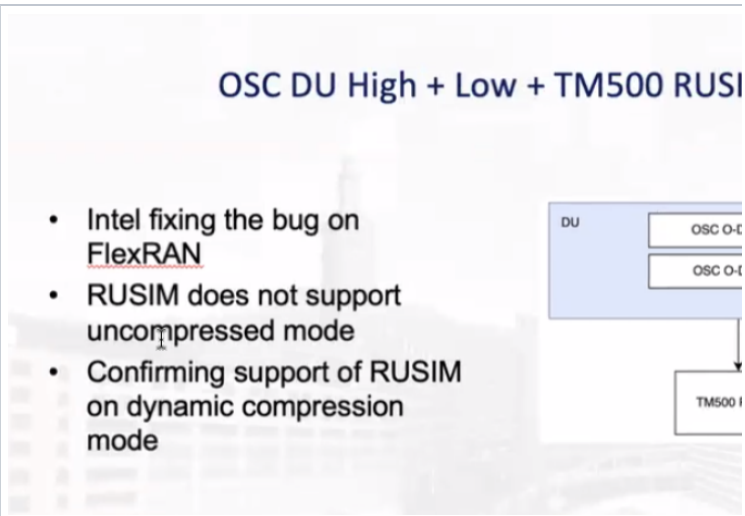
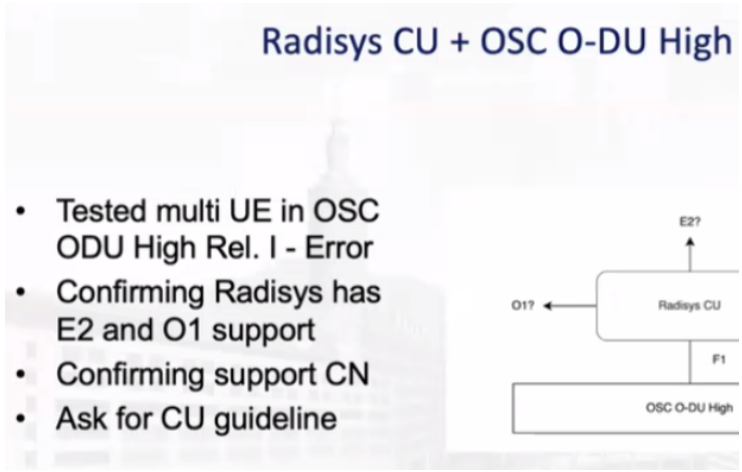
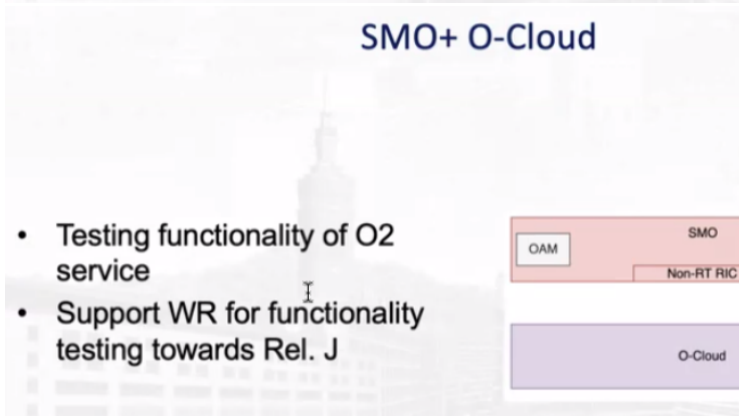
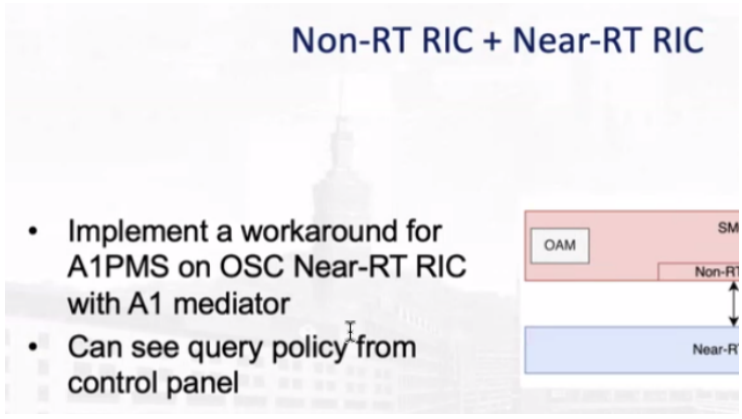
RSAC Meetings

This page will contain the schedule, agenda, and minutes summary/details for meetings of the **O-RAN SC Requirements and Software Architecture Committee**.

Weekly Meeting Notes

Date /Time	Comments	
07 May 2024	Updates from One summit Ankit Barve Requesting Prof. Rathi's xFAPI code base to be uploaded to OSC repo peng Lu Intel still having conversations re Flex ran version for OSC going forward (deprecate old version and move to a new version Ray-Guang Cheng Requesting Intel to provide resources to support the O-DU low / O-DU high integration work and also with xFAPI integration in NTUST OSC lab. peng Lu is looking to support this work in NTUST lab.	
01 May 2024	Need plan from ODULOW (peng Lu) on how the FAPI update from the x-FAPI (Prof Vipin) will be incorporated so we can establish some timeline expectations. lab status of NTUST 1. @ankit @ganesh the current O-CU binary is DPDK based, and we need a socket-based. The socket-based release needs to be tested then it will be released and the license will be provided at the same time. Ankit Barve is assisting.	
23 Apr 2024	lab status of NTUST 1. @ankit @ganesh pls provide license extension of Radisys CU to NTUST 2. raise this issue in the TOC re license renewal 3. ODU high and low integration contact Prof. Vipin Rathi 4. OAI and ODU high status - what is the status? 5. NTUST - odu high and low integration decided to postpone mtg with Prof. Rathi, he made some changes to flex ran code 22.07 version Intel (@Penglu) is going to evaluate this code, in the mean time two options - continue to support the old release - wait to use Prof Vipin's codebase for the new version NTUST may also need some NDA 5. near-RT RIC - found some issue of I rel deployment - CI/CD pairwise testing issue needs to be addressed (@JamesLi) - E2SM CCC code base is not updated or missing - G rel K8s v1.22 - already deprecated, need to move to v1.28 - Needs to update the helm chart - @Bimo to send email to PTL of near-RT RIC	
17 Apr 2024	ODULOW has discussed progress with Prof. Vipin Rathi. It seems that there are some changes to the FlexRAN code. ODULOW believes there is some ability to use his FAPI changes into the ODULOW base and they will be collaborating with Prof Rathi to incorporate those. We then should be able to move away from the Release "F" baseline we have been using. OSC Taiwan Lab still waiting on Radisys to renew the OCU License so that we can continue to use the binaries in the end-to-end service path.	

09 Apr 2024	Integration: Ankit Barvearranging call to test with Intel OAI testing call is in progress Almost done with O-DU high release development features Ashwini (Intel) - repetitive messages observed on Uplane UL Daniel from Viavi has proposed a testing call today Prof. Ray (NTUST) has linked Prof. Vipin Rathi from Delhi university They have successfully integrated 23.07 version flexran with OSC DU-high, connected to commercial RU plans to move 23.11 version any more info on FAPI interface? Did they write their own FAPI? Ashwini is sending an email to Prof. Rathi for clarifications	
26 Mar 2024	Update on TUWU fransiscus bimo problem in ODULOW but there is also a problem in RUSIM. Working on closing the RUSIM while the resource is available. Then need to work on OSC ODULOW. ODULOW is working on a plan on how to upgrade to a newer release. Intel is working this. It is hard to get developers/students to sign up for work on an outdated version. ODULOW peng Lu will look into being able to match the Viavi configuration for OAI ODULOW. This will allow easier transitions from one implementation to another.	

20 Mar 2024	Ankit Barve(O-DU high) dynamic uncompressed mode - Intel to respond on header length issue OAI L1 L2 data transfer OAI making NFAPI msg implementation changes WLS shared memory OSC has provided the changes 2 months for changes to be implemented multiple UE per slot almost done XML based config of ODU-High bimo fransiscus asisi Ray-Guang Cheng (NTUST lab) No updates from Intel raise to Ubuntu based version for basic testing Prof Ray or Ankit to raise this issue Is it possible to add the FAPI i/f to the WG8 spec? it is not clear which version of FAPI i/f is supported in WG8 new version of FAPI can support MIMO Radisys O-CU O1 and E2 and E2SM versions? Free 5GC is connectd with Radisys CU in NTUST lab PDU session established between O-DU high and Radisys O-CU NTUST lab to send Ankit O-CU config multi UE testing error - No HARQ (being worked on separate branch) A1 msg interactions being tested in NTUST lab Martin Skorupski Alex Stancu Martin/Alex OAM/SIM working on A1 simulator for latest spec ONES summit feedback on YANG compliance is delayed transition from WG5 to WG10 fixed OAM controller on netconf side porting back to previous releases to ONAP SDN-R working on deployment in NTUST lab John Keeney Non-RT RIC continuing on rApp mgr svc exposure 1st version available uses a service registry registration and discovery i/f uses a API g/w A1 policy starting to see some specs for WG2 cleanup of existing API with acls and documentation getting support requests from HCL, Fujitsu, Samsung, universities looking for help from INT project (James Li) - for a unified deployment script - proper integration tests for A1 policy controller and A1 mediator traveling to ONES summit James Li , INT project update pairwise testing for A1 mediator ONES mtg should get started for labs updates	   

12 Mar 2024	1. bimo fransiscus asisi OSC O-DU Integration a. O-DU Integration still in progress. Currently waiting Intel to fix bug on FlexRAN. b. Suggested to confirm to peng Lu for possibility of releasing newer flexRAN version for the integration. Reason: i. Speed up the integration (skip the bug). ii. New FlexRAN requires different OS. Different env can cause different issue. Double effort for future integration. iii. Fixing the bug might not be beneficial because it's an outdated version. iv. Resources availability cannot be fixed.	**OSC Taiwan Lab Status** **Mar 13** 1. OSC O-DU Integration - In progress ◦ Fixing bug on 21.11 2. OSC Taiwan Lab interconnection - In Progress ◦ Successful doing autodeployment using OAI RAN components 3. OSC SMO + Non-RT RIC ◦ Upgraded to Rel I 4. Near-RT RIC ◦ Check existence of E2SM-CCC 5. Radysis CU ◦ Running after fixing issue on O-CLoud
06 Mar 2024	TOC mtg for 3/7 will present items 1 and 2 below Project review 1. Ankit Barve ODUHIGH a. Integration working in NTUST b. Integrating with ODULOW c. Integrating with OAI ODULOW d. Uncompressed Mode not available in TM500 e. In Compressed mode payload size is incorrect i. ODULOW is debugging this, even though most commercial implementations do not use the mode. Problem appears to be in L1. f. BIMO to provide status update to TOC i. ODU Integration ii. SMO-OCloud Integration 2. Martin Skorupski OAM a. Some issues with versioning between O-RAN Yang and 3GPP Yang b. CVE Issues how does OSC respond to those. i. CVE report - https://cve.mitre.org/cgi-bin/cvekey.cgi?keyword=O-RAN ii. When is Open Source ready for such scanning iii. When is OPen Source considered Commercial Grade iv. Is there an intent to make OSC look bad v. Bring Issue to TOC (Martin/Alex) 3. John Keeney NONRTRIC a. R1 rApp Management b. working on Service Exposure Services for R1 i. <JK-added> Service exposure manager - aligned with 3GPP CAPIF & R1-SME now almost ready for use</JK-added> c. <JK-added> Data Management & Expose (DME / NONRTRIC-ICS) remains stable</JK-added> i. R1-DME Specification work is moving away from current implementation, may take significant effort to re-align. Currently resources are not available. d. Working on A1 Service exposure over R1 e. Sample rApp for demonstrating AI/ML training using KServe planning to review with AIMLFW project. f. Last 2 releases issues with A1 end point in Near-RT RIC i. Not sure of A1 compliance in Near-RT RIC ii. developed work-around adapter to deal with discrepancy which allows integration. Need a regular integration test. Will work with INT to establish one. g. Descoping some old functionalities 4. James Li INT a. POWDER looking for joint news publication which will help POWDER. James providing information on how OSC uses POWDER for Integration. James might eventually bring such a news release to the TSC for approval. 5. Toshiaki Takahashi a. discussing Tacker and SMO component interaction	

07 Feb 2024	project updates O-DU high (Ankit Barve) integration in NTUST lab, PTP integration issue being resolved OAI lab interaction re FAPI implementation, L1/L2 shared memory OAM (Martin Skorupski)- scanning Yang message specification changes and incorporating in OAM code base SIM(Alex Stancu) - waiting for Ultan Kelly to finalize on procedures for Viavi simulation data release NONRTIC(John Keeney) - focusing on rApp mgmt INT(James Li) - working with PTLs to document pair-wise integration scenarios SMO(Seshu Kumar Mudiganti Toshiaki Takahashi) - Tacker plan integration with SMO components progressing Create RSAC slides for F2F mtg Rittwik JanaDavid Kinsey	
24 Jan 2024		AIML ES Data set available (TIM), Viavi data is semi-private, password protect the file. A pro place for users to request access. Who approves this but it should be a “written” response to traceability. Another option is to have the data in the labs but not in a repo/nexus. Access to access to the data. We need to bring to TOC to ask Viavi what procedure we should use. Update on ODUHIGH, ODUHIGH now working again with ODULOW, tomorrow working ODU SIM • Simulators to align with latest YANG models. No feature requests. OAM • Looking for November Train specifications for testing. Already noticing schema version m NONRTRIC • rApp Management/Execution • Some work on Service Exposure INT • More Pairwise testing
16 Jan 2024	O-DU high integration project for J release	bimo fransiscus asisi Present the OSC Taiwan Lab status. Slide: https://wiki.o-ran-sc.org/dow /3604609/OSC%20Taiwan%20Lab%20Status%20-%20Jan%2010%2C%202024.pptx?api=v
13 Dec 2023	Release Readiness RSAC holiday schedule rApp Mgmt Demo (20 minutes)	Still work for projects to complete on Release "I" page to document the release by tomorrow' Tuesday 19 Dec 2023 cancelled. If it becomes needed we will need to ensure someone can Wednesday 27 Dec 2023 cancelled. Tuesday 02 Jan 2024 cancelled. If it becomes needed we will need to ensure someone can Next RSAC meeting Wednesday 10 Jan 2024
06 Dec 2023	Use RSAC portion of next week SMO+RSAC (need to confirm with Seshu Kumar Mudiganti) for rApp Mgmt Demo (20 minutes at end)	

29 Nov 2023	February Demos:
	
	• Backup? Demo OSC SMO/NONRTRIC w ONF Energy Savings
	
	OAI/OSC Workshop Outcomes:
	
	• Evaluate ODUHIGH to use OAI ODULOW
	• OAI strives for compliance and certification; OSC strives for demonstration of concepts and techniques.
	• Security as part of Open Source, is currently an after thought for OSC and might take a large effort to make it a fore thought.
	  ◦ Ties into WG11 Application Security
	
	ES Capabilities
	
	• rApp Management (early)
	  ◦ Needs hardenening (J Release)
	• ES rApp (in Progress)
	  ◦ Needs to be refactored (J Release) for NONRTRIC Alignment
	• Model Management
	  ◦ rApp Registration
	  ◦ rApp Training
	  ◦ More features in J Release
	• SIM
	  ◦ 1 Data Set published
	  ◦ 1 Data Set in progress (not public but available for OSC, license restrictions?
	• ODUHIGH
	  ◦ ES Features immature needs further development in J Release
	  ◦ J Release focus on Integration with other elements rather than internal capabilities.	

15 Nov 2023	• O-DU high feature updates and testing • OAM project: Topology description and deployment (IETF n /w topology) • ES dataset soon to be published by NTUST (verification of relevant attributes progressing)	
01 Nov 2023	• ES dataset from RIC tester (Viavi) and public TIM dataset availability • NTUST lab interconnect (download the PPT)	https://wiki.o-ran-sc.org/display/RSAC/Contributions?preview=%2F3604609%2F97452034%2F20231101_Options+of+CD+for+OSC+Lab+interconnection.pptx
24 Oct 2023	• F2F recap • ES dataset: Alex Stancu has provided ES data snapshot for AI/ML project (Joseph Thaliath) to start ML model training TIM data set representing the “Internet” usage from the network, for 2 months (Nov and Dec 2013, timestamps every 10 minutes) in our nexus: https://nexus3.o-ran-sc.org/#browse/browse:datasets The data is parsed, meaning we pruned the voice and SMS usage, keeping only the Internet traffic. The values themselves for the usage are normalised to a value known only to TIM (assuring some anonymisation). Other references: ▪ https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/EGZHFV ▪ https://www.nature.com/articles/sdata201555	

17 Oct 2023	ES MVP was presented by Awn the Rapporteur. There are specific details in the feature for mapping progress and alignment. Suggestion is for PTLs to review the material and identify their alignment for F2F reporting and updates to the TSC.
	
	Look to Project documentation
	
	Discussion for "J" Planning regarding Energy Savings MVP
	
	• rApp
	  ○ "I" ES rApp targeting Cell On/Off
	• xApp
	  ○ "J" ES xApp targeting TBD
	• Near-Rt RIC
	  ○ Integration for MME and Inference deployments
	• NonRT RIC
	  ○ New Performance KPI/Metrics for ES
	• SMO
	  ○ New Performance KPI/Metrics for ES
	• OAM
	  ○ New Performance KPI/Metrics for ES
	• AIML
	  ○ MME for Near-RT RIC and Inference deployments
	• ODU-HIGH
	  ○ New Performance KPI/Metrics for ES
	• ODU-LOW
	  ○ Need to check with Intel for potential gap for ES
	• INT
	  ○ Need individual projects to develop pairwise Xtest
	  ○ INT will work with SIM for data for simulated/emulated part of environment
	  ○ INT will work with labs for setting up E2E environment
	• INF
	  ○ Initial steps towards ES in "J", internal to O-Cloud
	  ○ External exposure for ES in O-Cloud to SMO targeted for "K"
	• SIM
	  ○ New Performance KPI/Metrics for ES
	  ○ New E2SM for Energy Savings
	• Labs
	  ○ Look to Powder integration in "J", possibly integrating with srsRAN to open other opportunities for radio integration
	• DOCS
	  ○ no new features	

20 Sep 2023	• ES data sets,Ultan Kelly to provide recreated synthetic data set for ES; mtg with bimo fransiscus asisi to discuss the details week of Sept 28th • NYCU deployed ArgoCD for a SMO CI/CD environment • briefly summarized their work on the O-Cloud, SMO, and OSC Component deployment as follows for your reference: 1. O-Cloud (Kubernetes): Have built a multi-node O-Cloud on bare-metal and virtual machines, with and without leveraging StarlingX. 2. OSC ONAP-based SMO (OSC IT/DEP Project): Have also deployed OSC ONAP-based SMO on top of the multi-node O-Cloud, again with and without StarlingX. 3. O-RAN Deployment Container: To facilitate and speed up the deployment of ONAP-based SMO, we made a portable container image that contains necessity scripts, ansible books, and prebuilt Helm charts for ONAP-based SMO deployment. 4. CD for ONAP-based SMO deployment: Currently working on Argo CD GitOps for ONAP-based SMO deployment. ◦ 1. O-Cloud: per your demo at the RSAC meeting a few weeks back, it's a manual process to provision /install a multi-node O-Cloud. Is there a way to automate the process for a single-node or multi-node O-Cloud? • What is the target environment? ◦ VM or physical servers ◦ With/without Starlingx (more hard to automate) • Should we recreate an O-Cloud for each integration test? ▪ 2. Per my understanding, the deployment from the it/dep repository of the SMO will just include the OSC non-RT RIC, but without the OSC OAM components • OSC OAM wiki also refers to it/dep repository for Kubernetes deployment. • The OSC OAM reuses ONAP components such as O1ves, ODL, ... • The id/dep repository contains ONAP helm charts for deployment of the OSC OAM components. • Deployment — oam master documentation (o-ran-sc.org) ◦ 3. Do you have any plan to commit the code as part of the "O-RAN Deployment Container" to OSC to facilitate and speed up the deployment of SMO as suggested? What is it different from the current deployment mechanism as part of the it/dep repo? • The "O-RAN Deployment Container" is a walkaround solution to reduce helm chart building time. • The better one is that OSC hosts its helm chart repository on OSC Nexus. ◦ 4. What's the granularity of your existing CD for ONAP-based SMO deployment? • We use Argo CD to deploy it/dep ONAP-based SMO with helm charts on Kubernetes. • The ONAP helm chart is too large for the helm, so ONAP provides a script to solve this problem. • It is not straightforward to integrate Argo CD and this script to deploy ONAP components (OAM), we will present the details in the RSAC meeting ◦ 5. It's desired to set up an O-Cloud and then SMO on top of it as the CI/CD base for further OSC components onboarding. Do you happen to see that your existing work can serve this purpose for OSC? ▪ CI: Should we rebuild the O-Cloud and the SMO for each integration test ▪ CD: May use the Argo CD GitOps	bimo fransiscus asisi to upload the slides gamerslouis@gmail.com presented here https://wiki.o-ran-sc.org/download/attachments/3604609/20230920-ONAP-based%20SMO%20Argo%20CD%20-%20NYCU.pptx?api=v2

29 Aug 2023	Energy Savings
	
	• ONF - Proceeding with Proposal #2
	  ◦ Shankar needs to understand what the data set is for E2E flow.
	  ◦ Need UL and DL throughput and ingress and egress from a cell
	  ◦ with an overlapping cell coverage area.
	  ◦ Basic algorithm is predicting when to turn cells off and on so as not to cause too few resources to handle the capacity while saving energy when capacity is not needed.
	  ◦ Switching Cell On/Off
	  ▪ Doesn't actually turn off or on, but puts the cell to sleep and then "wakes" it up.
	  ◦ When RU is put to sleep the corresponding DU infrastructure can utilize p-state and c-state policies to limit the power usage of the DU.
	  ◦ RICAPP nor NON-RT RIC have resources identified to create rApp. We might look to AIML to see if they have resources available.
	  ◦ TUWU may also contribute to AIML algorithm which should be able to be done separate from the rApp implementation.
	  ◦ Can look at Publicly available TIM dataset for current values and initial approach analysis.
	  ◦ https://github.com/arunasubbiah/milan-telecom-data-modeling
	• OAI Has infrastructure with ARM technology
	  ◦ We can use ARM if it is built as an O-Cloud then the SMO should be able to deploy to it.
	  ◦ INF project needs to assess viability	

23 Aug 2023	Energy Savings
	
	• ONF - Proposal #1 use Viavi to synthesize the data
	  ◦ Requires OSC $ which are not available
	• ONF - Proposal #2 use RANSIM and synthesize the data
	  ◦ How can we generate
	  ◦ Alex Stancu Will look at available TIM Snapshot data sets to find if there is one. Rittwik Jana We just need UL and DL throughput data per cell.
	  ◦ Martin Skorupski 3GPP data Cells have sectors. Is our data One sector, One Frequency, per cell. Or should we plan ahead for Frequency management. Rittwik Jana Each "Site" has two frequencies. 5 sectors, 1 coverage, 4 capacity which can be turned down when capacity is not required.
	  ◦ Prof Ray
	  ▪ They are looking at using Viavi RICTest to generate some data. They may have a topology that can be used. Will report back next week.
	
	OSC Taiwan Lab Update:
	
	1. We pushed slice-enabled implementation to the ODU repo.
	2. Shared the system design and guideline of #1 to ODU PTL via email
	3. TM500 power installation still ongoing
	4. O-Cloud has an issue with refusing to establish SSH connection. Will discuss with Jackie(WR) but he is currently OOO
	
	Sprint 1 Reports
	
	• TOC Report Due - 09/14
	  ◦ End-to-End Call - Pairwise Testing James Li
	  ◦ Lab Updates - James Li
	• TOC Report Due - 09/21
	  ◦ Disaggregated SMO Flows - N.K. Shankaranarayanan
	  ◦ Onboarding and Orchestration - Seshu Kumar Mudiganti
	• TOC Report Due - 09/28
	  ◦ RIC Platform Enhancements - Thoralf Czichy
	  ◦ Energy Savings - Alex Stancu	

15 Aug 2023	Lab Update
	
	• Bedminster move in progress
	• Taiwan
	  ◦ Committer issue. Info.yaml did not enable the connection need to understand issue from LF. Bring this up at TOC.
	  ◦ Power issue for use of TM500 instead of TM500 Lite. Facilities request issued.
	  ◦ Multiple UE testing
	  ▪ Fails if UE count is over 18
	  ▪ Ankit indicates we should get one UE functions working before moving to multiple UE scheduler.	

09 Aug 2023	Feature Updates: Disaggregated SMO Flows Demo - O-Cloud & SMO Deployment (Yi-Fan Li) ◦ 2 Control, 2 Worker, 2 Storage Onboarding and Orchestration Tacker Update (Toshiaki Takahashi) RICPLT Feature Planning (Thoralf Czichy) • E2 Enhancements w/Conflict Management • A1 Enhancements • xApp Deploy/Undeploy • Native IPv6 support Deferred to Next Agenda: Energy Savings E2E (Rittwik Jana , Alex Stancu) ONF Collaboration E2E Call Flow Pairwise XTesting (James Li) Lab Integration OAI Collaboration Bedminster Update (David Kinsey)	O-Cloud and SMO Deployment_NYCU_2023-0807.pdf Tacker I-Release_for SMO_July_rev3.pptx

26 Jul 2023	I Release Planning	AIML - Joseph Thaliath
		
		• Generic Training Pipeline
		• Advanced Feature Selection
		• Automated Testing of AIMLFW
		• Use Case Integration w/ Non-RT and Near-RT RIC
		  ◦ Can the project use the RICAPP EnergySavings App
		  ◦ Aligns with Feature 2
		• Code Refactoring (project internal)
		
		Feature 2 - N.K. Shankaranarayanan
		
		• RICAPP - ES rAPP
		• AIML - rApp Registration/Training
		• Non-RT RIC - DME for Training; Data Publisher ; Kafka consumer
		• OAM - CM; PM Schema
		• SMO - VES using JSON to Kafka (Publisher)
		• ODU-High - Netconf Server (CM); VES producer
		
		Feature 5 - James Li
		
		• INT - Pairwise Testing (work with participants from Feature 2)
		
		Discuss Feature 1 on 8/2 SMO+RSAC call
		
		AP: David Kinsey to get with Thoralf Czichy to discuss RIC Platform Feature Planning.
		
		Feature Lab Interconnection - bimo fransiscus asisi
		
		• Defined questions to be answered by each lab opening an interconnect.
		1. The bandwidth required to interconnect the three Labs2. Do we want to use IPVPN? required?4. ISP used for each Lab?5. What protocol gateway?
		• AP David Kinsey: Draft initial interconnect requirements. Discussion on 8/1 next RSAC

12 Jul 2023	Preparation for I-Release	I planning ▪ OSC + OAI interactions ▪ n/w lab interconnection (Phase 1) - Bedminster NJ lab operation mid Oct - Taiwan lab, TM500 O-DU integration, OAI-CU with OSC DU still ongoing integratior - CA lab - COSMOS lab OTIC (Phase 2, after I rel.) - POWDER lab OTIC+PAWR... - Northeastern uni lab (Coliseum) ▪ need an IP assignment network plan (OAM, CP, UP are internal to each lab currently; (planes across all labs?) - David/Rich/Ajay Bedminster lab rep - Bimo, Taiwan lab rep - James Li CA lab rep - Martin/Ivan COSMOS lab rep - [AI] bimo fransiscus asisi Bimo to come up with rough n./w plan - stand up an e2e phone/data call in 1 lab ▪ timeline - something e2e integrated up by end of Sept ▪ use cases 1. e2e orchestration NF onboarding with placement/homing in 1 lab, across multiple - onbaoarding IMS, deploy DMS, O1 health and registration of CNF, how to add A - Radisys O-CU CNF image as an example NF (SMO orchestrated); TM-500 not - gaps: - risk: need to get candidates inside OSC and outside orgs [ONAP,...] 2. Document Disaggregated SMO draft call flows identified from OSC as a contribut - focus on flows and interactions between SMOFs (e.g., with energy savings) - what dependencies do we have? 3. Policy SMOS/F? [defer to J rel.] - bring policy out to a centralized place - A1 policy vs SMO policy 4. Can we discuss with Sunil on an energy savings app? [Sunil, Start in I], Tue RIC/ - carrier RF on/off intermittent - cloud energy savings (C/P state reconfiguration) 5. Establish an E2E call session with OSC components [James] - what is needed to stand up an e2e data session? UE -> RAN -> CORE -> OTT ▪ workplan/timeline - I rel. timeplan refer to wiki
12 Jul 2023	Preparation for I-Release	▪ resource planning ▪ feature and function planning ▪ etc...
28 Jun 2023	RSAC/SMO joint mtg	
20 Jun 2023	O-RAN F2F Osaka, June 21st, Session 4 RSAC Planning call	Discussion of SMO proposal with SMO and AIML MVP-C feature rapporteurs for alignment.
18 Jun 2023	O-RAN F2F Osaka, June 19th, Session 2 RSAC planning call	Discussion on proposal for joint SMO.
06 Jun 2023	Japan F2F OSC Demo Preparati	

31 May 2023	Japan F2F OSC demo preparation Demo Suggestions from O-RAN Office (Zbynek): For demos in Osaka (in case of pre-recorded videos) I would like to share a few suggestions aiming to improve the delivery of messages to the audience: ◦ Make the videos rather short (2-3') – attendees to F2F meetings may not want to spend long time in front of a screen, as the F2F agenda is very busy ◦ If possible, include schemes/charts to visualize the demo scope in an easy way ◦ Make the video in high quality to look good at a large screen from close look ◦ Display each demo title clearly during the whole video (someone who comes in the middle of a demo could still understand what it is) ◦ If possible, provide captions for the voiceover (or at least a word document with the voiceover text for postprocessing) – the sound of the screens may not be possible to be too loud and reading subtitles could help understanding Would any postprocessing be required from O-RAN Office side, for the Osaka demo videos? Note: For the demos that were shown in Madrid (Oct 2022), O-RAN office arranged adding demo titles to the screen and some further postprocessing to allow playing the videos in a loop. In case any assistance needed for Osaka demos, we would need the videos in advance – the postprocessing takes some days… General note: If I recall the way OSC demos were presented in Madrid, Oct 2022, in my opinion – frankly – the content of the demos wasn't easily digestible in the way it was presented. The videos were long (10+ minutes), rather poor quality, sound was hard to understand (and couldn't be played loud to avoid disturbing the networking space). As O-RAN office could observe, not that many people looked at them. Hence the above suggestions to improve the presentation and delivery of desired messages. Demos: Demo #1 - NTUST: Slice-enabled xApp control ODU Scheduler fransiscus bimo Demo #2 - NTUST - RIC Test with KPI-Mon Demo #3 - RIC E2 Reset Japan Session Planning WG2, WG3, WG6, WG1 = 1 hour session Co-Chair or Work Item Rapporteur if associated with a work-item 3 Questions from each PTL that would help the project. Questions should be targeted for a specific WG or WI team to answer.	OSC_Taiwan_Lab_F2F_Demo_v2.pptx
23 May 2023	NTUST lab updates Japan F2F OSC demo preparation	
17 May 2023	CAPIF demo ASD demo	• **Demo/Discussion of CAPIF-based Service registry/discovery.** The 3GPP CAPIF a gaining traction as a basis for R1-SME, and we would like to show the progress we hav implementation. Since R1-SME (and SME in general) cross cuts several SMO-related ◦ Slides: 20230517 - OSC NONRTRIC - CAPIF ServiceRegistry+Discovery.pdf ◦ Video Hi-Res: 20230517 - capifdemo-hires.mp4 ◦ Video Lo-Res: 20230517 - capifdemo-lowres.mp4 • **Demonstrate ASD-based LCM for CNFs using ONAP CNFM**. The function, originall project, is used in standalone mode without the need for the rest of SO, A&AI or SDC. SMO/NFO-specific I think it would also be of interest to the wider OSC community ◦ Slides: 20230517 - OSC NONRTRIC - ASD+SO-CNFM.pdf ◦ Video Hi-Res: 20230517 - cnfmdemo-hires.mp4 ◦ Video Lo-Res: 20230517 - cnfmdemo-lowres.mp4

25 Apr 2023	RSAC mtg O-DU high tests continuing in NTUST lab bimo fransiscus asisi to reach out to Jon Zhang WR to help install a simple example NF and O-CU in NTUST O-Cloud;	
19 Apr 2023	Combined RSAC/SMO Lots of new people, roll call used to introduce participants and area of focus ODU-HIGH - Lab integration update SMO - Integration Vision from Seshu/John/Martin	Ocloud-operator.pdf  The agenda of this slides is to give a brief intro to Nephio. Explain what and how K8s operator works. Use of a K8s operator in the automation through Gitops. Slide 20, depicts the different ways of integrating the operator with other open source solutio using all of them together, but to show how and what part of the solution is being tackled by possible way to re-use the O-cloud operator across them.
4/11 /2023	NTUST lab: Debugging session on 4/14 with Radisys, Intel to make system operational with TM500 OAI components are working in NTUST lab; Need a use case to drive OSC and OAI interop INT project is working on X-testing platform to onboard near-RT RIC	
4/5/2023	Invited Amdocs/Quali to give a presentation on their CD/CT platform, titled "ORAN: Continuous Deployment and Testing"	ORAN: Continuous Deployment and Testing
3/22 /2023	Andrea Buldorini: SMO Decomposition and how that applies to OSC **AP**: Formalize NFO/FOCOM Use Cases for "H" for submittal to WG1; assigned to David Kinsey Shankar: Open-Source Harmonization with OSC	https://wiki.o-ran-sc.org/download/attachments/3604609/TIM-2023.03.22-OSC-RSAC_Architectural_principles_for_SMO_Services_integration.pdf?api=v2 https://wiki.o-ran-sc.org/download/attachments/3604609/ONAP_OSC_Areas_20230321.pdf?
3/8/2023	NTUST Lab: Ankit was unclear if lab was reverted. Prof Ray indicates the server is the same they have been using. Bimo there was some work for integration to real RU but now is connected to the TM500. Ankit to verify if change corrects the blocking issue. O-DULOW no plan to upgrade to newer version. Willing to provide bug fixes as needed. ONAP projects with OSC synergies not yet available. Work is in progress. SMO Function Flows. Discussed current work for O2IMS Cloud Registration and Discovery flow and Homing Flow.	
2/28 /2023	AI: Ankit Barve requesting NTUST lab to revert to old lab so that O-DU high testing can progress. Integration testing is stalled for the moment due to ATT lab's unavailability. Dennis to ask Prof Ray and Bimo (bimo fransiscus asisi) and report back to RSAC. AI: Ankit Barve requesting O-DU Low PTL (Luis Farias) for new release s/w version 22. O-DU high is currently using version 21 of O-DU low s/w.	

2/8/2023	Timo Perala (ONAP requirements co-chair) provided an update on ONAP projects that are related to OSC. AI: Timo to work with N.K. Shankaranarayanan, John Keeney and Martin Skorupski to come up with a list of projects that have synergies/touchpoints with OSC	
1/25/23	OAM Project • Update VES messages and align with 3GPP Rel 18 SIM Project • NS-3 project update to E2SM 2.0 (reach out to Michele Polese) • OAI and OSC interop INT Project • Work ongoing with INF project in CA lab	

1/18/23	SMO Project
	
	• Gaps for "H"
	  ◦ FOCOM
	  ▪ Cloud Registration
	  ▪ DMS Deploy/Config (Tacker)
	  ▪ Cloud Inventory
	  ▪ Package Onboarding
	  ▪ Package Inventory
	  ◦ NFO
	  ▪ Homing
	  • - 2 tags
	  ◦ Cluster-Type (**AIO-SX**, **AIO-DX**, AIO-DX+)
	  ◦ Package Type (ASD, **ETSI**)
	  • All Deployment Items to same DMS, later might have distributed deployment
	  ▪ Package Deployment Inventory
	  • Multiple Deployment Items
	• Integrations
	  ◦ AIML-SMO Influx
	
	INT Project
	
	  ◦ OAM+SMO+NONRTRIC+AIML=baseline SMO	

1/17/23	End-to-End Lab
	
	• Need Cloud connections to OAM/CP/UP networks, need ODU-HIGH to OAM/CP/UP networks.
	  ◦ ODU-OCU CP/UP bidirectional
	  ◦ ODU-OCU to SMO bidirectional
	  ◦ OCU-AMF on CP
	  ◦ OCU-UPF on UP
	• Deploy O-CU
	• Taiwan Lab
	  ◦ Working server configuration for ODU install
	  ▪ Server is more powerful than needed but something is off on the configuration. Need Radysis and Intel to assist.
	  ▪ Would like more documentation on configuration for both O-DUHIGH annd O-DULOW.
	  ▪ O-Cloud Simplex Install Complete
	
	O-RAN F2F
	
	• Need "G" Summary/"H" Plan
	
	NTUST - ODU Scheduler Decoupling so that different schedulers can be used.
	
	• Coordinate with Ankit for NTUST for new committer.
		Open RAN Work Shop on Feb 13 and 14: https://www.knaintl.com.tw/2023OpenRan/
		
		Need to ensure O=RAN F2F does not conflict.

1/11/23	"H" Release Planning - Are we ready for O-RAN F2F?
	
	AIML
	
	• DME Integration
	• Training pipeline Enhancement
	• SMO - InfluxDB Integration
	• KServe adapter
	  ◦ Deployments to Near-RT RIC
	  ◦ Suggest Deployments to Non-RT RIC as well
	
	O-DU HIgh
	
	• End-to-End Integration
	  ◦ TDD/MU1/100Mhz
	  ◦ FDD/MU0/20Mhz
	• Feature Enhancement - Stub-based Testing
	  ◦ Alignment WG-8 AAD Specification
	  ◦ Inter CU Handover Support
	  ◦ E2 Interface enhancement
	
	TACKER
	
	• Need to find out how to fill in the SMO Gaps
	
	OSC/ONAP
	
	• Trying to establish more structure around the relationship.
	
	NTUST
	
	• Upcoming Open RAN Workshop	

12/28/22	Cancelled for Holidays	
12/20/22	Cancelled for Holidays	

12/14/22	Blockers for Release "G" Tacker (SMO) - Ready AI/ML - Ready O-DUHIGH - Move blockers to "H" Backlog Some Cleanup is needed, this will drop the Lines of Code this will be done during the maintenance release. This will not result in any functional change. "H" Activities OSC - OAI Integration Possible Options: End-to-End using OSC RAN and OAI Mobile Core can be incremental in where the workloads execute. Target would be to use O-Cloud? **Goal: End-to-End 5G Open Source Network** Possible Options: OSC SMO Integration with OAI Elements **Goal: Would standard manageability** Possible Options: RIC-RICAPP Portability OSC RIC with OAI RICAPPs, and vice-verse **Goal: xApp Portability** **Step 1:** What would it take for SMO to deploy in a (OSC or OAI) lab a OAI CN element. **Goal: Explore the gap between OAI NF and OSC Infrastructure/SMO.** OSC - ONF Integration Possible Options: RIC-RICAPP Portability OSC RIC with OAI RICAPPs, and vice-verse **Goal: xApp Portability** Tacker "G" Update Supporting 02DMS-ETSI looks like part of Cloud Can be configured with K8s API which would be like a consumer of the O2DMS-K8s and therefore deployed as part of the SMO For "H" we need new SMO functions for Homing, Inventory, and NFO. These can be minimal in which ASD support by Tacker would consume the O2DMS. Need to work out how Tacker for ETSI as a O2DMS-ETSI is registered with SMO, vs Tacker as a NFO extension, uses the O2DMS-ETSI. Could NFO then just use the passed Tacker instance as its orchestration end point?	
12/7/22		

12/6/22	SMO/OAM/AI-ML/NonRT RIC/O-Cloud Integration for Release H
	
	• No RSAC calls in 2022 after the 12/14 meeting.
	• Focus of "H" will be "SMO Integration" to be further discussed on 12/7/22 RSAC after the SMO project meeting.
	  ◦ NFs to work on packaging and PNF/CNF Registration
	  ◦ SMO Blueprints (SMO/OAM/Non-RT RIC/AIML)
	  ◦ INF to support VMs for SMO components
	  ◦ Lab O-Cloud Build-out to move off of Lab OpenStack VMs	

12/5/22	Release H Planning • O-DU Lab Status • Update on OSC US East Lab Network update	

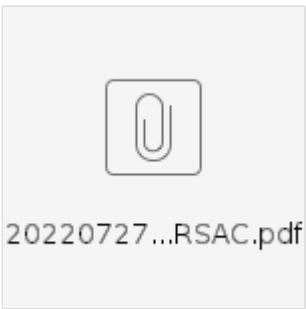
11/30/22	Release H Planning
	
	• SMO
	  ◦ Tacker Capability - SOL001 and SOL003 (VM/CNF)
	  ◦ "F" Tacker integrated with CISM
	  ◦ "G" Tacker integrated with VIM
	  ◦ "H" Tacker integrated with OAM (Packaging)
	  ▪ ETSI NFV first
	  ▪ K8s second
	  ▪ Extend to support ASD
	  ▪ FM/PM requires O-RAN WG6 specification
	  ◦ Need Contributions outside of Tacker for:
	  ▪ Cloud Registration (FOCOM)
	  ▪ Cloud Inventory (FOCOM)
	  ▪ Homing
	• INF
	  ◦ Do we need OpenStack support for SMO/Tacker deployments via the O-Cloud?
	• AI/ML
	  ◦ Interface prototyping
	  ▪ AI/ML to DME?
	  ▪ What is the data interface for xApps
	  ▪ Integrated Installs
	
	Lab Planning
	
	• David to get with Rich for server network interface to support OAM, Control, and User Plane connections. Then configure Core Simulator for Control and User Plane network connections.
		https://wiki.o-ran-sc.org/download/attachments/3604609/Report%20on%20Tacker%20G-Rel
		20SMO_October_r3.pptx?api=v2

11/23/22	Release H Planning
	
	• Non-RT RIC
	  ◦ Wrap-up rApp Mgmt
	  ▪ LCM Instantiate/Terminate/Update
	  ▪ Onboarding/Registration
	  ▪ Service Exposure/Discovery
	  ▪ Data Exposure/Discovery
	  • DME Subscription - Stretch Goals
	  ▪ A1 over R1
	• SMO/INF
	  ◦ O2 Integration
	• SMO/NF OAM SMOF
	  ◦ Alarm Analytics
	  ◦ Performance Job Management
	  ◦ Alarm/Performance DME Registration - Stretch Goals
	• AI/ML
	  ◦ Componentize AI/ML-NonRTRIC interface functions
	  ◦ Interactions with DME/Databases
	  ◦ Continued CI/CD Improvements from "G"
	• INT
	  ◦ OSC Project/SCCL Project Integration	

11/22/22	No Meeting	
11/16	No Meeting	

10/05/22	▪ F2F videos Next week video submission 10/11/22 deadline to RSAC https://wiki.o-ran-sc.org/display/RSAC/Contributions SMO - O-DU and SMO video (Mahesh) OAM, SIM - Martin, video for O1 notify PNF registration, 3GPP alarms, WG4 and WG10 (Martin, Alex) Integration - James to update the current video AI/ML framework - Joseph to show the dashboard and initial training flow video O-DU - O-Du setup and handover video (10 min video Ankit) Non-RT RIC - prepare a short presentation (Status update by John K) Near-RT RIC - 30 min video (Thoralf) INF - O-Cloud ?? send email to Jackie - H planning SMO and O2 integration TAacker vs K8s native, both DMS available AOSX, AODX, AODX+ selection attribute in DMS 5G super blueprint OAI ?? Can only run in Taiwan lab (Academia) AI/ML framework and SMO flows Where does AIML f/w derive its data from (training data)? SMO -> R1 -> DME -> O1 -> AI/ML Non-RT RIC R1 implementation and rApp mgmt, start enforcing the use of R1 i/f SME module rApp LCM enforcement DME will have examples of the use of PM jobs over R1 (Streamed and file based) Create a short OSC overview deck, accomplishments and status update for G release (Jinri, James, David, Rittwik) - 6 releases - 3 independent labs - 10 projects - TOC/RSAC - https://insights.lfx.linuxfoundation.org/projects/oran/o-ran-sc/dashboard AOB Joint FYUZ conference following O-RAN F2F -windrvr to present	
9/21/22	F2F Agenda • AI/ML will create a video • INT project demo recording • SIM - Video record StdDefined VES • O-DU - recorded Handover feature • Near-RT Demo recorded - 30 minutes ○ How to deploy Near-RT RIC • SMO - planned demo of receiving O1 from O-DU "H" Planning • Super Blueprint O-DU • Need ASN Decoder, current Git source is now archived • Points to Nokia seed however, some messages are not being properly encoded • It is unknown who to contact to correct in code base or what is wrong with O-DU code • Will bring up at the TOC	
9/13/22	O-CU Deployment into O-Cloud O-DU Status	190 Server should have images and HELM but currently doesn't allow SSH. – Rich to Chec Once SSH is re-enabled then we need to know the directory 10am Eastern Thursday Ankit (O-DU), James (INT), David (RSAC), Jon (INF), Rittwik (RSA to setup meeting

9/7/22	AI/ML Project status Madrid F2F agenda NJ Lab Review O-CU deployment O-DU 190/191 reachability issue	
8/24/22	Demo Availability for O-RAN F2F Oct 20th 4:30pm-7:45p, Madrid • OAM • SIM • NON-RT RIC • RICAPP • AI/ML AP: David Kinsey to schedule synch up for OCU Deployment from SMO via TACKER using O2 Interface from INF.	OAM - VES Standard Defined Message SIM - Yang Sim or E2 Sim demo - Potential Integrated demo: SIM VES Generation, OAM Collection, SMO Storage in InfluxDB CU Deployment Non-RT RIC: Will come up with something specific for O-RAN AI/ML: Joseph will look into what is possible from the initial seed. RICAPP: No data RICPLT: No data SMO: No data
8/16/22	Draft Agenda: Demo Availability • INF • RICPLT • RICAPP • OAM • SIM • Non-RT RIC • SMO • AI/ML • ODU • E2E	INT Project: XFT Framework demo Wed RSAC Sep 21st. Will record and make available to ODUHigh: Demo Sept 13 or 27 Handover feature from "F"; Stub based demo; In Local Dev L End-2-End will be prior release tests: Closed Loop tests.
8/10/22	Draft Agenda: Demo Availability • INF • RICPLT • RICAPP • OAM • SIM • Non-RT RIC • SMO • AI/ML • ODU • E2E	INT proj (James) to set up discussion for XTF testing framework AI/ML proj to provide a repo structure AI/ML project to interface with SMO project to understand the touchpoints OAM project is working with Tacker proj for initial integration
8/2/22	Cancelled.	

7/27/22 8AM Eastern	Release "G" Feature Planning
	
	• RICPLT
	• NONRTRIC
	• OAM - Received in e-mail - In project will add to Release
	• SIM - In project will add to Release
	• AI/ML
	  ◦ "G" Standalone, possible RICAPP deliverable too
	  ◦ "H" begin cross-project integrations
	
	Lab Status
	
	• US WEST
	
	AI/ML Project Proposal
		

7/19/22 9PM Eastern	Release "G" Feature Planning
	
	• ODUHIGH
	  ○ End to End Integration support (Spillover from previous releases)
	  1.TDD/Mu1/100MHz
	  2.FDD/Mu0/20MHz *
	  ○
	
	  Feature verification (Spillover from previous releases)
	
	  ▪ Closed-Loop Automation
	
	  • Link Failure Detection and Recovery
	  • Slicing PM Reporting and PRB Reservation
	  ▪ 16QAM and 64 QAM
	  ○
	
	  Feature Development
	  1. Implementation of Discontinuous Reception (DRX)
	  2. Inter CU Handover support
	  3. Aligning all modules and interfaces to latest specifications
	  ○ Question to INT for Health Check requirement, request parameters and expected results.
	  ▪ Alarm Summary?
	  ▪ Module Status?
	  ▪ Interface Status?
	• ODULOW
	• RICAPP in project meeting notes
	• INF - Received in e-mail
	
	Lab Status
	
	• US EAST
		RICAPP Meetings - RIC Applications - Confluence (o-ran-sc.org)

7/13/22
8AM
Eastern
	AI/ML Deployment Options
	
	• Separate Project
	  ◦ It has integration touch points with several projects
	  ◦ inside one may cause neglecting others (NonRTRIC, RICAPP, RICPLT)
	  ◦ Clear boundaries need to be defined to ensure non-overlapping scope.
	  ◦ Propose separate project - Avinash will work project description containing details articulated by John-Paul and Thoralf:
	  ▪ John-Paul Lane: If we decide the AI/ML proposal should be in its own dedicated project, we need a project proposal which TOC can review and vote on. As John Keeney has pointed out, understanding scope of the project, its ambition and how it interacts with other projects is key input to the proposal.
	  ▪ Thoralf Czichy : in Order to define the scope in more detail…
	  • (1) discuss data architecture (data flows)
	  • (2) overlap in model manegement and r /xApp LCM
	  • (3) define interfaces with existing projects
	  • (4) define an example set of r/xApps that are being developed in parallel as a proof of concept
	  ▪ From John-Paul Lane: Some pointers to creating a new project proposal are included here Seed Code Contribution/ New Project Proposal Process (DRAFT) Also, it is interesting that there is an attempt to define when a new project can / should be created. There are examples of new project proposals which have been presented to TOC previously. Maybe @Mahesh could share the SMO proposal? Or if there are others they could be shared too.
	• If inside existing which one
	  ◦ No Good fit
	  ◦ Would require a clear integration vision
	
	Release "G" Feature Planning
	
	• RICPLT - Deferred to post project meeting
	• SMO
	  ◦ Integration with ODU for PM Reporting
	  ◦ TACKER to deploy CNF or VNF to be selected later
	• RICAPP - Deferred
	• SIM - Deferred
	
	Lab Status
	
	• TUWU	

6/29/22	Reviewed proposal for new AI/ML Framework project	

6/15/22	Reviewed proposal for new AI/ML Framework project • Slides will be posted when available • Scope noted as large, suggestion from other PTL was to commit to a focus initially and expand over time • Some LCM may overlap with Non-RT RIC rAPP LCM this needs to be refined such that a clear demarcation exists between the two projects • With four projects for the overall SMO one project will need to be responsible for ensuring they can all be assembled into an O-RAN SMO. Suggestion was for the SMO project to be this point but the PTL was unable to make the meeting.	
6/7/22	James Li	
6/1/22	1. ORU-ODU pairwise testing progress (10 minutes) a. ODU Synch still the same skipping clock. b. **Action Item:** David will get with Rich to verify if 190 is connected to the O-RU or 191? 2. OCU deployment on O-Cloud progress (5 minutes) a. Binaries have been released from Radysis. b. **Action Item:** David will get with Bin (INF) to verify IP and availability of AIO-SX. c. **Action Item:** Ankit will FTP to lab and work with Bin (INF) to deploy onto AIO-SX, 3. Release G Planning and O-RAN F2F Synch (45 minutes) a. Only the ODUHIGH and INT PTLs were present. Planning was not able to occur. i. ODUHIGH "F" Features were held up by lack of O-RU availability, therefore "F" Features are backlogged into "G". ii. INT "F" Features were held up by OTF no longer maintained and thus non-viable. Therefore "F" Features are backlogged and will have to be replanned into "G". PTL is working with LF to find out how their CI/CD Toolchain might be used. Will require participation by each PTL in "G". b. **Action Item:** David to bring up to TOC that RSAC is only effective if PTLs participate. ▪ DUPLEX+ 4. Walk Ons: a. Samsung proposal for AI/ML Framework project. John Keeney had to drop and Mahesh was not in attendance. We need those projects and preferable OAM and INT as well to understand how the SMO is assembled from the potential 4 projects. i. **Action Item:** Samsung will start an e-mail thread and hope we will have a quorum to discuss either on the SMO+RSAC or the next RSAC+SMO calls. b. Tacker development team still needs lab access for SMO project i. **Action Item:** David to reach out to Rich to make sure the request didn't get missed.	
5/18/22	IXR Should be ready by 5/20/22. We found a bad optic cable and are replacing it. OTF is permanently down, we are soliciting ideas from PTLs for new test automation tooling or ideas. INT needs each PTL to create a "Healthcheck" type of test/script in which the project can be deployed and verified as "healthy". INT will then look for interoperability across projects. This will require participation from the individual projects and is not something INT can do entirely on its own. We identified while working towards the OTF workshop that projects sometimes assume things still work, when in fact they don't. This verifies the need for automated testing. O-DU HIGH needs O-DU LOW to install/verify the latest build in installed in the OSC lab. David and Rittwik will reach out to ODULOW to ensure there are not any blockers.	

5/10/22	OTF workshop postponed to next week. Here is the progress in Taiwan OSC Lab (Prof. Ray): - New results 1. Modified OAI CU * Topology: PHY-Stub <--> OSC O-DU-High <--> OAI CU: RRC Connection Setup is done. 2. Tested the S-Plane in Chunghwa Telecom (CHT) * Topology: GM <--> O-DU <--> TM500 RU Simulator - New partner: Auray will also provide their TM500 to support the OSC testing. Auray is also running OTIC Lab. in Taiwan - On-going jobs 1. Joint survey paper 2. Auray will make a trip to US. They hope to visit OSC Community NJ Lab. Please check any available slots if possible. - On-going jobs in Taiwan lab and **need support from Radisys**. 1. Testing Intel FlexRAN 21.03 version of O-DU Low Ankit: This activity has not been planned in F release and will be taken in account during next Release planning phase (G release) 2. We added an E2 Handler in O-DU High and connect it to RIC: Ankit, please reply with an email showing your plan. Ankit: As of now we are reaching towards end of the F release and do not have bandwidth to accommodate these changes with review.	
5/4/22	Lab update • OTF integration ongoing. Bringing up a simple rApp using OTF (James Li, John Keeney) • Nokia Front haul gateway configuration plan and ETA? Need to close this item asap. • TM500 availability • PTP installation and configuration. Need to close this item.	
4/7/22	Lab update ▪ OTF integration in Duplex O-Cloud (Alex C, David K, James Li, Bin Yang) ▪ Template file preparation for O-CU (Ankit Barve) ▪ PTP installation and configuration (Rich Wright ATT, David Kinsey)	
2/15/22	Lab Update • 3 Servers identified for INF Project • IXR Configuration in Progress. Have Nokia Resource to assist. ◦ Requires new 10.10.11.xx IP for OAM Network Gateway on M-Plan VLAN	

1/27	Lab Needs
	
	• DU and RU connections
	  ◦ vlans
	  ◦ Clock Multi-Cast Address (hard coded or default/std)	

1/18/22	Developed "F" Release presentation from previous meeting notes.	

1/13/22	"F" Release
	• SMO
	  ◦ Integration to O2 (INF)
	• INF
	  ◦ O2 IMS
	  ◦ O2 DMS (pre-spec aka HELM)
	  ◦ System Controller Cloud
	  ▪ Manages Sub-Clouds aka distributed resource pools)
	  ▪ Creates Distributed Cloud Architecture
	  ◦ O-Cloud with three resource pools
	  ▪ SIMPLEX
	  ▪ DUPLEX
	  ▪ DUPLEX+
	• ODUHIGH
	  ◦ Support Paging Feature
	  ◦ Inter-DU Handover
	  ▪ 2 DUs under same CU
	  ▪ Requires another Server for second Physical O-DU
	  ▪ Need to check with Viavi to see how this affects the O-RU simulator
	
	"G" Release
	• SMO
	  ◦ Possible bring in ONAP ASD Orchestrator (O2DMS candidate)
	  ▪ Contact Byung-Woo Jun from ONAP Architecture
	  ◦ Needs to support O-Cloud Registration (O2IMS)
	• INF
	  ◦ Add 4th resource pool from Blockhouse Resources
	  ◦ add those resources to Duplex+ Cluster creatings a distributed cluster	

12/16/21	Next Meeting 1/4/2022
	
	"F" Release
	
	• RICAPP
	  ◦ OTF "F" Release Test
	  ◦ RC xAPP (Slice Management)
	• RIC
	  ◦ OTF "F" Release Test
	• OCU
	  ◦ OTF "F" Release Test
	  ◦ Test Stub Image Basic Support of O1
	• ODUHIGH
	  ◦ OTF "F" Release Test
	  ◦ Support HARQ Feedback
	  ◦ Scalability (Scheduler Enhancement)
	  ◦ E2 Interface Upgrade
	  ▪ Near-RT RIC Connection (Stretch Goal)
	• ODULOW
	• OAM
	  ◦ OTF "F" Release Test
	  ◦ O1 Pre-Release for Message/Streaming
	• SIM
	  ◦ OTF "F" Release Test
	  ◦ O1 Pre-Release for Message/Streaming
	• NonRTRIC
	  ◦ OTF "F" Release Test
	  ◦ R1 Service Exposure
	  ▪ A1 Policy
	  ▪ A1 Enrichment
	  ▪ rAPP Onboarding/Deploy
	  ◦ Test Scenario Organization
	  ▪ By Scenario/Use Case
	• SMO
	  ◦ TACKER (Orchestration) (Docomo)
	  ▪ What will be deployed?
	  ◦ CRD Based Onboarding (Kubernetes Deployment) (VMWare)
	  ▪ xAPP
	  ▪ rAPP (Stretch)
	  ◦ OTF "F" Release Test
	• INF
	  ◦ 3 Resource Pools (SIMPLEX, DUPLEX, DUPLEX+) Kubernetes
	  ◦ OTF "F" Release Test
	• INT
	  ◦ OTF "F" Release Test	

12/7/21	Lab Status
	
	• NJ Lab
	  ◦ O-DU High still not accessible
	  ▪ Pending correction of this to install FHG (IXR+PTP-GM)
	  ▪ May have to resort to invasive recovery of the hardware
	  ◦ Discussing with Viavi on strategy for TM500 sharing from the lab
	• "F" Release
	  ◦ Discussed Windriver plan for O-Cloud/O2 builds in "F"
	  ◦ Discussed VMWare plan for xAPP Onboarding Package in "F"
	  ◦ There was a mention of O2 from DCM, "Tacker". More information expected on SMO call Thursday.
	• "G" Release
	  ◦ Migration of all xAPPs and Near-RT RIC to deployments from SMO, with homing to blockhouse servers in the Duplex+ Cluster (Spans two resource pools).	

11/18/21	Lab Status
	
	• NJ Lab
	  ◦ Clock in progress
	  ◦ IXR pending Cable
	
	"F" Release
	
	• SMO - INF Integration
	  ◦ Might look at CU for Deployment Option
	  ◦ VM Server needs have the ConfD Server installed
	• APP Packaging
	  ◦ VMWare is interested in SMO Contribution using CRD packaging proposal
	  ▪ Need
	• O1 PM CR Status
	  ◦ Rationale presented to O1 Focus Group
	  ◦ 3GPP PM Streaming supports GPB, O1 does not, CR Submitted for next meeting 11/29.
	  ◦ Will break down the CR into smaller chunks that can be independently addressed.
	  ▪ Decouple Stream Consumer and Job Manager from using common index to map value to measurename
	  ▪ Subscription Enhancements, Decouple Job from Reporting
	  ▪ Use Stream Report as Event Report in REST /JSON mechanism	

11/4/21	Lab Status
	
	• NJ- David IXR received, PTP-GM still an issue.
	• CA - James (Software Centric)
	• TU - Working with James
	
	"E" Release Status
	
	• RICAPP
	• RIC
	• ODU-H/ODU-L?
	• OAM - Alex Stancu Model Complete
	• SIM - Alex Stancu Updating Simulator
	• SMO - Mahesh Jethanandani Disaggregated VES Commited, DMaaP Adapter out for review
	• NONRTRIC - Need to reach out to John Keeney for Status
	  ◦ Issues around the events and actions not being available yet.
	  ◦ Concern on testing/availability of SMO's new Kafka->DMaaP -API-adapter.
	• INF
	
	"F" Release Planning
	
	• Per Project Release OTF Demo
	  ◦ RICAPP
	  ◦ RIC
	  ◦ ODU-H/ODU-L?
	  ◦ OAM
	  ◦ SIM
	  ◦ SMO
	  ◦ NONRTRIC
	  ◦ INF
	
	O1 CR Status
	
	• Rationale presented in O1 and RSAC.	

10/26/21	NJ OSC Lab • Waiting on IXR to be received • Long cable will be shipped separate • Ken will check to see if Block House installation of PTP-GM will be too far, estimating to be 100M from the lab. • David Kinseyto send Lab editable diagram to Bimo. Taiwan OSC Lab • Nov 10 working with Viavi for SW License • Integrate near-RT RIC/ODU-H: Complete • Still working on RU Simulator planning for EOY • Still having troubles logging into the TM500 in NJ ODU-H Integration Testing • new PTL James Li	

10/21/21	Release "E" Slice Reporting
	
	• Extension of VES Measurement Domain. Will be StdDefined in "F" Release
	  ◦ Started work on "F" JSON; more is still needed
	• Config still not baselined, critical for rAPP work
	  ◦ Martin will finalize HelloWorld to work for us
	  ◦ ODU-H is good with this	

10/12/21	CR Status • On Track for First Nov O1 Meeting Lab Status • Viavi "Demo" Equipment • IXR • PTP-GM Slice Use	

10/7/21	CR Status
	
	• Alex provided link to GNMI Flow for incorporation into CR
	
	Integration Status
	
	• Interfaces are not defined for the closed loop Use Case
	  ◦ Need PM interface between O-DU-HIGHSMO
	  ▪ We have a non-3GPP Plan, using VES Measurement Domain
	  ◦ Need PM Interface between SMO rAPP
	  ▪ TopicName: MeasurementEvent (4 Values)
	  ◦ Need CM Interface between rAPP OAM
	  ▪ Driven by YANG of O-DU-HIGH (RESTCONF)
	  ◦ Need CM Interface between OAM O-DU-HIGH
	  ▪ Driven by YANG of O-DU (In Discussion)
	  ▪ Believe we can use 3GPP in build and reference forge path but cannot tag the replicated file used for the build for the Release in order to preserve 3GPP Copyright.
	
	3GPP
	
	• OAM/SIM will work on Best Practice for using 3GPP (forge) documents in builds/documentation without publishing as part of the release.
		gNMI Interaction Diagram: gNMI - OAM - Confluence (o-ran-sc.org)

9/28/21	Lab Status
	
	• Still waiting on IXR
	• Haven't resolved the plan for the PTP-GM
	
	Slicing Use Case
	
	• Will have 2 rRMPolicyMemberList (MCC MNC SD SST)
	  ◦ 1 Best Effort, Slice 1 Managed Slice
	  ◦ MCC/MNC (aka PLMN) should be same as known by Core
	• Will use rRMPolicyDedicatedRatio for Managed slice
	• PM is Average DL/UL UE Thoughtput
	  ◦ Collection Interval same as Reporting Interval
	  ◦ Reporting Interval will be every 60s
	  ◦ One counter for each (UL/DL) (Uint32, kbits/sec)
	  ▪ DRB.UEThpDl.SNSSAI
	  ▪ DRB.UEThpUl.SNSSAI
	  ◦ SLA for the Managed slice is a throughput of 1Mb/s
	  ◦ Initial Managed slice has PRBs with a 40% reserved /quota
	  ◦ The rAPP should have a configuration value for enabling and disabling the control loop to allow the test controller to identify when the SUT has a stable traffic load.
	  ◦ When throughput drops below the 1MB/s SLA by 10% (900Kb/s) then the rAPP increases the reserved/quota by 10%
	  ◦ When throughput goes above the SLA of 1MB/S by 10% (1.1MB/s) then the rAPP decreases the reserved /quota by 10%; this cannot go below the baseline slice reservation (40%)	

9/9/21
 	
9AM EDT
	VES Improvements
	
	• Disaggregation Tabled for now
	• Kafka Backend to Influx/Elastic-Search/DMaaP
	• Streaming PM (Should be an "F" Release Target)
	  ◦ VES/JSON (Requires O1 CR) (AT&T)
	  ◦ HV-VES Websocket/GPB (Requires O1 CR) (DELL
	
	Scorecard
	
	• Specification Compliance Scorecard
	  ◦ Element Maturity (Behavioral Compliance)
	  ▪ PTL to self report to Scorecard ("E")
	  ◦ Interface (Specification) Compliance
	  ▪ OTF (INT) is looking at the FH Test Specification for M-Plane ("E")
	  ▪ OTF for Element which would apply the applicable Interfaces required by the NF (OCU-CP, OCU-CP, ODU, NearRT RIC)
	  ▪ PTL Self Report ("E")
	  ▪ OTF Auto Report ("F")
		https://wiki.o-ran-sc.org/download/attachments/35881444/VES-Collector-Flow-Diagram-V6.p

8/12/21 9 AM EDT	Reviewed Slicing End-to-End call flows presented by user-30c9d. Need verification from Viavi on pre-configuration of Slices within Core and UE simulator to request admission to a Slice. Reviewed VES Project to EPIC list presented by David Kinsey, need to work on iteration and resource mapping. Need OAM, SMO, and SIM PTLs Discussed PTP Grand Master availability in the lab. David Kinsey to reach out to Nokia for status on FHG and how it provides /interfaces to PTP. E-mail sent today. Discussed using format of ODU-HIGH Release "E" plan to formulate a release plan with one for each project. David Kinseyto send that. E-Mail sent with proposed template. This would replace the single 9MB growing powerpoint with a per-release plan.	

7/22/21 9 AM EDT	Meeting Held for discussion on Release "E" Disaggregated VES Reviewed proposal and discussed options. No Conclusions yet as this was more informatory. Next Meeting will try to work on specific deliverables by project. The attached presentation includes comments and on-going work between David Kinsey and Martin Skorupski which will be reviewed with the larger team at the next RSAC call.	
4/13/21 9 PM EST	Discussed 5G super blueprint for E release DU - RU message interaction blockers TM500 equipment preparation by Viavi for delivery to OSC lab NJ	

4/8/2021	Meeting recording to be listed to the right once it is available.
	
	Went through Release "D" Flow:
	
	• ODU-High still working a segmentation fault but have sent one message to O-DU low and should be enough to verify ODU-Low to O-RU
	• Other Messages to follow working for UE Attach
	• O-CU binary has been delivered to lab next step is to integrate with ODU-High and Core Simulator
	• Once all these are done should be able to UE attach
	• For ODU-High to SMO verified PNP VES will trigger netconf hello
	• Simple Yang will be provided by Martin Skorupski which allows control of the link
	  ◦ Please see
	  ▪ **wiki**: Use case driven YANG modules for O-DU
	  ▪ ~~**ODUHIGH-322**~~ - Closed loop use case driven yang models for O-DU DONE
	  ▪ **gerrit**: https://gerrit.o-ran-sc.org/r/c/scp/oam/modeling/+/5870
	  ▪ **email**: https://lists.o-ran-sc.org/g/toc/topic/api_modification_process/81994146?p=,,,20,0,0,0::recentpostdate%2Fsticky,,,20,2,0,81994146
	• near-RT RIC will get the O-DU ID and send the change state to "ACTIVE".
	• David Kinseytook an action to get an OTF/INT project representative for the RSAC.	

3/11/21 9am EST	Meeting recording listed to the right. Went through Release "D" Control Loop: • Alignment of DMaaP Topics across projects • Confirmed proposed YANG for O-DU is being analyzed by the O-DU team, should have an answer by next weeks call. • Confirmed Config was sent to O-RU team, ODU Team needs to know how to initiate pairwise testing • Reaching out to contributors for E2SIM modifications for Traffic Steering Use case • David Kinseywill Reach out to OTF team for OTF E2SIM integration at the same time • David Kinsey will work with user-59b16 to work with Taiwan University to see how best to use them for Integration Project. They likely will not have a FHG in their environment and therefore are missing O-DU functionality for Hybrid or Hierarchical support models to the O-RU. • SMO discussion was deferred as Mahesh had another meeting commitment. Nothing major pending.	

3/1/21 9 PM EST	user-165cfto share Config spreadsheet to Ken Trudgeon (O-DU--O-RU interactions Mahesh Jethanandani Review recording for APP onboarding schema (from David K) for D rel implementation	
2/25/21 9 AM EST	Discussed RU failure recover use case Zhe Huang to provide DHCP and CA server in OSC lab to bootstrap RU startup Viavi to check steps 1-8 in O-RU startup in 2. ORU Startup Viavi to check steps26-27 in O-DU startup re Alarm subscription in 3. ODU Startup user-165cfto check steps 12-23 in 3. ODU Startup – implementation task	
1/14/21 9 AM EST	Discussed RU failure and recovery use case (ppt attached) user-59b16 to create call flow for use case	

11/19 9 AM EST	Discussed O1/A1 use case for Dawn Modify Fronthaul parameters via O-DU using O1-CM. What is the role of A1 here? Setup meeting for 11/24, Tue 10 am EST **Where:**Zoom 1 bridge: https://zoom.us/j/9644759813 INF – O1 use case to show HA capability; Failure in INF; Will it cause O-DU to reset and reestablish connections? Develop switchover call flow Xiaohua to setup call and invite Conflict Management use case where rApp via SMO is providing O1-CM control to E2 node while xApp is providing E2 control messages Started discussing conflict use case with TS xApp Other items: Documentation Provide project doc to PTL for wiki CII badging https://wiki.o-ran-sc.org/display/ORAN/Core+Infrastructure+Initiative+%28CII%29+Badging Cherry release help to Felix John K and Felix to meet re A1-EI A1 healthcheck; enrichment data flowing inside a healthcheck App package validation demo – Mahesh/Harish	
9/15 9 PM EST	Intel servers configured in OSC lab for O-DU testing Intel and Radisys installing DU-low and DU-high s/w this week; SCTP libraries need to be installed; user-165cfto reach out to Rich for help Ganesh Shenbagaraman checking internally for compatibility for O-CU s/w contribution from Radisys (closed source) Ron Shacham to provide simulated trace files to Alex Stancu fro m Viavi sim into SIM repo user-59b16 David Kinsey to draft preliminary plan for D release; Requesting All PTLs to start thinking about D release work epics and Cherry flow over items	

9/1 9 PM EST	• Discussion about OSC lab setup and timelines for testing and integration Week starting Sept 7 – Configure Intel servers and install OS (windriver, server 1) Sept 14 – O-DU Low software installation and unit testing with stub RU simulator (server 1) Sept 21 – O-DU High software installation and unit testing with stub CU simulator (server 1) Sept 21 – Viavi O-RU emulator, O-CU emulator, EPC installation on (Server 2) Sept 28 – O-CU software installation and unit testing (Server 2) Oct 5 – O-DU high and O-CU unit testing Oct 19 – UE attachment and HO test Oct 26 – UE attachment and HO test The OSC lab server addresses are Server 1 Management IP 192.168.4.29 Interface 1 192.168.41.190 Server 2 Management IP 192.168.4.30 Interface1 192.168.41.191	

8/18
 	
9 PM EST
	• Discussion regarding O-CU MVP requirements for OSC
	  ◦ Implement HO for traffic steering, defer E1 interface for Cherry
	  ◦ Ganesh Shenbagaraman to raise topic to TOC for 8/19
	• Discussion regarding OSC and TIFG MVP requirements
	  ◦ Slides from ENGWEI KOO
		TIFG-OSC meeting slides 

7/28 9 PM EST	• Discussion with Radisys on O-DU activity • INF project installing OS and O-DU getting installed. Ganesh Shenbagaraman Sachin Srivastavato provide quick update on O-DU status • Discussed about SMO project initiation and PTL election • Discussed main challenges slide in OSC to be presented to EC by John Murray Jinri Huang Start Time : Jul 28, 2020 09:03 PM	O-DU High status (PPT attached) 

7/16 /2020
 	
9 AM EDT
	• O-DU and O-RU stub testing (Bronze maint.) (Zhimin Yuan , user-d3360); Have access to the box, waiting for Windriver to complete SW install before their SW can be installed
	• KPIMON xAPP integration with Near-RT RIC (Matti Hiltunen , Ron Shacham, ENGWEI KOO)
	  ◦ Working with Samsung and Near-RT RIC, problem with Subscription Mgr
	  ◦ E2SIM has Viavi Schema and has demonstrated flow, waiting on 10 minute playback file from Viavi.
	  ◦ Viavi indicates file wont be available until 7/24. Could work and lower risk with shorter file, Viavi will look into that.
	• Cherry SMO Proposal (Martin Skorupski , Tracy Van Brakle)
	  ◦ Proposal presented
	  ◦ Discussion on external SMO open source alignment (John Keeney)
	  ◦ Discussed possibility of sub-project instead of new project (John Keeney)
	• SMO LCM and Application Deploy Scenarios (Martin Skorupski)
	  ◦ LInk to recorded presentation available on OAM project meeting page. Separate link to also be added to Non-RT RIC page.
	
	  ◦ Start Time : Jul 21, 2020 08:50 AM	

6/18	Sachin Srivastava Zhimin Yuan to discuss on bronze maintenance release testing (P5 msg exchange, etc.) Xiaohua Zhang to check for testing possibilities for DU-LOW and DU-HIGH at Windriver user-59b16 user-d3360 to check on OSC lab status for L1 stack by 6/30 ENGWEI KOO to check with Ken and Ultan on Viavi providing sim log files for TS scenario by 6/30 ENGWEI KOO to share common config file IOT profile between O-RU, DU-Low and DU-high	 Common IOT profile
5/26	INF project cherry epics ▪ HA in O-Cloud - 2 server deployment scenario duplex Start Time : May 26, 2020 09:01 PM	
5/12 /2020 9 PM EDT	Topic: Cherry release planning Start Time : May 12, 2020 09:00 PM RSAC requesting PTLs to start suggesting EPICS for Cherry	
4/28 /2020 9 PM EDT		
4/9 /2020 9 am EDT	ENGWEI KOO to setup meeting with user-59b16 Ron Shacham to discuss Viavi simulation parameters for traffic steering Sachin Srivastava Ganesh Shenbagaraman to setup meeting with ENGWEI KOO to discuss Viavi testing with O-DU HIGH Martin Skorupski to draw up some some slides on cherry release requirement for s/w mgmt of X-RAN RU to O-RAN RU Alex Stancu to setup meeting with Ron Shacham for 4/13 on E2 simulator enhancement	

3/26 /2020 9 am EDT	▪ Setup meeting between TIFG, OSC and Viavi William DIEGO ▪ ONAP-ORAN harmonization and inputs to ONAP Guilan, John Keeney David Kinsey to present one slide to TOC next week ▪ Matti Hiltunen to send John Keeney TS xApp policy details Viavi's short term and long term proposal for OSC  	
3/10 /2020 9 pm EDT	Bronze rel. – PTL reports from ODU LOW, INT	
3/3 /2020, 9 am EST	Bronze rel. – PTL reports from RICAPP, O-CU, ODU HIGH O-CU  	

2/19 /2020, 11pm EST	Viavi presented a range of simulators that will be valuable for OSC use case testing and validation. Slides -  Action: Discuss in OSC TOC meeting regarding Viavi	
1/7 /2020, 9pm	Bronze release documents Epics spreadsheet: RSAC_Bronze_release_planning.xlsx Traffic steering use case: RSAC_Bronze_Use Case-Traffic Steering QoE.doc Health check use case: RSAC_Bronze_HealthCheck_UseCase.docx	
9/26/19, 9am	OSC and WG review meeting 1  	

Infra Status Upd...te.mh (002).pptx

Integration Status Update.pptx

Near-RT RIC Status Update.pptx

Near-RT RIC xAp...tus Update.pptx

Non-RT RIC Status Update.pptx

OAM Status Update.pptx

ODUHIGH Status Update.pptx

ODULOW Status Update.pptx

OSC_WG_review.pptx

		
8-1-19, 9 am	Reviewed Epics Start planning for Release B - Can we use JIRA for the planning phase in addition to the Word doc? Move Release planning cadence to once a week. Alternate between evening and day every other week. Where is the Integration and Test Environment? How do we set up the test env? Couple of possibilities. Check with John Murray • Tlab (AT&T) • OTIC (O-RAN Test and Integration Centre - Asia/Europe /North America (inter-connected) • Windriver lab ? • CMCC ?	

7-30-19, 9 pm	Reviewed epics
	
	• INT-A-F212 clarification added in annex for PNF registration
	  ◦ Need John Keeney Martin Skorupski to develop use case design doc
	• RICNRT-A-F10 for OSC Rel A ?
	  ◦ Need John Keeney and Tommy Carpenter to develop minimal use case
	• INF-A-F01 epic clarification needed from Paul Carver
	• INT-A-F013 - recruit Eliza Celenti to stand up OTF framework for Rel A
	• RICAPP-A-F110 - UE Monitor for slicing
	  ◦ Jun Hyuk Song to provide clarification of this epic, UE-NIB, overlap with UE Manager xApp
		O-RAN SC Ver A SW Requirements 20190730a.docx

6-4-19, 9 pm Eastern	Reviewed and addressed comments ▪ Created epics for different project groups	O-RAN SC Ver A SW Requirements 20190604a.docx