DCAE Dublin Features Highlights

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AGENDA

Platform Enhancement

New Service Components

DCAE Dublin Deployment updates

Onboarding Tools evolution

Demo

Future release planning

Data Collection Analytics and Events (DCAE) – Project Scope

- DCAE encompasses platform and service components
- Platform Components provides functions to deploy, host and perform LCM of service components.
- Service components collectively fulfill ONAP data collection needs from network elements and performing intelligent analytics for triggering root cause CL Events.
- DCAE architecture is flexible, plug-able, micros-service oriented, model-based component deployment and supports dynamic service composition.
- Supports multi-site collection and analytics operations which are essential for large scale deployment.

DCAE Dublin (R4) Platform Enhancement

- Multisite K8S cluster deployment support for DCAE services (via K8S plugin)
- Support helm chart deployment in DCAE using new Helm cloudify plugin
- DCAE Healthcheck enhancement
- Dynamic AAF based topic provisioning support through Dmaap cloudify plugin
- PolicyHandler Enhancement to support new Policy Lifecycle API's
- Blueprint generator tool to simplify deployment artifact creation
- Dashboard Integration (UI for deployment/verification)
- Cloudify Manager resiliency

Multisite K8S support for DCAE Services

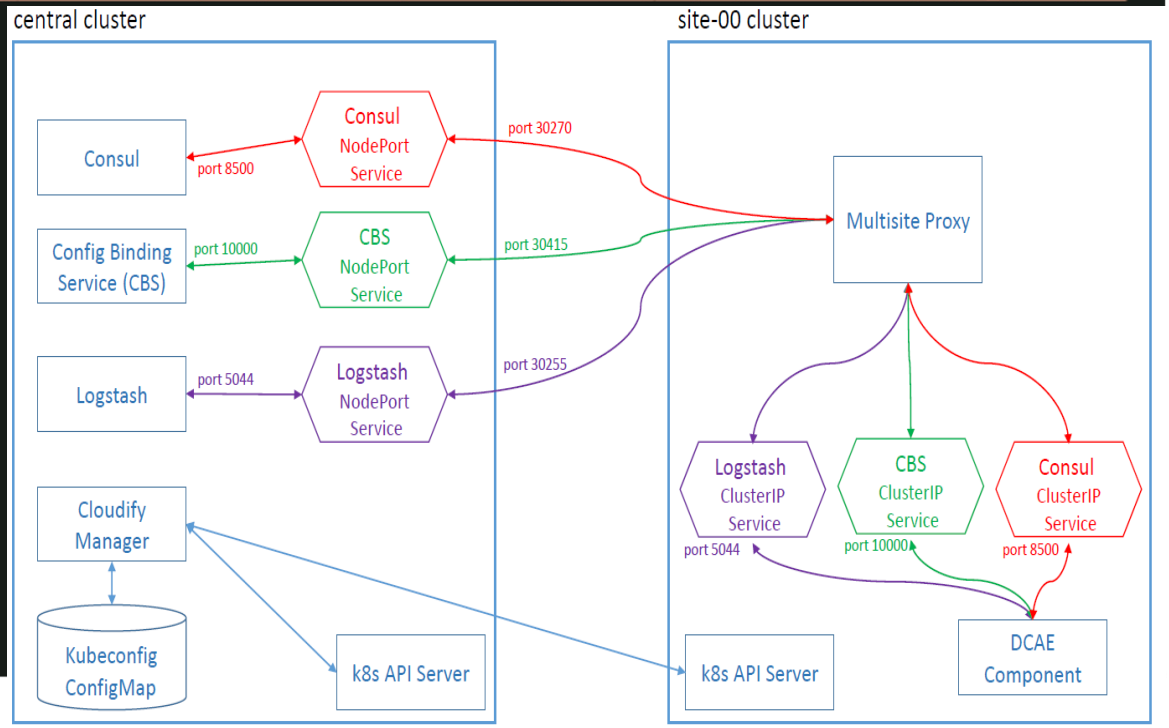
```yaml
tosca_definitions_version: cloudify_dsl_1_3

description: >
  Simple blueprint to launch nginx as a "service component"

imports:
  - http://www.getcloudify.org/spec/cloudify/3.4/types.yaml
  - https://nexus.onap.org/service/local/repositories/raw/content/org.onap.dcaegen2.platform.plugins/R4/k8splugin/1.4.12/k8splugin_types.yaml

inputs:
  location:
    type: string
    default: site-00

node_templates:
  web_server:
    type: dcae.nodes.ContainerizedServiceComponent
    properties:
      service_component_type: 'nginx-web'
      location_id: {get_input: location}
      image: nginx
      docker_config:
        healthcheck:
          type: "http"
          endpoint: "/"
    interfaces:
      cloudify.interfaces.lifecycle:
        start:
          inputs:
            ports:
              - '80:0'
```

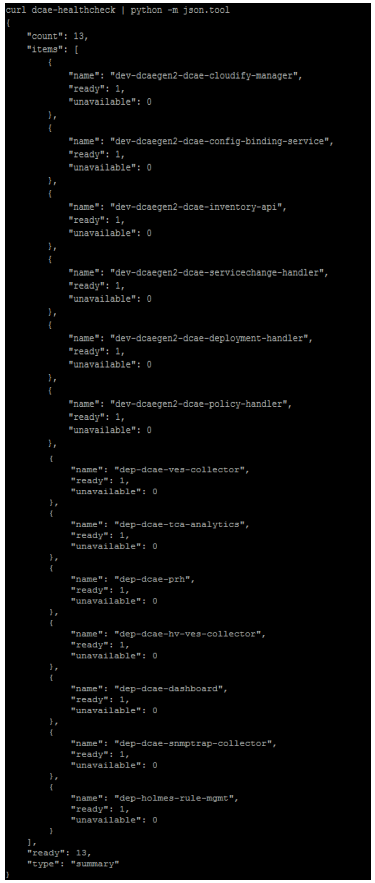


Heathcheck Enhancement

- Single API for all DCAE components
- Sample execution

```
curl dcae-health
     {"type":"summary","count":14,"ready":12,"items":[
     {"name":"dev-dcaegen2-dcae-cloudify-manager","ready":1,"unavailable":0},
     {"name":"dev-dcaegen2-dcae-config-binding-service","ready":1,"unavailable":0},
     {"name":"dev-dcaegen2-dcae-inventory-api","ready":1,"unavailable":0},
     {"name":"dev-dcaegen2-dcae-servicechange-handler","ready":0,"unavailable":1},
     {"name":"dev-dcaegen2-dcae-deployment-handler","ready":1,"unavailable":0},
     {"name":"dev-dcaegen2-dcae-policy-handler","ready":0,"unavailable":1},
     {"name":"dep-dcae-ves-collector","ready":1,"unavailable":0},
     {"name":"dep-dcae-tca-analytics","ready":1,"unavailable":0},
     {"name":"dep-dcae-prh","ready":1,"unavailable":0},
     {"name":"depdep-dcae-hv-ves-collector","ready":1,"unavailable":0},
     {"name":"dep-dcae-dashboard","ready":1,"unavailable":0},
     {"name":"dep-dcae-snmptrap-collector","ready":1,"unavailable":0},
     {"name":"dep-holmes-engine-mgmt","ready":1,"unavailable":0},
     {"name":"dep-holmes-rule-mgmt","ready":1,"unavailable":0}
     ]}
```

- Support dynamic service deployed from CLAMP/Dashboard

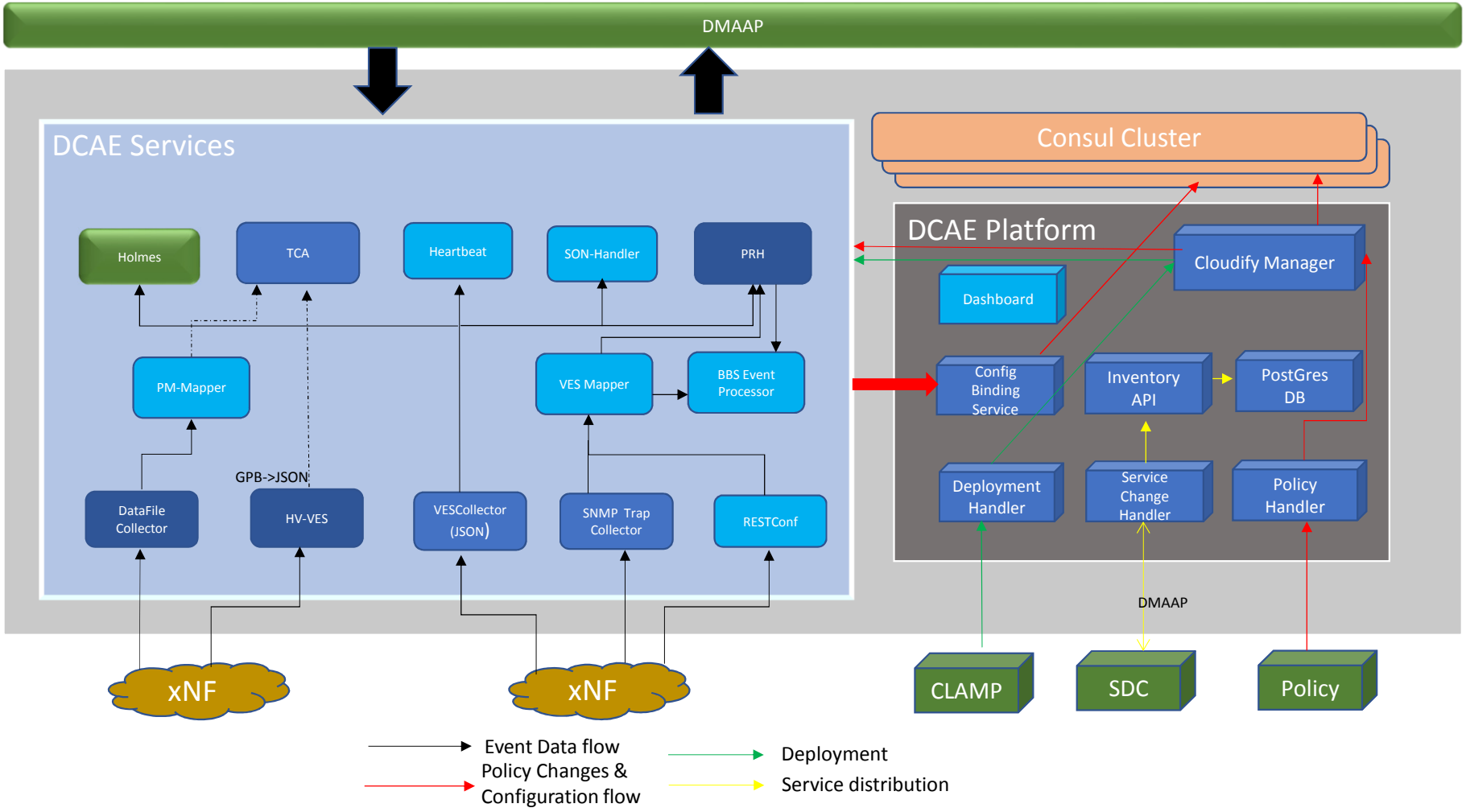


DCAE Dublin (R4) - New MS

- Collectors
  - RESTConf collector
- Event Processors
  - VES/Universal Mapper
  - 3gpp PM-Mapper
  - BBS Event processor
  - DL Handlers (POC) (https://wiki.onap.org/display/DW/DataLake+POC)
- Analytics/RCA
  - SON-Handler
  - Heartbeat MS

RTD : https://onap.readthedocs.io/en/dublin/submodules/dcaegen2.git/docs/sections/services/serviceindex.html

ONAP DCAE R4 ARCHITECTURE



DCAE Dublin (R4) Deliveries (Contd.)

Common SDK design for DCAE services

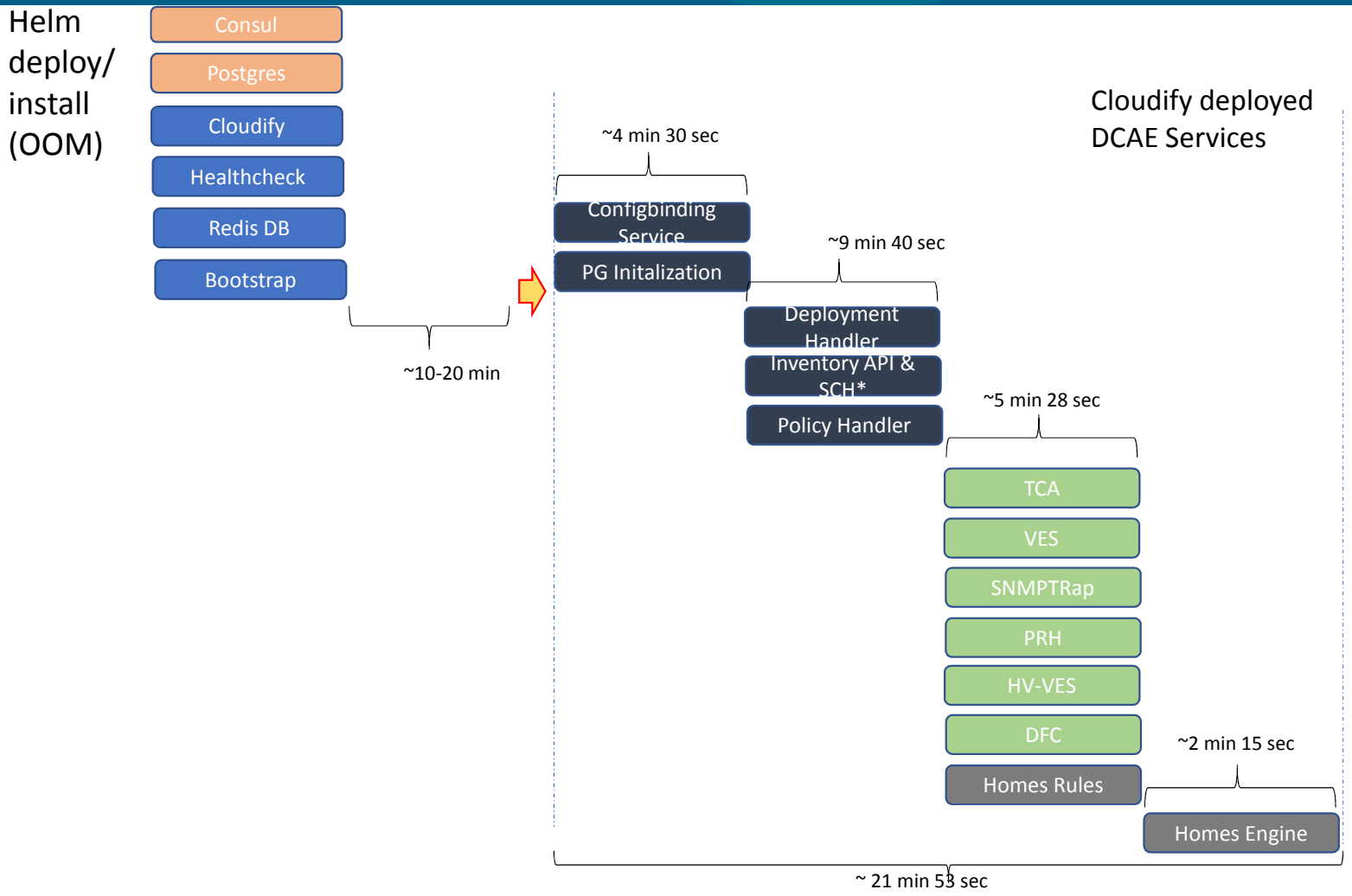
- Dmaap pub/sub
- Configbindingservice
- A&AI client

Enhancement to existing DCAE components

- VES Collector (security)
- HV_VES (logging)
- PRH (common sdk + BBS)
- DataFileCollector (security enhancement + resiliency support)

DCAE Deployment updates for Dublin

DCAE R3 Deployment



Dublin Deployment Strategy

DCAE Platform

- Migrated to helms charts for all prior components
- Cloudify Blueprint for R4 new components

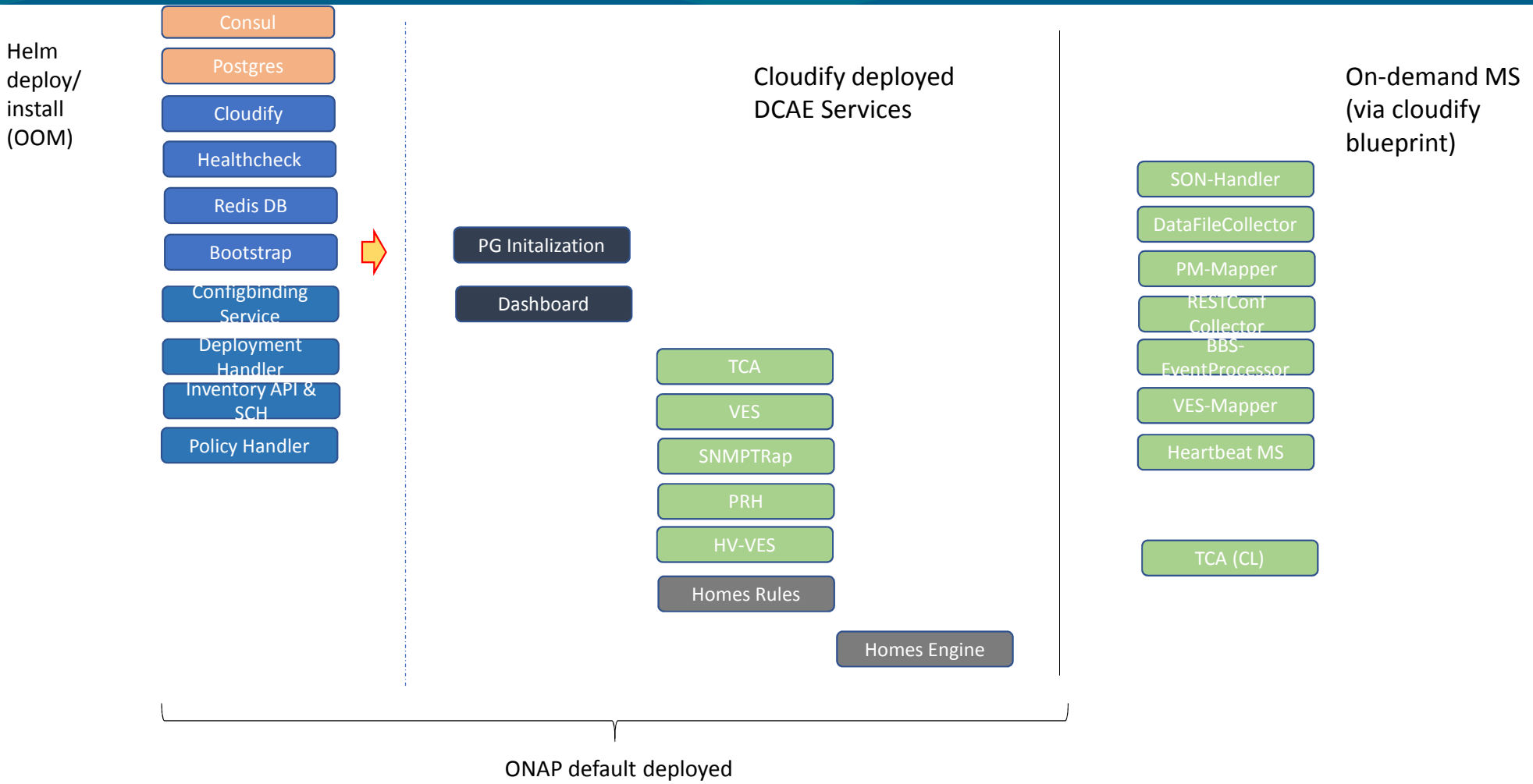
DCAE Services

Option 1 : Static Components (instantiated through DCAE-bootstrap)

Option 2 : On-demand deployment through CLAMP

Option 3 : On-Demand deployment through DCAE-Controller cli

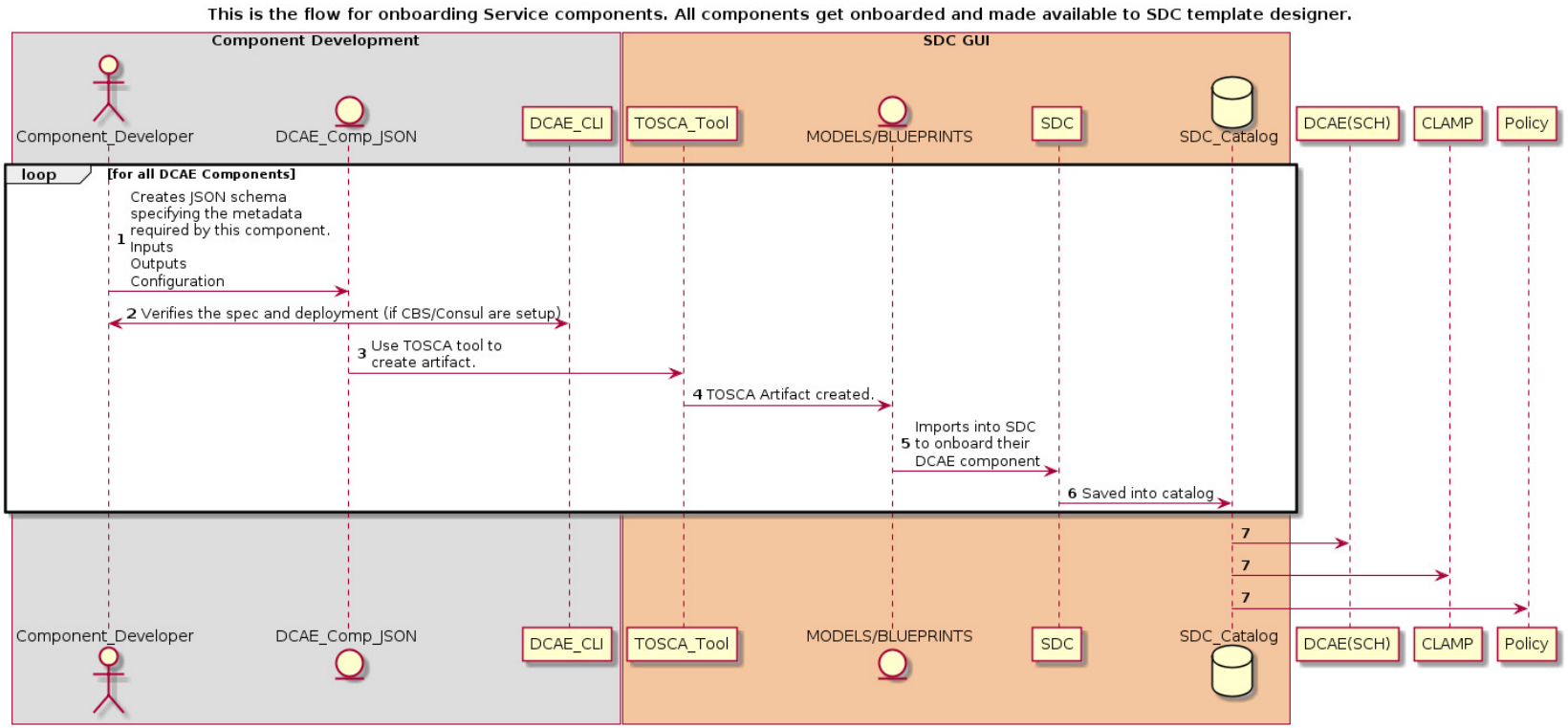
DCAE Dublin Deployment



ONAP MS Onboarding Evolution

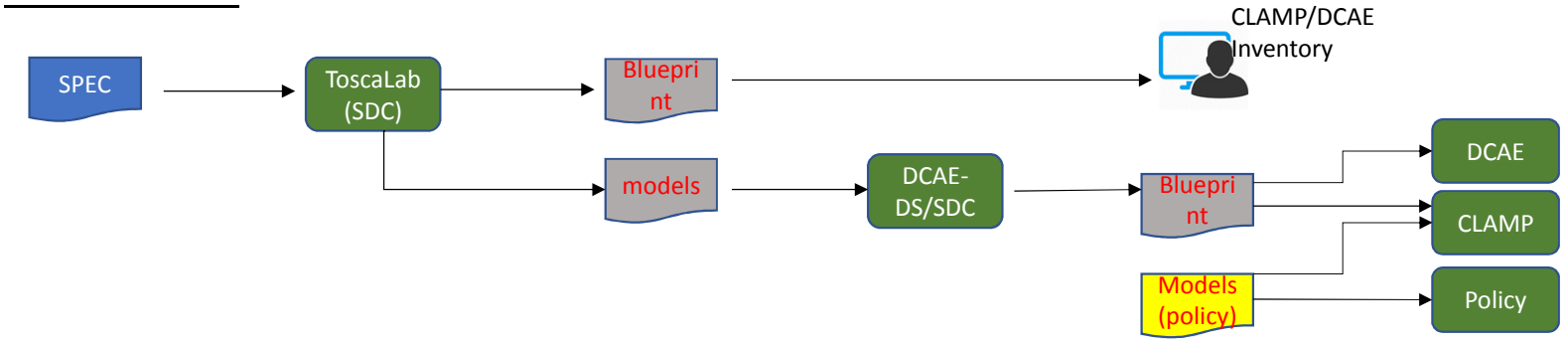
Control Loop Onboarding Flow (Target)

https://wiki.onap.org/display/DW/MicroServices+Onboarding+in+ONAP



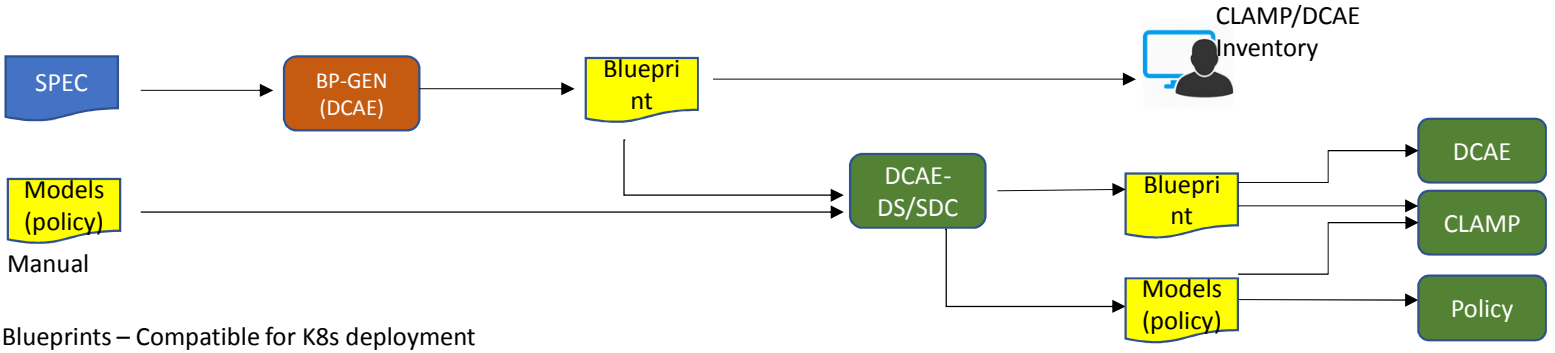
ONAP Control Loop Design Flow (Single MS)

Casablanca



Blueprints – Not compatible for K8s deployment
Models – Not conforming to Tosca standard

Dublin



Blueprints – Compatible for K8s deployment
Models – Conforming to Tosca standard

DEMO – Cloudify blueprint generation & Deployment (via Dashboard)

Demo Walkthrough

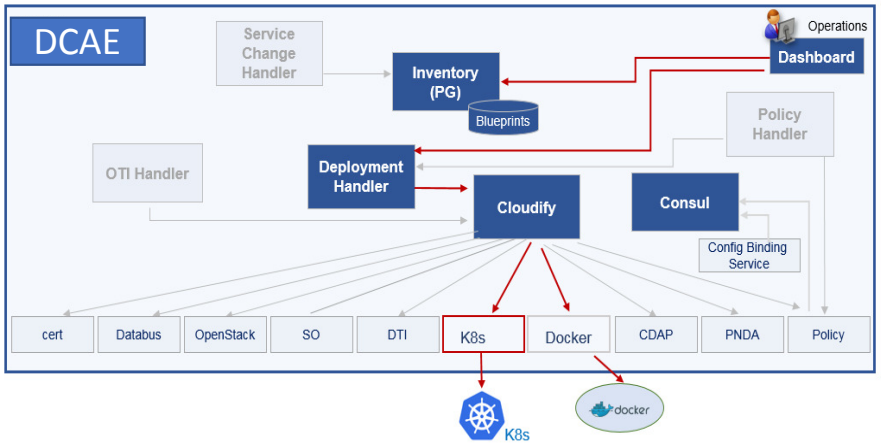
- Sample Spec file review
- Introduction to Blueprint-generator Tool
- Blueprint generation
- Dashboard Overview
- Sample Deployment into K8S

Dcae_cli/spec support (Onboarding pre-requisite)

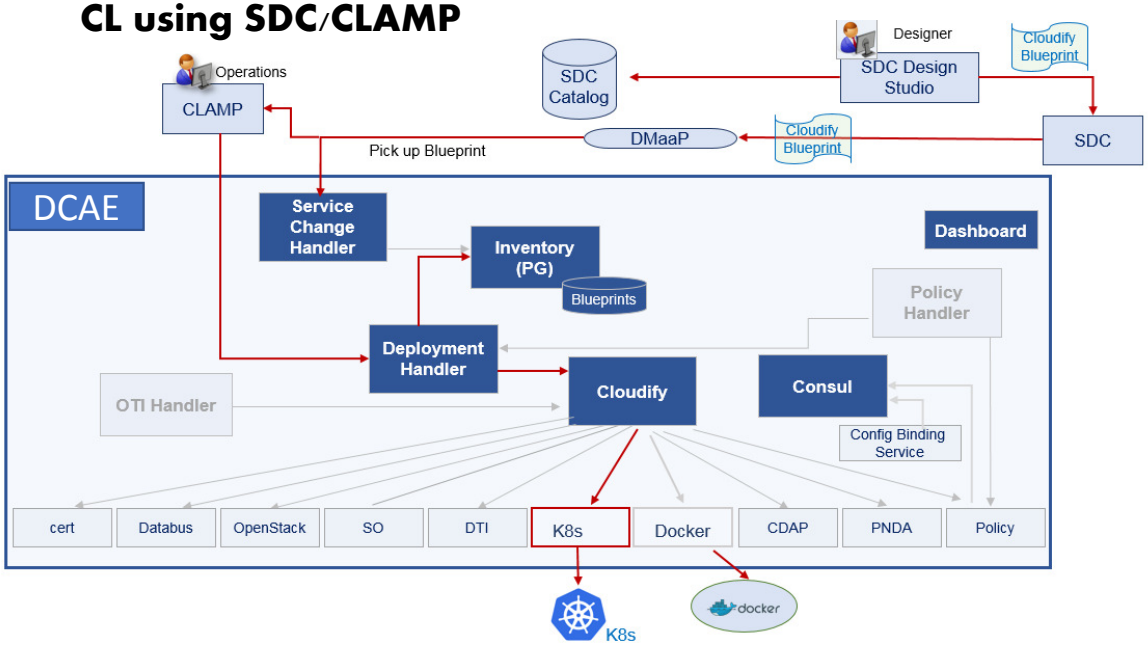
https://docs.onap.org/en/dublin/submodules/dcaegen2.git/docs/sections/components/component-development.html

DCAE Application – Deployment Workflow

Stand-alone (DCAE)



CL using SDC/CLAMP



Service Components (MS) DCAE Integration/Onboarding Impact

- Option 1 : Static Components (instantiated through DCAE-bootstrap)

Requires CBS integration

- Option 2 : On-demand deployment through CLAMP

Requires CBS integration + policy modelling + onboarding through SDC/CLAMP/Policy/DCAE flow

- Option 3 : On-Demand deployment through DCAE-Controller cli/Dashboard

Requires CBS integration + policy modelling

Note: Standalone with static configuration is also supported but current none of DCAE MS fits under this model

Reference : https://wiki.onap.org/pages/viewpage.action?pageId=36963506

DCAE Dublin - Demo Recordings

PM-Mapper MS **BBS-Eventprocessor MS**	https://wiki.onap.org/download/attachments/53249727/DCAE_Weekly_2019_04_18.mp4?version=1&modificationDate=1555597136000&api=v2
VES-Mapper MS **SON-Handler MS**	https://wiki.onap.org/download/attachments/53249727/DCAE_Weekly_04252019_Demo-Session1.mp4?version=1&modificationDate=1556202975000&api=v2
Dashboard (platform) **DCAE Multisite deploy (K8s plugin)**	https://wiki.onap.org/download/attachments/53249727/DCAE_Weekly_04252019_Demo-Session2.mp4?version=1&modificationDate=1556212411000&api=v2
RESTConf Collector **Heartbeat MS**	https://wiki.onap.org/download/attachments/53249727/DCAE_Weekly_05022019.mp4?version=1&modificationDate=1556809046000&api=v2
Datalake (PoC)	https://wiki.onap.org/download/attachments/53249727/DCAE_Weekly_05232019.mp4?version=1&modificationDate=1558621621000&api=v2

CII Badging Progression

Casablanca

- PASSING – 95%
- SILVER – 53%
- GOLD – 9%

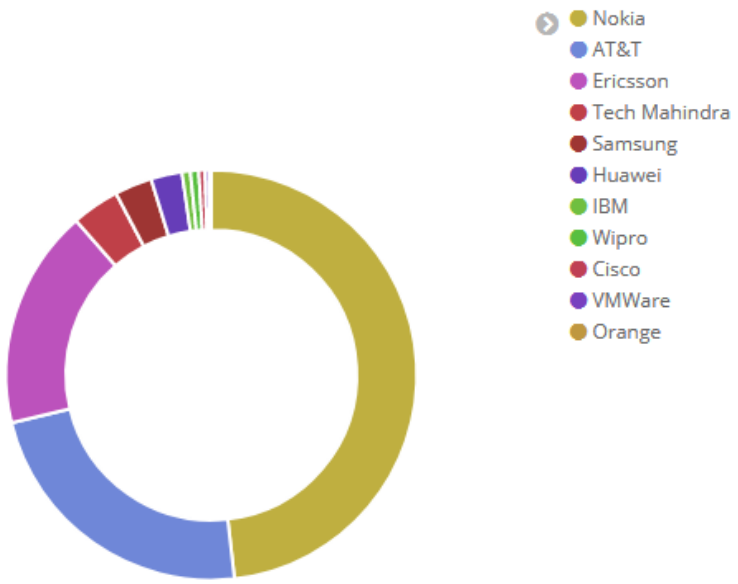
Dublin

- PASSING – 100%
- SILVER – 73%
- GOLD – 43%

https://bestpractices.coreinfrastructure.org/en/projects/1718

DCAE Contribution from ONAP Community (Feb-Jun'19)

Organizations	# Commits
Nokia	295
AT&T	141
Ericsson	106
Tech Mahindra	23
Samsung	18
Huawei	15
IBM	4
Wipro	4
Cisco	3
VMWare	2
Orange	1



- Dashboard, Dmaap Plugin under CCSDK project
- Helm charts under OOM repo
- ChinaMobile, QCT contribution not recorded

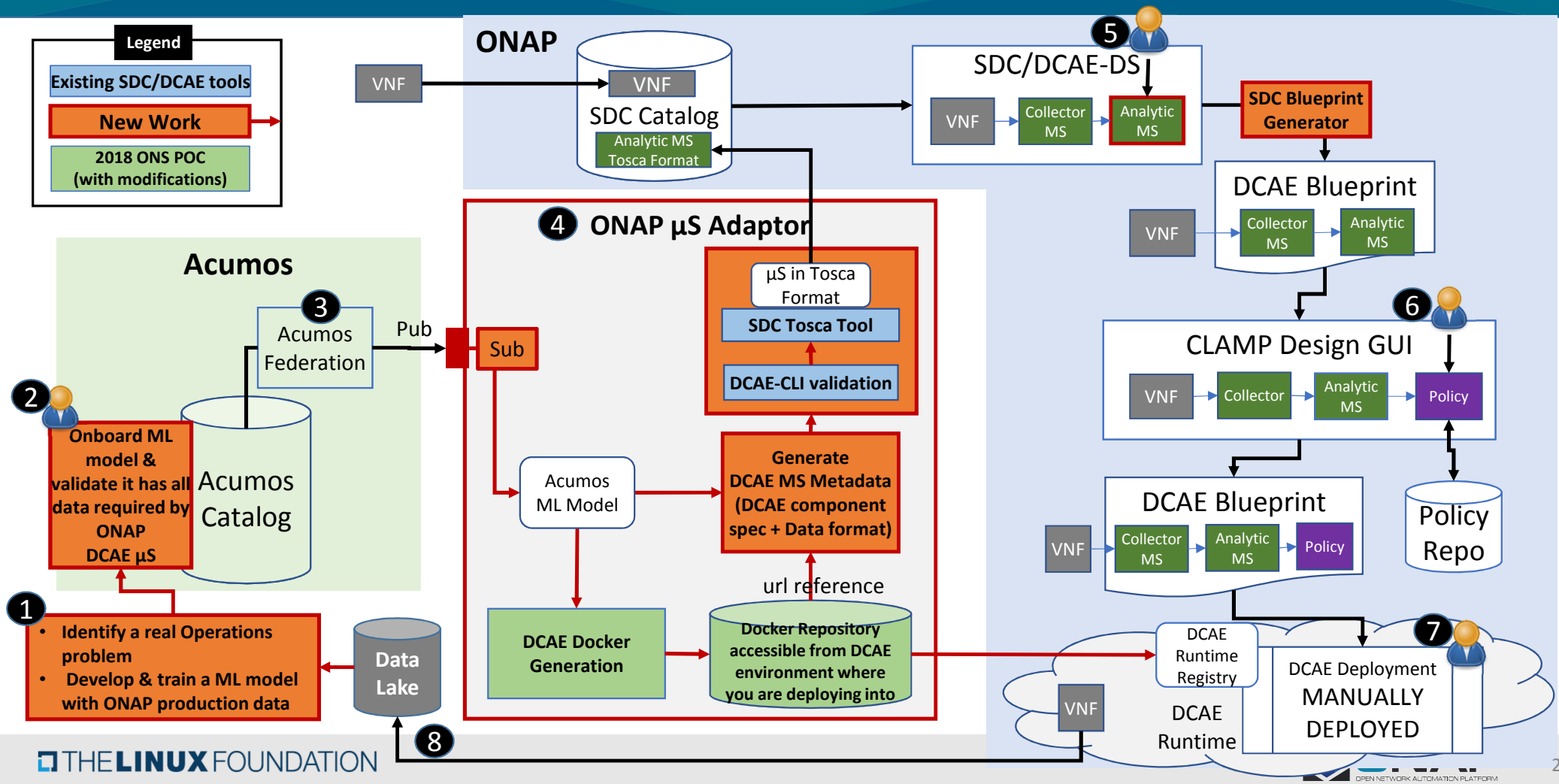
El-Alto and Frankfurt Planning

E and F Release Planning under-way

- El-Alto release - https://wiki.onap.org/display/DW/El-ALTO+-+Tracker
  - Security
  - Prototyping components for secure topic/feeds
  - CL enablement for additional MS
  - Blueprint-generator (policy model & dmaap-plugin integration)
- Frankfurt release
  - Design Flow enhancement
    - Acumos Integration
    - DCAE-DS integration and re-tooling
  - ONAP Topology based event reconfiguration of MS
  - DCAE PNDA Integration
    1) Leverage DMAAP/Kafka for PNDA instead of native
    2) Integrate PNDA apps with ONAP onboarding flow (SDC/CLAMP/Policy)
    3) PNDA adapter for supporting dynamic deploy and configuration support
    4) PNDA platform containerization and deployment via HELM for ONAP Central

Acumos-ONAP Integration Phase 1 Dataflow (3Q 2019)

Demonstrate with a Control Loop Use Case



Q&A