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Enabling BOD-Based Feasibility Check and Service Provisioning including Time-Aware Calendarization for E-Line Services

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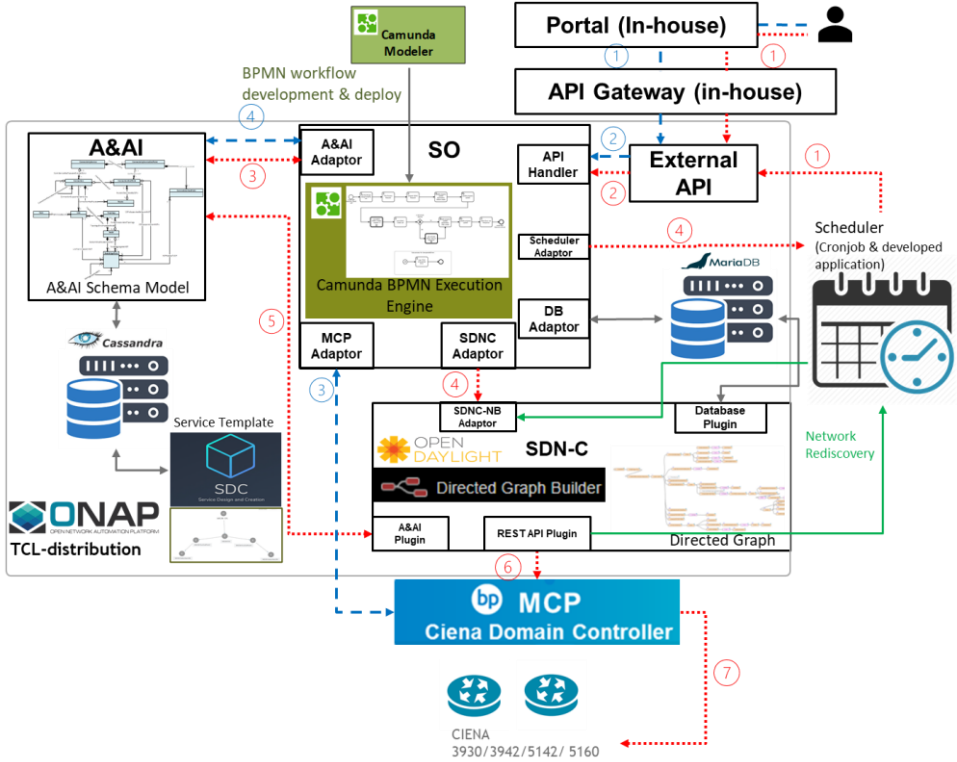
OVERVIEW

- TATA Communications has been developing and implementing multiple service orchestration use cases and functionalities using ONAP since Casablanca (R3) release
- All developments are backward compatible, and we were successful in upgrading and migrating developed artifacts through the subsequent releases - up to Istanbul (R9)
- Developed service templates & resource templates for service orchestration
- Developed BPMN processes to orchestrate E2E service flows, including feasibility check requests
- Developed standardized inventory model for full description of network resources and services
- Developed Plugins for network auto-discovery and service provisioning via 3rd – Party Controller
- Developed applications that enables scheduling tasks in a given time, including future time (network auto-discovery, service activation/termination, BoD schedules, etc…)
- Developed time-aware calendarization support (i.e., BoD capabilities)



DEPLOYMENT TIMELINE

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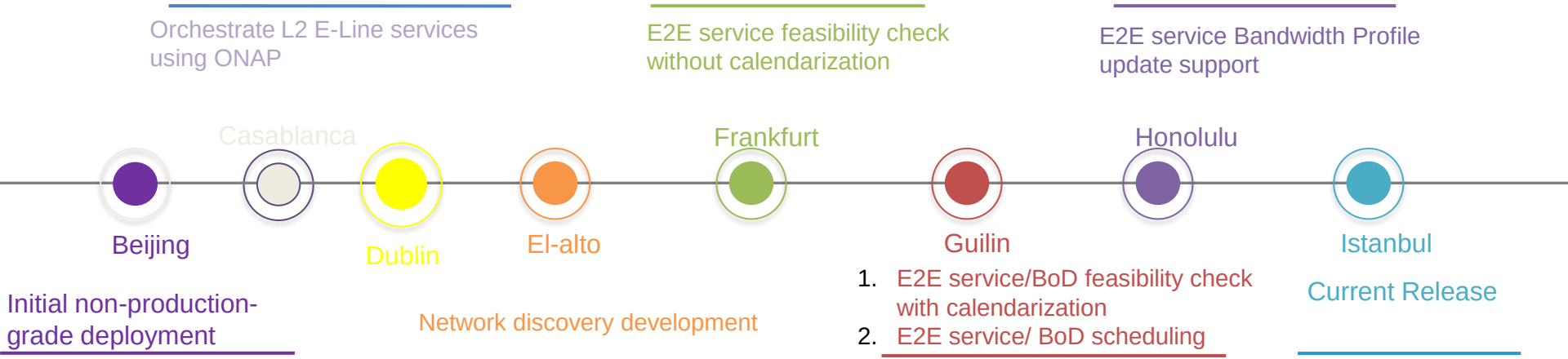
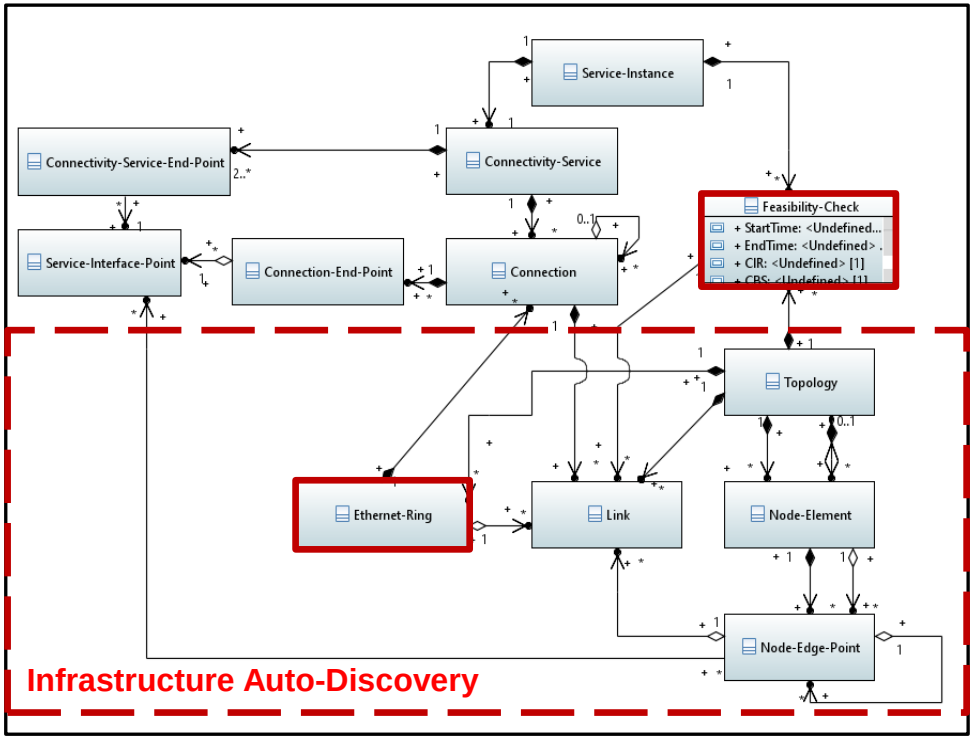


A&AI DEVELOPMENT

- A&AI schema is designed and developed based on ONF TAPI & MEF Resource information model to support PNF-based services and capture network infrastructure and resources.
- Neither ONAP nor MEF standard and TAPI standard models support calendarization. We modified the information model to implement BOD capabilities (including time-awareness) by adding an additional class in the model, i.e., feasibility-check class
- Feasibility-check class is added to capture the network & service layers states in time-domain. The class captured information includes start-time, end-time, bandwidth profiles and end-points of service requests
- To support calendarization, the Feasibility-check instance has a relationship with link instance used for the path. Therefore, we can capture the time-aware link utilization rate by checking related feasibility-check instances



FEASIBILITY CHECK & SCHEDULING FLOW

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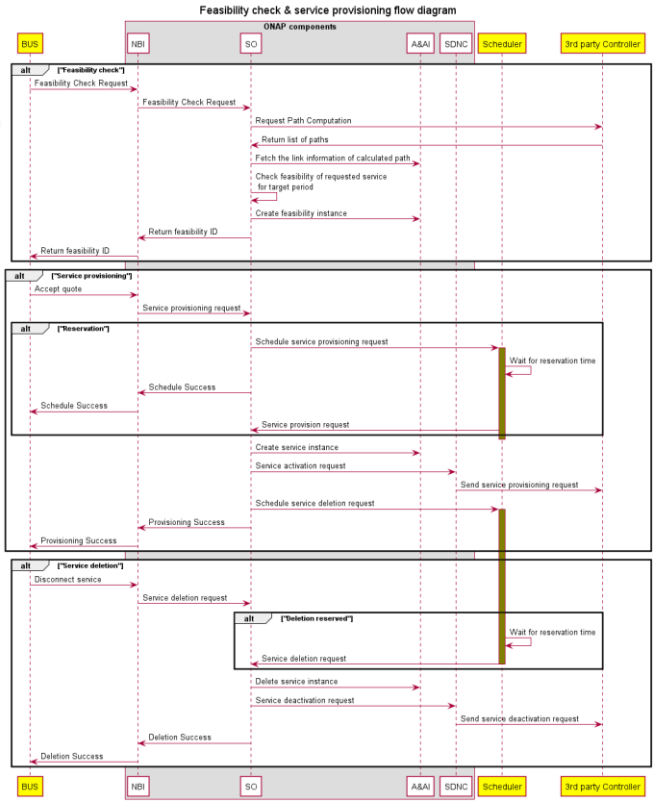
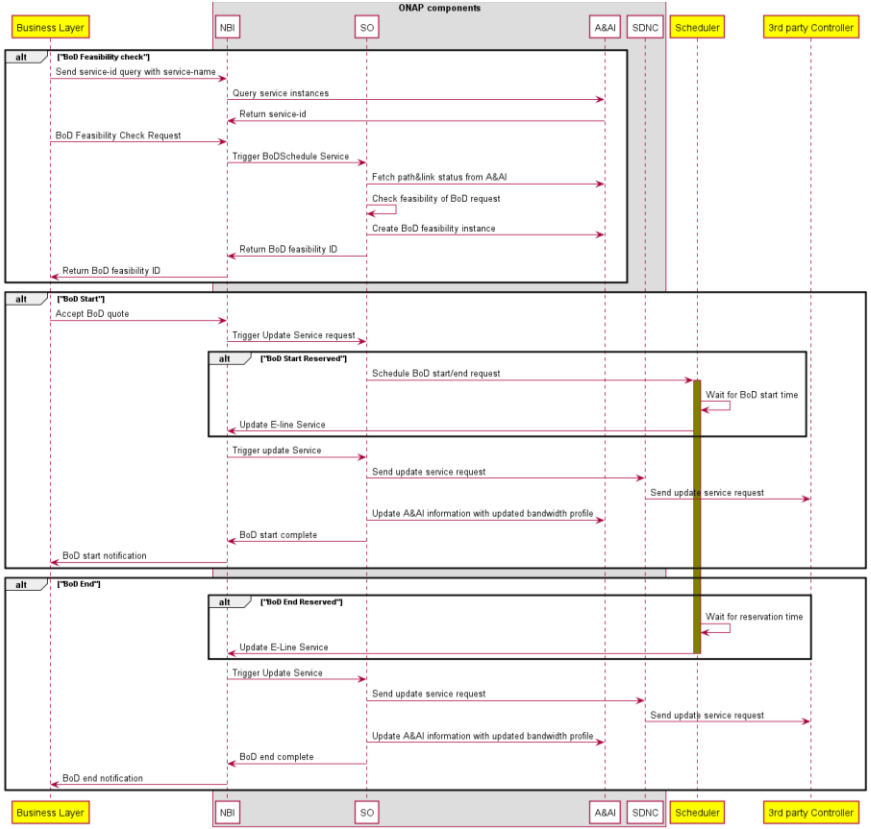
E-Line Base

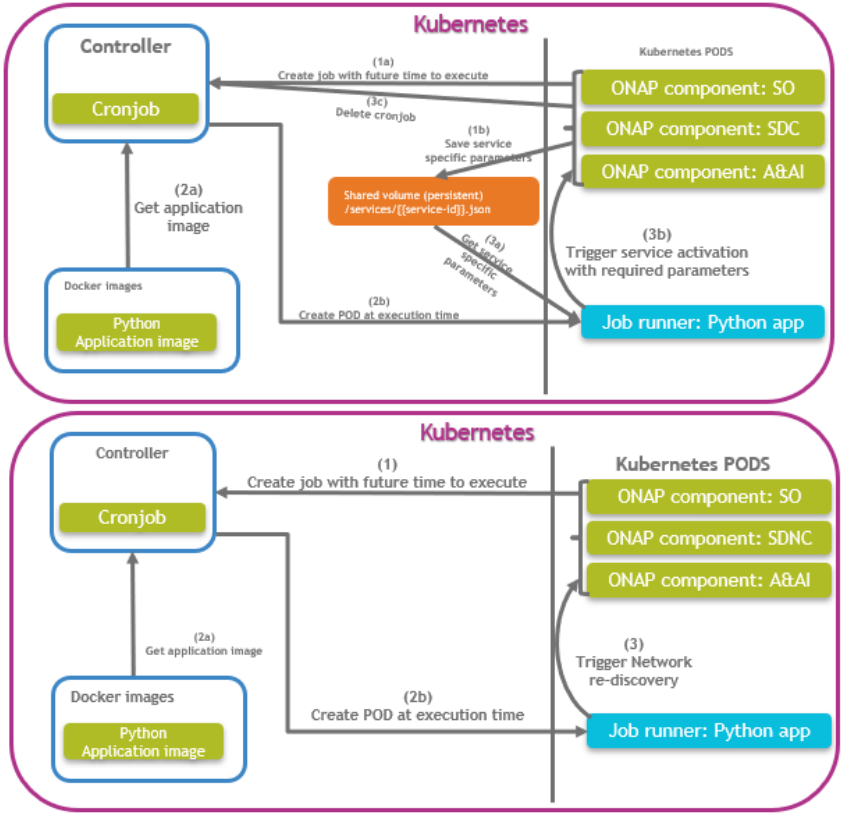


BOD Schedule



K8S CRONJOB – BASE SCHEDULER

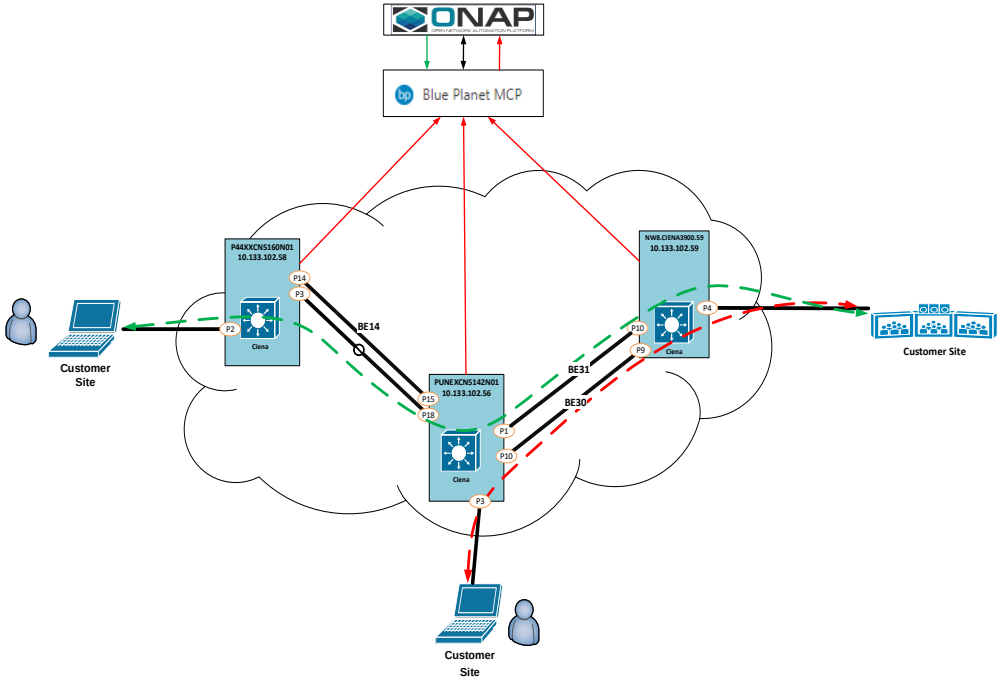
- ONAP does not have a scheduling function to schedule service activation, de-activation, reverse BW, release BW, etc…
- We implemented scheduling function using K8S cronjob combined with an in-house developed application which triggers required tasks (service activation/deactivation, network re-discovery and BOD schedules, etc…)
- The developed Python Application is dockerized and integrated in ONAP to trigger tasks in scheduled manner as needed
- Development is completed in SO component to utilize the developed application to trigger the tasks during the BPMN process for service activation and network re-discovery



Demo

1. Demo Test Case #1: Scheduling a BoD (Customer Experience)
   - Feasibility Check to upgrade a provisioned service (i.e., BoD)
   - Feasibility Rejection/Approval by user
   - Service Provisioning for a BoD
   - Disconnection of a provisioned BoD on its end time

2. Demo Test Case #2: Network Monitoring & Troubleshooting (Tata Comm. Operation Experience)
   - Enhanced Real-time Monitoring
   - Enhanced Logging system
   - Performance monitoring: infrastructure & ONAP



Q&A

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