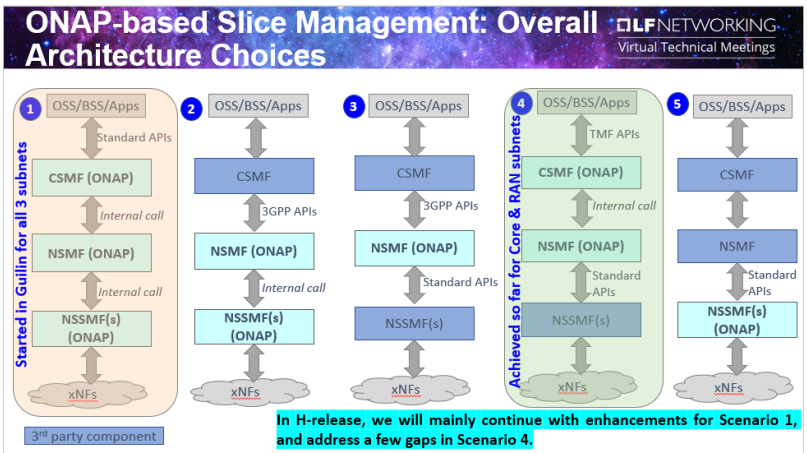
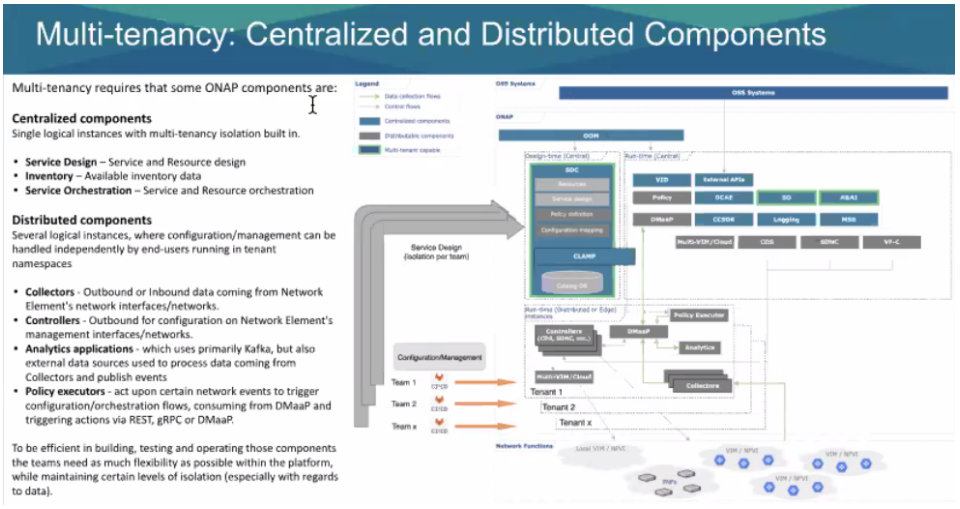
2020 October Virtual Technical Meetings Daily Summaries

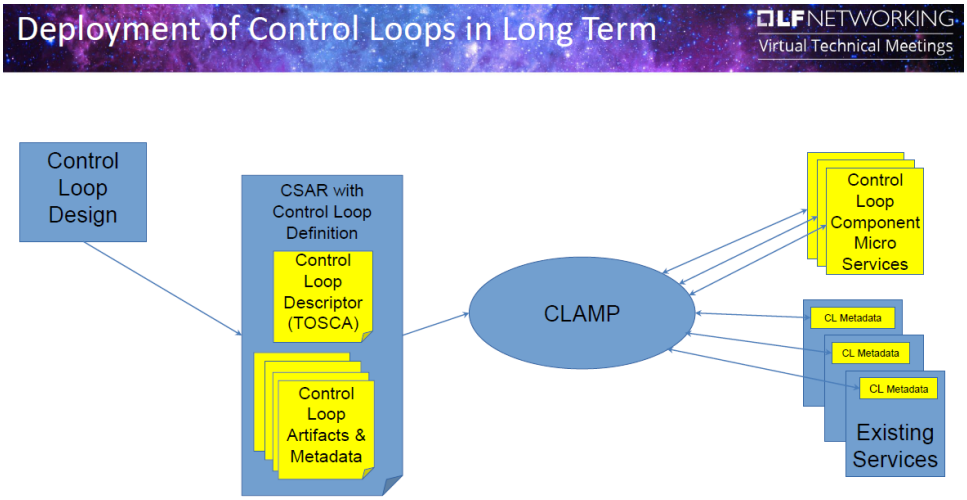
13 Oct 2020

Track	Key Points	Challenges	Action Items
Cross-Community	Good discussions on how to build a trusting community. Targeted at the CNTT/OPNFV Meld activities, but applies across the LFN and Open Source communities.		
ONAP	**Session on E2E Network Slicing - Honolulu release Scope and Future Roadmap** (Presenters: LIN MENG, Swaminathan Seetharaman, Milind Jalwadi,Henry Yu) This session covered what functionality has been realized in Guilin, and the proposal for Honolulu and beyond for each of the following tracks of the E2E Network Slicing use case: • Enhancements in CSMF and NSMF for E2E Network Slice allocation, standards alignment, operator intervention, etc. • RAN, Core and Transport Slicing related aspects, including alignment with O-RAN (RAN) and ETSI ZSM & IETF (Transport) • KPI Monitoring, Closed Loop Control & Intelligent Slicing Feedback from the ONAP community was sought on topics such as Network Slicing in roaming scenarios (i.e., true e2e slicing), interaction of slice management & orchestration functions (NxMF) with the Core NFs such as NSSF and NWDAF, collaboration with C&PS project, etc. Presentation Slides are available **here**. 		
	ONAP Multi Tenancy - Demo of Guilin work and Roadmap 		

ONAP Demo of O-RAN-SC O1 interface simulator configuration via CDS

CDS-ORAN-NETCO...lator-Demo.pdf

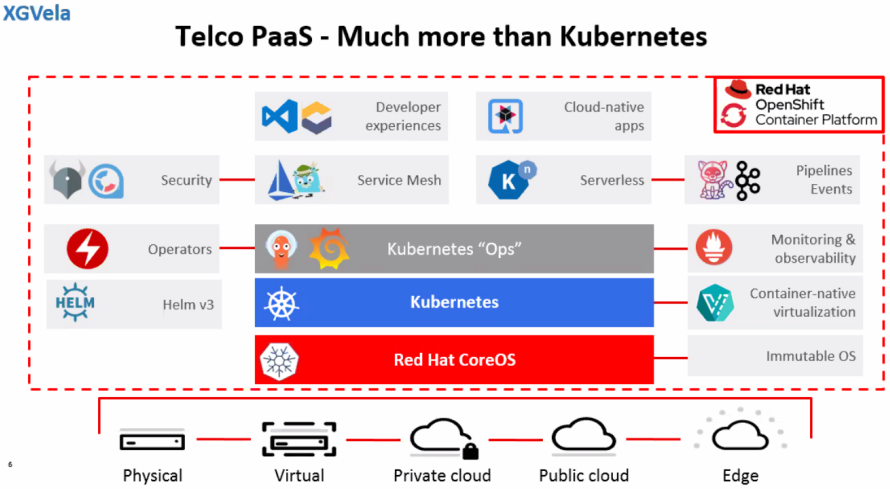
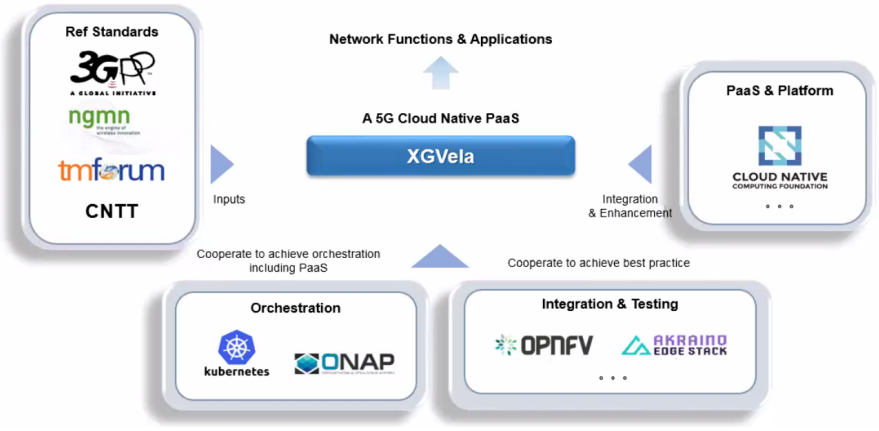
ONAP Control Loop in TOSCA PoC and Rel H evolution



ONAP Orchestration of Free 5G Core CNFs using ONAP4K8s (EMCO)

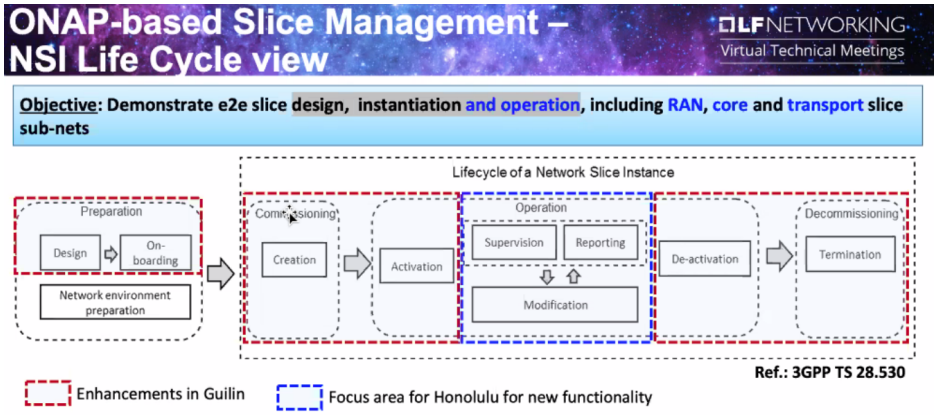
Free5GC CNF On...ONAP Preso.pdf

CNTT /OPNFV	
	CNTT K8S SURVEY
	
	OPNFV TSC Meeting
	
	• **Jerma M2 scheduled for Oct 20**
	  ◦ Functional freeze - Readiness Review
	  ▪ Document significant accomplishments
	  ▪ Release Management Tasks sent to for **M2**
	• **Goal for Documentation outline in Jerma Release** -Agreed
	• **Revisions to RELREQ-13 on Storage testing** requirements and clarifications - Agreed
	• **OPNFV Input to LFN Governing Board meeting on Project's Priority Activities** - Agreed
	
	• **Meld Meeting**
	• Meld work continues to make great progress. All three workstreams have actions and activities working towards a January 1 transition.
	• Likely that new TSC will be interim to align with the election processes of OPNFV and get the Meld org in sync with rest of LFN		

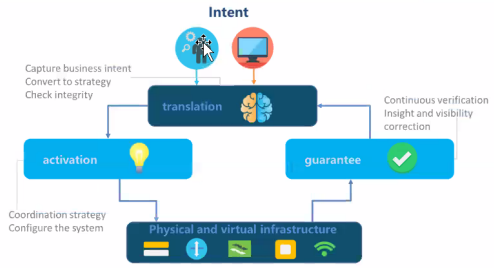
XGVela Project Update & Discussion	**XGVela**  **XGVela Update| Cross-Community Collaboration** 		

EUAG and SDN	EUAG and Software Defined Networking by Ahmed El Sawaf 			

14 Oct 2020

Track	Key Points	Challenges	Action Items
Cross-Community	Multiple engaging discussions on EUAG • Exploration of how to expand the scope of EUAG to better address the community needs • Telcom operators discussing how to bring a joint operator/vendor perspective.		
ONAP	ONAP Requirements Subcommittee - new requirements for Honolulu #1 ONAP ETSI-Alignment (SOL004, SOL005 v3.3.1) #2 E2E Network Slicing use case  • **Design and pre-provision**: Creation of necessary slice/slice sub-net templates. • **Instantiation/Configuration & Activation/Deactivation** of NSIs, including instantiation/mapping of its constituent slice sub-nets (RAN, Core and Transport).  **Requirement** / **Content** Provide a full E2E Slicing solution involving Core, RAN & Transport NSSMF: 1. Enhancements in the E2E Slice allocation & stitching together all subnets 2. Slice selection taking into account capacity, resource occupancy levels, etc. 3. TMF 641 API support for slice LCM operations (*stretch goal*) RAN Slicing enhancements: 1. Instantiation of RAN NFs and initial configuration (RAN service) (O2 – stretch goal) 2. Enhancements in interactions with NSMF (endpoints, slice profile) and TN NSSMF 3. Mapping Slice Profile to each Near-RT RIC 4. Use of A1 interface for Closed Loop and AI/ML 5. RAN (re) configuration enhancements Core Slicing enhancements: 1. Configurations of Core Slice Subnet 2. Placement of Core NFs (*stretch goal*) Transport Slicing enhancements: 1. Enable reuse of existing TN NSSI (consider also endpoints) 2. Resource occupancy levels of TN NSSI 3. Standard interfaces and info model enhancements 4. Support MP2MP connectivity (*stretch goal*) Modeling (*indicated as a separate track but many aspects are linked with other tracks*): 1. Service and Slice Profile, endpoints related enhancements 2. RAN slice sub-net modeling enhancements (including front-haul and mid-haul) 3. NST not containing NSST list, but only sub-net list (*stretch goal*) KPI Monitoring, Closed Loop and use of AI/ML: 1. PM data collection and KPI computation (Guilin carry-over) 2. Closed Loop and AI/ML at e2e slice and slice subnet level for RAN & Core 3. TMF 628 for PM data collection – first steps (*stretch goal*) #3 Smart Operator Intent -based Network & 5G Slicing Support		#2 E2E Network Slic Comment: O-RAN a topics such as slicin Comment: Clarify wh

3. Overview of IBN in ONAP (reference)



ITU-T High-Level Framework of Intent-Based Network

The target architecture of the Intent-Based Network is divided into a Intent orchestration layer (hereinafter referred to as the Intent layer), a control layer and a network layer.

The intent orchestration layer contains 4 key operational steps ("intention collection" – "intention conversion" – "intention and configuration verification" – "decision and optimization remediation"), cooperates with the configuration release of the control layer and network status collection to achieve a complete Closed loop operation process.

#4 5G OOF SON use case

SON use case: Roadmap

LF NETWORKING Virtual Technical Meetings

R6 Frankfurt	R7 Guilin	R8 Honolulu	R9 Istanbul & beyond
• CM-Notify handling • Control Loop Co-ordination (CLC) first steps • Introduced Adaptive SON functionality • Checked in RAN-Sim into ONAP repo	• ML-based SON – first steps (training done offline), additional input from ML-model for PCI optimization (based on PM data) • Preparation work for 3GPP/ORAN yang model	• O-RAN alignment (O1 for configuration and CM notification) • C&PS - RAN config data base (first steps), cell models, initial alignment with 3GPP NRM • SON coordination (preparation/initial steps) • CLC interaction (stretch)	• O-RAN alignment (FM/PM over O1) • C&PS – Full-fledged RAN data base, full alignment with 3GPP NRM • Control Loop Co-ordination, SON function co-ordination • New SON use cases & interaction with Network Slicing • SON in context of LCM, SON function deployment

Honolulu Requirement Summary

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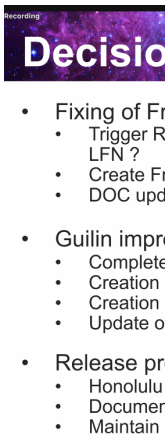
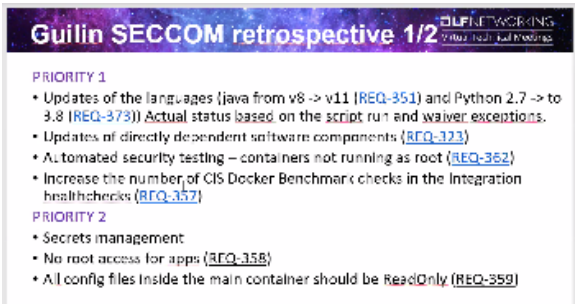
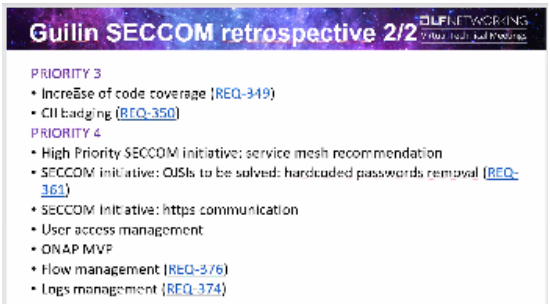
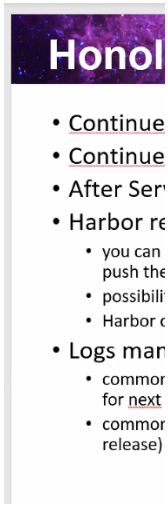
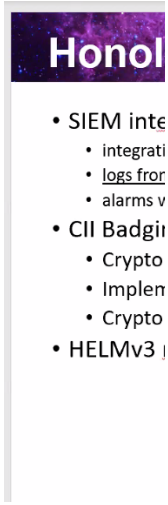
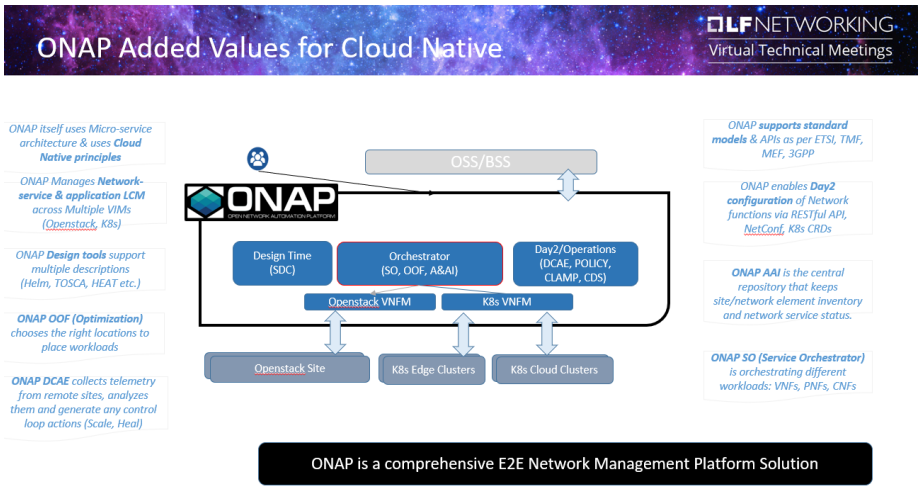
Category	Requirement	Content	Priority
Interoperability	O-RAN alignment (VES, O1 interface)	1. Receive Configuration Management (CM) notifications over VES 2. Align with relevant aspects of O-RAN O1 interface (netconf configuration, PM and FM notifications)	**HIGH**
Functional	RAN Database (C&PS DB), including new RAN models	1. Data models/DB schema & APIs to be generated from yang models 2. Details of cells to be stored with PNF reference in AAI 3. Modeling of RAN functions and objects (align with NRM)	**HIGH**
Platform	Control Loop Coordination (CLC) extensions	Collaborate on CLC extensions (queueing, priority, ...) (*stretch goal*)	**HIGH**
Functional	SON co-ordination	Co-ordination across SON functions – initial steps	MEDIUM
Functional	SON function to evolve ONAP platform	1. (New) SON use case based on data/KPI analysis 2. Machine Learning (ML) SON aspects in DCAE (extension) 3. Interaction with Network Slicing (*stretch goal*) 4. CLC interaction (*stretch goal*)	MEDIUM
Functional	SON in the context of LCM	Role of SO (e.g., new cell discovery/addition) (*beyond H-release*)	LOW
Platform	SON function deployment	SDC & CLAMP (for SON service/feature deployment) (*beyond H-release*)	LOW
Interoperability	Real gNB interaction	Interaction with real gNodeB in lab (over O1 interface)	LOW

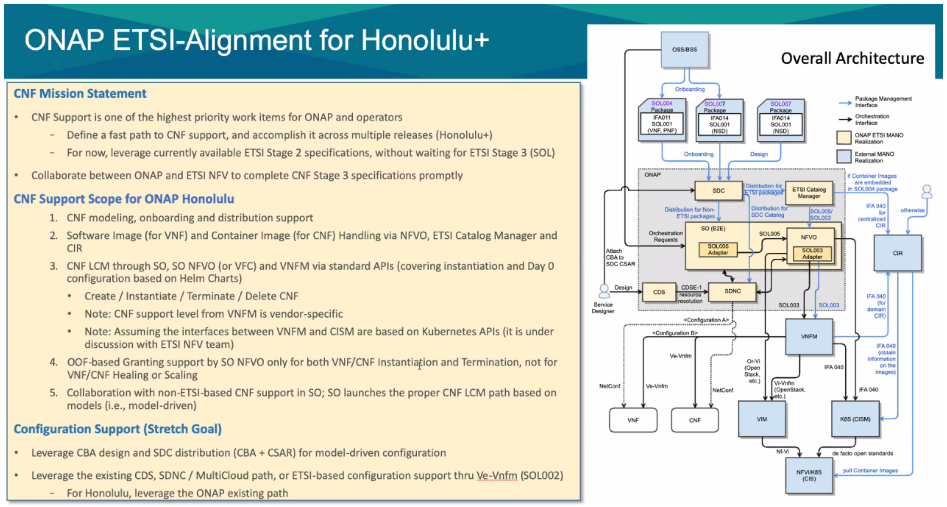
ONAP	ONAP Impact of the current ONAP release- and branching strategy on documentation
	
	Discussed the possible solutions for branching documentation and project / Cross release issues.
	
	 
	• Create and maintain a full list of (sub)components and provided documentation as part of an ONAP release
	  • Work started, clarification with PTLs ongoing (See Jira and List)
	  • Includes functional and non-functional components (e.g. Architecture, Security, Modelling, VNF Requirements, Use Cases).
	  • List should be part of the Release Lifecycle process
	• Release Process improvements
	  • All (sub)components that are part of a release must create a release branch (see Branching Strategy)
	  • All documentation content must be validated (and changed if required) to ensure that it fits to the release. A note about this validation (or update) must be made in the (sub)project release note. (also for not changed components)
	  • The availability of the described information and the execution of described tasks must be ensured by corresponding milestones of the Release Lifecycle process
		Several projects have deprecated repos
		
		Documentation update tracking should be part of release process
		
		should documentation be in a single repo ?
			

ONAP	**ONAP Security Subcommittee Kanban** Review Helm, OS, Python/java updates Update Vulnerable direct depencies (tracking through wiki) M1 (TBD) commit resources M4 (TBD) complete upgrades Guilin seccom retrospective : lots of improvements in this release   Reviewed H release priorities		 

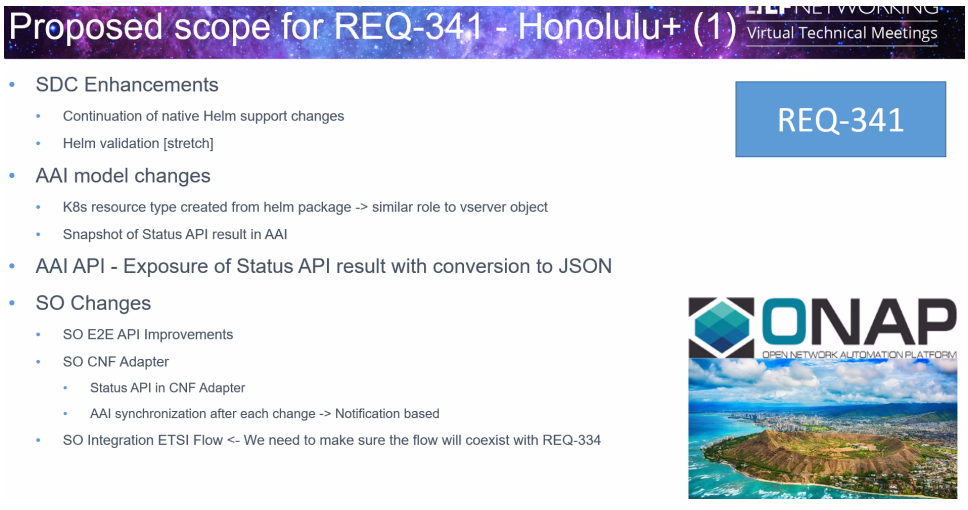
	ONAP Architecture Subcommittee update: Guilin Reviews perspectives and what's new for Honolulu  • The Release Theme for Guilin was “API Documentation”) New i. Swagger.json ii. Focused on the Modeling subcommittee recommendations on best practices for the API swagger files iii. API Spec are Referenced the updated links to the API Specs in the Component Architecture Template iv. Future Releases *Proposed* Themes: i. Honolulu (R8) - Information and Data Models ii. Istanbul (R9) - Flows iii. Koyoto (R10) - Modularity		
ONAP	ONAP TCC Network Management • ETSI ○ ETSI NFV update – Thinh Nguyenphu ○ ONAP Conformance to ETSI – Byung-Woo Jun • 3GPP ○ RAN Slicing: 5G NR Resource Configuration Management – Kamel Idir • TM Forum ○ Digital Transformation World – Magnus Buhrgard ○ Catalysts, rapid-fire proof-of-concept projects – Magnus Buhrgard  		
ONAP	ONAP Honolulu - CNF Task Force Requirements		



Presentation of REQ-334 (ETSI Alignment-CNF Support) - SOL004, SOL005 v3.3.1



REQ-341 (CNF Orchestrator)



Call for Developers f

If any interest then p

REQ-334: Fernando

REQ-341: Lukasz R

Consider port

Proposed scope for REQ-341 - Honolulu+ (2)

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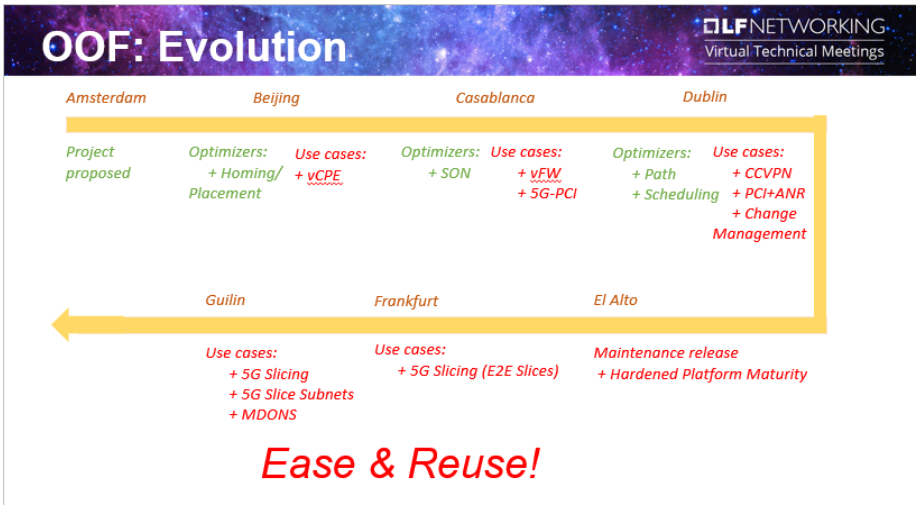
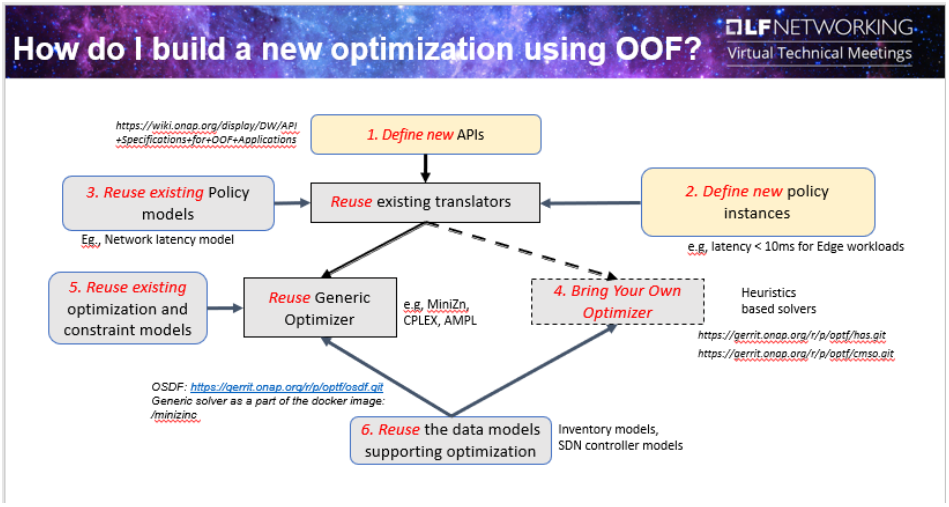
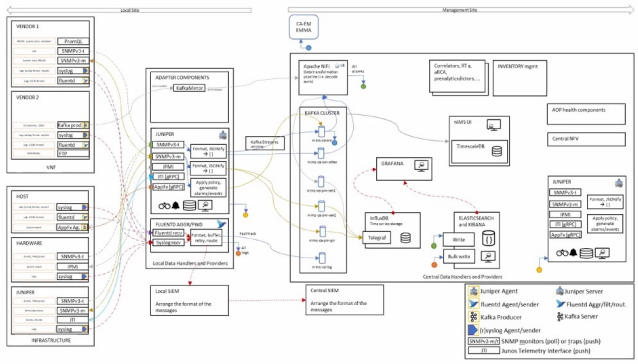
- Integration of K8s API v2 -> Investment for the future development
  - Configuration API for v2
  - v2 in OOM + adaptation of existing helm charts for NFR
  - SO CNF adapter must be changed in SO
  - ArtifactBroker must be modified for v2 or replaced by CNF adapter distribution
  - Native Profile Handler in CDS must be switched into v2
  - v2 in ONAP python-sdk?
- CCSDK/CDS
  - Native Configuration API Handler for v1 or v2
  - Native Status API Handler for v1 or v2
- Dedicated CNF Health Check Workflow in SO
  - Status Check -> Status API result verification
  - CNF Health Check with Dedicated Health Check Job Execution
- **We may want to switch to another pure CNF use case**
  - CNF use case CBA + Integration scripts
  - Reference Health Check Job Implementation for selected CNF use case
  - **Prometheus for collection of metrics**

REQ-341

ONAP	ONAP: Hands-on session on ONAP Optimization Framework (OOF) This session provided an overview of OOF, its modular architecture, capabilities and ease of reuse w.r.to onboarding a new use case or requirement that needs some sort of optimization functionality. It also described the typical realization steps to follow for any use case or requirement needing optimization (provided by OOF). It was followed by a guided walk-through with an example of how the E2E Network Slicing use case realized the optimization needs easily through a lot of reuse of existing functionality with some enhancements. Comment: Policy team highly appreciated the work done by OOF team for effective usage of the new Policy framework. Query: A query on how subnet instance's resource occupancy levels and capability of an existing instance to cater to a new request are considered by OOF. Response: This isn't yet considered by OOF, however, it is proposed to be realized in Honolulu release, with OOF getting the required info on available resources and capacity through an "inventory provider" which for example could be AAI or DCAE, which leverages existing OOF capabilities to a large extent. Presentation slides are available **here**.  		
CNTT /OPNFV	Field trial by Orange reviewed Next OVP revision documentation update planning Very engaged conversation on Telemetry and Observability HA requirements got into the obligation of defining the test approach vs. implementation. ODIM Project gave an overview of the project, with the CNTT RM team describing how the Hardware Interface Manager (HIM) concept can be addressed by ODIM. Several key areas were identified for collaboration. The ODIM team will continue the dialog in RM meetings and RA meetings afterwards, at the appropriate time.		

CNTT	CNTT - Telemetry/Observability architecture - a path to full automation this session presented an architecture for the Telemetry/Observability of VNFs and Cloud Infrastructure (NFVI) to achieve full automation leading to zero touch operation. This architecture is based on a central telemetry data BUS on which are connected Providers Consumers and Subscribers of telemetry data. IMPLEMENTATION AT DEUTSCHE TELEKOM  THE LINUX FOUNDATION LF NETWORKING 14 THE SUMMARY › Juniper and DT jointly put together this architecture › The joint solution is implemented and deployed in production › All Telcos need this in their desire to “zero touch” operations › CNTT RM should adopt this architecture › Win for Telcos › Win for Vendors › VNF/CNF and NFVI vendors support this model/API › True multi-vendor solution › Simplifies VNF/NFVI integration › No more silo’d solutions THE LINUX FOUNDATION LF NETWORKING 15		2020-10-14 - CNTT
xGVela			
Tungsten Fabric	Unified Life Cycle Management using TF Operator - integration with Airship Discussed approach on unification of life cycle management of Tungsten Fabric using Tungsten Fabric operator and provided reference implementation of an integration with Airship  		
Tungsten Fabric	Transparency of TF Community Shared details around documentation, governance, release management and related topics, community has made significant progess in recent days. looking forward to take it further as a collaborative effort. Callout for new contributors and participants for Tungsten Fabric community		☐ Sukhdev Kapu drive to wiki.tu

Tungsten Fabric	TF Feature Development Roadmap Discussed details on the 2020/2021 roadmap items with focus around cloud-native, dpdk, datapath and some other areas		Prabhjot Singh Seth discussions around ☐ Prabhjot Singh native effort
Tungsten Fabric	TF vRouter - New debug and troubleshooting tools Presented a session on new debug and troubleshooting tools inducted for datapath		consider further ses ☐ Kiran KN need
Tungsten Fabric	TF Cloud Native Discussion Discussion around cloud native work happening in tungsten fabric. Also presented a demo on Tungsten Fabric integration with envoy proxy		

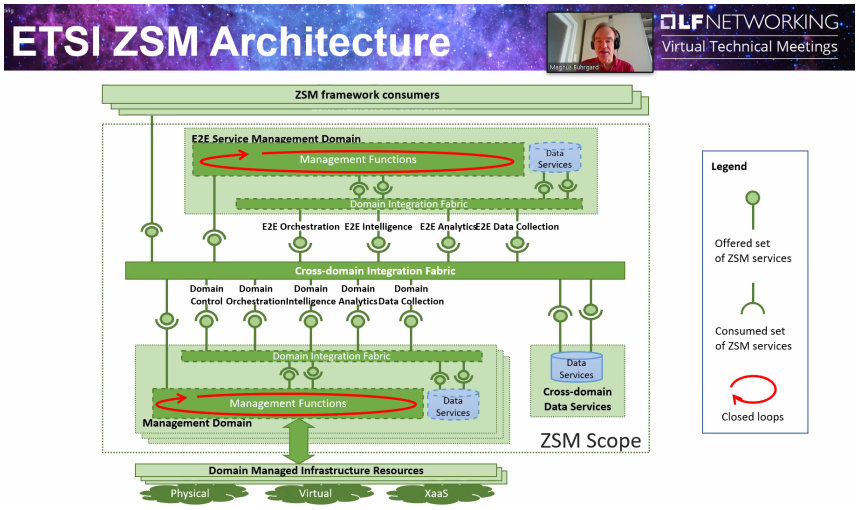
15 Oct 2020

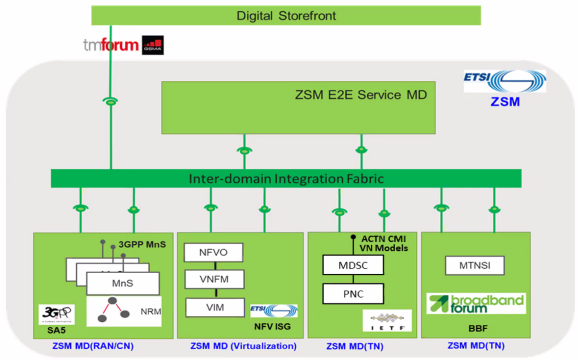
Track	Key Points	Challenges	Action Items
Cross-Community	**PLEASE FILL OUT THE EVENT SURVEY: https://www.surveymonkey.com/r/LFNTech** **PLEASE REGISTER IF YOU HAVE NOT: https://www.cvent.com/d/k7q1mh/4W?ct=50221cf5-5496-4c34-9ec0-3b52b1bf1204&_ga=2.21073848.2005020082.1597615801-222812119.1571605958&_gac=1.250209970.1597348253.EAIaIQobChMIuJ2l9vmY6wIVEh-tBh3_KApSEAAYASAAEgLU1fD_BwE**		
ONAP	• Policy Framework Guilin key updates. • Detailed working session & demo of Xacml-PDP engine. • Detailed working session & demo of Apex-PDP. • Detailed working session & demo of Drools-PDP engine. • Plans for Honolulu release All the details (slides, postman collection etc) are available here - https://wiki.onap.org/display/DW/2020-10-15+October+LFN+Virtual+Technical+Meetings		

ONAP

ETSI ZSM - ONAP architecture collaboration

ETSI ZSM - ONAP...on - agenda.pdf



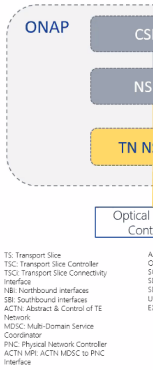


- ZSM stiches related work from different SDOs (e.g., TMF, 3GPP, IETF, BBF, etc.) and provides a federated solution.
- In other words, ZSM is a platform which integrates different standards and produces a unified and implementable solution, from which the ONAP network slicing use case may benefit.

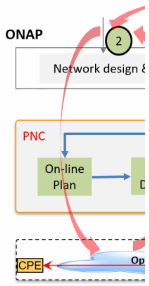
Illustration of the relation between the scopes of ZSM and other groups (source: ZSM 003)

- External interfa

Otherwise the TN



- Call for Develo



- **2021: New CPE deployment (and service activation**

ONAP

ONAP: O-RAN ONAP Collaboration and Alignment

Presentation slides are available **here**.

- O-RAN yang models for O1 interface
- Yang models and interface to Near-RT RIC
- A1 enhancements and usage scenarios
- O2 interface specification (for RAN Slicing, and RAN “service”)
- Use cases and requirements in ONAP (SMO/Non-Realtime-RIC) involving RAN
- SON – functional split and interactions (including A1 enhancements)
- Closed Loop and ML-based scenarios for E2E Network Slicing (including A1 enhancements)
- Insights w.r.to RAN deployments, configuration & dependencies
- Inputs w.r.to O-RAN focus areas, new specifications & timelines

- Synergy in development of simulators (O-RAN components)
- Collaboration for:
  - Identification of joint use cases
  - E2E use case realization and joint demos
  - Plugfests and LFN events
- Alignment w.r.to realization of SMO, Non-RT RIC and Near-RT RIC functionality

ONAP 5G & PNF use cases aligned with O-RAN & 3GPP

5G USE CASE	DESCRIPTION	Req vs U/C	5G Specific
BULK PM – PM control	PM data collection control provides a dynamic and efficient way to configure performance measurement collection on a selected subset of xNFs and complements the existing PM data collection and processing capabilities.	Requirements	General
OOF - SON PCI (5G)	Optimization and SON functions for 5G RAN. Self-optimization, Self-Healing, Self-configuration.	Requirements	5G
5G SERVICE MODELING & DEFINITION (5G)	Defining and modeling a 5G Service (in Design Time) and associated Modeling (Platform Info & Data Model).	Requirements	5G
CONFIGURATION & PERSISTENCY SERVICE	Configuration Persistency Service using internal Database for storing Network related data for use in LCM, OSS, Network, Operational applications.	Requirements	General
xNF LICENSING MANAGEMENT	Continue xNF License Management UC analysis for xNF onboarding, PNF introduction/ONAP PnP and VNF instantiation. Bring in new UCs like usage monitoring for the purpose of invoicing.	Requirements	General
ONAP/3GPP & ORAN Alignment	Standards Defined Notifications over VES Introducing the capability to receive, validate and process standards defined notifications encapsulated in VES events in ONAP. Also with A1 Adaptor extension.	Requirements	General
ONAP/ORAN Alignment - A1 adapter	A1 adapter: Enhancing the A1 adapter/interface capabilities in ONAP to manage A1 Policies, support multiple A1 targets in the RAN and multi-version A1 interface for different A1 targets, introduce secure TLS communication.	Requirements	General
E2E NETWORK SLICING (5G Use Case)	Network Slicing defines Slices for 5G RAN systems. Network Slicing is a long-lead (multi-release) development. (will be presented in its own lecture at the Virtual Face to Face)	E2E Use Case	5G

- Provide a mor
- O-RAN memb
- Feel free to cc
- Tracy Van Bra
- Link to ONAP /Technical+Co
- Rittwik Jana is
- Document the
- Continue the a Wed.

ONAP	ONAP: A1 Policy enforcement with Non-RT RIC		

What is Non-RT RIC

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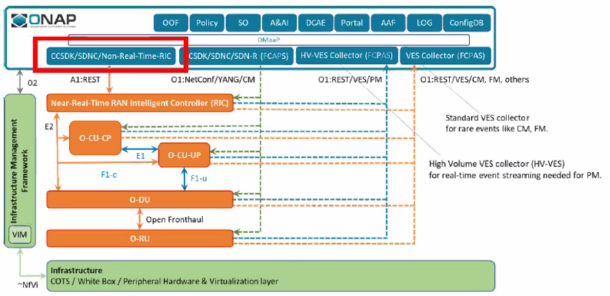
- A new component in ONAP
- A part of O-RAN Architecture
- Added to ONAP in Guilin
- For non-real-time control of RAN infrastructure
  - Optimization
  - Performance monitoring and evaluation
  - Provisioning of policies
  - Training and provisioning of AI/ML models
- Control Loops > 1s



Source: O-RAN Alliance

Non-RT RIC as a part of ONAP platform

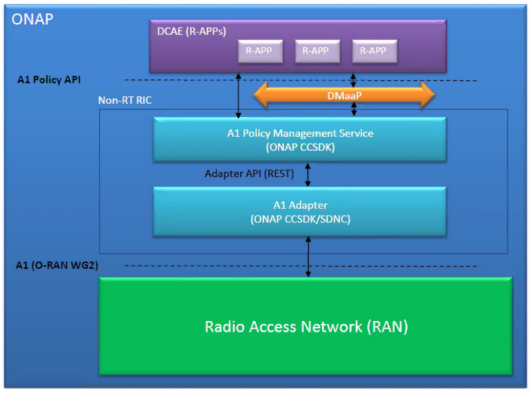
LF NETWORKING Virtual Technical Meetings

In ONAP "G" release, only A1 Policy Management function is supported

Components focus:

- A1 Policy Management Service: CCSDK micro service (community design)
- A1 Adapter: SDNC plugin (community design)
- **R-APPs: DCAE micro services (proposed option)**

A1 policy: Declarative *Set of rules* to guide the near-RT RIC function, and hence the RAN, towards better fulfilment of the RAN *operational or business goals*.



ONAP	ONAP Honolulu - What Should We Improve?		

ONAP TSC Next Priorities

LF NETWORKING Virtual Technical Meetings

In Progress

- Promote "What we have done" – Thank you to all ONAP "Demo Makers"
- Deliver Guilin Release (November 2020)

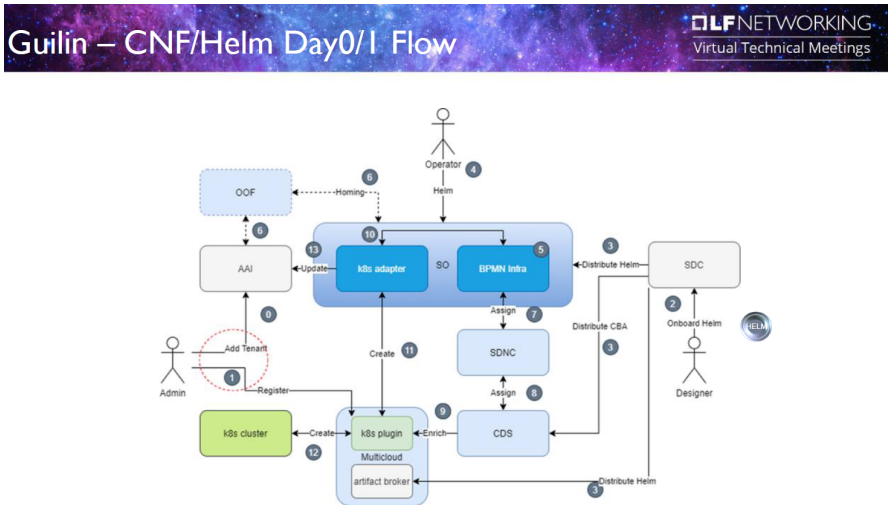
Next

- Implement the new Release Cadence Strategy with Honolulu
- Setup ONAP Project Maintenance Task Force

What Else?

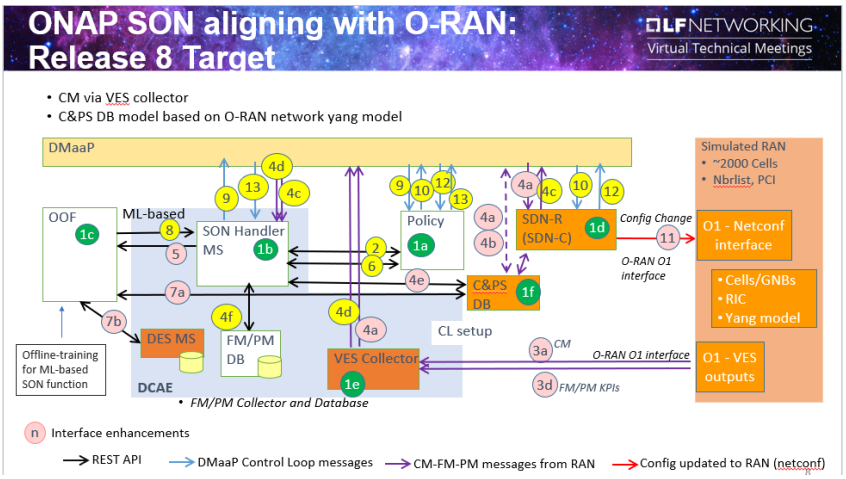
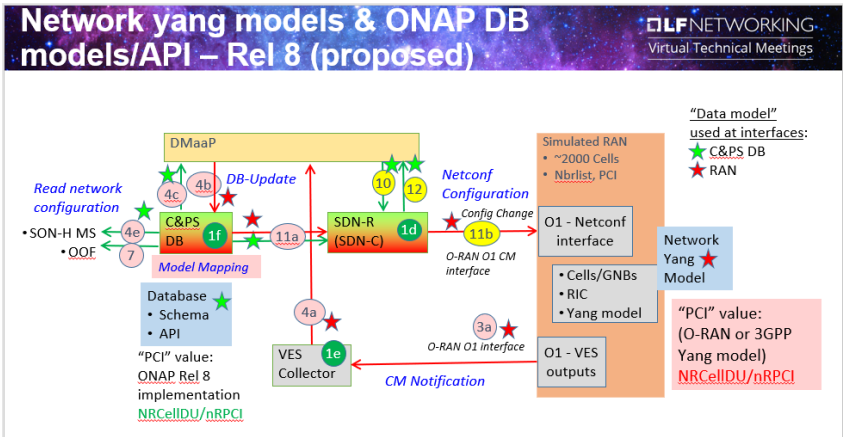
- Review TSC Composition
- How can we manage multiple releases i.e. N-2 (El Alto, Dublin)
  Today we only support N (latest official release i.e. Frankfurt)
  and N+1 (release under development i.e. Guilin)?
- Document to describe "How to operate ONAP" beyond the use cases and functional requirements
- Sharing "Best Practices" about how to use ONAP (from an operational perspective) across companies
- Continue to promote "What we have done" (Webinars, Demos, ONAP Certifications)
- Increase Test Automation (including Regression of previous Use Cases) + Demos for Use Cases (Do not wait RCx to start)
- Learn from CNCF about how we could optimize our ONAP Deployment (K8s and more)
- Resume our E2E Load/Performance/Stretch Testing to help us to define capacity management and to identify potential bottlenecks in our E2E Architecture

ONAP	ONAP: Guilin CNF improvements overview		• Support for co • Long direction replaced by TC



- Instantiation of Helm Package with existing VNF model
- Status and synchronization of instantiated k8s resources
  - ✓ Helm Resource Artifact in SDC/SO
  - ✓ Update of AAI Information by SO: vf-module
- SO Orchestrates Helm Package -> not Heat Template
- K8s Plugin as a standalone MS
  - ✓ K8s Adapter in SO to interact directly with the K8s Plugin
  - ✓ Enhance it to support the functions like the monitoring resources and status update (stretch)
- Improvements in Helm customization/enrichment
- Backward compatibility with CNF Macro Instantiation Workflow [Frankfurt] -> cvFW Example
- Validation through flows cvFW Use Case

REQ-341

ONAP	CONFIGURATION PERSISTENCE SERVICE  		
ONAP	ONAP: 5G OOF SON use case - Honolulu release requirements, dependencies and roadmap Presentation slides are available **here**.   		

ONAP	What's New in ONAP Frankfurt  		
CNTT /OPNFV	**Edge Workstream** • Review of Edge Workstreams work on what profiles need to be addressed in the reference architectures and model. 2020-10-15 - CNTT Edge Work stream Working Session • CNTT Edge - RA01 (OpenStack) Architecture - Scenario **OVP 2.0** Input on CNF Workload requirements - Requirements for the Infrastructure make sense and there should be a test on the infrastructure to ensure that the workload requirements are met. Requirements drive the tests that are developed. --- having Workload requirements BEYOND the above is thought to be out of scope for CNTT & OPNFV. Several people agreed or seemed to agree on this. **OPNFV Investigates CNTT Telemetry Req**. • with AIRSHIP and Barometer Projects • Study of current coverage with Prometheus and need for collectd support: CNTT provides the Use Case for OpenStack dev that was missing before. ◦ Reviewed status of collectd and Prometheus capabilities studies (RELREQ-18) ◦ Discussed possibility of reviving collectd effort in OS Helm that was abandoned about 3 years ago for lack of a compelling use case ◦ Emma / James to review code and scope the effort to get it running ◦ AI to **request** item on CNTT TSC agenda for next week to approach OS Helm about enabling collectd **OPNFV Kuberef** project review - • Relies on BMRA (new) installer for now, others welcome. • Testing the new Gitlab CI/CD environment from a green-field point of view (new project).		
xGVela			
OpenDaylight	ODL-Micro Aluminium updates ▪ Meeting Notes ▪ ODl-Micro VDF Slides		