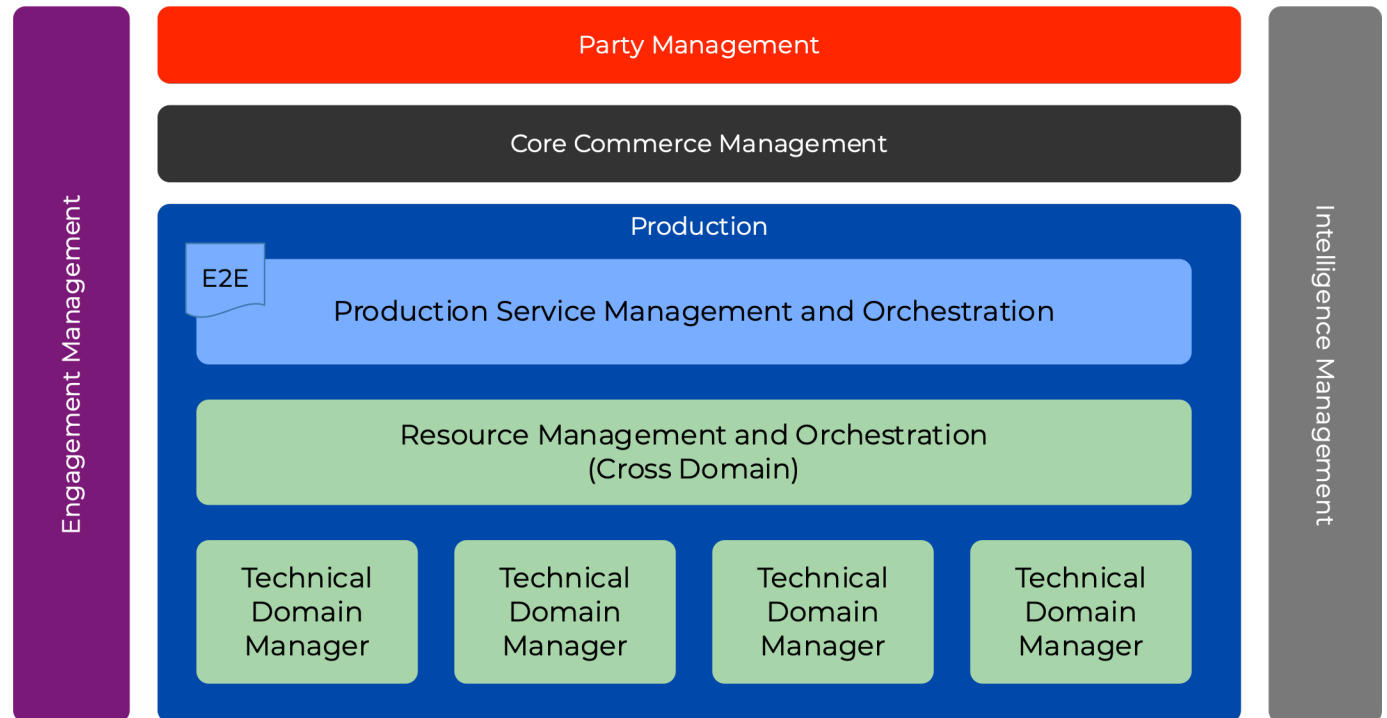
ODA Production Implementation Guidelines

GB999

Team Approved Date: 03-Apr-2020

Release Status: Production	Approval Status: TM Forum Approved
Version 4.0.1	IPR Mode: RAND

TMF ODA Functional Blocks

Production:

- Service Management
- Resource Management
- Technical Domains
  - RAN
  - Core
  - Transport
  - NFV
  - etc.

TMF ODA Production Block Components(*)

Component Name	XGVela Role
Address Management	Optionally Hosts
Logistic Management	Optionally Hosts
Resource Catalog Management	Provider
Resource Inventory	Provider
Resource Order Management	Optionally Hosts
Resource Usage Management	Provider
Service Balance Management	Optionally Hosts
Service Catalog Management	Optionally Hosts
Service Inventory	Optionally Hosts
Service Order Management	Optionally Hosts
Service Qualification Management	Optionally Hosts
Service Usage Management	Optionally Hosts

*Preliminary

TMF Production Block Open APIs

API	Description	XGVela Roles	
TMF633	Service Catalogue Management		
TMF638	Service Inventory Management		
TMF640	Service Activation		
TMF634	Resource Catalogue Management	Producer	
TMF639	Resource Inventory Management	Producer	
TMF664	Resource Function Activation	Producer	
TMF702	Resource Activation	Producer	
TMF642	Alarm Management	Producer	Consumer
TMF628	Performance Management	Producer	Consumer
TMF686	Topology Discovery	Producer	

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