Service Assurance in MDONS
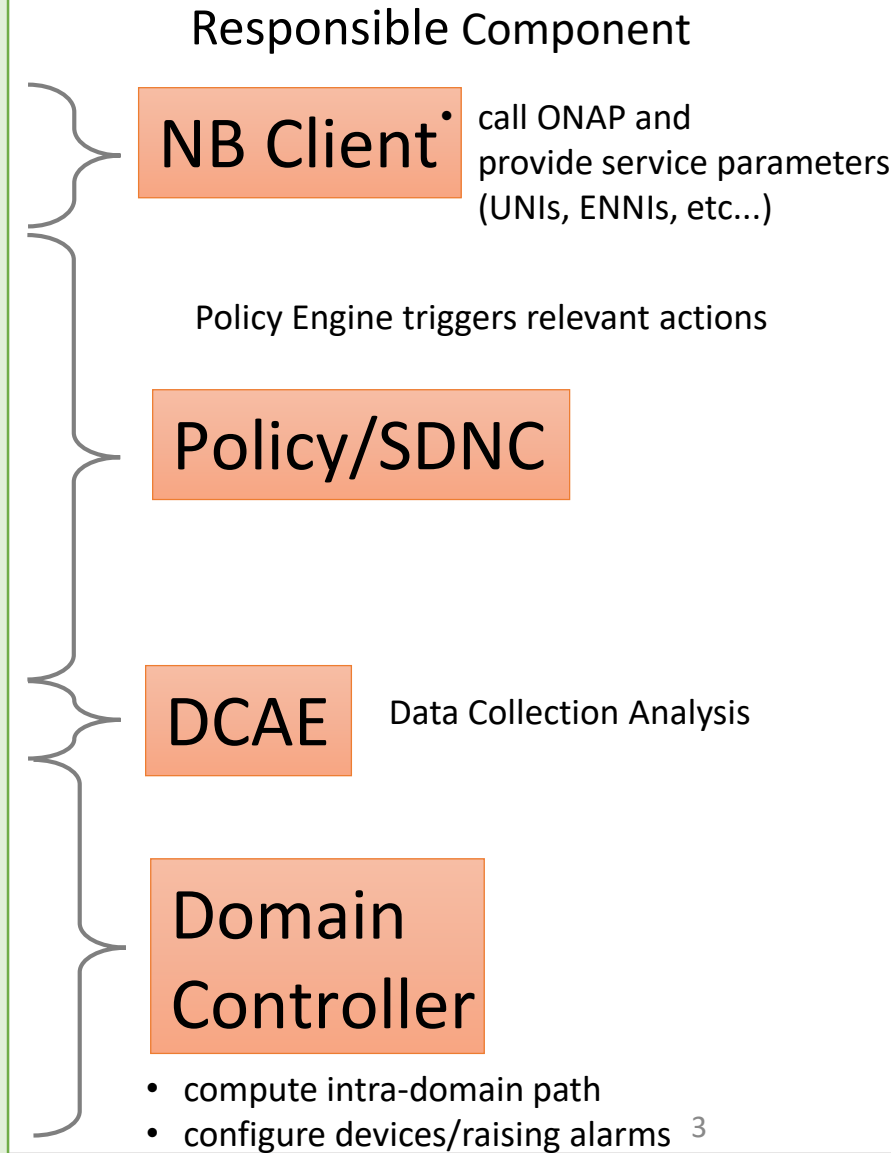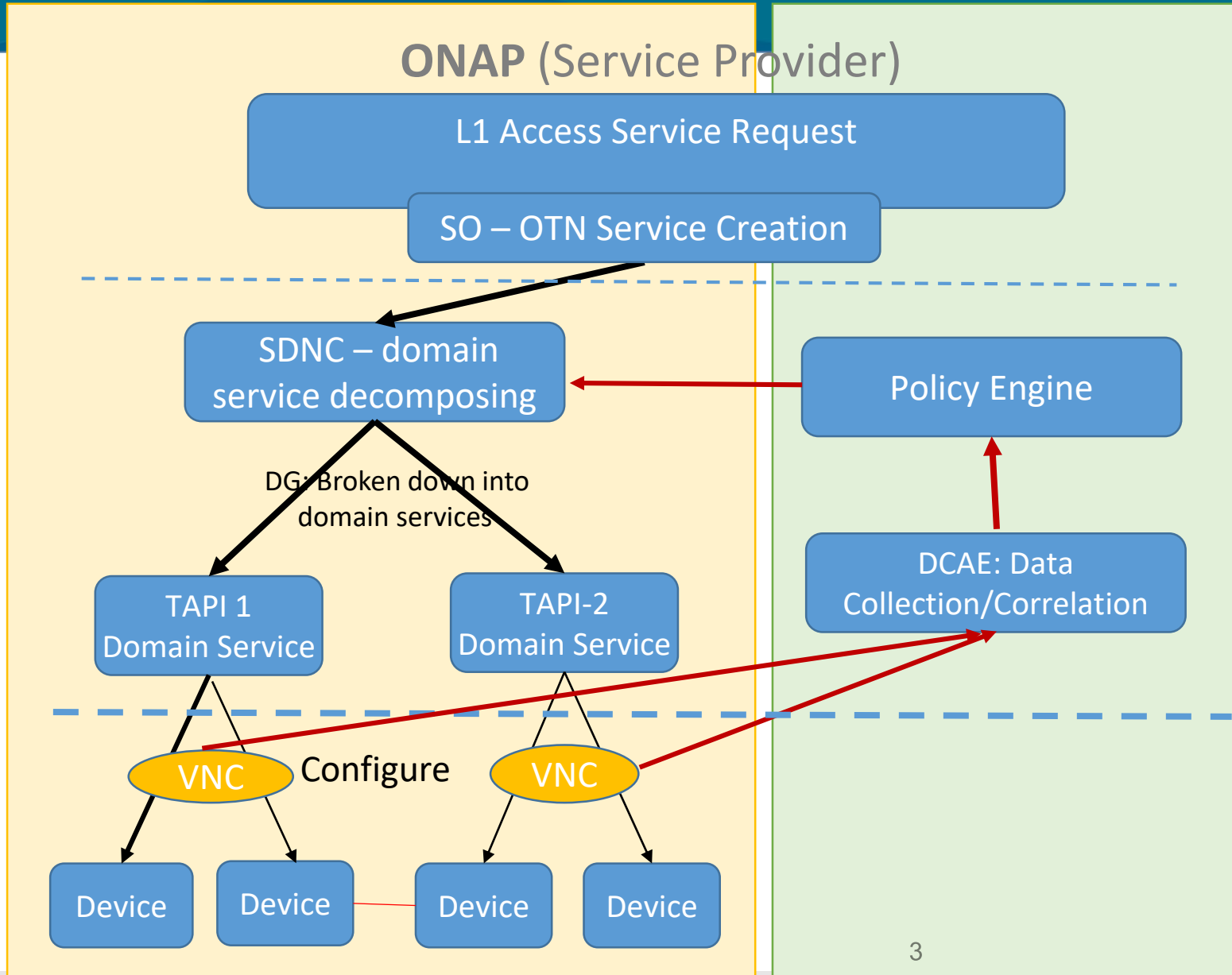
Introduction and work items in Guilin

April 2020   Xin Miao

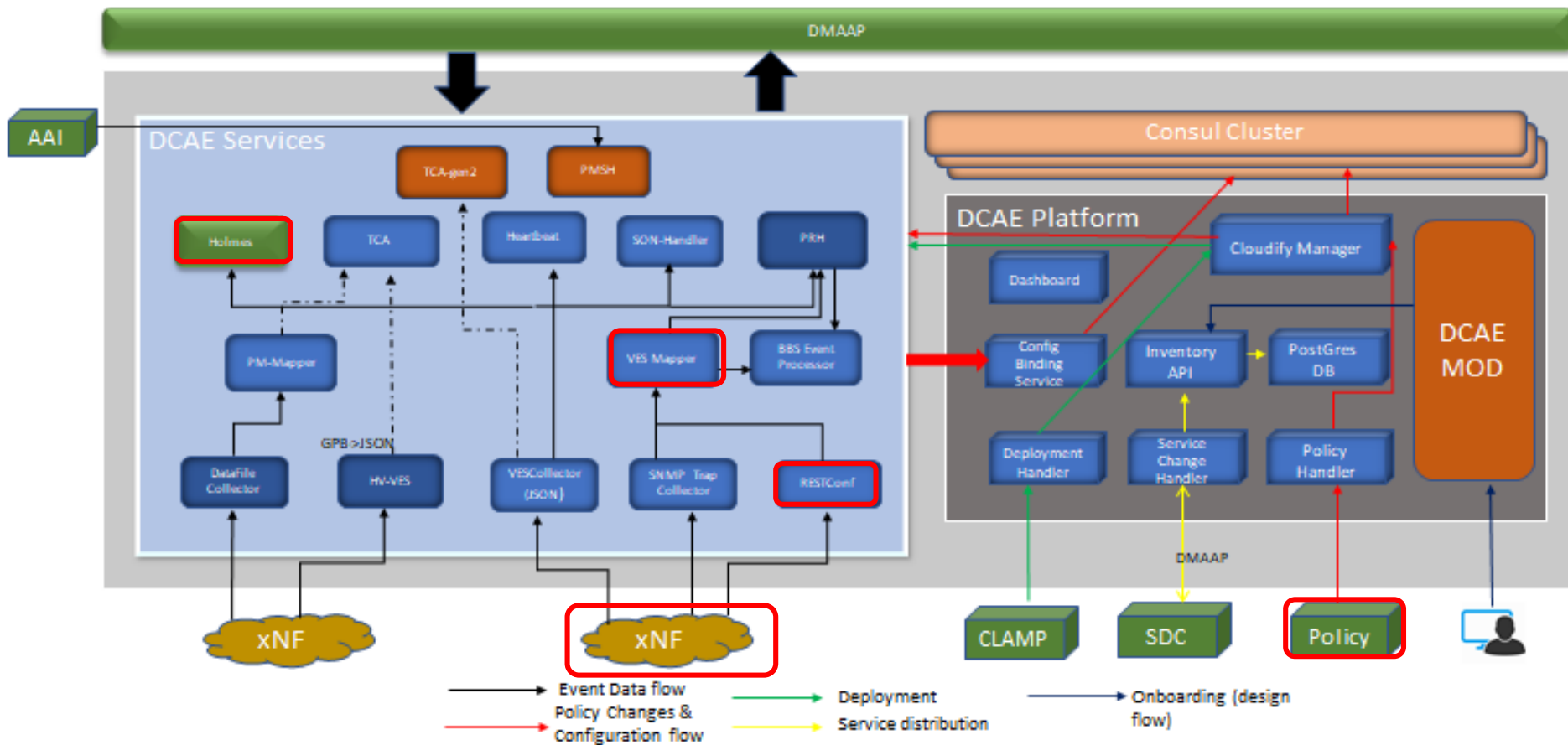# Contents

- Introduction
- Closed Loop – IDL Failure
- MDONS Data Collection
- Backup

Closed Loop Flow Hierarchy   (Run Time)

ONAP (Service Provider)

L1 Access Service Request

SO – OTN Service Creation

SDNC – domain service decomposing

Policy Engine

DG: Broken down into domain services

DCAE: Data Collection/Correlation

TAPI 1 Domain Service

TAPI-2 Domain Service

VNC Configure

VNC

Device

Device

Device

Device

Responsible Component

NB Client · call ONAP and provide service parameters (UNIs, ENNIs, etc...)

Policy Engine triggers relevant actions

Policy/SDNC

DCAE Data Collection Analysis

Domain Controller

- compute intra-domain path
- configure devices/raising alarms

3

DCAE in Frankfurt

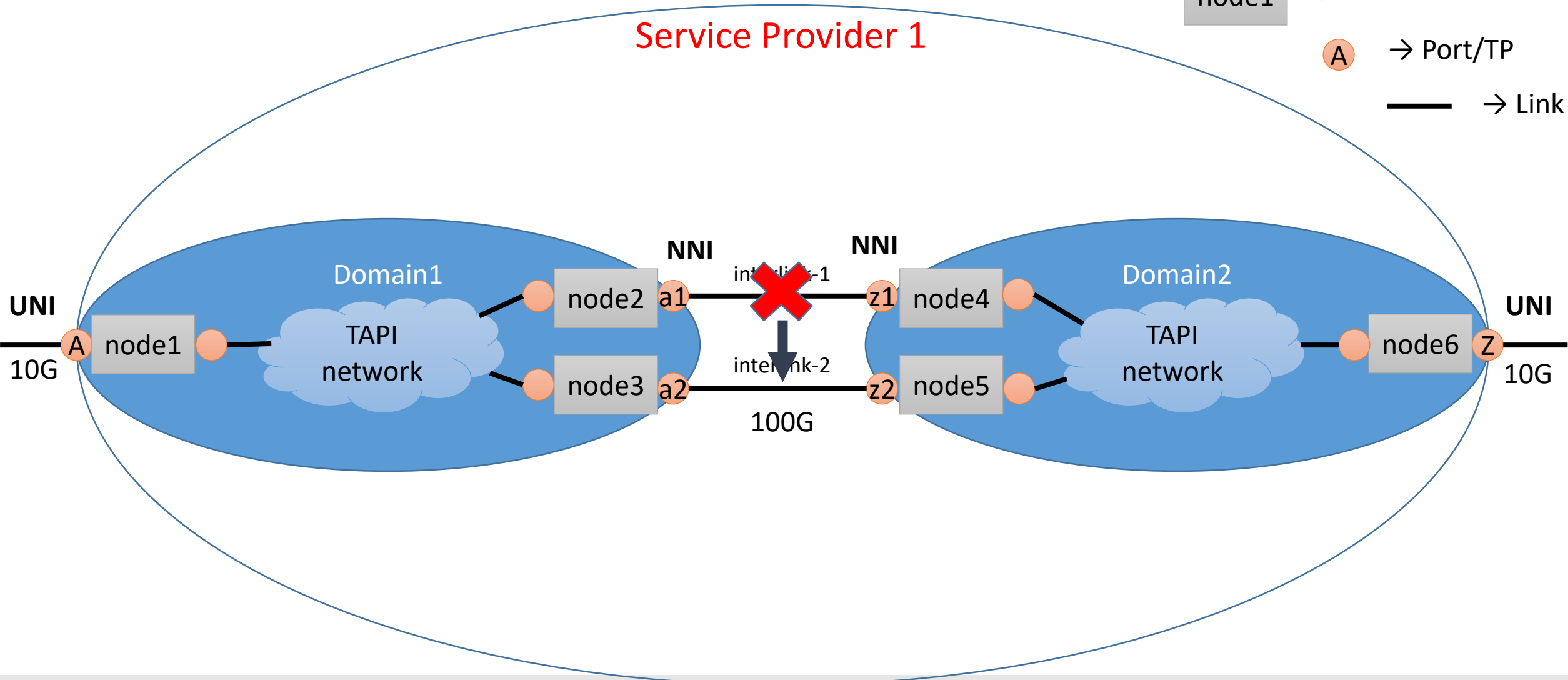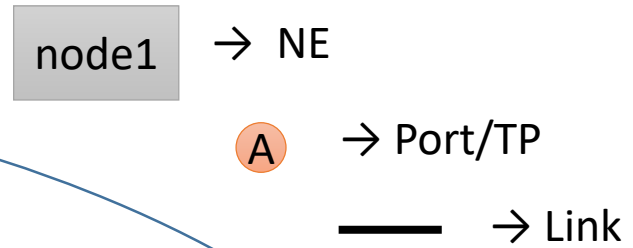## DCAE Architecture (Frankfurt)

Touched mS/components

MDDOS Services

RC Collector
VES Mapper
Holmes

Contents
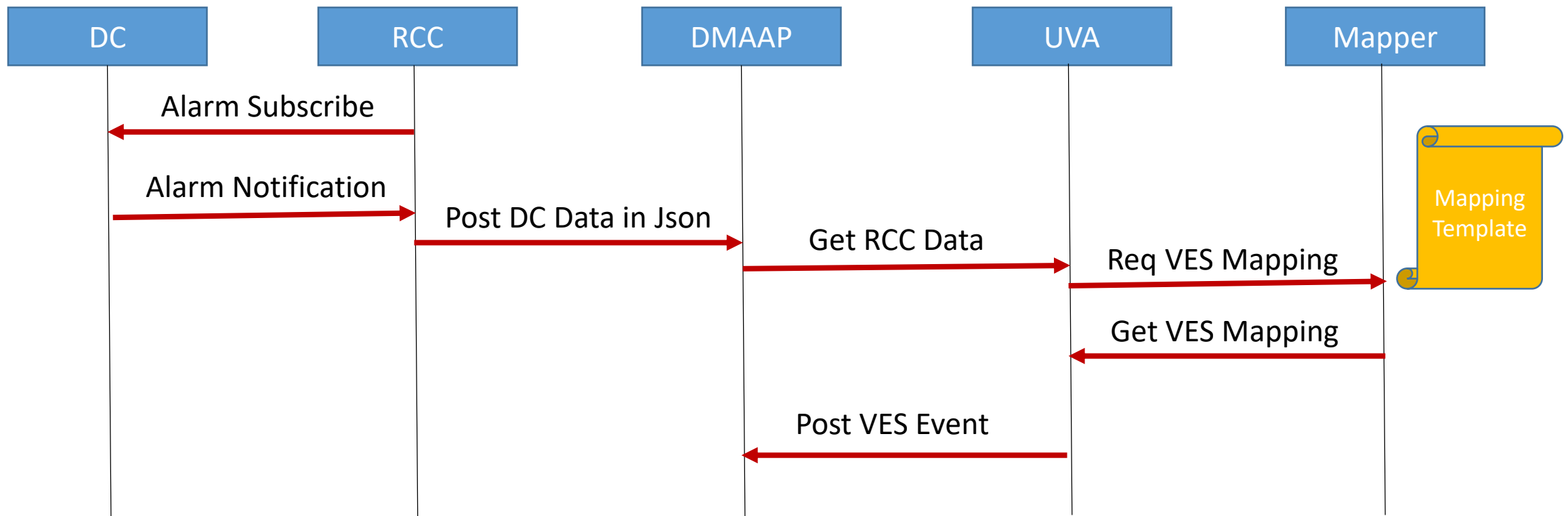
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MDONS Data Collection – for CL

Legend:

DC = Domain Controller   **RCC** = RestConf Collector   **UVA** = Universal VES Adapter

APIs

- VNC Alarm Notification
- AAI APIs
- SDNC APIs
  - for OTN service instance update in ONAP
  - for SDNC to all DGs to re-create domain OTN services

Alarm Correlation - Holmes

- Drools Rules from SDC/Holmes UI
- AAI provisioning

Policy Engine - Apex

- DCAE Event
- Operational Policy
- Actor/Action

SDC/DCAEMOD/CLAMP

- SDC - MDONS CL Design Time
- CLAMP for mS configuration/CL instantiation - runtime

Demo/Test

- Pre-conditions:
  - Cross Domain OTN Services Provisioned in ONAP
  - CL Defined and deployed
  - Policy defined
  - CL instance instantiated in DCAE and Policy distributed to Apex Engine
- IDL down alarms generation at NE simulators for both DCs
- Alarms received at RCC
- Alarms correlated at Holmes
- Action triggered at SO or SDNC
- OTN Service associated with another IDL
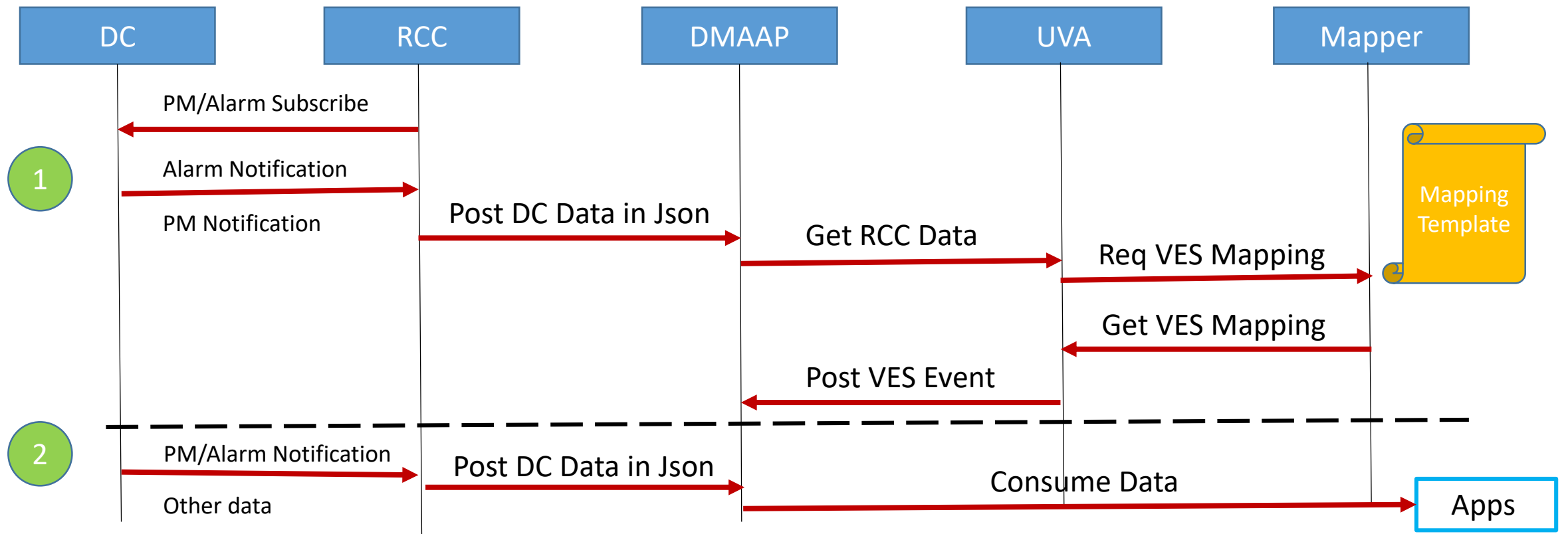- Alarms resolved -> down IDL up

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MDONS Data Collection

- ## Data Collection
  - Collectors
    - RCC – Restconf Collector
    - Other Collectors (?)
  - Data Types
    - Alarms
    - PMs
    - Others // … depend on VNC API availability
      - Topology
      - Domain Service related
      - Any types other than Alarm and PM

- ## Data format //… both VES and non VES

- ## Data Storage in ONAP
  - 3rd Party Data Lake (?)
  - Post on 3rd data router

- ## Apps/Micro-services
  - Data normalization

Data Collection Flow

Legend:

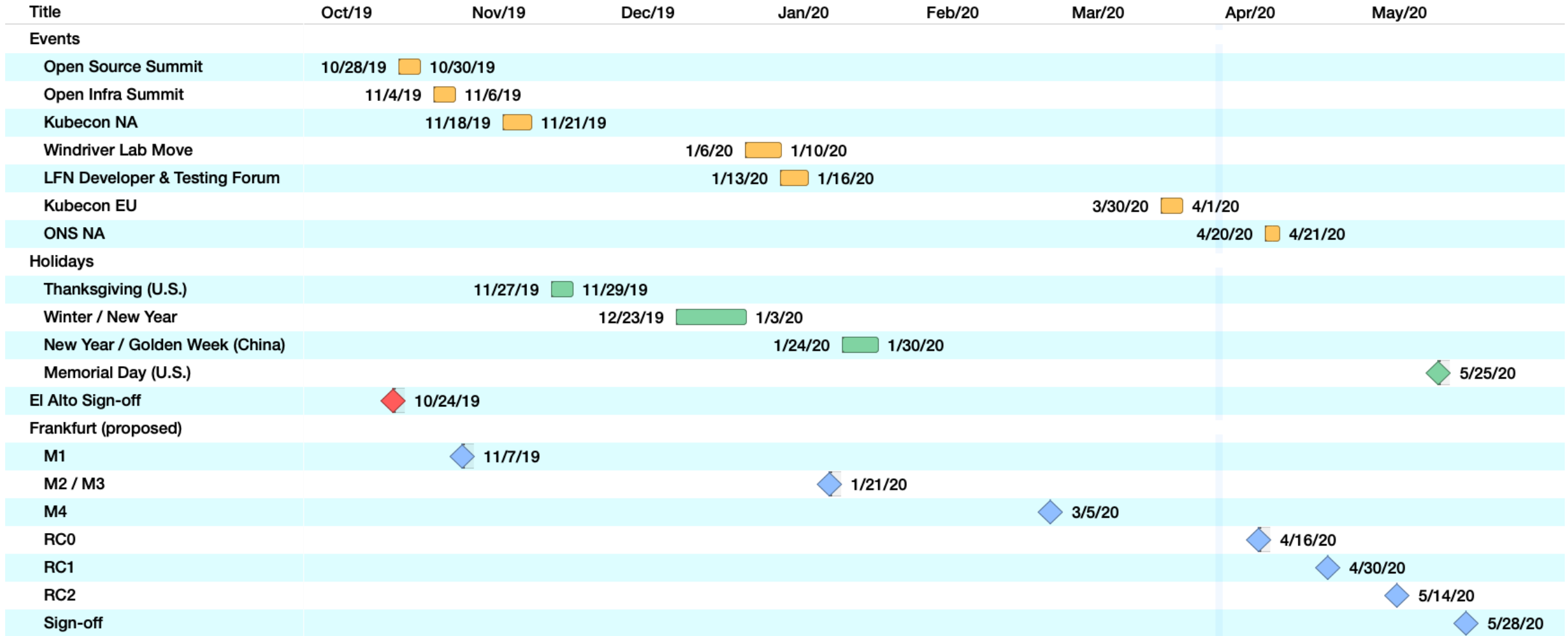**DC** = Domain Controller **RCC** = RestConf Collector **UVA** = Universal VES Adapter

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MDONS Integration Test Status

- Environment
  - FNC Local cluster in master branch.
  - WindRiver Lab - SB00 cluster

- Progress – Done
  - Passed RC0, RC1
  - Final E2E verification for RC2.

Frankfurt timeline (latest)

Title	Oct/19	Nov/19	Dec/19	Jan/20	Feb/20	Mar/20	Apr/20	May/20
Events								
Open Source Summit	10/28/19 ▭ 10/30/19							
Open Infra Summit	11/4/19 ▭ 11/6/19							
Kubecon NA		11/18/19 ▭ 11/21/19						
Windriver Lab Move			1/6/20 ▭ 1/10/20					
LFN Developer & Testing Forum			1/13/20 ▭ 1/16/20					
Kubecon EU						3/30/20 ▭ 4/1/20		
ONS NA							4/20/20 ▭ 4/21/20	
Holidays								
Thanksgiving (U.S.)		11/27/19 ▭ 11/29/19						
Winter / New Year			12/23/19 ▭ 1/3/20					
New Year / Golden Week (China)				1/24/20 ▭ 1/30/20				
Memorial Day (U.S.)								◆ 5/25/20
El Alto Sign-off	◆ 10/24/19							
Frankfurt (proposed)								
M1		◆ 11/7/19						
M2 / M3				◆ 1/21/20				
M4						◆ 3/5/20		
RC0							◆ 4/16/20	
RC1							◆ 4/30/20	
RC2								◆ 5/14/20
Sign-off								◆ 5/28/20

Frankfurt Rel. Status

Work Item	Status Update
MDONS Integration Testing • Testbed setup in community • Local verification in master branch • Component branch out • Issues?	• Windriver connection set up – ongoing • E2E LCM master branch verification – ongoing • UUI, OOF, Policy, APPC, Multi-cloud, etc – No • SO issue not MDONS related
Equipment / PNF Simulator (integration) • Which functions? • Where is it hosted? • Usage	• DC Simulator for NB API verification • Support use case integration test automation
Documentation • Enhance MDONS wiki page • Include sample service templates?	• Ongoing
ONAP Marketing • Solution brief addition for MDONS • Frankfurt Rel. Arch. white-paper updates	Provided updated info on MDONS to ONAP marketing team for inclusion in Frankfurt sol. Brief.

MDONS Guilin Work Items

Feature	Priority
Inter-domain optimizations (OOF) • API to support IDL selection • SDNC/DG interfacing OOF	1
Asynchronous service activation handling (SO / SDNC) • OpenROADM notification	3
Service Assurance support (DCAE) • Alarms / PMs – OpenROADM, T-API Notifications, • Alarm types, Data collectors / adaptors (VES, JSON) • Event types - Fault handling, OTN restoration	2
Inter-carrier / ONAP instances support (External-API) • Cross-carrier service decomposition • Supporting endpoint/ENNI topology updates • MEF Legato / Interlude enhancements	2

Note: Adding supporting Virtuora NC enhancements for OpenROADM & T-API