

2021 Q1 (Jan, Feb, Mar)

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2021 03 31

Recording: [TOC 20210331](#)

Agenda

1. Call for Scribe (minutes owner): Jinri Huang (CMCC). Starting in April, David will take over the scribe role.
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	X	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	X	James Li	
Deutsche Telekom	David Streibl	X	Ondej Hudousek	
Ericsson	John-Paul Lane	X	John Keeney	
NTT DOCOMO	Masafumi Masuda	X	Anil Umesh	
Nokia	Juha Oravainen	X	Thoralf Czichy	
Orange	William Diego	X	Vincent Danno	
Radisys	Ganesh Shenbagaraman	X	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Manasi from Radisys attended on behalf of Ganesh. Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
 1. **Decision:** For the 3/24/2021 TOC meeting minutes, Motion by Jinri, seconded by David. Motion approved by all TOC members present.
4. Review of Today's Agenda
 1. Release Votes and Approval.
 - b. Rittwik: need to make clarifications on the OSC lab and report the status of the OSC lab
5. Copyright update
 - a. Jack: This Friday's meeting was canceled due to a religious holiday. Will pick it up in a week and continue the discussion. We made progress going through the document. We've adopted a policy to add the documentation to the existing license to deal with it all together. We still have a couple of key issues on the wording and the goal is to get this ready for the next O-RAN board meeting. There will also be an update to the O-RAN IPR Policy.
6. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
 - a. Jinri: It's confirmed the June meeting is still to be virtual. A patch of specifications has been approved by the TSC and it is now under the process of EC barrel. For MWC Barcelona there will be an industrial event on June 29th. There will also be a board meeting by the end of June. For other working groups now they are discussing the MVP process and their opinions are gradually converging from multiple players. In the EC meeting they were also continuing the discussion of MVP process. Within MVPC they are discussing the massive MIMO use case, but I don't have too many details.
 - b. Tracy: A new working group, working group 10 is established, and it's been formally approved. And this is dedicated to OAM. On O-RAN Wiki you'll see all the information, the charter and the scope of work and so on for working group 10.
 - c. Jack: Jinri, there's an action item that's with you and me on the TOC membership.
 - d. Jinri: I'm working on this, probably will be ready by tomorrow, or the day after tomorrow the latest. If we get this done within two days, then we can bring this to the next EC meeting on next Wednesday.
 - e. Jack: We're a little behind, but the action items are: a) to re-approve the current members; b) add the additional member that meets the requirements; and c) address the changes in the EC regarding Verizon's, non-participation. So we'll probably recommend a change there.
 - f. Jinri: So definitely we can bring this to EC next week. I wonder whether you want to get approval of the candidates, the new interested party, Wind River. Then we can bring this decision results to the EC together next week.
 - g. Jack: It's really the EC's decision. They approve the TOC member community makes a recommendation. We have the three recommendations which is: 1) re-approve everyone because everyone said they wanted to continue; 2) We have the new candidate who said they were interested in and they meet the requirements. And 3) Verizon has not been participating, also they've changed

their EC status. We're looking to the six operators from the EC representatives to provide their guidance on that. I also wanted to add to the agenda today which is the discussion on the alignment with ONAP.

7. Old business and Status of Open Action Items.

- a. **Action Point:** [Rittwik Jana](#) to set up a meeting with TIFG Co-Chair.

a. Rittwik: I'm still trying to set that up.

- b. **Action Point:** **TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?

a. Rittwik: We've been busy setting up the OSC lab and we've got most of this setup. The RIC is not in the picture and that's in a separate installation. We've got the virtual machine for the CU Radisys provides. It's important to point out that there is no O1 or E2 in Radisys' CU binary. It's a conventional CU, not an O-RAN compliant one. But we're using this CU to make sure that we can have UEs attached completely so that the full stack is actually going to get used. This is not the open source CU, which is one item that we are currently pending. The other item is the SMO. I need help from Felix to provide the IP addresses and the networking related to the SMO and the nonRT RIC that sits inside the SMO.

b. Tracy: Is this the SMO as currently defined within OSC, release C or D or some other flavor of SMO?

c. Rittwik: It's the same what we had tried in the C release. We've gone through three releases where we do kind of pairwise testing. In D release, we're actually trying to get the full view working. Everything needs to interconnect with each other to make sure that the full stack is actually working. That's one major accomplishment. In D release this will be the standing environment with the RIC controller. It will be essentially an environment that will be up and running with all the simulators, so everybody can just keep working on it. Another item is this need for this frontal switch. It's a special switch and we have one version of it in AT&T. We're still trying to see if we can make that work. Without that we can't get DU/RU interaction to happen.

d. Mahesh: I wanted to point out that O-RAN CU doesn't have an O1 interface so even if the SMO has O1 interface working, there's no way for the SMO to verify the O1 interface connectivity to the CU. In D release it leaves the near real time RIC and the DU the only two modules that we'll be able to verify. I'm not sure what the plans for the near real time RIC, whether they would be ready to the O1 interface testing in this release.

e. Thoralf: we didn't plan much on the O1 interface

f. Mahesh: so no O1

g. Jack: is the health check messages over O1 or something else?

h. Martin: it's OAM according to the specification

i. Jack: So that should at least be a basic O1 there. So maybe Thoralf if you could check on that a little bit more and we cover it next week.

j. Rittwik: The open test framework is helping to bootstrap a lot of the automated testing and scripting access to this infrastructure. We need something like a CI/CD pipeline so that when people come in, they can automatically write their code, inject the code, it gets automatically tested, and bug reports come out. I think that is pending on Felix's table. I wanted to mention that this infrastructure is going to be up and running. And we should keep moving along this line so that all use cases and projects reside on this. And then we have a working environment, full stack to stack, and then eventually a CU will be enhanced with O1 and E2.

k. Jack: We need a road map for this. If you can add the near real time RIC even if it's a dotted line for now until it's ready so people can see it. And in SMO, you probably need to put a box that says a non real time RIC.

l. Rittwik: Mahesh has a couple of components inside the SMO to get filled in.

m. Jack: I really appreciate everyone's efforts as it's a big step when you cross from pair wise to system testing. But it does also highlight some of our challenges, particularly getting broad utilization of O1 as an example. You were going to highlight this front hall gateway, right?

n. Rittwik: There's a direct connection right now that does the synchronization, the timing synchronization that is already happening. But what's lacking is the CU message that originates at the upper DU via the app interfaces into the lower DU. There is a couple of bugs that Radisys is trying to figure out once that is there. Then basically, you have the DU talking to the RU, not just synchronization, but the actual message. The ETA for the TM 500 is second half of April, at which point we should be able to turn up some UEs and have the full message interaction going all the way to CU and back.

o. Jack: Are you still looking for a front call gateway?

p. Rittwik: Yes, I may have located one, but I've asked Intel also to see if they can provide us one. I'm trying to follow that up on AT&T side. But if Intel can help, or anybody in this community can help with this switch I think that will be helpful.

q. Jinri: I have two questions. The first question is whether the fronthaul gateway is mandatory in this configuration? You have mentioned that currently there is the direct connection between the ODU low and ORU.

r. Rittwik: For the M-plane it needs to have that switch so that connection can be made to the SMO.

s. Jinri: And the second question is, you mentioned that the current OCU doesn't support O1 and E2, how can we address this?

t. Rittwik: Radisys has a plan to enhance their product with O1 and E2 support. But we will not have it in D release, maybe in E release.

u. Jack: We need a road map for the lab. Maybe a quick spreadsheet to show what functionalities there and what's coming in the future. But that's the challenge with the lab in the development environment when it has to continue to evolve as software matures and capabilities are there. And that's part of the challenge with looking at these more sophisticated use cases. There's a lot of work to be done, and I appreciate everyone's contribution towards those activities, I think it's a major accomplishment to be able to start talking to as many pieces as possible. But the pressure is on PTLs to look at how each of your pieces has to continue to mature to meet all parts of the specifications to meet the use cases.

- c. Jinri: to take the **Action Point** to prepare a briefing report for TOC membership renewal

- d. **Action Point:** Trishan to get the presentation from Lincoln and share to the group. The presentation can be found here: [O-RAN Badging Intro.pptx](#)

- e. **Old business:** CII badging

- i. **Action Point:** discuss <https://lists.o-ran-sc.org/g/toc/message/402> LFX security for OSC subprojects // CII badging
 - ii. **Action Point:** Trishan to come up with a presentation regarding certified badge from other projects e.g. ONAP. In this context we also need to discuss the usage of the LF Security tool (as raised in this mail: <https://lists.o-ran-sc.org/g/toc/message/402>)
 - iii. Trishan: We have the non real time RIC project as the first one passing and we have five other projects that are over 80%. I had a couple of requests to directly access from the PTLs to edit their entries. So if anyone else wants access and to make updates please shoot me an email.
 - iv. Jack: Trishan can you just send a short email with where we're at so we can forward that onto the security focus group to give them an update on the progress we're making. You can send to the general TOC list, or just to me and Jinri.
 - v. **Action Point:** Trishan to send a short email to the TOC list or Jack and Jinri, regarding certified badge from other projects and/or usage of LF security tool, so that OSC could forward it to the security focus group and give them an update on our progress.
 - vi. Tracy: Jack, you expressed an interest in exploring some sort of a badger badging process for the models. If there's still an interest, I will follow up and put a call in the calendar with the right folks next week.
 - vii. Jack: It's to our interest to promote progress that we're making on badging or other ways within the software community and drive some events that would help raise the awareness.
 - viii. Tracy: We can build on some of the work we've done with early adopters who are actually using or have implemented the models that are now approved for use by O-RAN and in some cases also standardized within 3gpp.
 - ix. Trishan: I would encourage folks if interested to look at the non real time RIC entry if they're looking for how they answered some of the questions.
8. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
 - b. [D Release Timelin](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - a. Jack: It's March 31st, we're in the last week of the second development Sprint, about halfway through. People should be making significant progress by now on their user stories and on their deliverables. We still have a huge gap in the sense that we haven't had anyone else step up for the integration and test activities. We need people to get involved, particularly as you look at the requirements are growing. And with this whole discussion about needing the CI/CD pipeline to be improved working with the Linux foundation, we need a couple more participants out there. Otherwise, we're going to run into a problem at the end of the release and not have enough testing done. The release is at risk here of completing integration and testing without more participation. I don't know exactly how to solve this problem, but we need additional help. One of the ways to get that help is to partner with something like Lincoln's proposal last week where we pay for some support that would help in some areas with the activities.
 - b. Rittwik: The massive MIMO team is calling out to all working groups members to take a look and see how they can interact or how they can shore up their requirements. So if the TOC feels that we need to involve ourselves in that process let us know more actively. Look at those requirements that come out of each of the working groups and then maybe cherry pick which ones we need to go do E release?
 - c. Jack: I'm really asking the participants here to engage with Rittwik about how do we move the solutions forward. The E releases should be a big release for us if we're getting closer to interoperating. How do we push the O1 requirement? We need to get closer to the target architecture across the board and by E we should be having a more functional system coming together to do more sophisticated use cases. I suspect that the massive MIMO use case probably isn't an e release. It's 18 months away, so three releases. We need to start pushing on more minimum deliverables for each module.
 - d. Martin: this week is M3. So there's an API freeze. If somebody has something in terms of API changes in the pipeline, just let me know.
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - iv. [@gusu](#) O-RAN Centralized Unit (OCU)
 - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
9. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
10. Planning for Next Meeting
11. Any Other Business (AOB)
12. Meeting Summary (resolutions, new action items, etc.)

2021 03 24

Recording: [TOC 20210324](#)

Agenda

- 1. Call for Scribe (minutes owner): Jinri Huang (CMCC)
- 2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	X	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	X	James Li	
Deutsche Telekom	David Streibl		Ondej Hudousek	
Ericsson	John-Paul Lane	X	John Keeney	
NTT DOCOMO	Masafumi Masuda	X	Anil Umesh	
Nokia	Juha Oravainen	X	Thoralf Czichy	
Orange	William Diego	X	Vincent Danno	
Radisys	Ganesh Shenbagaraman	X	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

- Decision:** For the 3/17/2021 TOC meeting minutes, Motion by Jinri, seconded by Ganesh. Motion approved by all TOC members present.

4. Review of Today's Agenda

- Jack: We have a guest speaker, Professor Lincoln Lavoie from University of New Hampshire, and he's going to talk about their badging process and their labs and the activities that they support in partnership with Linux Foundation. Trishan was nice enough to arrange for him to come and speak.
 - Ganesh: Small Cell Forum has been looking for some examples of open source implementation. And I mentioned our effort in open source regarding 5G HAPI standard and they are interested in exploring this further. Probably they would like to do some press release or something.
 - Jack: We're all in favor of reusing software and O-RAN standards. So we're happy to have a discussion.
Ganesh: Let me share that email.
 - Professor Lavoie gave the presentation about the University of New Hampshire InterOperability Lab (UNH-IOL) in the context of badging and testing approaches within open standards and open source. **Action Point:** Trishan to get the presentation from Lincoln and share to the group.
 - William: I'm a bit confused as this kind of certification and compliance is handled by the test and Integration focus group in the O-RAN Alliance.
 - Jack: TIFG is setting up a program to validate the specifications. The opportunity here in the open source community is more on the validating the software and trying to build more activity around the software that is available, such as the interoperability of xApps or rApps. We have to figure out how to promote the open source software capability to the developers who are not yet O-RAN partners. So there's a range of opportunities here that I wanted to make sure the community was aware of. Both the University of New Hampshire and Linux Foundation participate in similar programs across the open source community, for testing of the specifications, and testing of the interoperability with the software that's being created in the community. So it's just a little different focus. Anyway, we need to find ways to continue to promote the use of the software and different aspects of the software.
 - William: my understanding for this topic was to talk more about the badging best practices around the open source implementation in the software community
 - Jack: that's basically correct. But our work is coupled to the O-RAN specifications. There will always be some references as to what version are released ties to what version of the specifications. Our job here is to really talk about interoperability, and the badging associated with use of the software. Lincoln's presentation is very open to the whole space and each software community has to sort out for themselves how they handle these issues. Rittwik, are you still working on setting up a talk with TIFG?
 - Rittwik: I've made some progress on that and I will finish that work item.
 - Jack: Lincoln, have you talked to the TIFG group in O-RAN?
 - Lincoln: We have not yet spoken with that group.
 - Tracy: Actually, we had a talk a while ago. I don't think it was you, Lincoln. We spoke with you guys and a couple of people from broadband Forum and got some excellent ideas. Jack, I found the note from late 2019. I'm forwarding it to you and Rittwik.
 - Rittwik: The TIP consortium also has a pretty mature certification and badging process. Maybe we can take a look.
 - Jack: The focus here is to promote the software that's available through the open source community and how it's maturing, how products interoperate with each other. The intent here is never to do every aspect of the O-RAN specification testing. That's more where the TIFG is focused. We're more focused on the software and APIs which maybe not as forefront in some of the TIFG's focus.
 - Lincoln: The other opportunity is that any work that you guys do can feed into their badging work or vice versa. If you were to focus on the API space, they might be able to then leverage that in some of their testing requirements down the road as they move forward and develop what will be the formal O-RAN approach.
 - Trishan: would it make sense to have a follow up meeting with Jinri, Tracy and Lincoln offline?
 - Jack: Certainly. Please post the time on Wiki or send email when you set up a time to continue the discussion so people are aware.
- ### 5. Release Votes and Approval.
- ### 6. Copyright update
- Jack: We continue to meet on Fridays. The legal team is in reviewing this proposed new license and process for handling specification copyrighted materials in the open source. They're refining the several points in the license to make sure that the broader legal team is comfortable. They're working on specific critical wording areas that the legal team is making sure everybody is clear on and frequently asked questions to give guidance to more users on what they think are critical aspects of using the new license.
- ### 7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
- Jack: Another item to let the group know is about the update on the TOC membership process. We need to work with the EC.
 - Jinri: My understanding is that currently we still have some seats vacant and I don't expect a voting for this. We also have already requested the top members to indicate whether they're interested to continue this membership or not by email. What kind of process are you talking about?

- c. Jack: We have one seat from that is changing. And we have one new proposed. We have two new EC candidates. We also have a new TOC candidate from the community. So those issues are to be formalized as part of the annual process.
 - d. Jinri: I will take the **Action Point** to prepare a briefing document for this.
8. Old business and Status of Open Action Items.
- a. **Action Point:** [Rittwik Jana](#) to set up a meeting with TIFG Co-Chair.
 - b. **Action Point:** **TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 - c. **Old business: CII badging**
 - i. **Action Point:** discuss <https://lists.o-ran-sc.org/g/toc/message/402> LFX security for OSC subprojects // CII badging
 - ii. **Action Point:** Trishan to come up with a presentation regarding certified badge from other projects e.g. ONAP. In this context we also need to discuss the usage of the LF Security tool (as aised in this mail: <https://lists.o-ran-sc.org/g/toc/message/402>)
 - iii. Jack: Trishan, any updates on the CII security badging?
 - iv. Trishan: A couple of groups had reached out to me that we're setting them up with access. The infrastructure project has progressed up and now it's 75%. If anyone wants to edit the entries directly, all you need to do is set up an account in the CII platform and send me the user ID number from your profile.
 - v. Jack: The goal is that by the end of this release that we complete the badging for all the active projects. We want to talk a little bit more about it since it's approaching the mid point of the development cycle.
 - vi. Trishan: I think the one area that right across the board is the reporting process has to be written out.
 - vii. Jack: I think we're relying on the security focus group in O-RAN to be the parent organization for that. Because if something gets highlighted, there is an equal part software and equal parts specification that we need to make sure we cover as part of that process.
 - viii. Trishan: We just need that sort of central reporting line to report an issue. So we'll set that up.
 - ix. Thoralf: Still one question I heard you talked about two minutes ago. Was it about getting a project into the CII badging page?
 - x. Trishan: No. All the projects now have profiles set up in the CII badging entry. If you want to edit your entry directly or add an updated, you can go log in with your Github account to create a user profile and send me the user ID number from that system. And I can add you to that project.
 - xi. Jack: Is there any PTL that has any items they would like to raise at this point in time?
 - xii. Thoralf: Is the LF security something that should play a role in the CII badging?
 - xiii. Trishan: That's a separate tooling. But we can use it if you want, but I think it doesn't support SQL yet, so that may be a gap for us.
 - xiv. Thoralf: That's also my understanding, but it would cover already quite a lot. For instance, in near real time RIC project it can cover 90% of the code.
 - xv. Trishan: If you need to use that tooling form you need a link to the CII badging. I would just use the search page with all the O-RAN projects listed in the way I've tagged it. We can discuss offline to walk through it.
 - xvi. Jack: I'd like to see how you go through it and then we can learn from it and then look at bringing the other projects to work them through.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
 - b. [D Release Timelin](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
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 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

2021 03 17

Recording: [TOC 20210317](#)

Agenda

1. Call for Scribe (minutes owner): Jinri Huang (CMCC)
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	X	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	X	James Li	

Deutsche Telekom	David Streibl	X	Ondej Hudousek	
Ericsson	John-Paul Lane	X	John Keeney	
NTT DOCOMO	Masafumi Masuda	X	Anil Umesh	
Nokia	Juha Oravainen	X	Thoralf Czichy	
Orange	William Diego	X	Vincent Danno	
Radisys	Ganesh Shenbagaraman	X	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

1. **Decision:** For the 3/10/2021 TOC meeting minutes, Motion by Jinri, seconded by John-Paul. Motion approved by all TOC members present.

1. Jinri: per our previous meeting, I put the set of open action items under this under #8 (Status of Open Action Items)
2. Jack: We often have open items that are not necessarily just action points, but I'm fine with it.

4. Review of Today's Agenda

1. Thoralf: I put one item in the beginning to discuss LFX security for OSC subprojects/CII badging

5. Release Votes and Approval.

6. Copyright update

1. Jack: More people from this team had joined last Friday's meeting. As mentioned before, the license just covers software. The biggest risk is that it's clearly not an open source license from a Linux Foundation perspective. Also it doesn't address the documentation copyright. The legal team asked me to come back with some firm examples where we need O-RAN specifications. Does anyone have a couple of good examples where separate file under CC 4C of module documentation needs to reference material that would be covered by the copyright from O-RAN specifications? Does anyone have any good examples I can use in the dialogue with the community?
2. Matti: For example, RIC implements E2AP version 1.1. That's not what you're talking about -- just reference to a version number?
3. Jack: No, I don't think so. I think it's more like how people could interact with these software components after they are built, such as our error messages that are documented or something that have to be exposed.
4. Thoralf: I wouldn't come up with anything that we put into the documentation related that is copyrighted material from the spec.
5. Jack: How about like an error message list that is generated that aligns with what is in a specification?
6. Thoralf: I think that's a borderline case.
7. Jack: How about API documentation?
8. Thoralf: We wouldn't directly copy anything from the original specification for a description of what an API is supposed to do.
9. Matti: Would there be an issue if we refer to some variable name, such as E2SM has some fields in the ASN.1 and we show in the documentation how you construct that object in an xApp. So you need to assign value to a field with that name -- we are essentially copying the same field name from the ASN.1 specification, but not the whole specification.
10. Thoralf: I don't think so. There has to be some significant intellectual value in the part that you copy.
11. Jack: Remember this is not patent. This is copyright, it's image and representation. There's a threshold in general practice of how much you have to represent before it's unique enough to be considered copyright in the representation.
12. Martin: For O1 we have a figure in the documentation about the overall architecture. We made it ourselves as a figure out of the O-RAN architecture. Could that be an issue or not?
13. Jack: That's something considered as a derivative work, depending on how significant it is. The issue for us as a larger community is if we want to address this problem, now is the time. If we don't raise it now and it becomes an issue in the future, it will be very difficult to reassemble.
14. Thoralf: I don't see a documentation issue.
15. Jack: OK, we'll then de-emphasize the issues with getting some documentation licensing in peace. If anyone comes up with anything, let me know.

7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

8. Status of Open Action Items (Old Business).

- a. Jinri: I gave a brief report at last Friday's O-RAN alliance TSC meeting. And I mentioned there was a lab from a university in Taiwan that shows interest in OSC testing. The TSC wants to encourage this lab to apply for OTIC as well. In TIFG I believe they have already developed this guidance and criteria for O-RAN and OTIC. Actually I think two operators, Dutch Telecom and Telecom Italia, have recently submitted their application for an OTIC center. This is kind of encouragement from TSC for this potential OSC lab in Taiwan. I need a contact of this lab to reach out and pass the OTIC related information to them.
- b. Rittwik: I can get you the contact person information
- a. **Action Point:** [John Murray Ganesh Shenbagaraman](#) to close this.
 - i. Jack: any update on the OCU license?
 - ii. Ganesh: let's consider this as complete. Sphoorthi is on this call and she will take care of it.
- b. **Action Point:** [Rittwik Jana](#) to set up a meeting with TIFG Co-Chair.
 - i. Rittwik: I haven't succeeded in setting up the meeting yet, but I reached out to them and hopefully this week.

Action Point TOC members and whole community to indicate what do we really need to deliver in D- and E-releases to be successful and useful?

- i. Jack: How's the E release planning shaping up? Are there any points of discussion that we need people to be thinking about?
- ii. Rittwik: We haven't started the release yet. Potentially I think that the MIMO requirements would go into the E release. Obviously, the whole MVP package cannot be done in one release, So we'll have to kind of trickle different sets of requirements in E, F and G releases. Another work item is to work through some more details on the SMO package.

- iii. Jack: I'll just use the MIMO as an example we need to make sure we have a block diagram of the modules that are needed and then the capabilities in those modules, because that may take a significant effort. How are we progressing on having a functional stack where we're just emulating the UE and the radios? And what percentage are we covering?
- iv. Rittwik: There are many different use cases that fall under the larger MIMO umbrella. Specific use case would have specific requirements. For example, grid beam optimization would have a set of inputs and outputs, and beam based mobility management has a different set of input output. We need to see what are the dials and the control knobs that you need for each of these individual use cases. The MVP team is going to collapse multiple use cases to figure out what super set of dials and knobs they need. Once we understand what those dials and knobs are, we can figure out how we're going to do that in software. From a hardware perspective, we need to think whether we need a MIMO system to do this or kind of simulation can work. I think that the interface compliance check and validation is what OSC can help. In the end the MVP package will come up with specifications that describes those dials and knobs, and the metrics. I think the plumbing needs to happen first. And then once the plumbing is all set, you can actually showcase a specific use case. We'll have a little bit more clarity once MVP settles down a little bit more.
- v. Jack: We need to focus on things that we can deliver incrementally and what shows the basic capability of the software. We may not choose to implement every use case but to figure out where it's best to spend our resources and our time.
- vi. Rittwik: That's the good part about the MVP package, which helps to set the priority and tell us which use case is the first one out of the gate.
- vii. Jack: My only concern is that it might be technically very interesting, but difficult to implement if they pick the most difficult one for us to do first. I encourage the community here to sort through on how we build stepping stones so that we can deliver some of the incremental work in each release on simpler use cases and then still tackle the more complicated one a year out. The community has to decide overall what strategy we can move forward with to keep the software delivering useful value to the community.
- viii. Martin: One question from my side: are we targeting also that we have a real end to end use cases with the mobile core in place because I think those are kind of required in order to get all the data which we need to transport over the interfaces. And I'm keeping also in that direction if we can set up an open source mobile core from some other parties. Otherwise, we always send data which we know in advance, and then we try to do machine learning on top of it but it's not very attractive to demonstrate.
- ix. Rittwik: Without the metrics and the dials and the control knobs, we will not be able to work through the entire full end to end stack. What's happening is first a parent work item is getting created. Drafted from the parent work item, there will be individual child work items. The child work items are the responsibility of each working groups in O-RAN alliance. Each of the working groups will come up with their child item specifications, and in OSC we will be able pick which ones we are interested in implementing, if not all of them. And once you implement all the child work items classification, then you have a full end to end working stack. I think it's a little ambitious that we can do all of that in E release.
- x. Jack: Let me view it in a slightly different angle. You can have different tracks when building a system. 1) A track that each individual component in the system must achieve, such as resiliency, security, APIs, etc. 2) How the system works when putting the components together, things like deployment, failure recovery. 3) What are the use cases that you want to accomplish using the system? It's a small number of tracks but you have to work in parallel, pushing progress in each of the different tracks, to continue to make sure the system is mature. You can't just think about the applications and the use cases running on it.
- xi. Rittwik: So some of those are management plane tracks, some of those are control plane tracks.
- xii. Jack: Yes. The community can decide how many tracks they want to focus on and drive, and progress through them. But we really need to make sure we're progressing in the multiple areas in each release. On one side you can't just abandon other tracks and jump to the end use case. On the other side, a lot of the work you're doing to build the underlying components does not drive much value because they don't see how it comes together to solve the bigger issue if you don't have any use cases. It's important to find the balance across each of these areas.
- xiii. Martin: I wonder whether we should have a check list in a certain order to show what's the next step in the road map.
- xiv. Jack: We need to think about how do we promote ourselves better. How do we expand beyond the 25 members who joined this call? How do find a significant issue, oress on and bring value? The future direction of the community has to be looking at how we bring value and promote the work that we're doing so that the software gets reused.
- xv. Rittwik: Would it be okay to for the PTLs to raise awareness on the individual project, and maybe reach out to the community who is actually using all this stuff to let us know what features they would like us to implement. Right now it's the 25 members who were joining these calls are making all the decisions and pushing the agenda forward as best as we can. We can only think of what's happening here and now. Future looking features need to come from outside of the 25 member groups. I would suggest to get developers outside their opinions on features they like. Make a bullet list and then bring that to this discussion. I'll put it up in the wiki. Otherwise you will just be circulating amongst ourselves.
- xvi. Jack: I certainly encourage that. The other way for us to do is to come up withour own milestone event to promote ourselves like I was talking a little bit about it last week. Can we come up with a challenge? Can we come up with a badge objective that we can take to TIFG? Do we have a challenge on how we can try to get interoperability between different near real time RIC? But we just need to figure out ways to promote ourselves more and the value of the software.

Action Point [Zhimin Yuan](#) to work on CII bading for O-DU-LOW project.

- i. Zhimin: I updated the status in Wiki and it's 91%

Action Point: Trishan to come up with a presentation regarding certified badge from other projects e.g. ONAP

- i. Trishan: I've worked with a couple of folks to fill out their entries so we should have more details on that in the next couple of days. I'll try to get some details for next Wednesday to present. The easy CLA team is working on a V2 release for the CLA Management. Maybe the CLM managers will see a new interface in the coming couple of weeks, so I'll share some more details on that once I have that as well. Just a heads up that a new release is coming out.
- c. **Action Point:** discuss <https://lists.o-ran-sc.org/g/toc/message/402> LFX security for OSC subprojects // CII badging
 - i. Thoralf: There are two CII requirements in a container environment. A very narrow view is only about the source code that we publish in Gerrit from OSC. A broader view is about the overall security level of the whole solution which is not only our source code, but also the components pulling from somewhere else. Do we want to be up to date in these binary containers with respect to security or not? Alok from HCL contacted the LF guys and they recommended this LF security tool. First is to organize groups of sub projects into one big project at the community level and then under that we would create sub projects which then can have multiple repositories in them. So that would mirror quite well the structure that we have at OSC. I would actually propose that we start using this LF security tool this way, we can prototype this first with the near real time RIC to see how this works.
 - ii. Jack: We take it offline during this week, and then we have another discussion next week in the beginning.

9. Standing Agenda Items (Brief Status of Ongoing Activities)
 - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
 - b. [D Release Timelin](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
 - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIG)
 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

2021 03 10

Recording: [TOC 20210310.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Jinri Huang (CMCC)
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	X	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	X	James Li	
Deutsche Telekom	David Streibl	X	Ondej Hudousek	
Ericsson	John-Paul Lane	X	John Keeney	
NTT DOCOMO	Masafumi Masuda	X	Anil Umesh	
Nokia	Juha Oravainen	X	Thoralf Czichy	
Orange	William Diego	X	Vincent Danno	
Radisys	Ganesh Shenbagaraman	X	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
 1. **Decision:** For the 2/24/2021 TOC meeting minutes, Motion by Ganesh, seconded by David. Motion approved by all TOC members present. For the 3/3/2021 TOC meeting minutes, Jinri will update the lady's name spoken for ODUHIGH. Motion by Jinri, seconded by David. Motion approved by all TOC members present.
4. Review of Today's Agenda.
 1. Rittwik: needs a fronthaul router for the lab, which switches between the RU and DU. The router needs to talk 25G to the DU. It also needs some specific timing associated with this switch. Rittwik has some candidates in mind and will send out via email.
 2. Juha: a couple of weeks ago there were some discussion from those open labs, and if we could get some more information to our website.
 3. Rittwik: will take direction.
 4. Jinri: one comment – Ganesh suggested to collect all action items and put in one place
 5. Jack: add one after "Review of Today's Agenda" for the collected action items.
 6. Juha: Take the action items out of Item 13 and add after "Review of Today's Agenda"
 7. Jack: we'll start this from the next meeting on
5. Release Votes and Approval.
6. Copyright update.
 1. update
 1. Jack: had a meeting again last Friday. I think we're pretty close on one part of the discussion to spell out the basic license. For this Friday's agenda we will bring that to beyond O-RAN to 3GPP and others to get feedback. There's one open item that's still not quite resolved: how to deal with documentation. The license covers the software code, but doesn't cover documentation. Most of the documentation in our projects is covered under CC4, which is a different licensing mechanism than the software code, which uses Apache. In my mind, at least, the documentation takes two forms: one is direct documentation of how the software is written and maintaining the software; second how you use the module that the

- software builds. Like, how do you use a near real time RIC. Simple examples typically fall into ASN.1 code models and software examples. In addition to the description of the functions, people are going to use APIs and error codes. Would you expect that ASN.1 code examples appear at the high level documentation?
2. Thoralf: you would probably be able to limit yourself so you would just kind of refer to the IEs by name, but not put their structure there
 3. Jack: there's an action for me to share the legal writeup. The legal team owns the content. Does anyone who doesn't have the latest version and would like a copy of it? If there is just please reach out.
2. **Action Point:** John Murray to share legal team write-up
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
 8. Status of Open Action Items (Old Business). i. Ganesh: Stephan did not seem to find the original email so I resent it to him. Hopefully to get his attention and Stefan can review this and the technique steps.
 - ii. Jack: Jinri, we probably need to set up a summary for the EC on a couple of items, one of them being the OCU discussion about how to proceed. We can periodically review on some of the topics.
- a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. Ganesh summarized the updates so far. Legal agreement due for signature from O-RAN. Needs approval/follow-up in O-RAN. Jack will follow up.
 1. **Action Point:** John Murray Ganesh Shenbagaraman to close this.
 - b. "D" Release requirements
 - i. **Action Point:** user-59b16 to set up a meeting with TIFG Co-Chair.
 1. Rittwik will try to schedule a meeting with TIFG Co-Chair this week.
 - ii. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 1. Rittwik: has set up a page under releases in wiki. for the OCU I just copied over from the C release. At this point almost everybody has filled in their high level goals and objectives.
 2. Jack: it's good to capture them on the page as things develop. It's a good way for us to keep a little bit of history as we go through the projects and what people do so people can figure out what was the thought process.
 3. Rittwik: I'll update with the new use case that we're targeting for the D release. Each PTLs have put in their bits, but maybe an abstract on what we're trying to demonstrate the closed loop use cases.
 - c. CII Badging
 - i. Mahesh: Will work on CII badging. **Action Point** Mahesh Jethanandani to work on CII badging for SMO project.
 - ii. **Action Point Zhimin Yuan** to work on CII badging for O-DU-LOW project.
 1. Trishan: all the projects now have a badging page set up so we can track progress. It's under software, and then best practices. And there's the table.
 2. Jack: there's nothing listed here for ODULOW. Is that because we don't feel there's any code there?
 3. Zhimin: I will update it offline
 4. Jack: INF at 3%?
 5. Trishan: We have some of the content for that. I need to add them to update the entry.
 6. Thoralf: I probably would need to work with you because I did enter some of the information. I don't know why it's not showing up.
 7. Trishan: once you have the page setup, anyone from the project can go in and update it. I can get you set up on that.
 8. Trishan: I think it makes sense to discuss the security response and reporting, like having a common procedure across the projects to report or having it documented for each one.
 9. Jack: we were trying to say that we would raise those issues with the O-RAN alliance security Group C. Are people overall comfortable with listing the O-RAN Security Focus group as the overall contact. And then if things come up, we raise it with them and have them manage the overall remediation and response. And then we focus on what codes needed to do that that makes sense to people rather than creating our own security efforts.
 10. Trishan: from the reporting CII perspective, we should just document that process somewhere that they can find it easily. I can set up a page under "software" at high level.
 11. Jack: Jinri we should add that to our discussion with the EC to make sure that we inform them how that's working and then follow up with the security team focus group.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
 - a. Release Manager Trishan de Lanerolle /Release Planning: Weekly TOC Scheduling
 - b. D Release Timeline
 - i. Jack: Today march 10th puts us in week 10, which is kind of wrapping up dev sprint 1. So next week will be asking for some progress from the PTL they think was completed in the Dev Sprint one, 1/4 through the cycle and how we're doing towards our overall objectives. So we'll expect to spend a little more time on that next week.
 - c. user-59b16 Requirements Software Architecture Committee
 - i. Rittwik: I've just been going to the MVPC where a lot of massive MIMO discussions there, so I think that will be the things to work on the E release. It's going to be like a 18 month program before the MVP package comes out. Before we see it is very tightly coordinated with the working groups because specifications have to be written first, then we can kind of work on it. The next six weeks the MVP team is meeting to hash out the plans as to which working groups are going to do what. We will get a good idea after six weeks what each working group has to do for massive mammo. Then OSC should take a look at that point and see if something can be done pre spec. Or maybe look at some models. Obviously, we can't build anything, but we'll have to see how to prepare for that. Eventually, I think after the 18 month cycle, when the specs come out, there'll be a very good set of requirements or specifications to work on. That's really what we need to kind of keep an eye on E release. But if the EC feels otherwise, please let us know, because right now all the working groups are putting their inputs in, how to strategize, how to make sure that they can balance their work according to what MVP team wants to do versus what is already in process. So if you think that the OSC needs to be playing a more active role in steering the MVPC, then tell us how we should do it right. Otherwise, it's really a specification work item and each of the stage one, two and three requirements have to be completed and the specifications have to be drafted based on that and that's going to take a long time. I was basically asking the team to create a special task force to see if they can get that task force to do the stage one stage two, stage three work and then bring it to the working group items in parallel for them to cross check it periodically rather than funneling the work through the working groups. But people felt that will be kind of fragmented. O-RAN MVP release will almost be around the same timeframe like 3gpp takes about 2 to 3 years to get specifications out. So what have we really gained? I thought the whole point was to actually get specifications out quicker and, you know, But I guess work cannot be accelerated just because you want to accelerate it.

- ii. Jack: I think the MVP has decided to take a more ambitious, large scale gold track of being able to implement a major use case like the MIMO use case, which exercises most of the system. I think we as a team needs to support that long term. But I don't think we will be successful if we sit around and wait for a year and a half to promote progress in the software community only on such a big work. In my mind there are some things that we really should be doing, sooner than later, to promote the progress that we're making. Some ideas are: 1. I see people talking about near real time RIC out there. Should we be driving an event around interoperability with our open source xApps and then let other people bring their real time RIC and run it as a badging event. 2. the non real time RIC as a module, not the whole SMO has a similar potential. And then we can start to really promote a broader interoperability piece around and use of the software on a broader basis. We have our labs and this lab that we're working with University in Taiwan. We also have the opportunity to do it with the OTIC and with Linux Foundation. 3. Make O1 to really be successful like USB where there needs to be an aggregate release of support for an O1 version. We need to promote our software community and show how we've done the work to make sure it's the key reusable components as part of a broader ecosystem. We have to start figuring out how to take the software to a more reusable level than just the incremental steps of specifications.? If the industry doesn't at least rally around a couple of these incremental steps as a point of real interoperability, I'm just concerned that O-RAN becomes an ocean of activity without any real major milestones or goals that the broader community can rally about.
- iii. Thoralf: just a comment with all due respect: that's not the role of the O-RAN alliance nor OSC. If you want multi-vendor interoperability, you define it in standards rather than writing code and then expecting that to become a standard. The O1, the RIC interoperability interface, the O1 interface in the non real time RIC, are not standardized.
- iv. Rittwik: create an O-RAN specific or OSC specific certification and the badging process just like what TIP is doing. There are different levels of these badges and depending on what requirements you meet, what specifications you're compliant to, you get a certain level of Badging. Maybe OSC will give out badges in coordination with O-RAN alliance. That's the only way you can kind of promote.
- v. Jack: I think O-RAN alliance should give out the badges. We as a community should push them towards some of these needs as we see software starting to exist that would enable those things.
- vi. Rittwik: I think you can influence that managing process. How we do it is still TBD.
- vii. John: has TIFG also done something related to this certification process?
- viii. Rittwik: I'm not sure how much they have done. There are their badges that are ready to go. Our products already been certified.
- ix. John: I think I have read somewhere that someone has been done in this area and we see this as being related to the minimum viable plan as well. Should MVP drive or should we feed back from OSC into the minimum viable plan. What we think we can do in specific releases and then that will act as a driver for the alliance to speed up in some areas and maybe slow down in other areas based on priority or focus.
- x. Rittwik: So you suggest that after a certain specification comes out, OSC needs to check it, implement and verify it and then associated with that verification process to give a badge?
- xi. Jack: That's part of what we want to talk about with the TIFG. At this point, we should let them know there are new near real time RIC, xApps, non real time RIC, and SMO at a certain level of capability that we would like to help drive some kind of badging event around. I think we need to figure out how to promote what we're doing, leveraging what's been there. And as part of that process, maybe bring a little pressure to the specification teams to rally around a particular milestone. We need to continue to talk about how we promote ourselves and how our software can be used and promote those uses and try to rally the community of users and align that with O-RAN objectives. I'm just concerned that we are not getting enough visibility about what we really do.
- xii. Trishan: we have existing badging that we can look at and ramp up. The most recent one that comes to mind is the ONAP certified badge. I can dig one presentation up about what other projects or somebody else has done.
- xiii. Jinri: regarding the TOC seats we particularly mentioned last week that any TOC members who are interested in continuing his membership should reach us by the end of last week. So far we have got the responses from Nokia and Ericsson.
- xiv. Jack: Ganesh from Radisys as well, also a new interest from Wind River.
- xv. **Action Point:** [Trishan de Lanerolle](#) to come up with a presentation regarding certified badge from other projects e.g. ONAP
- d. [Zhe Huang](#) (Felix) Integration and Test
- e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
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 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
- 10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- 11. Planning for Next Meeting
- 12. Any Other Business (AOB)
- 13. Meeting Summary (resolutions, new action items, etc.)

2021 03 03

Recording: [TOC 20210303.m4a](#)

Agenda

- 1. Call for Scribe (minutes owner): Jinri Huang (CMCC)
- 2. Roll Call & Quorum Check

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Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	X	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	X	Weichen Ni	
Deutsche Telekom	David Streibl	X	Ondej Hudousek	
Ericsson	John-Paul Lane	X	John Keeney	
NTT DOCOMO	Masafumi Masuda	X	Anil Umesh	
Nokia	Juha Oravainen	X	Thoralf Czichy	
Orange	William Diego	X	Vincent Danno	
Radisys	Ganesh Shenbagaraman	X	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

1. Decision:

- i. Delay decision to the next meeting since the last meeting minutes was uploaded just hours ahead of the current meeting and people didn't have time to review them.

4. Review of Today's Agenda.

1. i. Jinri: Xiaohua Zhang, the INF PTL applied for TOC seat.
- ii. Jack: If there's any interest, please do that by the end of this week, and we'll proceed through the process.

Action Point: ALL interested in TOC seats to indicate to the team by this week

5. Release Votes and Approval.

6. Copyright update.

1. i. Jack: We had a meeting last Friday that included, Ericsson, Nokia, Qualcomm, AT&T, Stefan from O-RAN alliance, Scott Nicholas from Linux Foundation. Nobody from CMCC was there last week. We'll meet again this Friday. There were a couple of agenda items: 1. Stefan is getting input from European operators, and he set up a meeting next week. We'll continue to meet on Fridays until we get this resolved. The work continues with a little bit broader scope in the sense that they are also trying to work the items with 3gpp at the same time.
- ii. John-Paul: We would take maybe a prep or a catch up meeting before this Friday session. I tried to book a meeting with Hank and a few other this afternoon Europe time.
- iii. Jack: I can make it. The discussion continues on. The current trend is towards a license around the material that we use from O-RAN alliance. So for the O-RAN alliance specs and other material that is of interest to license to the open source community it will be pulled out into a separate file that they had put under this license, which then we could pull into osc and use downstream. That's where the legal teams are pointing us to at this point in time. but we're gonna have to see how this works out in practice. I'm concerned about the process and how well it will be maintained.

2. **Action Point:** John Murray to share legal team write-up

7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

1. i. Jinri: Open Summit last week: there were two channels, one was from the China and the other is to join from out of China. The China Session had around one thousand audience online; and the international one had near 2000 audience at the same time. There were some reported incidents about the streaming and we are addressing that. The meeting recording is available on the ORAN website and it's public. The MVP Committee has already initiated work after the virtual face to face meeting.
- ii. John: Rittwik is on a meeting right now in parallel
- iii. Jinri: On this Friday, there will be a special TSC meeting and the major topic is related to the copyright discussion.

8. Status of Open Action Items (Old Business).

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. Ganesh summarized the updates so far. Legal agreement due for signature from O-RAN. Needs approval/follow-up in O-RAN. Jack will follow up.
 1. **Action Point:** John Murray Ganesh Shenbagaraman to close this.
 - a. Ganesh: hasn't heard anything from Stefan and will keep on pinging him
- b. "D" Release requirements
 - i. **Action Point:** user-59b16 to set up a meeting with TIFG Co-Chair.
 1. Jack: Rittwik to set up a call with the TIFG Co-Chair and talk about how we can better align, testing and integration activities.
 - ii. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 1. Jack: We're beginning the implementation at this point. The targets and requirements should be set not changing, and the team should be working towards those goals.
- c. CII Badging
 - i. Mahesh: Will work on CII badging. **Action Point** Mahesh Jethanandan to work on CII badging for SMO project.
 1. i. Jinri: is the SMO the only project who hasn't finished CII badging?
 - ii. Jack: No, it's not finished. It started. The first milestone that we were looking for is to have everyone begin the process, and then we'll check at the end of every software development cycle for progress towards the overall end.

9. Standing Agenda Items (Brief Status of Ongoing Activities)

- a. Release Manager Trishan de Lanerolle /Release Planning: Weekly TOC Scheduling
- b. D Release Timeline
- c. user-59b16 Requirements Software Architecture Committee
- d. Zhe Huang (Felix) Integration and Test

- i. Felix: slowly catching up on multiple requests for my assistance with the OSC labs I promised to finish the OSC lab preparations for the teams by the end of this week. I know there's been a bunch of questions because we have an external lab partner who is setting up a lab.
 - ii. Jinri: who is the extended lab partner?
 - iii. Felix: a professor from Taiwan wants to collaborate with us and set up a separate lab in Taiwan that basically a typical of the OSC lab we have in AT&T, and they also want to participate in the ODU testing as well as the security and the integration testing for the entire O-RAN SC project.
 - iv. Jinri: is the new lab complementary to our existing one at AT&T?
 - v. Felix: it should be complementary, but in general it's another lab. You can do things in parallel and especially during the releasing time we can have different teams perform different kinds of integration testing in both labs that will speed things up. Later on we can discuss what kind of role they can play.
 - vi. Tracy: There are also a few university labs, public research labs in Europe as well as North America. And I think we need to figure out how OSC can benefit from the work that's done in those labs. There are also potential OTIC candidates within O-RAN who are designated testing and integration center.
 - vii. Felix: Right now it may not be easy for the researchers in the universities to participate in testing in the OSC directly. But if there is a lab run by academic community, it will help them a lot, especially if they want to publish papers related to O-RAN projects. Definitely we want to talk to them and see how we can get assistance from them.
 - viii. David: There is an issue we have right now on release D with the lab regarding the front haul. In order to do a hybrid model where the SMO will connect to the O-RU, we need to find a front haul gateway to put in there between the point to point connection between the O-RU and O-DU, Rittwik probably will reach out to Felix. Without it, we have to implement code in the ODU to act as a packet forwarding interface for the front haul and M-plane, to the ORU for hybrid. Or we'd have to implement into the ODU a complete domain manager for a hierarchical model. And both of those latter ones require significant amount of coding to be done in the ODU. So we think that the front haul gateway is faster. But of course, it requires a device. It was discussed at yesterday's RSCA meeting.
 - ix. Felix: I'm going to review the meeting and catch up with you and with Rittwik.
 - x. Tracy: there are several options. Certainly the open front haul experiments and demonstrations in university labs in North America and Europe bypass the complexity of frontal gateway. But those test beds could be considered as candidates. And the one in North America is already integrated to some extent with multiple vendor labs as well as a couple AT&T labs.
 - xi. David: did those models still have a connection to/from ORU device instead of just to the SMO for the demonstration? Did it also still maintain the C/U/S-plane connection?
 - xii. Tracy: that's not a problem and we can build upon that potentially. Can have offline discussions about this.
 - xiii. Jinri: I have one further question for the lab in Taiwan. can we call this an OSC lab? What is the kind of official relationship between the existing OSC lab and the lab in Taiwan?
 - xiv. Tracy: The relationship among the labs in China, India, North America and Europe is that they're loosely described as OTIC candidates. And that loose definition is intended to allow them to also double duty, as OSC integration Labs based on getting the appropriate designation from the OSC. That's been the direction so far. Okay? The Taiwan lab can be built to be very specifically an OSC lab or an OTIC candidate that specializes in OSC integration.
 - xv. Jack: I've been calling for more help on the whole integration and test aspect. It was originally a pretty small team and now it needs more participation as more modules and more functionality growing. So this Taiwan lab brings some resources that can work on some items. We need to identify on how to get things set up and what the level of interest is and how best to align the different activities although it's just in the early stages of exploring.
- e. Report out from PTL: Stand-Up & Report Out on Blockers
- 1. Jack: Rittwik will set up a page for the D release in which it has breakdown of the different projects. Each of the PTLs needs to put a little summary paragraph and then links to whatever is relevant so each of the projects should have an update relative to the D release for people to see
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - 1. John: Still trying to figure out how can do all news use cases and nothing too exciting to report at this stage.
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - 1. Matti: Things are moving along. The RIC SDK repo creation was finally completed. No blockers, just a lot of coordination effort between multiple companies. China Mobile and Samsung India team started populating code in repos for the Load Prediction xApp, and the HelloWorld xApp in Python and Go, respectively. People are engaged in the SDK project, but it's still in the discussion stage. Once the RIC architecture document is completed, then the focus of WG3 RIC Architecture Task Force is going to be on the API or SDK aspects. In OSC we are trying to implement something not yet a complete SDK, but focus on some subset of the SDK, for example a KPI-Mon xApp that would be portable between OSC and SD-RAN. But given that the discussion on what should be the portability SDK still in early stages, it's somewhat optimistic that we would get this wrapped in release D even for that subset.
 - 2. Jack: besides the OSC and SD-RAN, is there any member company that's working on a flavor of RIC on top of the open source code? would like to see some kind of badging opportunity around while the WG3 is working on the eventual standard.
 - 3. Matti: A quick thought is to have the HelloWorld xApp that is attempting to demonstrate all the features of E2, A1, O1 access to the RNIB etc. to be a kind of a way to validate the interoperability once it imports the portability sdk.
 - 4. Jack: we can continue the discussion and align that with the TIFG work.
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - 1. Thoralf: We have the D release content somewhat clear, and will talk about it again two weeks from now. Will copy the links to the Wiki page shown earlier. One thing to mention is we will switch to E2AP version 1.1 from 1.0 because we do implement features that require capabilities from 1.1. Version 1.1 is backwards compatible. We have analyzed the CII requirements, and did some actions there, such as large commits to have unit tests. The other thing we have created is a release checklist. So when we release the D release, we will go through that criteria list, and it will assure that some of the CII requirements are fulfilled and documented. We have now a category called Security bugs in the JILA project. They are the same way as normal bugs, except that they are classified as security work. It's a special type that we requested from LF to be added to that project. Also some information about the sharing of the IT Support cases. So if you create an IT support case of Linux Foundation that affects O-RAN, you can mark them as O-RAN so that everybody under O-RAN can see them. But you can only do this if you have previously announced that you belong to the O-RAN organization to the IT support. And in order to do that, you just have to raise a support request to the JILA tool there, which says, please make me a

member of the O-RAN communities. This at least on our side it helps moving the discussion out of email to this tool.

2. Jack: Need to communicate to all teams so they can do the same, to be part of the community and the distribution list.

iv. [user-a934b](#) O-RAN Centralized Unit (OCU)

1. Genesh: some minor improvements can be done: can do something that's like a cleanup to the meeting minutes to pull out all the action points in one place. Can review the action points before we start off on the current meeting agenda.

v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)

1. Spooorthi: update from ODU high: from the integration perspective, we have once again started off in the OSC lab in the radio mode. But we are still blocked on the ORU integration with the ODU low. So we're waiting for that to be completed. And from the dev's perspective, we have the data path rolling now, and we will be meeting the QAM requirements as well the modulation requirements. Making good progress in the major Dev activity regarding the update to the TDD mode along with the numerology one. We're also working on the new use cases, closed loop automation and we're frequently having discussions on it in the our side and on emails as well. So we're getting things cleared as and how we progress through this release. On the O1 perspective, we are being supported by HCL fully and they're currently working on the TLS aspects.
2. Jack: is the blocking issue being addressed or something we need to do to help accelerate that being cleared?
3. Puttihurt(?): I guess the Viavi team and the Intel team is working on that on getting the ORU and the ODU communication up
4. Jack: Is that somehow related to what David were talking about earlier, or is that a different problem?
5. Puttihurt(?): The problem is that the ORU and ODU Integration has to be completed for us to proceed with the other flow to be tested out. And we're currently waiting for that to continue with the other messages that can be integrated from the ODU high towards the ODU low in terms of ORU.
6. Zhimin: Intel and Viavi teams are working on this. For the ODU low perspective, Intel can bring up the ODU low with the radio mode and to bring up the front haul interface towards the ORU; but from the Viavi side they can't get to the synchronization plane, and the first step they would like to try to connect the C/U/S-plane to the SMO, I cannot understand that part, it is waiting for the assemble and ORU talking. Through the email exchange, the Viavi's response is that the C/U/S-plane can be running in parallel with the SMO M-plane message exchange. We do need to wait for Viavi to get ready for the ORU config ready and the ORU can do the fixed configuration and bring it up. Then we can try to see if the ORU can take the C/U plane package from ODU low.
7. David: The problem is that we can connect the C/U/S, which is a P2P connection between the ORU and the Viavi simulator and the ODU low. But when we do that, the M-plane also tries to go to the ODU low in which we have no Netconf client or other means of plumbing to do that level of configuration through the ODU to the ORU. To get the M- plane working to the SMO we could disconnect the C/U/S and connect to the SMO. But what we actually need is both the C/U/S and the M- plane to the SMO connected at the same time, in order for the full use case to work, and that's going down the front haul gateway path. We're going to need some form of connectivity that would allow the M- plane to go to the SMO while the C/U/S goes to the DU.
8. Jack: just trying to make sure we're solving the same problem to clear the blocker issue and that that we don't miss something and solve one and not the other.
9. David: not 100% certain but believe that we're all talking about the same problem, which is the connectivity the use case requires both. And so the config coming down from ODU Low is in response to the setting up and turning on, then we detect it and turn it back off. We can do a certain amount of pair wise testing, but we can't do a full integrated test.
10. Jack: It's important to clear the blocking items as soon as possible so that testing can occur incrementally. Please work on that.
11. David: Rittwik might have a way to find a front haul gateway we could use. So he's following up with Rich.

vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)

vii. [Martin Skorupski](#) Operations and Maintenance (OAM)

viii. [Alex Stancu](#) Simulations (SIM)

ix. [Xiaohua Zhang](#) Infrastructure (INF)

x. [weichen ni](#) Documentation (DOC)

xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)

xii. (TBD) O-RAN Radio Unit (ORU)

10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.

- a. If you raise issues to LF support that are sensible to make visible to others, pls. first raise a ticket to join "ORAN" organization in the support tool: "When these organizations (ORAN) were created in the beginning, we added by default all members from the committer groups into the organization. If at that time a particular user was not part of any group or just joined the community, then they will not be automatically added into the oran organization. Going forward, the new user will need to create a support ticket to be added to the organization."

11. Planning for Next Meeting

12. Any Other Business (AOB)

- a. Jinri Huang will have James Li replace Weicheng Ni as the alternative contact for the future TOC meetings. James is located on the West coast and he's already involved in the RIC platform and xApp projects in OSC. Jinri will update the webpage.

13. Meeting Summary (resolutions, new action items, etc.)

2021 02 24

Recording: [2021-02-24.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Ganesh Shenbagaraman
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	x	Weichen Ni	
Deutsche Telekom	David Streibl		Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego	x	Vincent Danno	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

1. **Decision:** Motion by Ganesh, seconded by Jinri. Motion approved by all TOC members present.

4. Review of Today's Agenda.

5. Release Votes and Approval.

6. Copyright update.

1. Meeting with companies ongoing. Progress is being made. Meeting invite is available to all companies interested in participating in this discussion.

2. **Action Point:** [John Murray](#) to share legal team write-up

7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.) - Jinri

1. O-RAN Open Summit on Feb 25: Keynotes, panel discussion and open source update.
2. Board deck discussion: Request from EC on TOC election.
3. Jack: Anyone interested in TOC seat should contact Jack/Jinri. There are some minimum requirements of participation and contribution.
4. Jack: the process of election will be started in the week of Mar 01. The other process is PTL election, Trishan will assist.
5. Jinri raised question on the process followed last year for TOC. Jack clarified that nominations were requested. O-RAN EC and TSC were informed.
6. Jack: Election of PTLs will be a process within OSC. New PTLs will be active from E release and there will be overlap to ensure smooth transition.
7. Juha: Question on existing members of TOC continuing. Jack: Just an email to reflector expressing interest to continue is good enough.
8. Action Point: [Jinri Huang](#) to set up a meeting with EC. Jinri will talk to Zbynek and set the agenda.

8. Status of Open Action Items (Old Business).

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. Ganesh summarized the updates so far. Legal agreement due for signature from O-RAN. Needs approval/follow-up in O-RAN. Jack will follow up.
 1. **Action Point:** [John Murray](#) [Ganesh Shenbagaraman](#) to close this.
- b. Scribe for TOC meetings next month: CMCC volunteered for this. Jinri/Delegate will take care. Next will be David.
- c. "D" Release requirements
 - i. **Action Point:** [user-59b16](#) to set up a meeting with TIFG Co-Chair.
 - ii. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 - iii. User story tracking and updates from project. [user-59b16](#) to set up a page for progress updates by PTLs.
 - iv. Tracy raised the point of aligning and impacts from O-RAN Nov 2020 release of specs. Jack commented community needs time to absorb these changes.
 - v. MVP planning process is still ongoing in O-RAN. Guidance is that July train specs will be addressed in E release.
 - vi. Discussion on integration testing: Felix and Rittwik updated that Taiwan Uty team is helping and expect more help after Chinese New Year holidays.
 - vii. Jack, Tracy: We can add some information on our website on some of the open labs. More information on Plugfest, OTIC and Linux foundation labs.
- d. CII Badging
 - i. Mahesh: Will work on CII badging. **Action Point** [Mahesh Jethanandan](#) to work on CII badging for SMO project.

9. Standing Agenda Items (Brief Status of Ongoing Activities)

- a. Release Manager [Trishan de Lanerolle](#) /Release Planning: Weekly TOC Scheduling
- b. [D Release Timeline](#)
- c. [user-59b16](#) Requirements Software Architecture Committee
- d. [Zhe Huang](#) (Felix) Integration and Test
- e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
 - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)

- ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- a. Suggestions for improvements in meeting agenda and minutes.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

2021 02 17

Recording: [2021-02-17.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Ganesh Shenbagaraman
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair		Weichen Ni	
Deutsche Telekom	David Streibl	x	Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego		Vincent Danno	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
 1. **Decision:** Motion by Ganesh, seconded by David. No objections. 2021-02-10 minutes approved
 2. Juha commented that minutes can be updated earlier to give enough time to review. Ganesh to update the minutes of Feb 17 meeting in a day.
4. Review of Today's Agenda.
5. Release Votes and Approval.
6. Copyright update.
 1. Jack: Legal team in continuing the discussion with companies (Nokia, Ericsson). A write-up from legal team that says O-RAN can extend copyright.
 2. The other items being focused on are software license and documentation.
 3. John Paul: Will the write-up be shared with all?
 4. **Action Point:** [John Murray](#) to share legal team write-up
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
 1. Tracy and Juha brought up O-RAN summit. Link shared: <https://www.o-ran.org/open-summit-feb2021>
 2. Tracy: The vote in O-RAN alliance on MVP will conclude after the lunar New Year holiday and that should influence OSC releases D and E.
8. Status of Open Action Items (Old Business).
 - a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. Ganesh summarized the updates so far. Legal agreement due for signature from O-RAN. Needs approval/follow-up in O-RAN. Jack will follow up.
 1. **Action Point:** [John Murray](#) [Ganesh Shenbagaraman](#) to close this.
 - b. "D" Release requirements
 - i. Rittwik: We are set with D release requirements and completed all call flows related to use cases.
 - ii. Rittwik: We are waiting for Viavi to provide RU emulator in OSC lab. PTP sync up with O-DU-Low done. Work will resume after CNY holiday in the current sprint.
 - iii. Rittwik: Uty of Taiwan is involved in test/integration activities.
 - iv. **Action Point:** [user-59b16](#) to set up a meeting with TIFG Co-Chair.
 - v. Jack: We are looking for more participation and alignment between OSC and TIFG.
 - vi. Rittwik: MVP will be a vehicle for such a collaboration. What is the expectation from OSC on MVP? We can ask the MVP. We may be a release or two behind.
 - vii. Tracy: Need more clarity on formal alignment with O-RAN releases, without much administrative overhead.
 - viii. Jack: It takes roughly 12 months for OSC to deliver major features after O-RAN specs are released. Smaller items may be delivered earlier. That is how it works.
 - ix. Jack: Some heavyweight items might take even longer. There is no guarantee that OSC will implement all use cases supported by specs. The community will sort this out.

- x. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 - c. CII Badging
 - i. Trishan: Started putting together status of most of the projects. Missing the update on SMO, O-DU and radio projects.
 - ii. Trishan: 2 areas missing for many project are: security/vulnerability and analytics. Only 1 project has detailed release notes. RIC project is at 94%.
 - iii. Mahesh: Will work on CII badging. **Action Point Mahesh Jethanandani** to work on CII badging for SMO project.
 - iv. Trishan: There is one area we need streamlining across all projects: Reporting of security vulnerabilities. May need a central security group to triage issues.
- 9. Standing Agenda Items (Brief Status of Ongoing Activities)
 - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
 - b. [D Release Timeline](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
 - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
- 10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- 11. Planning for Next Meeting
- 12. Any Other Business (AOB)
- 13. Meeting Summary (resolutions, new action items, etc.)

2021 02 10

Recording: [2021-02-10.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Ganesh Shenbagaraman
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair		Weichen Ni	
Deutsche Telekom	David Streibl	x	Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego	x	Vincent Danno	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
 1. **Decision:** Motion by Ganesh, second by John Paul. No objections. 2021-02-03 minutes approved
 2. **Action Item:** John Paul Lane raised a point on accumulated minutes. Ganesh to clean up the minutes going forward and make it relevant for recent updates.
4. Review of Today's Agenda.
5. Release Votes and Approval.
6. Copyright update.
 1. Jack: Legal team in continuing the work in addressing the concerns raised. Jack will provide an update when it is available. Copyright case to be resolved with 3GPP
 2. No update on 3GPP license. Still being worked on.
 3. Martin: This means we will create our own use case based models in D release.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
 1. Tracy shared a link for D release last minute inputs
8. Status of Open Action Items (Old Business).

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. Ganesh summarized the updates so far. Legal agreement due for signature from O-RAN. Needs approval/follow-up in O-RAN. Jack will follow up.
 1. Action Point: [John Murray Ganesh Shenbagaraman](#) to close this.
 - b. Maintenance release plan:
 - i. Felix: Uploaded the source code. Consider the release as done.
 - ii. Juha raised question on code scan. No code scan was done as the changes were very minor.
 - iii. C release maintenance closure. Motion by Felix. Seconded by Juha. Approved by all.
 - c. Dawn Release Planning
 - i. Jack: Need help in integration takss. Need a new PTL.
 - ii. Rittwik: Prof Ray and students from Taiwan Uty are volunteering. accounts are being set up. Need some hand holding.
 - iii. Felix: Will continue the interactions with Tiwant Uty team after Chinese New Year.
 - iv. Rittwik: Good to get alignment with TIFG on test cases and test plan
 - v. Action Point: [user-59b16](#) to set up a meeting with TIFG.
 - vi. Rittwik: Will align in E release based on O-RAN MVP release: NW Slicing or Massive MIMO
 - vii. Need APIs have to be standardized in O-RAN WG3 (Service models)
 - viii. Andrea: Once basic set of features are agreed additional feartures will be easy to add.
 - ix. Jack: Where do we find ourselves at the end of 2021? Looking for people to be more involved and we need to set 2021 goals. What is valuable for different companies?
 - x. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 - d. CII Badging
 - i. Rittwik: Projects are now updating CII status. Christian is working on a dashboard.
 - ii. **Action Point PTLs** to go through the questionnaires to know gaps by Jan 2.
 1. Near-RT RIC has started to fill the questionnaire in CII Badging page: [Core Infrastructure Initiative \(CII\) Badging - O-RAN SC - Confluence \(o-ran-sc.org\)](#)
 2. This needs to be done by other projects as well
 3. There are half-dozen project that at least created the template
 4. **Action Point Trishan de Lanerolle**: update on CII badgin for next week
 5. **Action Point Thoralf**: complete Near-RT RIC CII questionnaire (Jack: to be completed during D release)
 6. Jinri: Trishant can attend only this meeting
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
 - b. [CherryTimeline](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
 - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
1. Rittwik: Prof Ray from Taiwan Uty has volunteered for integration tasks
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

2021 02 03

Recording: [2021-02-03.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Ganesh Shenbagaraman
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair		Weichen Ni	
Deutsche Telekom	David Streibl		Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	

NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego	x	Vincent Danno	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

1. **Decision:** Motion by William Diego, second by Ganesh Shenbagaraman . No objections. 2021-02-03 minutes approved

4. Review of Today's Agenda.

5. Release Votes and Approval.

- a. Matti: RICAPP repo request for RIC portability SDK with committers from ONF.
- b. Motion by Matti seconded by Juha. Motion approved. All "Aye" and no "Nay"

6. Copyright update.

1. Copyright permission: O-RAN/Linux Foundation

1. Jack: There were a couple of meetings this week. This is being discussed weekly Friday meeting with legal team of O-RAN and Linux Foundation.
2. Companies that brought up topics for discussion so far in this meeting: Nokia, Qualcomm and Ericsson
3. Ericsson brought up a broader issue O-RAN, OSC and 3GPP. Discussion continuing.
4. A joint working agreement between ETSI and O-RAN is in the process of getting approved. There is still a long way to go.

7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

1. No update
2. Actions from previous meetings Jinri: Virtual F2F - arrangement was presented
 1. **Action Point:** all PTLs to at least begin the process (questionnaire in CII Badging page)
 2. **Action Point Jini:** will request to Security TG chairs more information about security coding session, what kind of preparation and who from OSC is expected to attend.

8. Use cases requirements in D Release.

- a. Rittwik: There were a couple of OSC related meetings in O-RAN vFTF.
- b. D-release meeting, demo by Felix, an hour for security and Mahesh presented plan for SMO.
- c. For D release we are ready to go pending 1 issue in Cheery maintenance release.
- d. Mahesh summarized his presentation in O-RAN vFTF. 3 key asks to WGs and PTLs.
- e. Implementation of NETCONF servers in each of the nodes. Mahesh can provide links to open source NETCONF servers.
- f. Ganesh: On O-DU implementation of O1 needs discussion.
- g. Action Point: Ganesh to confirm O-DU O1 plan.
- h. Ask on YANG model: Implement these models so that SMO can configure.
- i. Ask on O1 VES model: VES generator module on each node.
- j. Jack: What are the requirements on O-Cloud? Mahesh: O-Cloud doesn't provide VES interface. David and Mahesh will discuss with WG.
- k. Currently these are being sent view O2. The preferred method is VES generation.
- l. Tracy: Currently open fronthul does not generate VES data. It generates NETCONF notifications.
- m. Martin: Needs to be addressed in specifications.
- n. John-Paul: Is this not an SMO implementation issue?
- o. David (AT&T): WG4 M-plane v04.00 says VES reporting by O-RU.
- p. Martin, David, Rittwik: O-RU (Viavi) plan to support alarms for link failure use case.
- q. Rittwik, Mahesh, Tracy: NETCONF implementation in O-RU. Translation is still required. No ETA on VES support by O-RU.
- r. Rittwik, Jack: MVP package is not closed. D release planning is closed. We may cherry pick some items.
- s. Jack: Let's make intelligent progress and pick more in E release.
- t. Tracy: The process of aligning between MVP and OSC releases not there. We had impacts in C release and now in D release.
- u. Jack: There has to be a mechanism for managing changes in data models
- v. Jack: Each project should have detailed use case and we should have started development sprints.
 - i. Action Jack: Correction in D release dates (schedule shown)

9. Martin closed action item on removing direct links to pdf of specifications. This however present in the older version of Wiki pages.

10. Maintenance release:

- a. Felix: Only project without deployment is OTF. This should not be included in C maintenance release.
- b. John Keeney: Small update in A1. Modification in deployment page needed. Page update - John needs to check.
- c. Felix: KPI MOn doesn't generate artifacts. Zhe Huang to check.
- d. Jack: We should target a release next week.

11. Status of Open Action Items (Old Business).

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. New O-CU PTL onboarding.
 - ii. Binary version of Radisys O-CU.
 1. Radisys legal document to be sent to Jack and Jinri in week of Nov 30.
 2. 2020-12-16: Ganesh sent the agreement to Jack and Jinri. Jinri to forward this to Stefan and follow up with Stefan to get this finalized. Use of a binary as a test fixture for OCU. Still a challenge to get an OCU implementing the O-RAN alliance interfaces.
 3. Rittwik: none new information from Radisys to this day
 4. Ganesh: from legal point of view all was done
 5. Rittwik: request a tuto for the binary
 6. **Action Point Ganesh Shenbagaraman:** bring into contact Rittwik with the Radisys team in charge of O-CU binary
- b. Maintenance release plan:
 - i. Felix: one item from integration team that works on off deployments scripts and still waiting for other PTLs items for maintenance release
 - ii. **John Keeney** (NONRTRIC): none major plans for Cherry maintenance release, only minor changes on documentation

- iii. [Matti Hiltunen](#) (RICAPP): couple of things on the KPI monitor to clean up (end of January)
- iv. [Thoralf Czichy](#) (RIC): will check
- v. [user-a934b](#) (OCU): not connected today
- vi. [Sachin Srivastava](#) (ODUHIGH): none major plans for Cherry maintenance release
- vii. [Zhimin Yuan](#) (ODUHIGH): none changes need
- viii. [Martin Skorupski](#) (OAM): none changes need
- ix. [Alex Stancu](#) (SIM): none changes need
- x. [Xiaohua Zhang](#) (INF): none major plans for Cherry maintenance release, only minor changes on documentation
- xi. [Mahesh Jethanandani](#) (SMO): fix and update jira
- c. Dawn Release requirements
 - i. D-release planning is ongoing
 - ii. **Rittwik** will give a short update in Jan 13th TOC meeting
 - 1. Rittwik: presented D-release plan and topics (last versions) wiki.o-ran-sc.org/display/RSAC/Contributions
 - a. RICAPP project
 - i. Rittwik: in MVP, network slicing is addressed but slice manager is not yet part of this project, vF2F could give us more understanding of that
 - ii. Tracy: will share MVP info around slicing (RAN slicing)
 - iii. Matti: still working on traffic steering xApp, the control loop closing to the simulator O-CU is missing (E2 control messages)
 - iv. Jack: it's expected to have a UC fully functional or is an incremental work?
 - v. Matti: this would be basically self-contained complete from the RIC/xApp point of view
 - vi. Matti: still discussion with Samsung on SDK for Signal Storm Protection
 - vii. Jack: we need to clearly indicate progress and stability at the end of the D-rel (clear nomenclature e.g. version)
 - b. NON-RT RIC (John Keeney)
 - i. D-release plan description
 - ii. John Keeney: Alignment with O-RAN WGs is a primary objective (support the standardization)
 - iii. Jack: Each project at the end of D-release have to show clearly its accomplishment
 - c. SMO project
 - i. Mahesh: We should have a functional O1 interface, we need the corresponding pieces (O-CU/O-DU)
 - ii. Jack: lets continue this disucssion on requirement meeting and next meeting
 - d. O-CU project
 - i. Rittwik: none contributor for E2, Handover nor O1 functionalities
 - ii. Jack: Building an O-CU from scratch is a huge job for the community. Having a blackbox as for O-DU with open interfaces could cover OSC needs, it could be a better way to move forward on open interfaces test? (community can benefit having one or two black boxes for demonstrations)
 - iii. **Action Point Ganesh Shenbagaraman** : will check if Radisys is able to provide a basic blackbox for O-CU as well (F1 interface only, E2 interface is under construction)
 - iv. Jack: a call of other companies having similar interest to provide a solution for open interfaces and simulators
 - v. Rittwik: PTL has not confirm work items for D-Rel, TOC should take on
 - vi. Jack: At this point I have to escalate at the EC, this is hole in our strategy
 - vii. Jack: Ultimately, what we would like to get is working with serveral working O-CU and focusing in open interfaces and making as much as the open interfaces code available rather than try to build a whole O-CU
 - viii. Jack: Rittwik will continue discussions with Ganesh (binary) or any other company at aiming to generate software for functions listed in the presentation
 - e. Close loop automation UC
 - i. Rittwik: O-RU close loop
 - ii. Tracy: this is an interested UC, the issue highlight is the hierarchical vs hybrid OAM model (this is clearly hybrid) and also netconf notification vs O1 consistend implementation
 - iii. Tracy: This is an interested blend of approaches of specifications which are not necessary consistent with each others
 - iv. Rittwik: not clear view on Yang Models in O-RAN
 - v. Tracy: Yang models are specified, imported from 3GPP, IETF, O-RAN WGs
 - vi. Jack: close loop for O-DU should follow
 - vii. John Keeney: this use case definitely need more work, in particular that the need of an external control loop for such recovery
 - f. O-DU project
 - i. Jack: How we assess where we are on the overall implementation vs specifications?
 - ii. Rittwik: we need to cross check which specs has been implemented
 - iii. Jack: A fundamental question in D rel. is how the NonRT RIC and the O-DU are implementing any of specifications
 - iv. John Keeney: NonRT RIC is implemented E2 API 1.0 excep for a couple of messages and for D rel there are working on implement E2 API 1.1.
 - v. John Keeney: For A1 the plan is to implement A1-EI (NonRT RIC)
 - vi. Jack: Does the NonRT RIC implement O1 capabilities?
 - vii. John Keeney: there is an O1 mediator
 - viii. Rittwik: specs of O1 are not available yet, there is only apre-spec
 - ix. Rittwik: There is not a complet set of O1 requirements that can be implemented
 - x. Jack: this is a great topic to treat at TSC and request what is the baseline for O1 (part of MVP discussion)
 - xi. Matti: the baseline is the 3GPP specs (Yang models), but there is a copyright issue
 - xii. Jack: **Action Point Rittwik & Matti** coordinate to figure out and clarify the O1 topic
 - g. Rittwik: Other projects will be cover next week
 - h. **Action Point Rittwik**: next meeting will continue presentation focus on NearRT RIC and NonRT RIC
 - i. Jack: all PTLs, please update user stories and Jira to follow up activities
 - j. Jack: it's important to have a clear view on what functionalities are really progressing on D and E releases

- k. Jack: next week we will start by this topic
 - l. Jack: Each project at the end of D-release have to show clearly its accomplishment to communicate effectively
 - iii. Jack: Where do we find ourselves at the end of 2021? Looking for people to be more involved and we need to set 2021 goals. What is valuable for different companies?
 - iv. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 - v. We need to expand Integration and Test activity and alignment with TIFG group. We need a new strategy in Integration and Testing and one part of that is better integration with TIFG. **Ask to TOC members** is to discuss with your TIFG peers in your company (if you have any) and come back next week how to better integrate with them + what is your strategy in TIFG and how that can be better leveraged in OSC? All in all more participation is needed in Integration and Test project
 - d. CII Badging
 - i. Jack asked all PTLs to update (Feb 03, 2021)
 - ii. **Action Point PTLs** to go through the questionnaires to know gaps by Jan 2.
 - 1. Near-RT RIC has started to fill the questionnaire in CII Badging page: [Core Infrastructure Initiative \(CII\) Badging - O-RAN SC - Confluence \(o-ran-sc.org\)](#)
 - 2. This needs to be done by other projects as well
 - 3. There are half-dozen project that at least created the template
 - 4. **Action Point Trishan de Lanerolle**: update on CII badgin for next week
 - 5. **Action Point Thoralf**: complete Near-RT RIC CII questionnaire (Jack: to be completed during D release)
 - 6. Jack: all projects, if the PTL can go and started this process
 - 7. Jack: We have a meeting with the security team,
 - 8. Rittwik: we can use information collected by Trishant
 - 9. Jinri: Trishant can attend only this meeting
 - iii. Liaison with Security TG to be set up
 - e. O-RAN virtual meeting (from Jan. 25 to Feb. 5.) -> email from Jinri
 - i. Rittwik: Request a time slots during vF2F meeting for OSC topics and how OSC will contribute
 - ii. Jack: one time slot for overall requirements meeting (Rittwik organise that)
 - iii. Rittwik: Amy request a session on CII or security (need PTLs on how move forward on that)
 - iv. Jack: there are:
 - 1. 1 hr slot – OSC D release features (point of contact, Rittwik and David Kinsey)
 - 2. ½ hr slot – OSC Security badging progress (with Amy Zwaico and Paul Smith)
 - 3. 1 hr slot – Demos showcasing Cherry features (point of contact, Felix Huang)
 - a. Rittwik: Each PTLs can prepare some videos (1-2 min)
 - b. Tracy: Include something about what is OTIC
 - 4. 1 hr slot – SMO project features and progress (point of contact, Mahesh Jethandani)
 - v. Jack: any other specific topic for vF2F
 - 1. Rittwik : request a session on ONAP - OSC alignment to have some guidance
 - 2. Jack: it's fine if it focus on fonctionality
 - 3. Tracy: we are bringing elements from multiple open source projects & SDO, we need some guidance and to share a common understanding
 - 4. Rittwik: MVP aspects, hope it get more elaborated in this vF2F
 - 5. **Action Point Rittwik**: will coordinate OSC vF2F meeting slots
 - f. Cooperation with ONF, OAI and ONAP
12. Standing Agenda Items (Brief Status of Ongoing Activities)
 - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
 - b. [CherryTimeline](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
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 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
13. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
 - 1. Jack: Annual review and voting time for TOC, review the process and view the options, there six (6) positions named by the EC
 - 2. Jack: Ask to other TOC members to hold some meetings about strategie about software needs (looking for one TOC member to lead discussions)
14. Planning for Next Meeting
15. Any Other Business (AOB)
16. Meeting Summary (resolutions, new action items, etc.)

2021 01 27

Recording: [2021-01-27.m4a](#)

Agenda

1. Call for Scribe (minutes owner): William Diego
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	x	Weichen Ni	
Deutsche Telekom	David Streibl	x	Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego	x	Vincent Danno	
Radisys	Ganesh Shenbagaraman		Sachin Srivastava	Manasi (Radisys) standing in even if not listed here.
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

1. **Decision:** Motion by William DIEGO, second by user-2057e. No objections. 2021-01-20 minutes approved

4. Review of Today's Agenda.

5. Release Votes and Approval.

- a. Matti: RICAPP repo request for RIC portability SDK with committers from ONF
 - i. Matti: Thoralf proposes to add an additional statement
 - ii. Jack: how ONF could contribute to OSC in areas where we are aligned, the intent is try to find how we work together, one of the items is around RIC (xApps)
 - iii. Matti: we are working with the architecture task force in the WG3, a contribution was pushed jointly with ONF, facebook, CMCC
 - iv. Jack: the objective is avoid to create another project and to try to keep alignment with projects with are related to these topics
 - v. Jack: New resources coming from ONF to contribute to this project and is open to everyone to participate
 - vi. John Paul Lane: portability SDK code would be used for rApps or only concentrated in xApps?
 - vii. Rittwik: there have been some discussions related to this topic, but not think has been approved
 - viii. Matti: after some discussions we realised that there are major differences (xApps and rApps), only subset of apps could run as rApp or xApps (not much active work)
 - ix. Thoralf: we sujets to add two statements: 1) description of components is about , 2) what this work is about, and the licence (Apache) https://lists.o-ran-sc.org/g/toc/topic/new_ricapp_repo_request/80119031
 - x. Thoralf: it is requested to include statement before to validate the repo
 - xi. Rittwik: it's possible to state other RICs implementations that it would be compatible with?
 - xii. **Action Point Thoralf:** Clarifies statement on what is acceptable (RIC implementations)
 - xiii. **Action Point Matti :** will talk with ONF and comme back by mail

6. Copyright update.

1. Copyright permission proposal to be approved by O-RAN EC
 1. Jack sent updated version to TOC members before holidays and would like to get this wrapped-up in the next few weeks
 2. Please send feedback to Jack, if you have any
 3. Jack: Copyright declaration has been prepared, shared and reviewed by serveral companies, Nokia will provide more comments in comming days.
 4. Jack: Clarification on OAI licenses is needed by legal team
 5. Jack: some feedbacks received, there is pending questioning EC and legal team on the copyrights related to IPR
 6. JP Lane : request more details on what was requested to the EC
 7. Jack: An standing question is clarification in IPR policy about granting forward others (we are waiting for clarifications)
 8. Jinri: in the declaration document there are nothing about IPR policy, someone is asking somehow to include any IPR related description
 9. Jack : In the O-RAN IPR agreement, clarifications on IPR rights (patents) of hypotetic case of pass forward of patent was requested
 10. John Keeny: If the patent is part of a contribution by a O-RAN member, it is cover by FRAND, but if it is part of a contribution by a non O-RAN member it's not cover by FRAND, so patents is a huge risk. It is requested some clarifications from EC
 1. Jack: The public declaration is not a licence, it is simply a statement on a public forum which say it's OK to use the copyright material in a this way and we will not pursue you on copyright infringement agains you if you use it in this way and and stay in the public forum
 2. Jinri: John, please contact O-RAN legal team to obtain clarification on this specific case
2. Copyright case to be resolved with 3GPP
 1. This is a little bit more complex topic and is part of the bigger 3GPP discussion handled by standards group in EC
 2. Jack: 3GPP copyright is still in process, the collaboration agreement is a top priority
 3. Jack: no new updates

7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

1. Jinri: MVP topic
 1. TSC has setup a dedicated committe (MVP-C) to lead the MVP work
 2. MVP committe are planning to publish 3 MVP releases during 2021 (Feb. Jun. Nov.)
 3. Tracy: it was stated that D release is not influenced (affected) by the MVP?
 4. Jinri: some conclusions of MVP discussion could impact release D (or not)

5. Jinri: D rel. session next week could include some discussions on MVP
6. Jinri: it's not sure that MVP discussion will be open to all (not decided yet)
7. Rittwik: need clarifications on use cases of MVP
8. Jinri: MVP-C request that every WG sends a representative to attend regular meeting
9. Jinri: if this MVP-C is open to everyone then we can present some requirements from OSC which UCs we need to implement, so this could impact D rel.
10. Tracy: based on operator survey, the MVP is prioritising uses cases and going into more detail a better alignment
11. Jack: we need somebody to participate in MVP process (MVP-C), Rittwik and Jack will figure out who can be this person
 1. Jinri: TSC is requesting a representative from OSC Rittwik
2. Jinri: Virtual F2F - arrangement was presented
 1. Every day OSC has three time slots (except friday)
 2. The agenda is not completed yet, is still recorded input from several WGs, it will updated in the following days
 3. Jack: demos on monday, leaded by Felix
 4. Jack: Regarding security badging, Trishan (Linux Foundation) is not a member of O-RAN so we need an other person to represent OSC
 5. Rittwik: Will talk with Trishan to see how solve it
 6. **Action Point:** all PTLs to at least begin the process (questionnaire in CII Badging page)
 7. Jack: Security coding session (Feb. 3), next meeting we need to get prepared for who should going and why should going to that session
 8. **Action Point Jinri:** will request to Security TG chairs more information about security coding session, what kind of preparation and who from OSC is expected to attend.
3. Jinri: during previous EC call, Jinri & Jack were requested to see the current status on TOC positions
 1. 3 vacant seats so we need to recruit
 2. EC election, some EC members gone and new members came
 1. Jinri: How this could impact our TOC composition
 2. Jack: Turn-over in April time frame, we can get started end of March
 3. Jack: one issues we have to address is the fact that Verizon is not participating anymore
8. Status of Open Action Items (Old Business).
 - a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. New O-CU PTL onboarding.
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 - v. Rittwik: PTL has not confirm work items for D-Rel, TOC should take on
 - vi. Jack: At this point I have to escalate at the EC, this is hole in our strategy
 - vii. Jack: Ultimately, what we would like to get is working with serveral working O-CU and focusing in open interfaces and making as much as the open interfaces code available rather than try to build a whole O-CU
 - viii. Jack: Rittwik will continue discussions with Ganesh (binary) or any other company at aiming to generate software for functions listed in the presentation
- e. Close loop automation UC
 - i. Rittwik: O-RU close loop
 - ii. Tracy: this is an interested UC, the issue highlight is the hierarchical vs hybrid OAM model (this is clearly hybrid) and also netconf notification vs O1 consistend implementation
 - iii. Tracy: This is an interested blend of approaches of specifications which are not necessary consistent with each others
 - iv. Rittwik: not clear view on Yang Models in O-RAN
 - v. Tracy: Yang models are specified, imported from 3GPP, IETF, O-RAN WGs
 - vi. Jack: close loop for O-DU should follow
 - vii. John Keeney: this use case definitely need more work, in particular that the need of an external control loop for such recovery
- f. O-DU project
 - i. Jack: How we assess where we are on the overall implementation vs specifications?
 - ii. Rittwik: we need to cross check which specs has been implemented
 - iii. Jack: A fundamental question in D rel. is how the NonRT RIC and the O-DU are implementing any of specifications
 - iv. John Keeney: NonRT RIC is implemented E2 API 1.0 excep for a couple of messages and for D rel there are working on implement E2 API 1.1.
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 - ix. Rittwik: There is not a complet set of O1 requirements that can be implemented
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 - xi. Matti: the baseline is the 3GPP specs (Yang models), but there is a copyright issue
 - xii. Jack: **Action Point Rittwik & Matti** coordinate to figure out and clarify the O1 topic
- g. Rittwik: Other projects will be cover next week
 - h. **Action Point Rittwik**: next meeting will continue presentation focus on NearRT RIC and NonRT RIC
 - i. Jack: all PTLs, please update user stories and Jira to follow up activities
 - j. Jack: it's important to have a clear view on what functionalities are really progressing on D and E releases
 - k. Jack: next week we will start by this topic
 - l. Jack: Each project at the end of D-release have to show clearly its accomplishment to communicate effectively
- iii. Jack: Where do we find ourselves at the end of 2021? Looking for people to be more involved and we need to set 2021 goals. What is valuable for different companies?
- iv. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
- v. We need to expand Integration and Test activity and alignment with TIFG group. We need a new strategy in Integration and Testing and one part of that is better integration with TIFG. **Ask to TOC members** is to discuss with your TIFG peers in your company (if you have any) and come back next week how to better integrate with them + what is your strategy in TIFG and how that can be better leveraged in OSC? All in all more participation is needed in Integration and Test project
- d. CII Badging
 - i. **Action Point PTLs** to go through the questionnaires to know gaps by Jan 2.
 1. Near-RT RIC has started to fill the questionnaire in CII Badging page: [Core Infrastructure Initiative \(CII\) Badging - O-RAN SC - Confluence \(o-ran-sc.org\)](#)
 2. This needs to be done by other projects as well
 3. There are half-dozen project that at least created the template
 4. **Action Point Trishan de Lanerolle**: update on CII badgin for next week
 5. **Action Point Thoralf**: complete Near-RT RIC CII questionnaire (Jack: to be completed during D release)
 6. Jack: all projects, if the PTL can go and started this process
 7. Jack: We have a meeting with the securty team,
 8. Rittwik: we can use information collected by Trishant
 9. Jinri: Trishant can attend only this meeting
 - ii. Liaison with Security TG to be set up
- e. O-RAN virtual meeting (from Jan. 25 to Feb. 5.) -> email from Jinri
 - i. Rittwik: Request a time slots during vF2F meeting for OSC topics and how OSC will contribute
 - ii. Jack: one time slot for overall requirements meeting (Rittwik organise that)
 - iii. Rittwik: Amy request a session on CII or security (need PTLs on how move forward on that)
 - iv. Jack: there are:
 1. 1 hr slot – OSC D release features (point of contact, Rittwik and David Kinsey)
 2. ½ hr slot – OSC Security badging progress (with Amy Zwaico and Paul Smith)
 3. 1 hr slot – Demos showcasing Cherry features (point of contact, Felix Huang)
 - a. Rittwik: Each PTLs can prepare some videos (1-2 min)
 - b. Tracy: Include something about what is OTIC

4. 1 hr slot – SMO project features and progress (point of contact, Mahesh Jethandani)
- v. Jack: any other specific topic for vF2F
 1. Rittwik : request a session on ONAP - OSC alignment to have some guidance
 2. Jack: it's fine if it focus on functionality
 3. Tracy: we are bringing elements from multiple open source projects & SDO, we need some guidance and to share a common understanding
 4. Rittwik: MVP aspects, hope it get more elaborated in this vF2F
 5. **Action Point Rittwik:** will coordinate OSC vF2F meeting slots
- f. Cooperation with ONF, OAI and ONAP
9. Standing Agenda Items (Brief Status of Ongoing Activities)
 - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
 - b. [CherryTimeline](#)
 - c. [user-59b16](#) Requirements Software Architecture Committee
 - d. [Zhe Huang](#) (Felix) Integration and Test
 - e. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
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 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
 1. Jack: Annual review and voting time for TOC, review the process and view the options, there six (6) positions named by the EC
 2. Jack: Ask to other TOC members to hold some meetings about strategie about software needs (looking for one TOC member to lead discussions)
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)
 - a. **Action Point Thoralf:** Clarifies statement on what is acceptable (RIC implementations)
 - b. **Action Point Matti :** will talk with ONF and comme back by mail

2021 01 20

Recording: [2021-01-20.m4a](#)

Agenda

1. Call for Scribe (minutes owner): William Diego
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair	x	Weichen Ni	
Deutsche Telekom	David Streibl		Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego	x	Vincent Danno	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
 1. **Decision:** Motion by [William DIEGO](#) , second by [JP Lane](#) . No objections. 2021-01-13 minutes approved
4. Review of Today's Agenda.
5. Release Votes and Approval.
 - a. [Matti Hiltunen](#) new repo for ONF collaboration (coordination ongoing)
6. Copyright update.
 1. Copyright permission proposal to be approved by O-RAN EC
 1. Jack sent updated version to TOC members before holidays and would like to get this wrapped-up in the next few weeks

2. Please send feedback to Jack, if you have any
3. Jack: Copyright declaration has been prepared, shared and reviewed by several companies, Nokia will provide more comments in coming days.
4. Jack: Clarification on OAI licenses is needed by legal team
5. Jack: some feedbacks received, there is pending questioning EC and legal team on the copyrights related to IPR
6. [JP Lane](#) : request more details on what was requested to the EC
7. Jack: An standing question is clarification in IPR policy about granting forward others (we are waiting for clarifications)
8. Jinri: in the declaration document there are nothing about IPR policy, someone is asking somehow to include any IPR related description
9. Jack : In the O-RAN IPR agreement, clarifications on IPR rights (patents) of hypothetical case of pass forward of patent was requested
10. John Keeney: If the patent is part of a contribution by a O-RAN member, it is covered by FRAND, but if it is part of a contribution by a non O-RAN member it's not covered by FRAND, so patents is a huge risk. It is requested some clarifications from EC
 1. Jack: The public declaration is not a licence, it is simply a statement on a public forum which says it's OK to use the copyright material in a this way and we will not pursue you on copyright infringement against you if you use it in this way and stay in the public forum
 2. Jinri: John, please contact O-RAN legal team to obtain clarification on this specific case
2. Copyright case to be resolved with 3GPP
 1. This is a little bit more complex topic and is part of the bigger 3GPP discussion handled by standards group in EC
 2. Jack: 3GPP copyright is still in process, the collaboration agreement is a top priority
 3. Jack: no new updates
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
 1. Jinri: MVP topic
 1. TSC has setup a dedicated committee (MVP-C) to lead the MVP work
 2. MVP committee are planning to publish 3 MVP releases during 2021 (Feb. Jun. Nov.)
 3. Tracy: it was stated that D release is not influenced (affected) by the MVP?
 4. Jinri: some conclusions of MVP discussion could impact release D (or not)
 5. Jinri: D rel. session next week could include some discussions on MVP
 6. Jinri: it's not sure that MVP discussion will be open to all (not decided yet)
 7. Rittwik: need clarifications on use cases of MVP
 8. Jinri: MVP-C request that every WG sends a representative to attend regular meeting
 9. Jinri: if this MVP-C is open to everyone then we can present some requirements from OSC which UCs we need to implement, so this could impact D rel.
 10. Tracy: based on operator survey, the MVP is prioritising use cases and going into more detail a better alignment
 11. Jack: we need somebody to participate in MVP process, Rittwik and Jack will figure out who can be this person
 2. Jinri: Virtual F2F - arrangement was presented
 1. Every day OSC has three time slots (except Friday)
 2. The agenda is not completed yet, is still recorded input from several WGs, it will be updated in the following days
 3. Jack: demos on Monday, led by Felix
 4. Jack: Regarding security badging, Trishan (Linux Foundation) is not a member of O-RAN so we need another person to represent OSC
 5. Rittwik: Will talk with Trishan to see how to solve it
 6. **Action Point**: all PTLs to at least begin the process (questionnaire in CII Badging page)
 7. Jack: Security coding session (Feb. 3), next meeting we need to get prepared for who should go and why should go to that session
 8. **Action Point Jinri**: will request to Security TG chairs more information about security coding session, what kind of preparation and who from OSC is expected to attend.
 3. Jinri: during previous EC call, Jinri & Jack were requested to see the current status on TOC positions
 1. 3 vacant seats so we need to recruit
 2. EC election, some EC members gone and new members came
 1. Jinri: How this could impact our TOC composition
 2. Jack: Turn-over in April time frame, we can get started end of March
 3. Jack: one issue we have to address is the fact that Verizon is not participating anymore
8. Status of Open Action Items (Old Business).
 - a. O-CU development and O-CU for Cherry traffic steering use-cases.
 - i. New O-CU PTL onboarding.
 - ii. Binary version of Radisys O-CU.
 1. Radisys legal document to be sent to Jack and Jinri in week of Nov 30.
 2. 2020-12-16: Ganesh sent the agreement to Jack and Jinri. Jinri to forward this to Stefan and follow up with Stefan to get this finalized. Use of a binary as a test fixture for OCU. Still a challenge to get an OCU implementing the O-RAN alliance interfaces.
 3. Rittwik: none new information from Radisys to this day
 4. Ganesh: from legal point of view all was done
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 6. **Action Point Ganesh Shenbagaraman**: bring into contact Rittwik with the Radisys team in charge of O-CU binary
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 - i. Felix: one item from integration team that works on off deployments scripts and still waiting for other PTLs items for maintenance release
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- xi. **Maresh Jethanandani** (SMO): fix and update jira
- c. Dawn Release requirements
 - i. D-release planning is ongoing
 - ii. **Rittwik** will give a short update in Jan 13th TOC meeting
 - 1. Rittwik: presented D-release plan and topics https://wiki.o-ran-sc.org/download/attachments/3604609/Dawn_rel_v4.3.pptx?api=v2
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 - i. Rittwik: in MVP, network slicing is addressed but slice manager is not yet part of this project, vF2F could give us more understanding of that
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 - 4. 1 hr slot – SMO project features and progress (point of contact, Mahesh Jethandani)
 - v. Jack: any other specific topic for vF2F

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 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)
 - a. **Action Point:** all PTLs to at least begin the process (questionnaire in CII Badging page)
 - b. **Action Point Jini:** will request to Security TG chairs more information about security coding session, what kind of preparation and who from OSC is expected to attend.
 - c. **Action Point Rittwik & Matti** coordinate to figure out and clarify the O1 topic

2021 01 13

Recording: [2021-01-13-toc.mp4](#)

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1. Call for Scribe (minutes owner): William Diego
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
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Orange	William Diego	X	Vincent Danno	
Radisys	Ganesh Shenbagaraman	X	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
 1. **Decision:** Motion by Juha, second by David. No objections. 2021-01-06 minutes approved
4. Review of Today's Agenda.
 1. **New item:** Felix : each PTL shares its plan for Cherry maintenance release
5. Release Votes and Approval.
6. Copyright update.
 1. Copyright permission proposal to be approved by O-RAN EC
 1. Jack sent updated version to TOC members before holidays and would like to get this wrapped-up in the next few weeks
 2. Please send feedback to Jack, if you have any
 3. Jack: Copyright declaration has been prepared, shared and reviewed by several companies, Nokia will provide more comments in coming days.
 4. Jack: Clarification on OAI licenses is needed by legal team

2. Copyright case to be resolved with 3GPP
 1. This is a little bit more complex topic and is part of the bigger 3GPP discussion handled by standards group in EC
 2. Jack: 3GPP copyright is still in process, the collaboration agreement is a top priority
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
 1. OSC Cherry blog post and PR
 1. Jack: blog post and PR were approved by the EC and have been posted, the Cherry release is now complete
 2. We need to produce a session (middle/end of Jan) for O-RAN alliance to show what we achieved in Cherry and look for their feedback
 1. **Action Point Rittwik**: Reach out Jinri and Paul to sort this out
 2. Jack: Virtual F2F is the next important event, the requirements and Software Architecture team lead that discussion, some demos are planned to show OSC progress
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 - d. Rittwik: Other projects will be cover next week
 - e. **Action Point Rittwik**: next meeting will continue presentation focus on NearRT RIC and NonRT RIC
 - f. Jack: all PTLs, please update user stories and Jira to follow up activities
 - g. Jack: it's important to have a clear view on what functionalities are really progressing on D and E releases
 - iii. Jack: Where do we find ourselves at the end of 2021? Looking for people to be more involved and we need to set 2021 goals. What is valuable for different companies?
 - iv. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?
 - v. We need to expand Integration and Test activity and alignment with TIFG group. We need a new strategy in Integration and Testing and one part of that is better integration with TIFG. **Ask to TOC members** is to discuss with your TIFG peers in your company (if you have any) and come back next week how to better integrate with them + what is your strategy in TIFG and how that can be better leveraged in OSC? All in all more participation is needed in Integration and Test project
 - d. CII Badging
 - i. **Action Point PTLs** to go through the questionnaires to know gaps by Jan 2.

1. Near-RT RIC has started to fill the questionnaire in CII Badging page: [Core Infrastructure Initiative \(CII\) Badging - O-RAN SC - Confluence \(o-ran-sc.org\)](#)
 2. This needs to be done by other projects as well
 3. There are half-dozen project that at least created the template
 4. **Action Point Trishan de Lanerolle:** update on CII badgin for next week
 5. **Action Point Thoralf:** complete Near-RT RIC CII questionnaire (Jack: to be completed during D release)
 - ii. Liaison with Security TG to be set up
 - e. O-RAN virtual meeting (from Jan. 25 to Feb. 5.) -> email from Jinri
 - i. Rittwik: Request a time slots during vF2F meeting for OSC topics and how OSC will contribute
 - ii. Jack: one time slot for overall requirements meeting (Rittwik organise that)
 - iii. Rittwik: Amy request a session on CII or security (need PTLs on how move forward on that)
 - iv. Jack: there are:
 1. 1 hr slot – OSC D release features (point of contact, Rittwik and David Kinsey)
 2. ½ hr slot – OSC Security badging progress (with Amy Zwaico and Paul Smith)
 3. 1 hr slot – Demos showcasing Cherry features (point of contact, Felix Huang)
 - a. Rittwik: Each PTLs can prepare some videos (1-2 min)
 - b. Tracy: Include something about what is OTIC
 4. 1 hr slot – SMO project features and progress (point of contact, Mahesh Jethandani)
 - v. Jack: any other specific topic for vF2F
 1. Rittwik : request a session on ONAP - OSC alignment to have some guidance
 2. *Jack:* it's fine if it focus on fonctionality
 3. Tracy: we are bringing elements from multiple open source projects & SDO, we need some guidance and to share a common understanding
 4. Rittwik: MVP aspects, hope it get more elaborated in this vF2F
 5. **Action Point Rittwik:** will coordinate OSC vF2F meeting slots
 - f. Cooperation with ONF, OAI and ONAP
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
 - i. [CherryTimeline](#)
 - b. [user-59b16](#) Requirements Software Architecture Committee
 - c. [Zhe Huang](#) (Felix) Integration and Test
 - d. Report out from PTL: Stand-Up & Report Out on Blockers
 - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
 - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
 - iii. [Thoralf Czichy](#) RIC Platform (RIC)
 - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
 - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIG)
 - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
 - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
 - viii. [Alex Stancu](#) Simulations (SIM)
 - ix. [Xiaohua Zhang](#) Infrastructure (INF)
 - x. [weichen ni](#) Documentation (DOC)
 - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
 - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)
- a. **Action Point Ganesh Shenbagaraman:** bring into contact Rittwik with the Radisys team in charge of O-CU binary
 - b. **Action Point Trishan de Lanerolle:** update on CII badgin for next week
 - c. **Action Point Thoralf:** complete Near-RT RIC CII questionnaire (Jack: to be completed during D release)
 - d. **Action Point Rittwik:** will coordinate OSC vF2F meeting slots
 - e. **Action Point Rittwik:** next meeting will continue presentation focus on NearRT RIC and NonRT RIC

2021 01 06

Recording: [2021-01-06_toc.mp4](#)

Agenda

1. Call for Scribe (minutes owner): Juha Oravainen
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
AT&T	Jack Murray Co-Chair	x	Rittwik Jana	
China Mobile	Jinri Huang Co-Chair		Weichen Ni	
Deutsche Telekom	David Streibl	x	Ondej Hudousek	
Ericsson	John-Paul Lane	x	John Keeney	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	

Nokia	Juha Oravainen	x	Thoralf Czichy	
Orange	William Diego	x	Vincent Danno	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

*Quorum: 50% or more of total TOC voting members unless excluded due to attendance. // Yes, we have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting

1. **Decision:** Motion by Juha, second by David. No objections. 2020-12-16 minutes approved

4. Review of Today's Agenda.

5. Release Votes and Approval.

- a. Matti requested a new repo for the RIC performance benchmarking xApp called "bouncer"

- i. **Decision:** Motion by Matti, second by Masafumi. No objections. New repo for xApp called bouncer approved

6. Copyright update.

1. Copyright permission proposal to be approved by O-RAN EC

1. Jack sent updated version to TOC members before holidays and would like to get this wrapped-up in the next few weeks
2. Please send feedback to Jack, if you have any

2. Copyright case to be resolved with 3GPP

1. This is a little bit more complex topic and is part of the bigger 3GPP discussion handled by standards group in EC

7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

1. OSC Cherry blog post and PR

1. This is supposed to go out most obviously next Monday (Jan 11th)

2. We need to produce a session (middle/end of Jan) for O-RAN alliance to show what we achieved in Cherry and look for their feedback

1. **Action Point Rittwik:** Reach out Jinri and Paul to sort this out

8. Status of Open Action Items (Old Business).

- a. O-CU development and O-CU for Cherry traffic steering use-cases.

- i. New O-CU PTL onboarding.

- ii. Binary version of Radisys O-CU.

1. Radisys legal document to be sent to Jack and Jinri in week of Nov 30.

2. 2020-12-16: Ganesh sent the agreement to Jack and Jinri. Jinri to forward this to Stefan and follow up with Stefan to get this finalized. Use of a binary as a test fixture for OCU. Still a challenge to get an OCU implementing the O-RAN alliance interfaces.

- b. ~~Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.~~

- i. ~~PTLs to keep summary page for Cherry release current and up to date.~~

- ii. ~~2020-12-16: Close this~~

- c. Dawn Release requirements

- i. D-release planning is ongoing

- ii. **Rittwik** will give a short update in Jan 13th TOC meeting

- iii. Jack: Where do we find ourselves at the end of 2021? Looking for people to be more involved and we need to set 2021 goals. What is valuable for different companies?

- iv. **Action Point TOC members and whole community** to indicate what do we really need to deliver in D- and E-releases to be successful and useful?

- v. We need to expand Integration and Test activity and alignment with TIFG group. We need a new strategy in Integration and Testing and one part of that is better integration with TIFG. **Ask to TOC members** is to discuss with your TIFG peers in your company (if you have any) and come back next week how to better integrate with them + what is your strategy in TIFG and how that can be better leveraged in OSC? All in all more participation is needed in Integration and Test project

- d. "E" Release naming.

- i. Jack proposed to continue with only letters. **Decision:** No objections, proposal was approved

- e. CII Badging

- i. **Action Point PTLs** to go through the questionnaires to know gaps by Jan 2.

1. Near-RT RIC has started to fill the questionnaire in CII Badging page: [Core Infrastructure Initiative \(CII\) Badging - O-RAN SC - Confluence \(o-ran-sc.org\)](#)

2. This needs to be done by other projects as well

- ii. Liaison with Security TG to be set up

- f. Cooperation with ONF, OAI and ONAP.

- i. ONF co-operation is going on. Please check chapter 9dii5 (RICAPP) below

- ii. OAI: we continue to have meetings with OAI

- iii. ONAP: EC has been very clear that they prefer to leverage upstream projects but keep O-RAN work in O-RAN community (configuration files, Jira process etc)

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- c. [Zhe Huang](#) (Felix) Integration and Test

- d. Report out from PTL: Stand-Up & Report Out on Blockers

- i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)

- ii. [Matti Hiltunen](#) RIC Applications (RICAPP)

1. In the Cherry release the instructions for users are available on how to run Traffic Steering in combination of xApps

2. Anomaly Detection flow is a separate. There are instructions how to run that, too

3. People should be able to download these and follow the instructions

4. In D-release we should have xApps from four different companies
5. New activity around xApp SDK
 - a. ONF would work with RICAPP project to build a portable prototype SDK that would allow xApps that are build on different RIC platforms
 - b. Jack: This is an effort kicked-off by EC to better align OSC and ONF. Even if we have more than one RIC platform, xApps should be interoperable between them. ONF has agreed to contribute resources to help make that happen rather than to create a whole new project. We try to do this under RICAPP. This might have some impact to rApps, too
 - c. WG1 and WG3 are involved. John-Paul: we should involve also WG2
- iii. [Thoralf Czichy](#) RIC Platform (RIC)
- iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
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