

# 2020 Q2 (Apr, May, Jun)

- [2020 07 01](#)
- [2020 06 24](#)
- [2020 06 17](#)
- [2020 06 10](#)
- [2020 06 03](#)
- [2020 05 27](#)
- [2020 05 20](#)
- [2020 05 13](#)
- [2020 05 06](#)
- [2020 04 29](#)
- [2020 04 22](#)
- [2020 04 15](#)
- [2020 04 08](#)
- [2020 04 01](#)

## 2020 07 01

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
    - a. The minutes of the prior meetings were reviewed, and no corrections.
      - i. Vote to approve minutes for 24 Jun 2020
      - ii. On motion made by [Juha Oravainen](#)
      - iii. Seconded by John Paul
      - iv. **VOTE:** Vote taken, item passed
  4. Review of Today's Agenda
  5. Release Votes and Approval
  6. Copyright updates
  7. Marketing of the current release (WG, LF, PR)
    1. Bronze Release PR
    2. Virtual Exhibition.
    - c. OSC Logo status.
  8. Status of Open Action Items (Old Business)
  9. Standing Agenda Items (Brief Status of Ongoing Activities)
    - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
      - i. [Bronze Timeline](#)
      - ii. [Review Bronze Release Highlights](#)
    - b. [user-59b16](#) Requirements Software Architecture Committee
    - c. [user-d3360](#) Integration and Test
    - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
      - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
      - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
      - iii. [Thoralf Czichy](#) RIC Platform (RIC)
1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)

- iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
  - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHGH)
  - 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. (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.)

## 2020 06 24

Recording: [2020\\_06\\_24\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of Previous Meeting
  - a. The minutes of the prior meetings were reviewed, and no corrections.
    - i. Vote to approve minutes for 17 Jun 2020
    - ii. On motion made by [Jinri Huang](#)
    - iii. Seconded by [user-2057e](#)
    - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
5. Release Votes and Approval
  - a. Samsung released the KPIMON xApp under Apache 2.0 license in the Amber release. However, the team has been advised by Samsung legal team that for the KPIMON enhancement in Bronze release should use O-RAN FRAND S/W license. Since only one license is allowed within a repo and the repo name depends on the license, we request a new repo: scp/ric-app/kpimon. The committers are the same as the existing KPIMON repo.

#### KPIMON xAPP:

- Proposed repository name: scp/ric-app/kpimon.
- License: O-RAN software license
- A brief description: This repo will host the source code for the KPIMON xApp. KPIMON uses E2SM (extended KPM service model) to collect information from the RAN and populate it in two name-spaces (one for cell metrics and other for UE metrics) in the RIC SDL layer.
- A list of committers:
  - i. Jeongyeob Oak, [jy.oak@samsung.com](mailto: jy.oak@samsung.com), LFID: jyoak
  2. Jun Song, [junhyuk.song@samsung.com](mailto: junhyuk.song@samsung.com), LFID: junny
  3. Jinwei.fan, [jinwei.fan@samsung.com](mailto: jinwei.fan@samsung.com), LFID: jinwei.fan
- ii. Jack This is a little different because of the dual license. Is there someone from Samsung project?
- iii. Matti: I submitted this request as a RICApp PTL.
- iv. Jack: Will the old repo be retired? Will contributions be split because of dual licenses? Do you know how we are going to treat the new license?
- v. Matti: I was wondering that my self. There are contributions in Amber.
- vi. Jack: Once content is released under Apache the content stays. Until we get clarification from Samsung, the way I would categorize is we are leaving the existing repo there and archiving it. Active contributions will go to the new repo and stays in its form.
- vii. Peter Moonki Hong: Can I have clarification?
- viii. Jack: There has been a request for a new repo and the question I had was what will happen to the old repo. Typically we would archive and close the old repo and have new repo contributions.

- ix. Peter Moonki HONG: When it comes to KPI monitoring xApp we want to leave the repo as it is and archiving the repository. We will stop contributing to the old repo and start contributing the new repo for KPI monitoring of xApps.
    - 1. On motion made by Peter Moonki Hong from Samsung to approve creating the new KPI monitor repo and archiving the existing one
    - 2. David: Was the archived repo Apache only contributed by other than Apache?
    - 3. Peter: Motivation is to change their direction to the FRAND license.
    - 4. David: All the code is 100% contribution from Samsung.
    - 5. Matti: It's copyright AT&T and Samsung.
    - 6. David (DT): This is a lawyer question. If it all code by one company then they can release under new license but if there is code from another company then needs clarification from lawyers.
    - 7. Jack: This is a new occurrence. The AT&T code would still be under the Apache license and anyone can continue to use it going forward. It is released under Apache. To create the new repo it becomes a mixed repo that has pulled code from the Apache license and made into O-RAN license. I'll have to get clarification on what that means. Action/ [John Murray](#) get clarification regarding transfer of AT&T Apache code into the new dual license repo. General rule in the past is the most restrictive license dictates the combined code follows the most restrictive license.
    - 8. Lusheng: Will AT&T continue contributing to the SCP repo?
    - 9. Matti: No we had the admission control xApp but the person who wrote the code has left AT&T. I don't see any reason for the Amber release repo to carry on.
    - 10. Jack: It will be archived and the code is available for people to use.
    - 11. Lusheng: LF does support making a repo read only (archive) to use for the KPIMON.
    - 12. John Keeney: I presume it's possible for people who have branched the code can continue using?
    - 13. Jack: That's why it is archived. It follows the Apache usage rules. The new repo will use the new license with the new contributions with what they pull forward from Apache under O-RAN restrictions.
      - a. On motion made by Peter Moonki Hong from Samsung to approve creating the new KPI monitor repo and archiving the existing one.
      - b. Seconded by [Jinri Huang](#)
      - c. **VOTE:** Vote taken, item passed
  - b. Summary Bronze Release
    - i. Lusheng: We have completed the remaining tasks for the release. The detailed status is reported on the [Bronze Release \(Jun 2020\)](#)
      - 1. New [Getting Started](#) guide
    - ii. Jinri: Expresses his sincere gratitude for the hard work.
6. Copyright updates
- 1. Jack: Did we get an official approval of the copyright yet?
  - 2. Jinri: I believe the voting results have come out. The EC has not announced.
  - 3. Jack: We will get clarification on the EC call today and let everyone on this team know about the copyright permission from the O-RAN Alliance material.
7. Marketing of the current release (WG, LF, PR)
- 1. Bronze Release PR
    - 1. Jinri: Preparation for the virtual exhibition is done. I have the website link to the virtual exhibition. There are 13 new demos uploaded to the O-RAN virtual exhibition website. Among the 13 there is one from our open source community provided by Ericsson and their partners.
    - 2. Jack: Do you have to be an O-RAN member for the virtual space?
    - 3. Jinri: No it is a part of the O-RAN website.
    - 4. Jack: The Bronze PR activity is ongoing.
  - 2. Virtual Exhibition <https://www.virtualexhibition.o-ran.org/>
  - c. OSC Logo status.
8. Status of Open Action Items (Old Business)
- a. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
    - i. Jack: There is an open item from for the EC to work with the test group on a discussion around the emulator/simulator needs. We need to coordinate that. I got an email but am not sure where we are in the process of meeting. We need to meet to work out a longer approach.
  - b. **Action/** [Jinri Huang](#) notify the EC that the Bronze release has been voted on and approved.
  - c. **Action/** [user-d3360](#) send Jinri your status slides.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Bronze Timeline](#)
      - 1. Maintenance release is available.
      - 2. Lusheng: We have a request from LF legal to have a formal process to address the use of external source code licenses? Should we use specific attributions or use a blanket statement. Action / [user-d3360](#) add the topic of license attributions to the agenda. We want to start the pairwise testing.
      - 3. Jack: Use the opportunity to do pairwise testing.
    - ii. [Review Bronze Release Highlights](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
    - i. Our hope is to get the lab prepped by 6-30. We want to get the KPIMON inserted. We've asked Viavi to monitor a trace file that can be delivered by the end of the month we can make the use case more sophisticated. That will lead to the Cherry release to run with a real time simulator. We are counting on Viavi.
    - ii. The ML enabled traffic steering xApp I want to get a simulator of RAN topology.
    - iii. rApps and xApps will detail the onflows. How do you deploy the rApp and put it in run time. We also have to think about what kind of training and the training pipeline.
    - iv. How is O-CU going to talk to O-DU. Introduction of SMO in regards to LCM and pre-release R-1 interface for Cherry will drive R-1 interface for Dawn.

- v. R-1 interface is for introducing R-Apps. It is still being discussed in O-RAN Alliance. Some of it is pre-release and not set in stone. We can drive requirements down and start the ball rolling. The DU Low and High P7 is going to be integrated. R-U, D-U, C-U is a challenge. We've come up with a tentative plan of what the combined configuration. We will attempt to attach one UE and have a functional RAN element working. We have to get all the parameters and time. With HARK disabled can we attach a UE? It is important to get a functional end to end stack working.
- vi. Lusheng: Do you mean simulated or physical UE?
- vii. Rittwik: O-R is a simulated but with the real RAN we want a physical UE.
- viii. Is there anything resembling and R-U stub for DU-Low?
- ix. Rittwik: Yes, there is an R-U stub that is there already. That is basic functionality.
- x. Tracy: I think you are aware that AT&T will use SMO in stages? Is it ONAP based SMO?
  1. Rittwik: It will be ONAP based.
  2. I wanted to confirm the basic.
  3. Jack: The SMO is a big box that we've thrown some pieces in. It means different things to different people. The O-RAN Alliance WG1 leaves it to implementation. The challenge for us is to decide do we create a formal SMO project or not? There could be more than one if there's enough support in the community or do we avoid that? The issue we have to figure out is to make a working thing we need to pull together all the pieces. If we wrap it with a SMO label. How do we bring it forward enough so that companies understand how to use the pieces to wrap it together and see how somebody comes out with commercial implementation. The work is useful if it ends up with multiple providers across the globe.
  4. Tracy: The SMO are components or subset of building blocks. It has a few components some are being added and dependent on contributor support.
  5. Jack: The SMO needs to be provided by the software community to do the work.
  6. Tracy: AT&T is not the only operator who wants to start implementing the Phase 1 SMO and have some reassurance that phase 2 SMO can be built on phase 1 SMO.
  7. Jack: Industry trends company's lose interest. The SMO has to support a range of functionality but also make it easy for this community to build, test, demonstrate and move the community forward. We will cue this up for the next discussion.
  8. Jack: How are we going to approach pulling the SMO pieces together. Continue to get the O-DU moving forward. Looking at how the O-DU and O-CU work together. What about the O-RU? Those are more targeted discussions. As we mature a lot of discussions become complex.
  9. Jinri: TSC requested we work Acumos team for near Real Time RIC development.
  10. Jack: I will get someone from the project give a presentation here.
- c. [user-d3360](#) Integration and Test
- d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
  - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
  - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
  - iii. [Thoralf Czichy](#) RIC Platform (RIC)
    1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)
  - 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. (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. Votes

- i. On motion made by Peter Moonki Hong from Samsung to approve creating the new KPI monitor repo and archiving the existing one.
  1. Seconded by [Jinri Huang](#)
  2. **VOTE:** Vote taken, item passed
- ii. Vote to approve minutes for 17 Jun 2020
  1. On motion made by [Jinri Huang](#)
  2. Seconded by [user-2057e](#)
  3. **VOTE:** Vote taken, item passed

b. Actions

## 2020 06 17

Recording: [2020\\_06\\_17\\_O-RAN\\_SC\\_TOC.mp4](#)

### Agenda

- 1. Call for Scribe (minutes owner) Farheen Cefalu
- 2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
---------	--------------	------------	-------------------	------------

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)

- a. The minutes of the prior meetings were reviewed, and no corrections.
  - i. Vote to approve minutes for 10 Jun 2020
  - ii. On motion made by John-Paul
  - iii. Seconded by [Juha Oravainen](#)
  - iv. **VOTE:** Vote taken, item passed

4. Review of Today's Agenda

- 1. Jack: We will spend time today to vote and approve the Bronze release for 21 Jun 2020
- 2. Rittwik: What is the suggestion for the Viavi simulator on the lab.

5. Release Votes and Approval

- 1. Last week we discussed delaying Bronze for one week. We had the press release. We voted and approved the delay by one week.
- 2. Lusheng: With the extension we have completed all the flows for the use cases. We have started preparing for the release. A wiki page has been created for tracking the remaining tasks.
  - 1. Repo must address all finding with the LF legal scan. There were 3 findings. 2 offending references have been removed. 1 for O-DU project has a resolution but it will take some time. The resolution will be on Thursday or Friday. After scan seed code 2 GNR scans have to be addressed. Lusheng will address after O-DU scan has passed.
  - 2. Binary artifacts will be perpetual.
  - 3. All the repos must update their release
  - 4. Bronze branch will be released for all the code.
  - 5. We are between 80 and 90% completion level for all the remaining tasks.
    - 1. See [Releasing Bronze Tasks](#) to see how we keep track of where everything is.
    - 2. John Keeney: Which comes first the code or the release?
    - 3. Lusheng: We have completed one round of passing Bronze release testing. Previously for the non real time RIC there it was yellow. The last round of testing passed. We will do another round of testing after the tasks are complete.
    - 4. Remaining tasks for Integration and testing teams.
    - 5. We are also creating a Getting Started wiki page to stand up their own near real time RIC and non real time RIC. We will also provide a video of the flows.
    - 6. We will have a Bronze Release Page
    - 7. Deferred to Bronze Maintenance Release
      - 1. US O-DU Low and O-DU High Use Case
      - 2. Full Traffic Steering Use Case
      - 3. RICApp xApp raising alarms Use Case
      - 4. O-DU-LOW CICD
      - 5. O-CU CICD
    - 8. Rittwik: This is pending the emulator decision because the input to the KPIMon is dependent on the emulator or else it is not a full traffic steering use case.
    - 9. Jinri: Where can I get these slides?
      - 1. **Action/** [user-d3360](#) send Jinri your status slides.
      - 2. Jack: I wanted to elaborate on the getting started. I asked a team of people to take a look at the process of starting the procedure. We found from other projects that it is easier to have a getting started page for new people who are not familiar with the project.
      - 3. How do we see updates before release and after release?
      - 4. The deadline for the release is Sunday 21 Jun 2020
      - 5. Lusheng: The tarball is the source code for getting the branch at that moment. The images are self service releasing. What does it really mean when people release. We will provide recipe files in the Getting Started. After a repo has been released and more changes are needed we will maintain the head of the Bronze branch as much as we could.
    - 10. Given the current status [user-d3360](#) made a motion for a go or no go for the Bronze release.
      - 1. On motion made by [user-d3360](#) to officially release the Bronze code on 21 Jun 2020
      - 2. seconded by [Jinri Huang](#)
      - c. **VOTE:** Vote taken, item passed

6. Copyright updates

- 1. Jack: O-RAN copyrite usage for O-RAN specifications.
  - 1. Jinri: I was late to the last EC. I will follow up with Zybnek.
  - 2. Jack: We have not gotten official closure for the vote. Next week we will get the exact clarification. On a related topic ETSE approved the O-RAN Alliance use of copyright. In process and making progress for the O-RAN SC to have copyrights.

7. Marketing of the current release (WG, LF, PR)

## 1. Bronze Release PR

1. We are working through establishing some guidelines for that PR release. Some of the feedback is we're trying to keep the statements refined. I was asked to go back and ask the companies to trim to make a crisp statement with a blog area for extended information. We are working through that with the EC and PR teams.

## 2. Virtual Exhibition.

1. Jinri: I don't have the progress. I have not seen any email exchange between Zybnek, Paul and me. Zybnek is working on online. I will update the progress next time.
2. Jack: It will come out along with the board meeting. The opportunity to the community is to show off progress we are making in the O-SC. It is a good place to show the O-SC software.
3. John Paul: I heard 19 Jun 2020 is the last day for the deadline communication.
4. Jinri: Gate 1 is to review. Gate 2 is PR which has already past.
5. John Paul: The submission of the actual demo deadline is this Friday 19 Jun 2020 .
6. Juha: I see the deadline is 19 Jun 2020
7. Zhimin: Intel has not given feedback for the PR. Is it already tracked?
8. Jinri: It is already tracked. I forwarded it to Zybnek.

## c. OSC Logo status.

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

- a. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
  - i. <https://oranalliance.atlassian.net/wiki/spaces/TTIFG/pages/480542932/1.0+Draft>.
  - ii. William: I will continue to attend the ETE meetings.
- b. **Action/** Farheen point to the F2F meeting from the Events page to O-RAN Alliance's latest spreadsheet.
  - i. We had some OSC meetings on this topic. One was a F2F of all the WGs. Well over 100 participants attended. We had a second one on a more detailed discussion on the emulator activities. We made a presentation and discussed the values.
- c. **Action/** Vishnu send Rittwik the slides for the ITU / AiML Challenge
  - i. Jack: We did not do too much
- d. **Action/** Rittwik: Post ITU / AiML Challenge slides on the wiki and pull together a team. Include Thoralf.
  - i. Rittwik: I would like to know where we are with Viavi simulator?
  - ii. Jack: It is at the EC level. They have been very busy the last few weeks. It is on the agenda but we have not come to a resolution or a vote at this time.
  - iii. Jinri: Several EC members had dropped the meeting and not enough time to discuss. Tomorrow's EC call this has been put at the top priority. The EC members have reviewed the documentation late so they postponed it to tomorrow's call.
  - iv. Jack: More complicated because of the Virtual F2F.
- e. **Action/** Rittwik: I will set up a meeting for ITU AI/ML and pull together a team.
- f. **Action/** Trishan: clear all the legal items for the code and figure out what is needed for the O-CU repo creation so the team can continue.
- g. **Action/** [user-d3360](#) provide Trishan with the O-CU repo trouble ticket.
  - i. The repo was created and since then O-CU has uploaded the code and merged.
  - ii. Jack: The key is to get that repo added to the analytics page.
  - iii. Trishan: It should be available after 6 hours of adding the
- h. **Action/** [Jinri Huang](#) generate an email to inform Zybnek and EC regarding that we will be delaying the release
  - i. Jack: **Action/** [Jinri Huang](#) notify the EC that the Bronze release has been voted on and approved.
  - ii. Jack: We'll start planning for Cherry and Bronze Maintenance release. We want to look at the end to end use cases that will align the community and O-RAN Alliance forward. I need to ask for people to look at the requirements and test teams. Those teams have done two releases and are small. Typically on projects we rotate people. We will need new people to step up for the Cherry release or else we won't be able to do all the testing. It is important for all the operators, vendors, and participants in the community and look to contribute and find a place where everybody can pitch in. Requirements, Integration and Test and requirements will be pulling this all together. These up front and back end teams need participation with the community or else we will have to do more testing. I asked the other TOC members to take time to see if there is any where they can contribute.
  - iii. Jack: We are at the end of our meeting and thanked the team. DU High and Low made significant progress to make the end to end flow. We have new code coming in from two areas like TR69 and O-CU code that will bring functionality. We are looking to Cherry to add more O1 and A1 support so it looks like a system and not just stand alone parts. I look forward to new projects such as the SMO work. There is still a lot to do and participate. I wanted to thank everybody for all the progress and look forward to watch Cherry

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

- a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
  - i. [Bronze Timeline](#)
  - ii. [Review Bronze Release Highlights](#)
- b. [user-59b16](#) Requirements Software Architecture Committee
- c. [user-d3360](#) Integration and Test
- d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
  - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
  - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
  - iii. [Thoralf Czichy](#) RIC Platform (RIC)
    1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)
  - 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. (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. Votes:
  - i. The minutes of the prior meetings were reviewed, and no corrections.
    - 1. Vote to approve minutes for 10 Jun 2020
    - 2. On motion made by John-Paul
    - 3. Seconded by [Juha Oravainen](#)
    - 4. **VOTE:** Vote taken, item passed
  - ii. Given the current status [user-d3360](#) made a motion for a go or no go for the Bronze release.
    - 1. On motion made by [user-d3360](#) to officially release the Bronze code on 21 Jun 2020
    - 2. seconded by [Jinri Huang](#)
    - 3. **VOTE:** Vote taken, item passed
- b. Actions:
  - i. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
  - ii. **Action/** [Jinri Huang](#) notify the EC that the Bronze release has been voted on and approved.
  - iii. **Action/** [user-d3360](#) send Jinri your status slides.

## 2020 06 10

Recording: [2020\\_06\\_10\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
  - a. The minutes of the prior meetings were reviewed, and no corrections.
    - i. Vote to approve minutes for 03 Jun 2020
    - ii. On motion made by [Jinri Huang](#)
    - iii. Seconded by [Juha Oravainen](#)
    - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
  1. Any further updates for the ITU AI/ML Challenge.
    1. Rittwik: Sent it to John Paul. **Action/** Rittwik: I will set up a meeting and pull together a team.
    2. Jack: It is difficult to move quickly. It takes time to ramp up.
    3. Rittwik: Where should I put the challenge?
    4. Jack: Events wiki and post to the reflector.
  2. Lusheng wants to post the status of the Integration and Test
5. Release Votes and Approval
  - a. Vote on the Bronze Release and Integration and Test Status
  - b. Jack: The press releases are handled by the O-RAN Alliance. Zbynek is the primary contact and he runs it through the O-RAN Alliance. Jinri is our interface to Zbynek. Zybnek has pulled together a draft. It will be combined with the Virtual Demo and the board meeting that is coming up at the end of the month. The direction is to release the press release at the end of the month like June 30th. That gives us another week for the highlights. That is the feedback from O-RAN Alliance and Zybnek is our contact.
  - c. Jinri: Does not have the latest.
  - d. Trishan: Do we need a quote for this release?
  - e. Jack: Yes, we should.
  - f. Trishan: Jinri please share.
  - g. Jinri: I'm not sure we can share but we can pull out a portion and share with this community.

- h. Jack: It is a combined press release making it a little complicated. I'm trying to work through how this work than through the traditional open source.
- i. Trishan: If it is a press release we keep it close.
- j. Jack: If you have input contact Zybnek and he will coordinate with Jinri for the PR Release. That gives us a little window to discuss. Let us go on to the report from the system integration group.
- k. Lusheng: Sharing screen.
- l. Jinri: OCU PTL informed Jinri they have code ready for quite some time. They are waiting for the repo to be opened by the LF. The request was submitted one month ago. It has been ready for quite some time.
- m. Lusheng: I was cc:d on the help desk ticket. LF has added all the information needed for the automation job to create the repo. 7 - 8 hours ago there was a message from LF that the ticket is on hold. Action/ [user-d3360](#) will check the status of the O-CU demo.
- n. Lusheng: Scope: We have a number of use case flows. Mainly the flows are RIC , O-1, A-1 healthcheck. O-1 was descope. Traffic use case is a partial flow that verifies the traffic steering decision. First is without KPIMon. Second phase in the Bronze maint. release will deliver the full flow. O-DU high and low will communicate over FAPI and exchange one MAC message. This is also timed for B maint. release. For integration this is what we deployed for testing. The color coding represents different code implemented for different projects. There are some pieces that are grayed out and will be dedeployed in Bronze maint release. We deployed two k8 clusters in the lab. We deployed SMO real time one towards edge. Status: We have completed two of the four flows A1 RIC healthcheck. Long with more than 60 calls. The long chain will interact with non Real Time down to A1 mediator and distributor to the Hello World xApp. To support xApp near Real Time RIC complex flow passed.
- o. Proposals for 4 flows deliverables.
  - i. Lusheng would like to recommend option 1
  - ii. Lusheng requesting a vote from the TOC.
  - iii. Jack: Floor is open for questions.
    - 1. Jack: if we go with where we are right now. What percentage of work that's been tested. All flows have not been tested. There are only certain things that we can test. It is driven by end to end flows. When you say for the overall testing plan what percentage would you put on the testing overall. What percentage of testing of flows will one week give you?
    - 2. Lusheng: We are between 80 - 90% Blocker is the alarm flow that is blocking the two healthcheck. We are not able to complete the test however the dev teams were successful. That is why I think it is a configuration mismatch and not a feature missing. There is a feature missing but will be provided. The one week extension will help us to complete the alarm process and we will have the 4 flows. The alarm processing flow involves O1 mediator and Prometheus and Prometheus manager. Prometheus are external components of the upstream so configuration is tricky.
    - 3. Jinri: if we can address can we include O-CU with the one week extension?
    - 4. Lusheng: The code will not be a part of testing.
    - 5. Jack: Has the license scan been completed and accepted?
    - 6. Lusheng: Yes, LF attorney conducted a scan and came back with questions. I distributed to the PTLs. I have to pull that report and return to legal. The issues have been resolved but we don't have LF legal final approval to release the code.
    - 7. Lusheng: We are putting together a Getting Started guide. It is a work in progress. We will have the test documentation and a video tutorial. The video will be on the tutorial. After the Bronze release will be off. the landing page. The quick start will be for end users of how to configure and run. What are the commands to run. We have the first part all the way up to deploying near completion.
    - 8. Jinri: Have you considered a two week extension for safety?
    - 9. Lusheng: No I did not.
    - 10. Jack: We try to stick as close to our schedule as possible because people will start moving into. the maintenance release. We try to focus to validate through testing. That is what is most useful to the software community vs. diving into code that they are not familiar with and they don't have a lot of support. It's progress for the community but not for downstream users. You still have to clean things up.
      - a. finishing completing testing
      - b. getting through scans
      - c. make the getting started guide for people to understand what the Bronze release is all about.
      - d. Let the team take on a host of issues for the maintenance release rather than working the team week to week.
      - e. [user-2057e](#) agrees with Jack to complete in a week and clean up in the maintenance release.
      - f. Ganesh and Juha agree.
      - g. Jinri: The reason i raised the comment because I think O-CU is critical for the release. If we have a two week window extension we can get the O-CU part done. The code is ready and waiting to be uploaded. If we can do it in two weeks we can include the O-CU.
      - h. Jack: We should get it scanned and address the legal issues in time I doubt two weeks... It will either pass or need more time to resolve that will push into maintenance release.
      - i. Jack: [Martin Skorupski](#) provide the status for the TR-69 adaptor is included.
      - j. Lusheng: The previous scan did not include.
      - k. Jack: Those are two items we should put on the list for the maintenance release.
- p. Vote: On motion by [user-d3360](#) to move the Bronze release from 14 Jun 2020 to 21 Jun 2020 add one week extension to the Bronze release. Delay the release by one week.
  - i. Seconded by [user-2057e](#)
  - ii. **VOTE:** Vote taken, item passed
- q. Jack: Action/ Trishan: clear all the legal items for the code and figure out what is needed for the O-CU repo creation so the team can continue.
- r. Action [user-d3360](#) provide Trishan with the O-CU repo trouble ticket.
- s. Action/ [Jinri Huang](#) generate an email to inform Zybnek and EC regarding that we will be delaying the release
- t. Zhimin: We decided to release next week. I have questions for development on the branch. What is the way for us to implement.
- u. Lusheng: I will send out a separate email for the release and action items.
- v. Jack: For pieces that are complete as far as Bronze is concerned they can branch their code and move on to maintenance.
- w. Lusheng: Yes, the release process, 1 you need to make sure as PTL that the artifacts exist in release repo registries and not in staging. 2. xApp descriptors contain a link to the docker image. After that you can make the branch. We will use the bronze branch. All lower case for the branch name. bronze will be the bronze name. The repo owners can make the branch. Please make sure the release notes in the repo docs section is up to date and contains the bug fixes in the release notes. This is the high level process.

- x. Jack: Everyone should update their bronze release table for features and capabilities so that it is on the web site as well.
- 6. Copyright updates
- 7. Marketing of the current release (WG, LF, PR)
  - 1. Bronze Release PR
  - 2. Virtual Exhibition.
  - c. OSC Logo status.
- 8. Status of Open Action Items (Old Business)
  - a. **Action/ William DIEGO** update on the coordination with the O-RAN test group
- 9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager **Trishan de Lanerolle /Release Planning**: Weekly TOC Scheduling
    - i. **Bronze Timeline**
    - ii. **Review Bronze Release Highlights**
  - b. **user-59b16** Requirements Software Architecture Committee
  - c. **user-d3360** Integration and Test
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. **John Keeney** Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
    - ii. **Matti Hiltunen** RIC Applications (RICAPP)
    - iii. **Thoralf Czichy** RIC Platform (RIC)
      - 1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in **Bronze Release (Jun 2020)**
    - iv. **user-a934b** O-RAN Centralized Unit (OCU)
    - v. **Sachin Srivastava** O-RAN Distributed Unit High (ODUHGH)
    - 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. (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. Votes
    - i. The minutes of the prior meetings were reviewed, and no corrections.
      - 1. Vote to approve minutes for 03 Jun 2020
      - 2. On motion made by **Jinri Huang**
      - 3. Seconded by **Juha Oravainen**
      - 4. **VOTE**: Vote taken, item passed
    - ii. On motion by **user-d3360** to move the Bronze release from 14 Jun 2020 to 21 Jun 2020 add one week extension to the Bronze release. Delay the release by one week.
      - 1. Seconded by **user-2057e**
      - 2. **VOTE**: Vote taken, item passed
  - b. Actions
    - i. **Action/ William DIEGO** update on the coordination with the O-RAN test group
    - ii. **Action/ Farheen** point to the F2F meeting from the Events page to O-RAN Alliance's latest spreadsheet.
    - iii. **Action/ Vishnu** send Rittwik the slides for the ITU / AiML Challenge
    - iv. **Action/ Rittwik**: Post ITU / AiML Challenge slides on the wiki and pull together a team. Include Thoralf.
    - v. **Action/ Rittwik**: I will set up a meeting for ITU AI/ML and pull together a team.
    - vi. **Action/ Trishan**: clear all the legal items for the code and figure out what is needed for the O-CU repo creation so the team can continue.
    - vii. **Action/ user-d3360** provide Trishan with the O-CU repo trouble ticket.
    - viii. **Action/ Jinri Huang** generate an email to inform Zybnek and EC regarding that we will be delaying the release

## 2020 06 03

Recording: [2020\\_06\\_03-toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
<a href="#">AT&amp;T</a>	Jack Murray Co-Chair	x	Lusheng Ji	
<a href="#">China Mobile</a>	Jinri Huang Co-Chair		Weichen Ni	x
<a href="#">Deutsche Telekom</a>	David Streibl		Ondej Hudousek	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	

Orange	William Diego	x	Vincent Danno	
Verizon	Viswa Kumar		Kristen Young	
Nokia	Juha Oravainen	x	Thoralf Czichy	
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Ericsson	John-Paul Lane	x	John Keeney	

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)

- a. The minutes of the prior meetings were reviewed, and no corrections.
  - i. Vote to approve minutes for 27 May 2020
  - ii. On motion made by John-Paul Lane
  - iii. Seconded by [weichen ni](#)
  - iv. **VOTE:** Vote taken, item passed

4. Review of Today's Agenda

1. Juha - Last week discussed Virtual meeting.

1. Jack: Jinri has been involved in setting it up. It was mostly Jinri.
  1. Action/ Farheen point to the F2F meeting from the Events page to O-RAN Alliance's latest spreadsheet.
  2. <https://oranalliance.atlassian.net/wiki/spaces/OAH/pages/644448276/Virtual+F2F+Meetings+June+8-19+2020>  
<https://wiki.o-ran-sc.org/pages/resumedraft.action?draftId=1179657&draftShareId=102136bc-a84f-4418-bf53-c4fbd986063a&>

2. ITU / AiML Challenge

1. Vishnu: This is an invitation to collaborate.
2. ITU has launched a 5G challenge. We request O-RAN SC to consider collaboration or a problem statement for the challenge.
3. We are trying To create platforms using open source.
4. We provide feedback and collaborate with ITU specifications.
5. Who? Open to everybody 5GU. And also include you as a nominee.
6. LFAI and NGNM.
7. I discussed two plans with Rittwik two plans.
8. Tool set

3. Jack: Dates to get back to you by?

1. Vishnu: June second week around 10th or 15th. You can provide a date for your collaboration window. If you need to come in the next window will be midSeptember. I can stretch it to 3rd week of June.
2. Jack: I would like to get a few people to get involved.
  1. Matti and Rittwik.
3. Is it only for xApps?
  1. Vishnu: It is open contact Vishnu.
4. Jack: is there anyone else who would like to get involved?
  1. John-Paul we would like to know more.
  2. Thoralf: slides?
  3. Action/ Vishnu send Rittwik the slides.
  4. Action/ Rittwik: Post it on the wiki and pull together a team. Include Thoralf.

5. Release Votes and Approval

1. Jack: Saw Zbynek's draft with information for the release. Several people asked for supporting statements. Please contact Jack or Zbynek for release highlights. The company's that have statements send Jack requests and he will pass along to Zbynek.
2. John Keeney: Will it be possible to see the press release before it goes out?
  1. Action/ Jack: Will share the document through the reflector. Jack and Jinri provided the input.
  2. John: When is the deadline for the highlights?
    1. Jack: We try to be ready by 6/14. The press release will come out any time after that. They will make the final decision on the exact. Have to them by the end of this week.
    2. We will focus next week on the final vote to approve the release.

6. Copyright updates

1. Jack: The updated statement is still in the process of being voted upon at the board level. I don't see the details. I am not in the email pool. I get some information back but it's in process. The board votes take a little more time to gather the input from everyone and they try to get everyone's vote. I will get an update as soon as I return.

7. Marketing of the current release (WG, LF, PR)

1. Bronze Release PR
2. Virtual Exhibition.

1. There is a June update to the virtual exhibition coming out. Jinri has been talking about the demos and submitting them to Paul Smith from AT&T. Any questions?

c. OSC Logo status.

8. Status of Open Action Items (Old Business)

- a. **Action/ William DIEGO** update on the coordination with the O-RAN test group
  - i. John-Paul. It will be decision based.
  - ii. Jack: Yes, O-RAN will look at it and give the thumbs up that we've looked at it and saying it's met their principles.
  - iii. John-Paul: There is nothing from stopping anyone from using testing simulators but they have to be approved by OTIG.
  - iv. Tracy: I think what you are saying is consistent with the OTIG guidelines. I am familiar with the one in North America to demonstrate ONAP elements.
- b. ~~Action~~ **TOC** members vote to approve Martin's email for a new repo request.

- c. **Action/** Rittwik: Share the spreadsheet with Jinri and Yingying. Regarding the topic of O-CU 5G status.
    - i. Rittwik: asked Yingying to share Cherry release to pass along.
      - 1. Jack: This is important that we promote and support in the Cherry release. I am looking for progress in the Cherry release.
      - 2. Rittwik: ODU OCU ORU are discussing their minimum support that they agree to inside Radisys, Viavi, Yingying are providing input to show they are in consensus.
      - 3. Jack: That starts to make them more useful.
  - d. **Action/** [Trishan de Lanerolle](#) provide the Insight slides to [Farheen Cefalu](#)
    - i. Jack: We got the report last week from Trishan. People saw issues with Unknown attributes. Farheen got most of that addressed. We have improved the unknowns and got them addressed.
    - ii. In the attribution process one of the challenges we've observed is as an AT&T representative to make a decision, people were contributing from different [att.com](#) domain we were seeing code coming from different parts of the company. We were getting a lot of dither inside the AT&T. Even though I can see it and know that contributions are coming from Nokia. As a company think about unifying your subdomains into one company domain to make it easier to see the entire company.
    - iii. John Keeney: Cross cutting projects such as documentation and tests. Content is driven by other projects. Such as Non real time RIC can we tag some of those changes to certain topics.
      - 1. Jack: Yes, we are open to that discussion. We can review for example they only had information by each sub project which made it difficult to see progress by sub sections. We can carve out time to talk about it and work with Trishan and team to work with.
        - a. John: To make sure everyone gets credited for work they are doing.
        - b. Jack: Documentation has it's own set of reports. There is ability to look at that and it is separate.
  - e. **Action/** PTLs provide one or two bullet highlights worth including in the press release. It does not have to be long. One or two sentences one or two bullet points. 03 Jun 2020 Should include statements from any company's.
    - i. Jack: I will send it out in the reflector.
    - ii. Matti: What is the process for collecting highlight emails?
      - 1. Copy Jack in an email.
    - iii. Rittwik: Put the highlight you think you have received put it on the front Bronze highlights. Put it on the Bronze Release page.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Bronze Timeline](#)
      - 1. We are at the end of the timeline.
      - ii. [Review Bronze Release Highlights](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [user-d3360](#) Integration and Test
    - i. RSAC defined flows for Bronze. Traffic steering has been completed and successful.
      - 1. Traffic Steering use case is successful.
      - 2. For A1 flow under health check segment flows have been successfully tested.
        - a. Hello World is not working yet so we are using traffic steering.
      - 3. ODU High are successfully able to establish healthcheck communication.
        - a. O1 alarm flow over healthcheck we have model re-alignment are different. We will set up a meeting with the PTLs of both OAM and Near Real time RIC. We will see if we can close this gap and how long it will take. Thoralf has a conflict and Martin is not available today.
        - b. Jack: Do we understand the gap why it happened. How do we address this moving forward? Is this improve communication? Change specs? Or get clarification on the topic?
          - i. Lusheng: There is a short term to see how large the gap is and can we close in this release?
          - ii. For longer term pairwise testing on different projects has been minimal. In Cherry improve in the design and architectural phase if somebody can own the ETE flow. Not just a high level agreement at the definition phase. We are finding it at the end of the release.
          - iii. We should start pairwise and intercomponent earlier than the last integration and testing phase. We couldn't do much of testing. It would be better if the developer or owners of the inter communication or components throughout.
      - 4. In terms of shedding we have until the end of next week. The go/no go will happen next Wednesday. Next week we will have the virtual face to face as well. The projects need to branch the code, documentation, and release notes. We will try our best to target this deadline but we may need some time to cover the final release items.
      - 5. Jack: TOC please provide input regarding slipping the timeline by one week. This will delay the press release. The TOC members should talk to the participants and getting these items addressed. This is crunch time and look forward and prepare for a slip in the schedule by one or two weeks.
      - 6. Rittwik: I think you've completed 90% of testing. The 10% can be pushed to maintenance meeting.
      - 7. Jack: We'll discuss the details in next weeks meeting.
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
    - iii. [Thoralf Czichy](#) RIC Platform (RIC)
      - 1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)
    - 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. (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. Votes:
    - i. The minutes of the prior meetings were reviewed, and no corrections.
    - ii. Vote to approve minutes for 27 May 2020
    - iii. On motion made by John-Paul Lane
    - iv. Seconded by [weichen ni](#)
    - v. **VOTE:** Vote taken, item passed
  - b. Actions:
    - i. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
    - ii. **Action/** Farheen point to the F2F meeting from the Events page to O-RAN Alliance's latest spreadsheet.
    - iii. **Action/** Vishnu send Rittwik the slides for the ITU / AiML Challenge
    - iv. **Action/** Rittwik: Post ITU / AiML Challenge slides on the wiki and pull together a team. Include Thoralf.
    - v. **Action /** Jack send the highlights out on the reflector before the press release.

## 2020 05 27

Zoom Recording: [2020-05-27\\_toc\\_audio\\_only.m4a](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
  - a. The minutes of the prior meetings were reviewed, and corrected by Farheen who replaced Jean-Paul name where Juha had seconded last 20 May 2020 meeting minutes approval vote.
    - i. Vote to approve minutes for 20 May 2020
    - ii. On motion made by [Juha Oravainen](#)
    - iii. Seconded by [Ganesh Shenbagaraman](#)
    - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
  1. Preparation for Bronze Release
    1. Jack: I added this item for the preparation for the Bronze Release.
    2. Trishan: We have the Insights team on today.
    3. Chat: From Trishan de Lanerolle (LF) to Everyone: (08:30 AM)  
<https://lfanalytics.io/projects/o-ran>
  2. Insights Team
    1. Shubhra Kar (CTO Insight) sharing a deck.
    2. LF planning to launch Networking Project this year. Reviewing short term and long term roadmap. Have been working with PMs for the Networking Project.
    3. Birdseye view of what they are trying. LF foundations automation platform. Security scanning, single sign on service. Wrap zoom around security layer. Analytics will go deeper today. We have easy CLA tools.
    4. We have been writing automation around asset management, voting, and PM service. We announced crowd funding service and more. The goal is to build a centralized platform to provide services in the platform lifecycle.
    5. There is an IP automation part.
    6. Today we are going to talk about Insights. It is still early. It is our V1 version. What are we trying to solve. 1. members, 2. Projects, 3. contributors. We want to look at employees impact. We want to see activities going up or down. For the projects you want to grow the community you want to measure health. Also, optimization is built in. While youre collecting data is the data secure? Email addresses are they stored in GDPR and privacy policies. Look at contributors commits and backlog working in sprints. However, can the contributor think about security? Are there security metrics available. In the version1 we haven't integrated our license yet.

7. This is home grown. LF needed to rely on third party tools. This has been built for LF community and all the projects under LF umbrella. Large team supports this from operations perspective. It is GDPR compliant. Features are the multi dimensional views. From a support perspective we are putting a support structure and offer weekly office hours from our engineers.
  8. We are gathering our metrics around commits and issue tracking. We aggregate on a daily basis. We have automated the instrumentation. So if a project adds another data source tomorrow we can add it without a lot of overhead. We are building custom dashboards on kibana. Two challenges are identity management. No consistency in contributors ids. How do we unify an identity of a user and refer back to one person. For member companies you want that credit to be applied to the company. How do you affiliate the contributors to these companies? There is no source of truth. We have a solution of how we manage through an administrative console. As we build it out we are scaling into a self-serve platform. We have put access rules into place. These are the data sources. We have projects moving into gitlab. Issue tracking systems. Bugzilla in jira. If you are using jenkins in your builds we have instrumentation that is pulling that data. As well as Slack, Jira, Confluence, Github Issues,...
  9. John-Paul does there need to be a design time update from the team or our own reports?
  10. We do create templated dashboards. If you want to visualize data in a custom view you can download anonymized data and voting dashboard, we have that instrumentation. We have sprints we work on the design and put it on staging get user acceptance and move it to production.
  11. John-Paul so as a company we could run a query across a number of projects.
  12. Shubrah: You can we are coming up with an out of box dashboard that will be released in fall.
  13. Shubrah showing a demonstration. Watch the recording.
  14. When will it be available to use?
  15. V1 is available right now. If you look at the site. There is a roadmap and newer views we are building for code pipelines. There is a role out plan PMs in the Networking team. We are doing waves and sign off. Wave 1 was presented. Wave 2 we want to give to O-RAN. There are others.
  16. Jack: can we have these slides.
  17. **Action/ Trishan de Lanerolle** provide the Insight slides to **Farheen Cefalu**
  18. David McBride: We split the schedule into greenfield project that don't have a developer O-RAN tool. Last week we talked to CNTT this week FIDO, O-RAN...
  19. These are the projects that have developer tools.
  20. Shubhra: PMs are validating their data. This is UAT.
  21. Jack: Is there a best procedure for closing these unknowns? How we do that? Is there guidance?
  22. Shubhra: Trishan is one Admin who can work on affiliation. We have a filter list.
  23. Trishan: We can add a couple of members in the community add them and then merge it back in.
3. Bronze Release PR
  4. Virtual Exhibition.
  - e. OSC Logo status.
5. Release Votes and Approval
    1. Jack: Any items open for votes and approvals? What is going to happen here is we are going to have a Go No Go vote on the Bronze release. Today is not the right day yet. The B release is supposed to happen on June 14th. Next week we should have a go / no go vote on the software release and press release. We have work to finish if we plan to release on time. That would mean the press release will come out Monday June15 or Tuesday June16.
    2. Jinri: For the press release the O-RAN Alliance is not quite sure if we will have a separate PR for Bronze release or mid year press release for O-RAN Alliance. I plan to bring this up in today's EC call.
    3. Jack: That is fine where the mechanics are when we release the info but the preparation of the documentation and released will stick to the time line. We are finishing up end to end testing this week and we'll have to decide if we are ready for a release on the 14th. That will give us time to pull together documentation and additional work for the Bronze release. One of the things we have to finish up gathering for B. We have to have our testing complete and the package to pull together. We'll discuss here how EC wants to release the information but for us we want to make sure we have the information ready for the press release.
    4. Jinri: Before hand preparation for information. In the press release we want to see the high lights. It is OK to ask the PTLs to provide 2 or 3 bullet points that they would like for us to highlight in the press release.
    5. **Action/ PTLs** provide one or two bullet highlights worth including in the press release. It does not have to be long. One or two sentences one or two bullet points. 03 Jun 2020 Should include statements from any company's.
    6. Jack: I will be out next week. Lusheng will be my proxy. Jinri could you run the meeting?
    7. Jinri: Yes, I think so.
6. Copyright updates
  7. Marketing of the current release (WG, LF, PR)
    1. Virtual Exhibition.
      - i. Jinri: There was an OSC related demo submitted to working group 1 O-RAN Alliance.
      - ii. Jiri: There is the virtual exhibition will last 2 weeks. The OSC have two time slots on Monday June 8th. Cherry release kick off discussion. Row #13 OSC line. The first item is the Cherry release kickoff 2 timeslots on Monday. Next topic Viavi on Tuesday. This is based on what I collected before. There is third one that is proposed by WG8 but they request us to join this discussion. The question to you and Rittwik just to confirm that we do need these two slots that we have required. We can attend.
        1. How long is the slot?
        2. One block is one hour. 2 hours for Cherry release. Starting time will be 8AM EST.
        3. Rittwik: Does this clash? You have WG1, 2, 3.
        4. Jinri: They will join this topic. WG1, WG2 is the entity who requested across this discussion followed by the topic.
        5. **Action/ Farheen Cefalu** add the spreadsheet to the Events page.
        6. Jinri: The latest one is the one I sent to you, Rittwik and Lusheng.
    - b. OSC Logo status.
8. Status of Open Action Items (Old Business)
    - a. **Action/ William DIEGO** update on the coordination with the O-RAN test group
    - b. **Action/ TOC** members approve Martin's email for a repo request.
    - c. **Action/ Rittwik:** Share the spreadsheet with Jinri and Yingying. Regarding the topic of O-CU 5G status.
9. Standing Agenda Items (Brief Status of Ongoing Activities)

- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Bronze Timeline](#)
    - ii. [Review Bronze Release Highlights](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [user-d3360](#) Integration and Test
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
    - iii. [Thoralf Czichy](#) RIC Platform (RIC)
      - 1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)
    - 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. (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)
  - a. Keep working towards completing our tests. Get back to Lusheng to assist with integration work. I appreciate everyones efforts and see if
13. Meeting Summary (resolutions, new action items, etc.)
  - a. Votes
    - i. The minutes of the prior meetings were reviewed, and corrected by Farheen who replaced Jean-Paul name where Juha had seconded last 20 May 2020 meeting minutes approval vote.
      - 1. Vote to approve minutes for 20 May 2020
      - 2. On motion made by [Juha Oravainen](#)
      - 3. Seconded by [Ganesh Shenbagaraman](#)
      - 4. **VOTE:** Vote taken, item passed
  - b. Actions
    - i. **Action/** [Trishan de Lanerolle](#) provide the Insight slides to [Farheen Cefalu](#)
    - ii. **Action/** PTLs provide one or two bullet highlights worth including in the press release. It does not have to be long. One or two sentences one or two bullet points. 03 Jun 2020 Should include statements from any company's.
    - iii. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
    - iv. **Action/** TOC members approve Martin's email for a repo request.
    - v. **Action/** Rittwik: Share the spreadsheet with Jinri and Yingying. Regarding the topic of O-CU 5G status.

## 2020 05 20

Zoom Recording: [2020-05-20\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
  - a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
    - i. Vote to approve minutes for 13 May 2020

- ii. On motion made by [Jinri Huang](#)
  - iii. Seconded by Jean-Paul Lane (correction made on 27 May 2020 to 20 May 2020 meeting minutes replaced Juha Oravainen with John-Paul Lane)
  - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
- 1. John-Paul We would like to nominate John Keeney as the alternative contact.
  - 2. Martin has a request open for a repo and would like to discuss OAM in the Cherry release. I will announce when we come to the PTL topic.
5. Release Votes and Approval
- 1. [Martin Skorupski](#) has a vote out for adding a repo for TR-69 adaptor.
  - 2. Martin: Comscope developed an adaptor. They would like to open source. We have 3 approvals we need 5.
  - 3. **Action/** TOC members approve Martin's email repo request.
  - 4. Jack: Is TR-69 is about work that Comscope is doing relative to RU or DU?
    - 1. Tracy: We started quite a while back. The notion here is that since TR-069 Broadband's forums formalization CPE planned management protocol. Since that is a pre-existing standard embraced by 3GPP standard we are referring to an TR-069 adaptor to integrate into the O-RAN architecture. Most indoor / outdoor small cell solutions already are speaking this TR-069 small cell solutions language. Not just Com-scope. This complies with all 5G TR-069 communications. This complies with specifications. This is the O1's universal adaptor for this so all will interface. It is operator selectable. Some will select TR-069 others will use the O-RAN O-1 management interface.
    - 2. Jack: Is Com-scope getting proper credit for contributing code? Sometimes when it is contributed by an intermediate contributor.
    - 3. Martin: They are contributing the code and I will make sure they are aligned with all Linux Foundation licenses and will make sure they get the credit.
    - 4. Jack: Is TR-069 been approved as an option under release or is this coming as a specification?
    - 5. Tracy: This is coming under the O-RAN modeling specification. It will be included with multiple data models. The TR-061 will be included that the modeling specification document.
    - 6. Martin: It was adapted by 3GPP and WG1. They want to align their modeling topics with 3GPP. It fits into O-RAN but also into the O-RAN software community.
    - 7. Jack: This is good it touches the aspect of touching networks and getting them going. It is important aspect of overall design.
    - 8. Ganesh: Technical question. This is related to the data models? This supports multi data models. Which data models?
    - 9. Martin: TR-96 and TR-181.
    - 10. Tracy: anybody who is interested Comscope was the first and global plugfest slides are on the O-RAN wiki. I'll send the link in the chat. Their demo is in the O-RAN virtual information.
      - 1. CHAT: From Tracy van Brakle (AT&T - WG1) to Everyone: (08:17 AM) <https://oranalliance.atlassian.net/wiki/spaces/TTIFG/pages/519208969/PF1+North+America+and+Europe+Presentations?atOrigin=eyJlJoiNTY3NzUyNzNjNzM2NDZhMWI5N2ZiYTEOGVkJmE4YmUjLWJlJoiYyJ9> link to CommScope slide from 1st O-RAN PoC/Plugfest in December 2019
      - From William Diego (Orange) to Everyone: (08:26 AM)
      - E2E test framework draft: <https://oranalliance.atlassian.net/wiki/spaces/TTIFG/pages/480542932/Draft>
      - From ENG WEI KOO (VIAVI) to Everyone: (08:29 AM)
      - thanks William you are fast! appreciate it
    - 11. Jack: This covers the small cell items but the CU and DU will be under the O1 specifications.
    - 12. Marin: Yes
    - 13. Jack: TSC had a vote on approving Intel binary usage as part of the DU Low. The vote closed last Friday. It got only positive votes. I sent a note to Zbynek of the O-RAN Alliance looking for a statement that it has passed. I have not gotten that statement from him yet. I don't know how many votes needed to pass a TSC vote. There are 15 positive votes. I believe we are good. I am waiting for confirmation from Zbynek that it is an approved vote.
    - 14. Jinri: I can confirm.
    - 15. Jack: We will consider that an approved vote we'll authorize people who want to implement Flex-ran implementation around integration and test as an initial working DU at the end of maintenance assuming that we don't have further delays.
6. Copyright updates
- 1. Jack: As I described last week there was a vote with the board on an initial copyright request. Jinri did it get reviewed or is it still in process?
  - 2. Jinri: It is not officially approved yet.
  - 3. Jack: An updated one was brought forward that addresses all of the open source software needs. They are updating and going through the process as an email vote. That process has started. Stephan has introduced it for the vote. The board votes by mail and it takes a few weeks to vote through that process. Any questions?
7. Marketing of the current release (WG, LF, PR)
- 1. Virtual Exhibition.
    - 1. Jack: The bronze release will be coming out mid next month. We've heard from companies who want to add a statement as a part of the release. We're working on writing comments included in the body of this release on capabilities please send Jack and Jinri a note. We are starting to pull together the body of the content for the release. Once we get something together we'll be adding the comments and getting it ready for the software release date.
    - 2. Jinri: Just a reminder tomorrow will be the deadline for the A1 review of O-RAN Alliance virtual demo for June but so far I have not gotten feedback for interest from anyone.
    - 3. John-Paul: Ericsson will submit later today to Paul Smith within the deadline.
  - b. OSC Logo status.
8. Status of Open Action Items (Old Business)
- a. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
    - i. William: Draft release that requests contribution from the O-RAN SC. I sent an email two days ago in order to complete info on our contributions to the test integration end to end test specifications. We are working on that. We expect to have the final version in two or three weeks.

- ii. Eng Wei Koo: We have to get together with Lusheng to get thru the contribution to ask for help. I sent it out the latest draft in Test and Integration. I can send to this team. We came together for this discussion and will get it together for next week.
  - b. **Action/** [William DIEGO](#) and [user-59b16](#) lead the effort to organize a long term discussion with Viavi about the coordinated view of the test group and their activities.
  - c. **Action/** [Jinri Huang](#) status of the O-CU 5G contributions to repos.
    - i. Jinri: For the O-CU part will be from ICT. They are in the process of signing a CLA and are getting their F1 code ready. They will create a repo and update the code once CLA is signed.
    - ii. Rittwik: Will there be testing for Bronze release?
    - iii. Jinri: No. [ENGWEI KOO](#) get a draft document prepared by next weeki.
    - iv. Rittwik: Will there be ODU High? OCU should look at a spreadsheet. Action/ Rittwik: Share the spreadsheet with Jinri and Yingying.
    - v. Jinri: As far as I know ICT attended last weeks meeting.
    - vi. Rittwik: Yes, they were listening in. He should see the spreadsheet.
    - vii. Jinri: If you have his email you can send the spreadsheet directly to him and cc me.
    - viii. Jack: Are they a member of O-RAN or are they just going to contribute to OSC?
    - ix. Yinying; they are a member of O-RAN Alliance and WG8.
    - x. Jack: At some point it would be good to set up a meeting with RSAC committee about laying out the timeline and feature roadmap. I know it is a larger component with different section so people have a better understanding of how it will progress. It is very important for the overall project. Thank everyone for their efforts for bringing that forward.
  - d. **Action/** TOC continue last weeks review of projects.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Bronze Timeline](#)
      1. Jack: We're into ETE testing and documentation. We should be planning an O-RAN demo of the capabilities of the Bronze release. Things are sliding a bit. We should be looking at inviting the WGs and members of O-RAN to see the release features.
      2. Lusheng: I have two items.
        - a. One is report status of testing. We're making good progress. Most complex flow health-check made good progress. Waiting for the Hello World xApp. O-TU is able to talk to non real time RIC. We're waiting for the Hello World xApp to be ready for testing.
        - b. Matti: The gap was we didn't have the image being generated and the developer of the xApp was going to talk to someone to set it up. It should be there or else let me know.
        - c. Lusheng: I couldn't find any documentation for this xApp. Do you have policy that will work with Hello World? We can add/delete policy into A1 only applicable if we have the policy.
        - d. John Keeney: We saw the body of the policy but not the schemas.
        - e. Jack: We have some work to do here.
      - ii. Lusheng: There are 2 health-check flows that requires OAM artifacts. We were able to deploy Frankfurt but had some difficulty with the other.
      - iii. Lusheng: for the traffic steering use cases we have the docker images on the nexus repos we should be able to start testing very soon.
      - iv. Lusheng: The O-DU lab testing we're getting a lot of help from Intel. The cards that Intel contributed are having issues and we are debugging.
      - v. Lusheng: We made a plan for the CI Flow and O-DU. there are some CI flows are not being used because the Intel compiler will not allow. Also testing requires particular LF software that is not good for that. We will use CI flow using LF. We will do the other tests in the lab. we are planning to finish this by the maintenance release. In addition to us other LF are using this process.
      - vi. Jack: Did you mention there was test framework code that would be available to the test group?
      - vii. Lushgen: Yes, there is OTF open testing framework ATT contribution repo IP/OTF because open source available for TGIG and OTIG. If they have special requirements to build demos or goals we will work with them.
      - viii. [Review Bronze Release Highlights](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
    - i. I received input from infra, testing teams for Cherry release. Also had a good discussion with John Keeney. There have been discussions with O-RU O-DU and some activities going on there.
    - ii. Jinri: Regarding software rental from Viavi. I sent the request to TSC co chair. It was not brought to EC but I will keep pushing. How is the progress?
    - iii. Rittwik: Technical work is continuing. Viavi wants to get the work done.
  - c. [user-d3360](#) Integration and Test
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
      1. Bug fixing and testing before Bronze release. WE are seeing scale and roundtrip times through the nonrealtime ric and controller. As we scale up to 10x and 100x. https support and ipv6 support has been keeping us busy with integration and test. Cherry we've been chatting with Cherry release. We will continue to discuss in RSAC in the coming release. One way of improving there is no SMO project which is ONAP we are finding that we will be working with Cherry.
      2. Jack: It doesn't mean that there wont be a project. At some point we will have to address but we dont' have enough working pieces to work on the higher level.
      3. John: We have better alignment.
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
    - iii. [Thoralf Czichy](#) RIC Platform (RIC)
      1. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)
  - 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)

1. Jack: How are things going?
2. Zhimin: We are quite busy to prepare release package. We are doing the final security and quality review and then we can go upstream. For Cherry release our committee requirement and integration with other project feature perspective. The O-DU low was support the typical config. We have doubt about going to the Massive MIMO or not? We have a doubt here and would like to know what is the community requirement for O-DU low.
3. Jack: That should be worked through the RSAC committee.
4. Rittwik: We have a pretty good idea of O-DU Low and High.

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

1. I was looking to the Cherry release. In bronze we depend on the models in order to have nice implementations ready. We didn't get something from O-RAN in time we are pointing to models that are readily available. We have to move on because this complicates the components. All the software I had in mind for the O-RAN sC is in Open Daylight and ONAP. It looks like my team has to move into the modeling teams of O-RAN Alliance so we can have some models available for SC. Basically for Cherry release ONF is now coming up with a near RTRIC project they are asking for models. I don't have many models to offer in the Cherry release. I don't know what to contribute in terms of software.
2. Jack: Modeling is a critical issue. Let's put this on the table for further discussion. Jinri let's highlight on the O-RAN Alliance side that this is a blocker for this space. We have to come up with a strategy. Let's chat on the side and see what we can come back with from that community. Rittwik this effects your items as well. Let's make it clear what our blockers are in this space.
3. Martin: I am aware so I started working with
4. Tracy: I have some slides that describe the status open issues. When you discuss this with the O-RAN Alliance folks these slides show progress and pitfalls. One of our problems not a lack of models but too many models. It is good to import models as long as they integrate neatly across a common framework makes it complicated.
5. Jack: Is that something you can share on the wiki?
6. Tracy: Yes.
7. Jack: 2022 is a long way out.
8. Tracy: We're following Agile there is a spec and models. example O-1 TR adaptor is based. The models where the open front haul. We are not where we need to be with A1, A2 and O1 is still a work in progress.
9. Rittwik: What about the impact to simulation.
10. Martin: I made tutorials.
11. Jack: If the PTLs feel it is time for them to move on then let us know and we will find others to take over. It's been a year and it is not unusual.

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

1. We are still struggling with the E2 simulator. We will work with the data from AT&T and will continue progress in the maintenance release for the traffic steering use case. For Bronze release it will be for data pipeline will move to bronze maintenance and xApp testing will happen in Bronze.
2. Jack: Samsung status?
3. Rittwik: I will follow up with Samsung. Lusheng may know more.

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

1. Enabled Ansible bootstrap so we have an all in one single server solution. In Cherry we will extend single server solution to multiple. There's another target to do interoperability to do O-DU High, Low to be used by the infrastructure.

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

1. Everything looks good. There is a lot of help from each project preparing the documentation and I am preparing the documentation branch for bronze release.
2. Jack: Is there an overview document?
3. Weichen: I am creating for Bronze.

xi. (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

- a. Jack: prioritize the test teams efforts. Support Weichen with documentation. Continue discussion with the RSAC committee with O-RAN to get things done.
- b. In two week on June 3rd I'll be out. Jinri if you will be available please lead the meeting and Lusheng will be my proxy.

12. Any Other Business (AOB)

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

a. Votes

- i. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
  1. Vote to approve minutes for 13 May 2020
  2. On motion made by [Jinri Huang](#)
  3. Seconded by Jean-Paul
  4. **VOTE:** Vote taken, item passed

b. New Action Items

- i. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group

2020 05 13

Zoom recording: [2020-05-13\\_toc.mp4](#)

Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
  - a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
    - i. Vote to approve minutes for 06 May 2020
    - ii. On motion made by [Juha Oravainen](#)
    - iii. Seconded by [user-2057e](#)
    - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
  - a. Add O-RAN Distributed Unit Low (ODULOW) May 31st Bronze delivery request to the top of the agenda because we ran out of time last week.
    - i. The question is ODULOW will deliver before May 31st. Who from the O-DU is going to talk about that? Is that Zhimin?
    - ii. Rittwik: I thought it was covered last week.
    - iii. Jack: They asked if they will be included in this release. I spoke with Zhimin last night. The issue is Intel has to go through the Intel review process to get this released.
    - iv. Their target is to deliver at the end of May which does not give them time for Integration. They wanted to put it in their software code in the repo and consider it as a part of the Bronze release. The code would be untested and un-integrated and finish up during the maintenance window. This is a discussion for the TOC how we want to proceed. I had a discussion with Intel last night for improving their process for the Cherry release and adopt open source methods for their software contributions and processes. They are going back to work those items and express that they will be able to improve them. In terms of a vote. The question is assuming that they contribute all the code by May 31 and our final date is June 14 do we consider that code is a part of the Bronze release? This is a question and the approval that they seek. It is a question for the whole TOC how they want to proceed. The code is there and is complete and it stretches things out from how we normally do things.
      1. Rittwik I think the code is there. Lusheng please comment. Are we testing the O-DU low? There is a bilateral agreement that happened. Even though it is not open internal pairwise testing is happening. We set up the servers in the lab to do the testing. Progress has been made in May.
      2. Lusheng: The Intel team stated source code in the repo is for Amber. They didn't provide the Bronze code. They will install the binaries in the lab there and do their pairwise testing and integration with O-DU-HIGH. That will happen in parallel with the source code. We are asking for the Bronze release they will put out new version of the source code for their internal process and conclude by the end of May and provide all the unit testing and testing with simulation. They do have some testing but not integrated with other O-SC components. That was the ask. In terms of integration building and when integration testing with ODU-HIGH currently are having some hardware issues in labs I do not have an eta due to lockdown and no access to lab. I can not give a timeline. If TOC consider this request from Intel it will be where to include the software in Bronze. The code will pass the unit test for contribution. I do not know when the integration with O-DU HIGH will happen. ODU-HIGH integration will happen in Bronze maintenance release.
      3. [Zhimin Yuan](#) What Lusheng and Rittwik said is clear. For ODU-LOW project can be published by the Intel process by the end of May. We will pass all the unit test and Layer 2 test 2 will finish unit tests internally. If we have chance We will use the open lab if able as well. We are asking for you to include ODU-LOW for the B release.
      4. Jack: For other TOC members are there questions?
      5. Juha: What about the licensing voting that is still ongoing and will be completed next week. Will that effect this vote?
      6. Jack: It's being used as a test fixture. It's not included as part of the software contribution for O-DU LOW but it does mean that what we had to go through to make sure we are cleared to use the intel software in our test lab and recommendation of using the lab. The community members have to decide if they are interested in the ODU path based on the Intel approach. The approval is based on license review and everyone is aware that we are using the software. But it is not a part of the software contribution. It's more or less to allow us to use it for testing. Do you still want to wait until after we get the license approval or should we vote now?
      7. Juha: If licensing is not approved then we revisit. I wanted to understand it a little better.
      8. Zhimin: Regarding the OSC repo we will contribute the shared between O-DU High and O-DU LOW. We will do integration testing if we are able.
5. Release Votes and Approval
  1. We have a motion to include the Intel contribution if it's made by 01 Jun 2020 to the repos. That is the motion that Intel has made. Vote on including O-RAN Distributed Unit Low (ODULOW) in the Bronze Release.
    1. seconded by [Ganesh Shenbagaraman](#)

- 2. **VOTE:** Vote taken, item passed
- 2. If it is not by 01 Jun 2020 or else it will not be included as a part of the Bronze release.
- 6. Copyright updates
  - 1. We covered copyright updates in the New agenda items.
- 7. Marketing of the current release (WG, LF, PR)
  - 1. Virtual Exhibition.
    - 1. Jinri: I checked the email and found that 21 May 2020 will be the deadline for WG1 in O-RAN Alliance contributions for the demo. Contact Jinri for the virtual exhibition. Paul Smith will organize teleconference and review submissions.
    - 2. That will be for the end of June virtual exhibition.
  - b. OSC Logo status.
- 8. Status of Open Action Items (Old Business)
  - a. **Action/** [Farheen Cefalu](#) add copyright updates to the agenda. (See item 6 added above)
  - b. **Action/** [Farheen Cefalu](#) add link to the Virtual Exhibition site. (Completed on 28 Apr 2020 on [Events](#))
  - c. **Action/** [Farheen](#) add reviewing Bronze release highlights to the agenda (See item 9.ii added below)
    - i. Issue for Bronze gets back to the marketing. If there are companies that want to make statements as a part of Bronze release, it takes time to get them cleared internally and over to us. We do that through O-RAN Alliance. Jinri is our contact for that. I assume that they will get information to you and we will work on figuring out on the press release and we should have that on the EC meeting as well.
    - ii. Jinri: They have a communication. Let's double check with Zhiminik.
    - iii. John-Paul Lane: Who should we contact?
    - iv. Jack: Send an email to Jinri and copy Jack. Jack will get a list together and we'll go from there. You don't need the complete list. We want to know everybody's input for tracking purposes.
  - d. **Action/** [Farheen](#) Add the O-RAN-SC logo request to the marketing agenda. (See 7b above)
  - e. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
    - i. Jack: You heard the feedback from TSC meeting where they want to get a more coordinated view with the test group and the OTIG and other activities. You can work with Rittwik whose been working with the simulator and anyone else interested in participating in that discussion reach out to Rittwik and William. I know Viavi will participate. Since they are the target I'd like Rittwik and William to organize the long term discussion. We'll follow up on the short term discussion at the Monday EC meeting. Is everyone OK with that?
    - ii. William: Yes
    - iii. Rittwik: Yes
    - iv. **Action/** [William DIEGO](#) and [user-59b16](#) lead the effort to organize a long term discussion with Viavi about the coordinated view of the test group and their activities.
- 9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Bronze Timeline](#)
    - ii. [Review Bronze Release Highlights](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee.
    - i. Cherry release requirements gathering has started. I have spoken to Matti, Thoralf, and the O-DU folks. I am setting up a few meetings individually to gather requirements. By mid-June we should be in a better position for votes. TOC should consider what kind of themes the Cherry release will be responsible for. We will continue traffic steering, and healthcheck use cases. Things that have not been percolated through all components. We have a few extra epics. If the TOC has suggestions then let me know.
    - ii. Bronze release the final integration will be done for call flows for healthcheck and traffic steering. We have truncated some of those flows. Lusheng understands the subflows that need to be tested. The RSAC wiki has been updated to reflect this.
    - iii. Jack: I'd like to continue to see the ETE use cases evolve to drive the community to more ETE operations. There are OAM capabilities such as healthcheck that continue to advance. I would hope O-DU and O-CU can start those initial use cases. I hope we can get a new use case to demonstrate more either near Real Time RIC and xAPPs and non Real Time RIC and rApps activities so we can demonstrate the work that is going on in the non Real time RIC. I would like to make sure we are pushing the projects forward as a larger system in the general guidelines. They should be done around useful functions like traffic steering and OAM. If different people have different use cases then provide the input. It is key that each release advances the overall stack and elements. We only do two a year so it is important to push ourselves.
  - c. [user-d3360](#) Integration and Test
    - i. Gerrit review process improvement
      - 1. I will table this for now. We will start it in Cherry.
    - ii. Integration and testing status report
      - 1. We have a good understanding of the flows to be tested for the Bronze release.
        - a. Healthcheck there are 3 use cases to be tested.
        - b. Traffic use case has one
        - c. O-DU will be planned out as well.
        - d. T-lab has near Real time RIC. We are getting close to making the test call flows.
        - e. Integration lab O-DU test hardware installed and cards are installed but we are having hardware compatibility problems that we are looking into. As soon as they are fixed we will install Intel's O-DU Low binary code so O-DU High and Low can continue with integration testing.
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
      - 1. Matti: We got a two week extension for RIC App and simulator. It looks like part of the RIC App traffic steering use case will slide into the maintenance release. We still don't have the KPI MON from Samsung which has not been tested with the simulator we are planning the maintenance release. We also don't have legal approval. We have a couple xApps traffic steering use cases will be tested as a part of Bronze release.

- a. Jack: How many xApps between Bronze and Amber do we have available in open source for people to evaluate?
  - b. Matti: In Bronze there are 4 xApps that are reasonably solid. In Amber we had one xApp Admission Control that we have not upgraded to the latest E2 specs that is left over and does not apply to any of the use cases. There is a demo Hello World xApp on using a lot of features in RIC such as E2, A1, messaging SDL. There is a measurement campaign xApp in the Amber release that has been extended to generate more reports based on X2 messages. We have two xApps related to traffic steering use case that are already in the repo. Main traffic steering xApp in C++ that drives the QP driver which is pulling the data from the SDL for the ML part. The ML app is still not in the repo but promised any day now. It might still be testable before the end of the month. The KPI MON is bigger because it will use the simulator that Ron just completed. I expect there will be some bugs. Our extended code freeze deadline passed. I want to move this to the maintenance release.
  - iii. [Thoralf Czichy](#) RIC Platform (RIC)
    - 1. Reviewed status on Jira items moved to Cherry. The links are in the RIC Platform status report.
    - 2. Thoralf: I went through all the epics and double checked with all the teams. Of the 65 epics planned for Bronze 36 are implemented as of yesterday. 13 have started that are in Cherry. 9 have not been started to Cherry. 8 more have been moved to backlog. There is a link for the first phase of Cherry. We are still planning the second phase of Cherry. In this first phase we have a list of what will be worked on. I don't see important dependencies on other project. If you are curious you can find them for the status report.
    - 3. Jack: Two of the projects are further along than others. OAM is also moving along pretty rapidly. We will discuss other projects next week. The biggest question right now...
    - 4. Jack: Jinri is any of the O-CU code going to start making it back to the repos soon for the 5G?
    - 5. Jinri: I remember contribution started 15 May 2020 for O-CU part I will double check with my colleagues. **Action/ Jinri Huang** talk about the O-CU 5G contributions this week.
    - 6. See status notes under "Status 2020-04-29 and 2020-04-30 and 2020-05-06 and 2020-05-12" in [Bronze Release \(Jun 2020\)](#)
    - 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. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- a. OAI/OSA purposed Meeting
    - i. OSA community had a call. Introductions and I talked about our process. They talked about where they are in their process.
      - 1. Overall they were happy with us cleaning up the issue we had with our code in our repos.
      - 2. They would like to talk about a strategic alliance announcement and agreement between them and the O-RAN Alliance. I made it clear that it's an O-RAN Alliance activity. For that particular component should come from O-RAN Alliance. They asked about copyright use and access to the O-RAN specifications. One way to do that is if they contribute the interfaces under a project in OSC. Software contributions can be pulled into the integration process. They were more interested in people working outside of OSC and maybe interested in participating.
      - 3. I described the Intel model on the O-DU. There is a license issue. They do have some higher level code in Apache but their lower level code that is in debate follows their license which is different from our license. There are US universities being funded by the Power project and others that are interested in using the OAI and O-RAN code in make something work. My concern is if work takes place outside of the community that benefits, much like Intel's FAPI code that can be re-used by the community becomes more complicated. They told me they have copyright permission from 3GPP material that allows them to generate code. I will pass that information along to the people who are working for us. I did not get very positive feedback from 3GPP that is what they were thinking. I will pass along to O-RAN Alliance 3GPP.
      - 4. In the end they were unable to articulate a very strong ask from us. It is mostly from a copyright and agreement perspective. They didn't have a plan for software contributions. Anyone who attended feel free to add or correct.
        - a. Jinri agrees.
      - 5. It would be great to have more code on a lower layer but that is hard to do. They are going to go off and think about it and get back to us. The next steps are between them and Zbynek.
      - 6. I am hoping it will turn into something more for the universities that I talked to on the Power project. Hopefully we will get more university participation. They don't care about patent rights and 3GPP issues they can contribute to the open project. Hopefully we'll get more university participation. Let Jack know if there are any other universities that will contribute. We should look to expand.
    - b. Jean-Paul: The discussion about replicating O-RAN Alliance specifications. It was brought up as part of the TSC meeting and discussed. Was that discussed?
      - i. Jack: The copyright aspect of it where we talked about what we can do was the operating feature. 2 votes. Acceptance of Intel binary software for Flexran to test our approach. Other was the copyright vote. Board meeting coming up. There were 2 issues with copyright approval.
        - 1. It stalled half way thru. Not enough board members voted to pass it before a question came up about it. We got some clarification and I don't know if they had to go back and reset the vote because they changed the wording slightly. I have to find out. Both are active. The vote for O-RAN using Intel ends this Friday. When I looked at it last there were +10 votes and none against last weekend. I don't expect a problem. It has gone into the process where I only know when it comes out.
    - c. Rittwik: Can we get an update of the Viavi contract that was discussed in the EC?
      - i. Jack: It was brought up as a part of the TSC and discussed. I don't control when they get to the topic. Jinri was there for that discussion but I was not. They didn't approve it they kicked it back for further discussion.
      - ii. Jinri:
        - 1. Regarding Intel license, the deadline will be this Friday. Currently we all have the yes vote. Next Monday will be the EC call for further approval.

2. Regarding Copyright permission. I don't have any idea regarding vote process. Next Monday we can raise on the EC call.
3. Regarding Viavi contract. At the time I didn't receive confirmation from Viavi. This is tentative. Next Monday is the EC call we will raise this. I have forwarded this message during the TSC call.
  - a. Jack: Did they have any particular questions...
    - i. Jinri: No. They raised another request for two collaborations. One is short term collaboration targeted for Bronze release and the other is long term collaboration can be used with WGs, TSC, and OTIC. For the long term solution the TSC Co chair asked us how we want to use this from OSC perspective. for example: What software will be needed for Cherry and software for OTIC and other WGs have? We need to combine these requirements and discuss further before presenting to Viavi.

11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

a. Votes:

- i. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
  1. Vote to approve minutes for 06 May 2020
  2. On motion made by [Juha Oravainen](#)
  3. Seconded by [user-2057e](#)
  4. **VOTE:** Vote taken, item passed
- ii. Vote on including O-RAN Distributed Unit Low (ODULOW) in the Bronze Release.
  1. On motion made by [Ganesh Shenbagaraman](#) for the O-DU LOW contribution made by 01 Jun 2020 to the repos.
  2. [user-2057e](#) seconded the motion
  3. **VOTE:** Vote taken, item passed

2. Actions

- i. **Action/** [William DIEGO](#) update on the coordination with the O-RAN test group
- ii. **Action/** [William DIEGO](#) and [user-59b16](#) lead the effort to organize a long term discussion with Viavi about the coordinated view of the test group and their activities.
- iii. **Action/** [Jinri Huang](#) status of the O-CU 5G contributions to repos.
- iv. **Action/** TOC continue last weeks review of projects.

## 2020 05 06

Zoom recording: [2020-05-06\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
<a href="#">AT&amp;T</a>	Jack Murray Co-Chair	x	Lusheng Ji	
<a href="#">China Mobile</a>	Jinri Huang Co-Chair	x	Weichen Ni	x
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda		Anil Umesh	
<a href="#">Orange</a>	William Diego	x	Vincent Danno	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	
<a href="#">Nokia</a>	Juha Oravainen	x	Thoralf Czichy	
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x	Sachin Srivastava	
<a href="#">Ericsson</a>	John-Paul Lane	x		

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
  - a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
    - i. Vote to approve minutes for 29 Apr 2020
    - ii. On motion made by [John-Paul Lane](#)
    - iii. Seconded by [user-2057e](#)
    - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
  - a. Add O-RAN Distributed Unit Low (ODULOW) May 31st Bronze delivery request to the top of the agenda because we ran out of time last week.
  - b. Jack has copyright updates. It should be a part of the agenda. Action/ [Farheen Cefalu](#) add copyright updates to the agenda.
  - c. Jack as we approach Cherry I would like to ask other team members to bring up changes to the agenda to improve the Cherry release. I invite your ideas and recommendations of how we should adapt. For others please work with the RSAC committee to start planning Cherry. The more pre-work we can do it is better. It is important that we as a team participate on the planning of Cherry.
5. Release Votes and Approval
6. Marketing of the current release (WG, LF, PR)

1. Virtual Exhibition.
  2. Jinri - I was absent last week.
    1. The virtual exhibition has been opened. **Action/ Farheen Cefalu** add link to the website.
    2. The demos once approved will be on the O-RAN website.
    3. Jack it is not quite time yet to release information on our Bronze release. Typically if we ask for companies to add statements it takes a little time. We want to gather the statements in advance of the press release. We should add this to the list.
  3. Nokia and AT&T will put something together for the plugfest. During the plugfest which is 9-21-2020 we will put the RIC.
  4. Another idea we have to add here is the OSC logo. What is a good logo that covers what we want to do. If someone is interested in taking the lead. We should add it under the marketing piece. It is better to have a logo rather than text because other LF projects have logos. Looking for TOC member who wants to take the lead on the logo.
7. Status of Open Action Items (Old Business)
- a. **Action/ William DIEGO** update on the coordination with the O-RAN test group
    - i. For the moment I just sent you the timeline for the ETE test focus group. We need to update the Cherry release timeline. I will continue to follow the test integration focus group.
  - b. **Action/ user-d3360** add the longer term test strategy to the agenda.
  - c. **Action/ Farheen Cefalu** add the update on the copyright issue for us. This has been an ongoing decision for some time.
    - i. Jack got confirmation from the legal team on item 1. Each contributor retains the full copyrights...
    - ii. O-RAN does not technically doesn't have possession of the copyright material. There is a gap in time. See the item 2.
    - iii. **Copyright**
    - iv. The board has to grant permission to make the decisions. The intent is broad to cover all the items that we have requested in the specifications.
    - v. John-Paul: I interpret this to mean is OSC the A1 spec was worked on collaboratively we can go the executive committee to seek permission to use for specifications received by the Alliance.  
Jack: Once a spec is approved they will grant the use. There is a little gap in once the o-ran alliance approves the spec.
    - vi. There is a third item that is being worked on for 3GPP. I will invite someone to talk about that once it is ready to be shared.
8. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager **Trishan de Lanerolle /Release Planning: Weekly TOC Scheduling**
    - i. **Project Bronze Release**
  - b. **user-59b16** Requirements Software Architecture Committee
    - i. We started gathering the Cherry release items.
    - ii. Rittwik: for O-DU to be functional we need to agree on a specific format or minimal viable configuration (bandwidth, numerology). Implementation depends on our consensus. All upstream use cases will depend on that. As a team we need to make progress. If you infrastructure doesn't match the use case requirements.
    - iii. Zhimin - We want to know what are our priority contributions.
    - iv. Rittwik - In general how advanced does O-SC have to be? We need advice from the TOC of what is the minimal viable feature set the O-DU supports. OAI will also need this requirement also
    - v. Ganesh - I believe we will benefit in another focused meeting. It can be feature rich that can be built out. We need to have a roadmap done so we will see how it matures over the next three releases. From Radisys we can support this approach.
    - vi. Jack - The minimal viable product set that we are coming up from an OSC standpoint is demonstrate the interfaces of O1, E1, E2 interfaces and show a minimally viable functional stack. We need to define a scenario of three different radios that walk through a series of scenarios that run as a functioning stack. How to install, operate, setup, tear down, hand off a session. You need to demonstrate a working stack. That is our first go. Then you start working horizontally adding and improving functionality based on features and capabilities. Without a stack in place with a very advanced CU or DU to talk to makes it a very fractured feature. This is my thought process. The integration test team has to demonstrate this minimal stack interfaces working together.
  - c. **user-d3360** Integration and Test
    - i. Gerrit review process improvement
      1. Two TOC meetings ago we continued the improving the test team process. We recommend starting from Cherry we will putting out the messaging instead of enforcing during the gerrit review process. The recommendation was let us first come up with Best Practices then review how it was executed and then enforce the gerrit workflow changes.
        - a. there is no self merging. You have to get a +2 score from a reviewer who is not yourself. The other is not allowing a huge single submission.
        - b. Under Integration and Test Release Testing Plans we will have 3 use cases. Healthcheck, O-DU Integration, and the Traffic Steering Use case.
        - c. Team members review and make sure the flows are represented correctly **Release Testing Plans**
        - d. Traffic Steering use case layer is planned to be delivered later this week. I hope Matti's team can update the call flows so we can test.
        - e. O-DU integration presented a deck two weeks ago. They will deliver in the Bronze point release.
        - f. Jack: I look to the team to figure out a process to create a score card to track the progress of each process relative to the target requirements of each release. That summary score card is what we will share with others. No one will have a perfect score but we have to understand how each project will deliver.
      - ii. Integration and testing status report
    - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
      - i. **John Keeney** Non-RealTime 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)

1. [Bronze Release \(Jun 2020\)](#)

- a. Fronthaul interface in the source code format.
- b. Layer 1 in binary format.
- c. Testing structure for O-DU low internal testing.
- d. Jack will the O1 spec effect O-DU low or O-DU high? How the O1 will handle the split?
- e. Zhimin No we are not discussing on O1.
- f. Jack: Ganesh get to an agreement about the split.
- g. Ganesh: The O-DU plain once it is out it will have a consistent interface. O-DU is one logical physical entity High and Low.
- h. Fapi Interface development slide 2.
  - i. We have fronthaul interface
  - ii. test mack stub will be stored in github repo.
  - iii. Inside is the O-DU low project with the FAPI translator.
- i. Jack Intel has submitted a license that the O-RAN legal team has accepted. We are working toward tomorrow morning US Eastern time. We have to get this on the TSC agenda. We have to get the OSFG vote. The goal is to approve using the Intel binary as a test fixture in this structure. O-RAN legal team has approved using it as a test fixture. The software will not appear on the LF repo but be on demand on the test assembly. We need to get approval from the OFSG members to vote and bring it to the TSC meeting. Hopefully by tomorrow we will have approval.
- j. Zhimin: O-RAN Community B time line: Our target is May 31. The code will be available in both the osc repo. Can we be included in the Bronze release?
- k. Jack: That leaves no time for test. We can make it available by the July time frame as a part of the Bronze maintenance release. Generally we don't release code unless we can pass some of the tests and use cases.
- l. Zhimin: The binary license was agreed. We are now focussed on the process. We can start testing our software application in the lab. If we can pull in one week? Is that possible?
- m. Jack: Lusheng can testing be completed by the end of May?
- n. Lusheng: If everything works well and it's not too complicated. Another gap we have the integration with O-DU High. Ganesh?
- o. Zhimin: For the Bronze release finished with O-DU High is not for Bronze but for Maintenance release. Can O-DU Low be a part of the Bronze release?
- p. Lusheng: There is no integration test. We call it unit test. Jack I think Zhimin is asking for participation in normal release B and not as a part of the flow. The flow will be delivered by the maintenance release.
- q. Jack the broader TOC needs to understand. We don't have to make a final decision this week. Let's take it up next week at the TOC level to see if we are OK with including O-DU Low as a part of the Bronze release with only unit testing. Let us take a vote on it next week on how we want to proceed. Is it a part of maintenance or Bronze.
- vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
- viii. [Alex Stancu](#) Simulations (SIM)
- ix. [Xiaohua Zhang](#) Infrastructure (INF)
- x. [weichen ni](#) Documentation (DOC)
- xi. (TBD) O-RAN Radio Unit (ORU)

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

- a. OAI purposed Meeting
- b. OSC Logo

10. Planning for Next Meeting

- a. Next Tuesday there is an OAI meeting. If you wish to participate please join the zoom meeting for next Tuesday. We will hear from the OAI group of what they are thinking about activities, coordination, and interest.

11. Any Other Business (AOB)

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

- a. Votes:
  - i. he minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
    - 1. Vote to approve minutes for 29 Apr 2020
    - 2. On motion made by [John-Paul Lane](#)
    - 3. Seconded by [user-2057e](#)
    - 4. **VOTE:** Vote taken, item passed
- b. Actions:

## 2020 04 29

### Agenda

- 1. Call for Scribe (minutes owner) Farheen Cefalu
- 2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
<a href="#">AT&amp;T</a>	Jack Murray Co-Chair	x	Lusheng Ji	
<a href="#">China Mobile</a>	Jinri Huang Co-Chair		Weichen Ni	x
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Orange</a>	William Diego	x	Vincent Danno	

Verizon	Viswa Kumar		Kristen Young	
Nokia	Juha Oravainen		Thoralf Czichy	x
Radisys	Ganesh Shenbagaraman	x	Sachin Srivastava	
Ericsson	John-Paul Lane	x		

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)

- a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
  - i. Vote to approve minutes for 22 Apr 2020
  - ii. On motion made by [user-2057e](#)
  - iii. Seconded by [weichen ni](#)
  - iv. **VOTE:** Vote taken, item passed
2. Clarify comments about questions about 9.iii.a needed clarity so Farheen updated minutes.

4. Review of Today's Agenda

5. Release Votes and Approval

1. Jack: we will need to vote on how to support the Viavi simulator as a part of our test environment. At some point we will have to bring to vote a decision to request for funding to support a part of the bronze activity. We are looking at it as a rental fee on the open source side. People from Viavi are on the technical side.
2. If people are interested in this topic reach out to [user-d3360](#) or [user-59b16](#). One of our challenges working in the RAN at some point we have to have devices and radios to simulator. We have a small effort on simulating protocols but RAN simulator is more active. The short term activity is how do we deal with this in Bronze without a full operating stack.
3. We need more participation in the test department. There is a lot of activity going on there.
4. ORAN Alliance and O-RAN SC are two different leadership.
  1. Open source focus group in O-RAN Alliance.
  2. TOC is focus group in O-RAN SC.
  3. OSFG is asked to take a vote. There are recommendations of the OSFG group in the O-RAN Alliance and there are votes for the TOC for the O-RAN SC.
  4. John-Paul Is there any information about the specification project?
    1. Jack: The O-RAN SC has a charter under the LF. We follow LF guidelines. O-RAN Alliance funds the LF for the O-RAN SC to operate under 2 licenses.
      1. Apache open source initiative.
      2. O-RAN Alliance license. I am not a lawyer it is managed by the software alliance entity. We use the Apache license, Documentation is slightly different. The O-RAN license is managed by the O-RAN Alliance. I do not call this an open source license. In this forum I refer to it as a FRAND license. We're an open source community we have the Apache license and the FRAND license from the O-RAN Alliance.
      3. Jack: Look at the charter. The charter for the OSC is an LLC founded in the USA under a series of LLC under the Linux Foundation. We also have the O-CU and O-DU High.
      4. Jack: It is intended to mimic 3GPP and the O-RAN FRAND policy. I am not a lawyer.

6. Marketing of the current release (WG, LF, PR)

1. Virtual Exhibition.

7. Status of Open Action Items (Old Business)

- a. **Action** / [Jinri Huang](#) work with Farheen to add the MWC demos and presentations to the O-RAN SC wiki once posted to the O-RAN Alliance.
- b. **Action**/ [William DIEGO](#) update on the coordination with the O-RAN test group
  - i. William we are working with Viavi to establish a date. Planning to integrate into the Cherry release timeline.
  - ii. Jack: I try to give people more time. I encourage people to work ahead of the next release. People should be thinking about participating the requirements for Cherry. This way when we start talking full time about Cherry we are ready.
  - iii. We will need both long and short term
- c. **Action**/ [William DIEGO](#) send [John Murray](#) the dates from the TIFG slide deck so he can add it to the Cherry Release timeline.
- d. **Action** / TOC Martin: We want to have data modeling on the wiki in a broader way.
  - i. Martin will add a new page and link to the Program Developer Guide.
- e. **Action**/ [Zhimin Yuan](#) [Sachin Srivastava](#) come up with a timeline of your activities with [user-d3360](#) because you are not going to make the timeline for the Bronze release. Try to come up with a plan that will be able to be delivered in the Bronze Maint release for the FAPI and the O-DU Low and High.
  - i. Zhimin: we did a lot of time on this.
  - ii. Sachin: sharing slide deck. Adding points. We are discussing integrating plan. We talk to Viavi about O-RU and O-CU.
    1. Trying to break into pieces. Each piece has less dependencies. We can do the P5 message integration using our own O-RU and O-CU stack. But the dependency is properly installed and configured. For O-DU high and O-DU low we got some agreement.
    2. Test Cases Profile For Example is very important for RAN Integration. We need guidance of which section we should start.
    3. We have had discussions with Lusheng and Rittwik to move forward with the Cherry and Dawn release. We have had a few gaps with O-DU High and O-DU Low. We are targeting the P5 messages exchanged between High and Low. We will be using the third dependency we will be using the L1 and L2 loss because there is no FAPI detector. From a target perspective we will be targeting the P5 messages using the stub from O-CU. Going forward we will need to define the use case call flows test plan where we can use O-RU and O-CU.
    4. Jack: Acknowledges and appreciates everyones effort. Getting the P5 messages are a positive step forward. P5 is something that will work in the Bronze release or the Cherry Release?
    5. Sachin:
      - a. When we will hve the O-DU server to start testing. I will need help with Lusheng.
      - b. Configure the O-DU low and O-DU high.

- c. Once we have agreement on these two points we will be able to provide a time estimate. We will be using the Intel software in the lab to save time.
  - d. Jack: We have had the Intel software reviewed by the O-RAN legal team. You can use it. It will be discussed at the TSC meeting and no one raises concerns we can move forward with using it. Since it has passed legal review it should be OK. We are setting up the lab with the servers. I am making sure that the servers will be available. I am in charge of that. Delays are due to everyone working from home.
  - e. **Action/ Farheen Cefalu** add the longer term test strategy to the agenda. Get it from Lusheng.
  - f. Jack: The binary software should never be loaded into the LF repos. It is built and deployed into the machines. We have legal clearance to use it but I still have to get the TSC to approve. We can start a second O-DU software to use a different approach. Our goal is not to limit ourselves to one option.
  - g. Rittwik: Intel can only give permission by the end of May. Does this mean we can start working in the lab and have phase 1 tested.
  - h. Jack: We have been given legal clearance that we can use it. As a risk item you can use it but it can't become a part of the official release policy.
  - i. Sachin: O-DU High we had a discussion. It can be used to do the initial integration.
  - j. Lusheng: It can be a part of Bronze. It can be integrated with the near Real Time RIC.
  - k. Jack: How are we tracking the completeness in a release. Are we planning to deliver 20% - 50%. At some time we want to state that success when we do the interoperability testing.
- f. O-RAN Alliance Copyright update
- i. We are working the issue in detail. Lawyers and board work approvals are ongoing. It is a logistical issue. There are no concerns about doing it but how to do it properly. Part of the challenge is asking for approvals by paragraphs for specifications so we are trying to find out the implementation details.
8. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Project Bronze Release](#)
    - ii. Does the time extension apply to all repos.
    - iii. No only the ones that request extension.
    - iv. Lusheng: We have 4 tracks. for healthcheck we have to find out what can be delivered and what needs to be tested. We need to have discussion with Martin, John, and Thoralf.
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [user-d3360](#) Integration and Test
    - i. Gerrit review process improvement
    - ii. Integration and testing status report
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [John Keeney](#) Non-RealTime 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)
      - 1. Code is planned to be available on May 31. Can we have O-DU Low for the Bronze release package?
      - 2. Jack: That puts us at the end of any cycle. Can we work to put it into the Bronze maintenance release to give us enough time to test.
      - 3. Zhimin: The testing will be handled before May 31.
      - 4. Jack: We will need to discuss further and we are near the end of the meeting. We don't release code unless it has gone through the open source testing.
      - 5. **Action / Farheen Cefalu** add this topic to the top of the agenda next week.
    - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
    - viii. [Alex Stancu](#) Simulations (SIM)
    - ix. [Xiaohua Zhang](#) Infrastructure (INF)
    - x. [weichen ni](#) Documentation (DOC)
    - xi. (TBD) O-RAN Radio Unit (ORU)
9. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- a. OAI purposed Meeting
    - i. Jack OSC wants a discussion with OSC.
    - ii. OAI meeting is taking place?
      - 1. Initial meeting between OSC and OAI TOC. To see if they want to participate as an upstream project and a separate project.
      - 2. John-Paul: When will the invitation be sent?
      - 3. Action/ Jack: I will post that. They have suggested some dates.
  - b. OSC Logo
10. Planning for Next Meeting
11. Any Other Business (AOB)
12. Meeting Summary (resolutions, new action items, etc.)

2020 04 22

Recording: [2020-04-22\\_toc\\_audio\\_only.m4a](#)

#### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu

## 2. Roll Call & Quorum Check

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

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

### 3. Review and Agree to Minutes of [Previous Meeting](#)

- a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
  - i. Vote to approve minutes for 15 Apr 2020
  - ii. On motion made by [Jinri Huang](#)
  - iii. Seconded by [John-Paul Lane](#)
  - iv. **VOTE:** Vote taken, item passed

### 4. Review of Today's Agenda

1. Rittwik requesting time extension for RIC App and E2 SIM enhancements. This will be covered during Rittwik's status.
2. Jack: O-AI offered to discuss align or collaborate.
3. Lusheng: Added two items under integration and test section.
4. John Keeney: Wants to ask a question about Licensing

### 5. Release Votes and Approval

- a. [Vote Release Name](#) for D release is Dawn.

### 6. Marketing of the current release (WG, LF, PR)

1. ONES = LF Networking Conference tentatively August/ September (Los Angeles). [Open Networking & Edge Summit Event](#)
2. Virtual exhibition meeting will be open soon. Jinri will be meeting with O-RAN Alliance.
3. Last week people discussed the virtual meeting for June to replace the face to face due to COVID-19.
  1. the virtual meeting will be a little different.
  2. **Action/ [Jinri Huang](#)** work with Farheen to mark this as an open item.
4. Jack: There is one marketing item. Most other open source projects have a logo. In the early days we talked about creating a logo for O-RAN SC. It got pushed to the background. The LF will help with registering a logo. If a TOC member is interested in taking it on let the TOC know. It's nice to have and takes time to work through different peoples ideas.
5. Jack: I will be replacing the LF Edgeboard AT&T employee. I will keeping these activities separate. I wanted to let this team know.

### 7. Status of Open Action Items (Old Business)

- a. **Action / [Jinri Huang](#)** work with Farheen to add the MWC demos and presentations to the O-RAN SC wiki once posted to the O-RAN Alliance.
- b. **Action/ [Farheen Cefalu](#)** work with [Tracy Van Brakle](#) to update the events page with plugfests.
- c. **Action/ [William DIEGO](#)** update on coordination with the O-RAN test group
  - i. William presenting slides.
  - ii. Idea is to have different ETE test spec coordination between O-RAN (Test Integration Focus Group) and OSC.
  - iii. Jack suggested to add use cases and tools. We want to make sure we are aligning on the ETE use cases. The use cases will drive software and drive it back to the TIFG.
  - iv. Is OSS Open Source Software?
  - v. Yes, up to now we are integrating different software
  - vi. William: This scheme tries to illustrate the test and integration framework.
  - vii. John: Do you mean no Real time RIC?
  - viii. William: In this first version we will not integrate the RIC.
  - ix. John: Proprietary OAM interfaces there's no real time RIC there's no A1.
  - x. Eng Wei the ETE framework includes all the O-RAN Alliance specifications and all the requirements. We will be mapping from a subsystem perspective. Allow blueprint deployment. What to do via subsystem level. all the specs will be in place day 1. Telecom Italia wants to validate the RIC using use cases. Dynamic traffic steering is something they need to use as well.
  - xi. Jack: I agree with everyone here. This baseline scenario does not leverage what we have today.
  - xii. Rittwik: Yes, because ORU is being tested in Bronze.
  - xiii. Jack: But we don't have O-RU?
  - xiv. Yes,
  - xv. Jack: The way this picture is described is legacy. As part of the plan for Cherry we have to start understanding how we are going to play into these. I like your picture on timeline. We should fold these key dates into our timeline on our release management.
  - xvi. **Action/ [William DIEGO](#)** send [John Murray](#) the dates from the TIFG slide deck.
- d. **Action/ [William DIEGO](#)** provide more details of how the use cases and Jira items reflect the activities. simple flow diagram of our activities and their activities and how they are going to work together.
- e. **Action/ PTLs** provide [user-d3360](#) with your sprint 3 demo dates.

- f. **Action/ Martin Skorupski** add the link for the yang model to the wiki. <https://forge.etsi.org/rep/3GPP/SA5/data-models/tree/master/yang-models>
  - i. Martin: We want to have data modeling on the wiki in a broader way.
- 8. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager **Trishan de Lanerolle /Release Planning**: Weekly TOC Scheduling
    - i. **Project Bronze Release**
    - ii. Rittwik: Asking for two weeks to add on to the end of the timeline.
  - b. **user-59b16** Requirements Software Architecture Committee
    - i. Rittwik requesting time extension for RIC App and E2 SIM enhancements. This will be covered during Rittwik's status.
    - ii. There are 3 key pieces
      1. Viavi sim files need to come thru.
      2. Once those files are produced the E2 sim is getting enhanced. Alex will run with it.
      3. Once E2 format is formed the xApps can start consuming.
    - iii. We want to make some progress to help gear what we want to do in the next release. A lot of parties have to get together. It is better to get this done now.
    - iv. Alex: What Rittwik said is what I am aware of. I am talking to Ron and things are going well.
    - v. Jack: The code we're talking about is primarily in the simulator project.
    - vi. Matti: KPI, Traffic steering xApps and ML. Ron's time is being split between sim and xapp and we lost a developer. All the interfaces are nailed down so the development can occur in parallel.
    - vii. Jack: If we stay on the current schedule what kind of functionality will be available. We have two options we can slide the test date out or stay on schedule and bring some functionality to the maintenance release.
    - viii. Matti: If you scroll up to the previous screen. Right now we are at the end of dev sprint 4. The good thing is the changes between simulator, xapps, and platform will be simpler because we don't need to integrate O-CU, O-DU.
    - ix. Rittwik: it's OK to demonstrate in parts. It's important and will resonate.
    - x. Jack: We do ETE sprint testing and then another two weeks of ETE testing.
    - xi. Lusheng: We are OK. We will have three separate tracks. Since this extension impacts Traffic Steering use case. It is fine to schedule the testing for this track a little later. We can take a phased approach. Finish testing of phase one. We can complete within the release schedule.
    - xii. Zhimin: O-DU low and O-DU high need an extension to finish development to May 17. We are following the Intel process. I need two weeks more.
    - xiii. Jack: It looks like 3 weeks more.
    - xiv. Zhimin: Yes, May 17. After Intel process we are looking at May 31. Code freeze is May 17.
    - xv. Jack: That's three weeks behind the deadline. This has to do with developing inside Intel and then dumping them out. It is best practice to contribute code as you develop for collaboration in open source.
    - xvi. Lusheng: It's not like other components like docker containers. This is tighter integration.
    - xvii. Action/ **Zhimin Yuan** provide a time of when you will be able to deliver?
    - xviii. Sachin: From O-DU High we are going to have the code ready but the integration will take four to five weeks.
    - xix. **Action/ Zhimin Yuan Sachin Srivastava** come up with a timeline of your activities with **user-d3360** because you are not going to make the timeline for the Bronze release. Try to come up with a plan that will be able to be delivered in the Bronze Maint release for the FAPI and the O-DU Low and High. Please try to get it in the B release window. It's important to have in the Bronze release. We need to stick with the timeline and deliver the functionality and work into the open source repos and pay attention to the timelines.
  - c. **user-d3360** Integration and Test
    - i. Gerrit review process improvement
      1. Lusheng: presenting a deck. During the release I took at the current practice and making some suggestions. gerret requires +2 reviews after jenkins job has passed. Then the submission becomes mergable. The problem is if the submitter is a committer as well he can submit the code and give a +2 and merge the code. We are losing the advantage of using gerret. There is an improved merging policy call NACR Non-authore code review.
      2. Ask TOC to move forward with the +2 requirement.
      3. Jack: Are you asking to use it Bronze or Cherry?
      4. Lusheng: Either way I recommend we start on Cherry due to time delays.
      5. Jack Let's talk about it more next week. We are not going to change it.
      6. Lusheng: Another practice is to limiting the submission size. Gerret will block submissions exceeding certain size limits. Something for us to consider what we want to adopt. We want to do all the code changes in gerret open source because there is a 5000 lines of code limit.
    - ii. Branching and testing strategy
      1. Once testing starts do not adding code to the master branch. By code freeze we are expecting bug fixes and documentation fixes to the master branch.
      2. For all the repos the code freeze date is this weekend. Repos involved are the traffic steering use case and the O-DU low and O-DU high. Branching strategy diagram it is starting the code freeze time and some members of the team create a development branch and put your development code on the development branches. Once completed make a branch for Bronze. This time we are going to use all lower case "b".
      3. After you branch the master branch is open for development again. If new bugs are being discovered then fix and cherry pick for the head. It should be the best for the B release.
      4. For healthcheck here are the projects involved from RSAC implementation.
      5. Track 1: We'll finish the RSAC flows. Track: 2 Approach is the same for call flows. Track 3 O-DU Integration.
      6. Testing Plan
      7. Testing Set Up we will be using the open public AT&T T-Lab. For track 2 and 2 we are going to use 2 VMs. One will run near realtime RIC and the other will run SMO, O-RAN Lite
  - d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. **John Keeney** Non-RealTime 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. (TBD) O-RAN Radio Unit (ORU)
9. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- a. OAI purposed Meeting
  - b. Licensing: John O-RAN Alliance specs. What is the relationship with O-SC and O-RAN Alliance regarding licensing?
    - i. Jinri: Stefan prepared documentation. EC discussed this and propose it hopes that the board can give the authority to approve a similar request in the future to save time.
    - ii. Regarding re-using of the spec there is not specific request for this.
    - iii. [John Keeney](#) send [John Murray](#) your question regarding licensing.
      - 1. O-RAN Alliance can not grant copyright until specification has been approved.
        - a. Jack has been informed that If a company has copyright privileges it does retain a copyright privileges and can get clarification from the O-RAN Alliance legal team.
        - b. Content in messages requires a separate copyrite. They don't want us to release the whole specifications in open source. It's the content of those messages needs to be copyrights on.
        - c. John: it's for the schema definition.
        - d. Jack: Send me a note and I want to put it on the list.
10. Planning for Next Meeting
11. Any Other Business (AOB)
12. Meeting Summary (resolutions, new action items, etc.)

2020 04 15

Recording: [2020-04-15\\_TOC.mp4](#)

Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
<a href="#">AT&amp;T</a>	Jack Murray Co-Chair	x	Lusheng Ji	
<a href="#">China Mobile</a>	Jinri Huang Co-Chair	x	Weichen Ni	
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Orange</a>	William Diego	x	Vincent Danno	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	
<a href="#">Nokia</a>	Juha Oravainen	x		
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x		
<a href="#">Ericsson</a>	John-Paul Lane	x		

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)
4. Review of Today's Agenda
  - a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
    - i. Vote to approve minutes for 08 Apr 2020
    - ii. On motion made by [user-2057e](#)
    - iii. Seconded by [Juha Oravainen](#)
    - iv. **VOTE:** Vote taken, item passed
5. Release Votes and Approval
  - a. **Vote Release Name:** Vote is active to choose name of "D" release.
    - i. Running the vote until Saturday. It looks like Dawn will be the color.
  - b. OCU new repo 5G
    - i. Jack: As we talked about the last two meetings. We had some issues with the O-CU project. Ran into problem where contributors brought in code that they were not allowed to bring to the project. Since we have cleaned up. LF decided to drop all code in the O-CU project and focus more on Best Practices and other activities. It aligns with what's been changed in the O-CU project. Some new contributors are coming in and we're moving on to the 5G code.
    - ii. Yingying: For O-CU I have a new repo request 5G NR.
    - iii. Jinri: Several weeks ago we mobilized a few more contributors on this project. We will submit a request for a new repo. We developed a timeline for contributing O-CU code for 5G. The first patch of code will be uploaded by early next month or the earliest at the end of this month.
    - iv. Lusheng: The previous code from the Amber release has been purged from the repo. March 17 there was a new repo request. Do you want to withdraw the previous request?
      - 1. Jinri: The request was raised in March is a part of the restart process. Thank you for this reminder.
      - 2. Lusheng: This request is still outstanding. We will send this out to the main mailing list.

3. Jinri: I approved two.
4. Jack: I want to review for this approval. Some of the TOC were not included. This is trying to restart the process with new code and contributors. We will restart the process focused on 5G. This code was not in the previous contributions. We are working closely with contributors to tighten up the best practices and process. We need to create a repo to restart this process. Are there any questions?
  - a. Ganesh: We are re-writing all the code?
  - b. Jack: The code will be 5G O-CU. Yingying is still the PTL but we are working with a new team of contributors and new code.
  - c. Jack: Request a vote to approve a new O-CU 5G repo
    - i. Vote to approve a new O-CU 5G repo
    - ii. On motion made by [Jinri Huang](#)
    - iii. Seconded by [user-2057e](#)
    - iv. **VOTE:** Vote taken, item passed
6. Marketing of the current release (WG, LF, PR)
  1. ONES = LF Networking Conference tentatively August/ September (Los Angeles). [Open Networking & Edge Summit Event](#)
  1. Action/ [Jinri Huang](#) communicate the online events on the wiki.
7. Status of Open Action Items (Old Business)
  - a. **Action/** update on O-CU plans
    - i. It is important to have the team do contributions to draw more people to participate in your project.
  - b. **Action/** update on Intel license agreement on binary usage
    - i. Jack: People may remember as part of O-DU in Bronze doesn't have layer 1 open source contributed at this time. Intel has offered a binary image of their flex ran software to be used for the O-DU low. We have been tied to that binary license for testing O-RAN purposes. We have been trying to have a review with the Intel. We are hoping for Bronze release to have a test instance of O-DU with Intel binary as a part of that. There is still progress. We are looking for contributions and activities for feedback and guidance. It still has to go for the O-RAN legal team review. Remember that's not Open Source Code. The O-DU project is organizing that.
      1. Zhimin (Intel): we will provide a doc file in the O-SC community.
  - c. **Action/** new TOC members provide an alternate contact for TOC calls when they are unable to attend.
    - i. Send Jack your
  - d. **Action /** [ENGWEI KOO](#) - will add a deck to RSAC wiki.
    - i. Engwei and Rittwik added the deck to the RSAC wiki.
  - e. **Action /** [Jinri Huang](#) work with Farheen to add the MWC demos and presentations to the O-RAN SC wiki once posted to the O-RAN Alliance.
    - i. O-RAN Alliance created a demo space. Action/ [Jinri Huang](#) work with Farheen to put the virtual demos on our wiki.
  - f. **Action/** [Farheen Cefalu](#) work with [Tracy Van Brakle](#) to update the events page with plugfests.
    - i. The days have been finalized. It will be the last week of Sept first week of October activities in all three zones. It will be joint this time it will be joined with Integration and test team in Europe. A series of events in Asia, Europe, North America. Not duplicative but complimentary.
    - ii. Jack: Thank you Tracy. It is important to learn from our activities.
  - g. **Action/** [user-2057e](#) update [Vote Release Name](#) page with the D release name option
    - i. you can now vote on name for release D here: <https://wiki.o-ran-sc.org/display/REL/Vote+Release+Name>
  - h. **Action/** [Jinri Huang](#) provide the TOC with the new O-RAN Alliance timeline.
    - i. This was done when we discussed the Cherry release.
  - i. **Action/** [Trishan de Lanerolle](#) let us know the outcome of the ticket that [John Keeney](#) opened regarding the Calendar synchronization.
    - i. Trishan: Yes, we came back with the recommendation to use the Confluence calendar with the UTC time.
    - ii. John: It will require people who have Confluence calendars to move over to the groups.io calendar and to change the calendars to UTC. For a couple weeks the organizers around the world will have to decide what to do for the
    - iii. Matin: Is it possible to remove the calendars?
    - iv. Trishan: We will work on doing that.
    - v. **Action /** [Farheen Cefalu](#) update the Calendar Best Practices. Remind Jack.
  - j. **Action/** PTLs update your project summaries with your sprint 2 status updates. Be prepared to review your sprint 2 deliverables with the TOC.
    - i. We are in sprint 3. It is best to incrementally update each projects progress as we move forward.
  - k. **Action/** Jack will review Thoralf's [How to request committer changes](#)
  - l. **Action/** [user-d3360](#) add the wiki link for SONAR to the Integration and Test wiki where people can easily find.
    - i. Lusheng: We will make it easier to find the information for SONAR on the Project Developer Wiki.
    - ii. Jack: Use the project developer wiki for Best Practices.
  - m. **Action/** [William DIEGO](#) update on coordination with the O-RAN test group
    - i. William: We have contributions from CMCC AT&T, Orange. Blueprints will be updated. Work is ongoing.
    - ii. Jack: If there is a need to have a meeting let us know.
    - iii. Rittwik: We need to understand the specifications or testing activities. We are contributing but I don't see a plan of how TIST and ORAN-Alliance will be coordinate.
    - iv. Jack: We need a simple flow diagram of our activities and their activities and how they are going to work together.
    - v. **Action/** [William DIEGO](#) provide more details of how the use cases and Jira items reflect the activities. simple flow diagram of our activities and their activities and how they are going to work together.
  - n. **Action/** PTLs provide [user-d3360](#) with your sprint 3 demos.
    - i. O-DU HIGH next Wednesday.
8. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Project Bronze Release](#)
    - ii. Jack: Looking at our release plan. Today is the 4-15. That is dev 4 sprint ist sprint 3. We are well into the development cycle process. We have a week and a half to move into ETE testing and interoperability. Looking at Jira items. People testing software it is important to work issues between O-CU high and O-CU low. All the modules need to work with the self test for the capability of the ETE use cases and the progress on the use cases. Important to have documentation. Looking at C release with Cherry I have restructured the table to reflect the Maintenance release to give folks a chance to get their backlogs items completed. This is in Cherry even though it's Bronze release.
  - b. [user-59b16](#) Requirements Software Architecture Committee

- i. We are tracking the Traffic Steering use case closely. Working with Viavi for metrics. Ron is enhancing the E2 simulator. That will get worked into this last sprint. Matti has the TSxApp to make progress. Regards to healthcheck Martin and John. Speaking to Eliza the healthcheck is getting more elaborate if you're making changes check back with John Ng and David Kinsey. If you're making large changes.
  - ii. John: John Ng is aware and is happy.
  - iii. Eliza: John will finalize the documentation, right?
  - iv. John: Yes, OTF documentation is coming together nicely.
  - v. Eliza: We worked with Martin for healthcheck2. Once we have the interface spec for healthcheck 3. In the mean time the team was working with other information.
  - vi. John: Let us work together.
  - vii. Matti: Please keep me in the loop for the A1 healthcheck. I need to know.
  - viii. Jack: The question is with all of that work is it staying aligned with the specs coming out of the O-RAN working groups?
  - ix. Rittwik: Not sure.
  - x. Jack: I am making sure we are staying aligned.
  - xi. Martin: Yes, we try to keep aligned problem WG is 3GPP. It looks similar but it's not with 3GPP. I am directly in contact with 3GPP modeler. There is good progress on the yang model. This is a major step.
  - xii. Jack: Did you add that link?
  - xiii. **Action/ Martin Skorupski** add the link for the yang model to the wiki.
  - xiv. Martin: I wrote a script that will pull the yum models.
  - xv. Eliza: We need to document what we are doing. We want to do it incrementally so we are in synch. Also operators and vendors are supposed to create the tests. It is important to provide the test team with instructions.
  - xvi. Jack: it is important to carry evolution forward incrementally.
  - xvii. Tracy: We are within working group 1 in the O-RAN Alliance. We are forming a formal pathway to get the data models from O-RAN to 3GPP so there is version control easy to download data models. That will be worked out in WG1 and properly documented.
  - xviii. Jack: Do you see there will be yang models beyond 3G-PP.
  - xix. Martin: We already have them. Fronthaul Yang files are in gerrit for modeling. Also from IXRAN to O-RAN. They are available for the software community.
  - xx. Jack: is there an easier way to organize.
  - xxi. Tracy: A reason for O-RAN Alliance we brought in the 5G baseline model from 3GPP and in parallel numerous 3GPP Yang models in need of repair. They are upstream 3gPP and augmenting 3GPP. I think we're going to have the repo reside where it is right now and allow access to the O-RAN software community. We don't want to proliferate.
  - xxii. Lusheng: What license are these under?
  - xxiii. Tracy: We are working one on one with the operator liason with 3GPP.
  - xxiv. Lusheng: Whether oran alliance 3gpp the question is are we hosting those models?
  - xxv. Tracy: We won't host it on O-SC.
  - xxvi. Lusheng: Yes, we don't have to host it if it is in github. We can just pull github.
  - xxvii. Martin: They don't have a license statement on github so we asked them to add their licenses for the yang models.
  - xxviii. Jack: the new ones that are generated in O-RAN where are they going?
  - xxix. Martin: It's the decision of O-RAN Alliance.
- c. [user-d3360](#) Integration and Test
- d. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
- i. [John Keeney](#) Non-RealTime 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. (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.)

## 2020 04 08

Recording: [2020-04-08\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner) Farheen Cefalu
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
<a href="#">AT&amp;T</a>	Jack Murray Co-Chair	x	Lusheng Ji	
<a href="#">China Mobile</a>	Jinri Huang Co-Chair	x	Weichen Ni	
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Orange</a>	William Diego	x	Vincent Danno	

Verizon	Viswa Kumar		Kristen Young	
Nokia	Juha Oravainen	x		
Radisys	Ganesh Shenbagaraman	x		
Ericsson	John-Paul Lane			

\*Quorum: 50% or more of total TSC voting members unless excluded due to attendance. We have a quorum and can vote on activities.

3. Review and Agree to Minutes of [Previous Meeting](#)

- a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
  - i. Vote to approve minutes for 01 Apr 2020
  - ii. On motion made by [user-2057e](#)
  - iii. Seconded by [Juha Oravainen](#)
  - iv. **VOTE:** Vote taken, item passed

4. Review of Today's Agenda

1. Issue of licensing and code contributions in O-CU gerrit repos  
 LF investigated also  
 taking an unusual activity for our community, code needs to be removed  
 will restart the O-CU project with new, empty repos  
 rebuilding is the easiest way to clean up and address all concerns  
 re-examining some best practices  
 concerns?
2. Rittwik asked, integrated eNodeB OCU or distributed eNodeB OCU?

Jack answered, Affects all OCU repos.  
 Jack asked, how much OCU is used in this release?  
 Rittwik answered, not very much.  
 William asked, new contributors in OCU?  
 Jack answered, contributors to area of concern have changed; 4G area has been reexamined; 5G area has different contributors; focusing on 5G portion which didn't have code/licensing issues  
 William asked, only 4G code is impacted? 5G also?  
 Jack answered, going thru process for both as everything is re-submitted, adhering to guidelines; LF giving guidance how best to proceed.  
 John Paul asked, how to capture lessons learned from OCU project, publicize to other projects?  
 Jack answered, this gives us an opportunity to review best practices and make sure people are aware & complying, following well-established open source guidelines for all projects, so other projects can avoid complications. Rely on contributors to follow guidelines, sometimes have to clean things up, taking a strong step to address the concerns.  
 John Paul asked, these principles and guidelines, where are they published?  
 Jack answered, the O-RAN-SC wiki has the page, not easy to find, <https://wiki.o-ran-sc.org/display/ORAN/Best+Practices>

5. Release Votes and Approval

- a. Vote is active to choose name of "D" release.  
 Leading candidate today is "Dawn"  
 What color is Dawn? Nobody was quite certain.

6. Marketing of the current release (WG, LF, PR)

1. ONES = LF Networking Conference tentatively August/ September (Los Angeles). [Open Networking & Edge Summit Event](#)

7. Status of Open Action Items (Old Business)

- a. **Action/** new TOC members provide an alternate contact for TOC calls when they are unable to attend.
- b. **Action /** [ENGWEI KOO](#) - will add a deck to RSAC wiki.
- c. **Action /** [Jinri Huang](#) work with Farheen to add the MWC demos and presentations to the O-RAN SC wiki once posted to the O-RAN Alliance.
- d. **Action /** [Tracy Van Brakle](#) clarify Open Testing and Integration (OTIC) North America
- e. **Action/** [Farheen Cefalu](#) work with [Tracy Van Brakle](#) to update the events page with plugfests.
- f. **Action/** [user-59b16](#) upload the UE emulator short/long term slide deck to the RSAC page.
- g. **Action/** TOC provide feedback to Jack regarding the Cherry and D Release calendars on the [Releases](#) page
- h. **Action/** [Jinri Huang](#) will point [Thoralf Czichy](#) to the appropriate WG specification times. There are 3 trains for the specifications.
- i. **Action/** [user-2057e](#) update [Vote Release Name](#) page with the D release name options.
  - i. you can now vote on name for release D here: <https://wiki.o-ran-sc.org/display/REL/Vote+Release+Name>
- j. **Action/** [Jinri Huang](#) provide the TOC with the new O-RAN Alliance timeline.
- k. **Action/** [Trishan de Lanerolle](#) let us know the outcome of the ticket that [John Keeney](#) opened regarding the Calendar synchronization.
- l. **Action/** PTLs update your project summaries with your sprint 2 status updates. Be prepared to review your sprint 2 deliverables with the TOC.
- m. **Action/** Jack will review Thoralf's [How to request committer changes](#)
- n. **Action/** [user-d3360](#) add the wiki link for SONAR to the Integration and Test wiki where people can easily find.
- o. **Action/** [user-59b16](#) set up a meeting with Viavi, O-RAN Alliance test committee (whoever is leading the test committee (David Orloff)), and the TOC.
- p. **Action/** [William DIEGO](#) we need a test coordinator with the O-RAN test group so we can come up with a common plan between the test groups

- q. **Action/** [user-d3360](#) add the link in the Integration and Test wiki to the SONAR instructions that you discussed on 25 Mar 2020 TOC meeting.
- r. **Action/** PTLs provide [user-d3360](#) with your sprint 2 demos.
- 8. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
    - i. [Project Bronze Release](#)
  - b. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [Matti Hiltunen](#) RIC Applications (RICAPP)
      - 1. Ongoing activity RIC applications -  
Matti H. gave update that a person is assigned for simulator
    - ii. [Thoralf Czichy](#) RIC Platform (RIC)
      - 1. note I updated the committer change process as per discussion last week: [How to request committer changes](#).
      - 2. Thoralf C. gave update
        - . many epics in Bronze release
        - . 8 done, 6 in progress, 38 not started
        - . 2 new epics related to ASN.1 problem

Thoralf C. asked, is there progress on ASN.1 legal issues with 3GPP and ORAN Alliance?  
 Jack M. answered, writeup is being reviewed, process is onerous, have to go to board for permission  
 Jinri H. answered, EC has reviewed, (?) has approved, then will forward request to board  
 Jack M. answered, once approved it can be used by all ORAN projects, not just one  
 Jinri H. clarified, this is for ASN.1; Hank wants to broaden request. Current request is from Thoralf targeting specific ASN.1 content in one ORAN specification. Want to broaden this to apply to all the ASN.1 content from ORAN alliance. Hank wants to improve/refine the proposal so it's a bit on hold. Expect to hear tomorrow. Once the specific request is approved, it will apply to all projects.

Held demo of development sprint 3, recording is available for people to view

  - iii. [user-a934b](#) O-RAN Centralized Unit (OCU)
    - 1. Ongoing activity - OCU  
skipped, have discussed the exception being handled there
  - iv. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
    - 1. Ongoing activity - ODUHIGH  
Sachin of Radisys gave update  
Demonstrated F1-U and F1-C  
working on traffic steering implementation, that will be in next demonstration, with limitations based on specification  
working with Intel team on IPC mechanisms and L1 might have to push some content to Cherry release due to recent late changes  
expect to be formally available in ORAN wiki  
Jack asked, please update wiki page to capture progress  
Sachin added, seeing lots of effort required here  
Jack asked, are working group specifications coming out, how is the interface to the WGs functioning?  
Sachin answered, they are aligning to specifications; also dependent on E2 SM specifications, may have to adapt
  - v. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
    - 1. Ongoing activity - ODULOW  
Zhimin Yuan of Intel gave update  
working on shared memory feature between ODULOW and ODUHIGH  
Jack asked, have you updated wiki pages with status?  
Zhimin answered, have updated for front haul library; other pieces in development  
Rittwik asked, for the WLS binary files, this is not exactly open source, cannot see the IPC mechanisms used, is this done or in progress?  
Zhimin answered, in progress, shared with Radisys  
Rittwik asked, how will it work eventually?  
Zhimin answered, get approval from Intel, pass legal check  
Rittwik asked, will be approved for Bronze release?  
Zhimin answered, it is possible but not definite  
Rittwik noted, this is a bilateral arrangement today; unclear how it will work in the future  
Zhimin answered, working for approval by end of May
  - vi. [Martin Skorupski](#) Operations and Maintenance (OAM)
    - 1. Ongoing activity - OAM  
Martin S. of Highstreet gave update  
Working to finalize the deployment  
Contribution depends on YANG models  
Got in contact with 3GPP YANG developers directly for assistance  
Hoping to use YANG models as basis in Cherry release  
Identified use case to be proposed for Cherry, a software update from

XRAN device, becomes ORAN front-haul device, maybe O1 device  
 Jack suggested, get this in early to requirements group  
 Martin noted, Jira pages are very slow to load  
 Jack asked, how are demonstrations of health check going?  
 Martin answered, demonstration tomorrow of using a health check, but not sure if it can be recorded; demo can be repeated anytime

- vii. [Alex Stancu](#) Simulations (SIM)
  - 1. Ongoing activity - simulators
    - Alex S. of Highstreet gave update
    - finally have a resource to work on simulator
    - hope to finish what they need for traffic steering use case
    - working on build job for Jenkins at LF
    - health check use case is implemented in the project
    - John is working on moving A1 stub simulator into repos
    - Jack asked, stub simulator in this release?
    - Alex answered, yes only have to move Jenkins jobs
- viii. [Xiaohua Zhang](#) Infrastructure (INF)
  - 1. Ongoing activity - infrastructure
    - Xiaohua Z. of Wind River gave update
    - By end of March had ARM-based K8S cluster available
    - Want to use third-party layer1/layer2 to demonstrate
    - Invites people to look at code in integration repo
    - working with ODULOW project so their deliverable meets requirements
    - hope to finish this week, plan to work with integration team in integration lab
    - rest of Jira is related to platform services enabling, ongoing
    - schedule is challenging, have good chance to finish in Bronze
    - holding biweekly meetings, minutes are in the wiki
    - Jack asked, will ARM-based system be available to wider community, to see the demo?
    - Xiaohua answered, code has been upstreamed into repo, instructions are uploaded how to build and run demo, but Layer 1/layer 2 applications are from third-party company, only agreed to use as demo not open source, shows capability of ARM-based platform
    - Jack noted, important to have diversity in the project; please follow best practices around open-source contributions vs test fixtures, make clear what's open source and what is only a demo test fixture
- ix. [weichen ni](#) Documentation (DOC)
  - 1. Ongoing activity - documentation
    - Weichen N. of China Mobile gave update
    - not many new features
    - created a label on documentation page to switch between branches
    - already have amber from last year
    - when we release bronze release, can have selection button for bronze
    - next is API documentation
    - if any project is willing to add API doc, please let Weichen know and he will collect the doc from different projects to form OSC API document
    - Jack asked, need to pull together doc on end-to-end use cases part of Bronze release; work with RSAC committee to understand where will we send someone as part of Bronze release to see use cases, also a description of how to recreate/download/build use cases as end user; people need to learn from use cases, as projects deliver their pieces and users come in to see what we have done
- x. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
  - 1. Reached 9am, unable to hear John's update on NON realtime RIC, John will go first at next meeting
- xi. (TBD) O-RAN Radio Unit (ORU)
  - c. [user-59b16](#) Requirements Software Architecture Committee
  - d. [user-d3360](#) Integration and Test
- 9. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  - a. New item: OAI [John Murray](#)
- 10. Planning for Next Meeting
- 11. Any Other Business (AOB)
  - a. No other new business.
- 12. Meeting Summary (resolutions, new action items, etc.)

2020 04 01

Recording: [2020-04-01\\_toc.mp4](#)

**Agenda**

- 1. Call for Scribe (minutes owner) Farheen Cefalu
- 2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance

AT&T	Jack Murray Co-Chair	x	Lusheng Ji	
China Mobile	Jinri Huang Co-Chair	x	Weichen Ni	
Deutsche Telekom	David Streibl		Ondej Hudousek	
NTT DOCOMO	Masafumi Masuda	x	Anil Umesh	
Orange	William Diego	x	Vincent Danno	
Verizon	Viswa Kumar		Skand Priya	
Nokia	Juha Oravainen	x		
Radisys	Ganesh Shenbagaraman	x		
Ericsson	John-Paul Lane	x		

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

1. TOC Membership has increased. It has been one year of the O-RAN-SC.
2. **Action/** new TOC members provide an alternate contact for TOC calls when they are unable to attend.
3. Review and Agree to Minutes of [Previous Meeting](#)
  - a. The minutes of the prior meetings were reviewed, and there were no comments, questions or corrections.
    - i. Vote to approve minutes for 25 Mar 2020
    - ii. On motion made by [Jinri Huang](#)
    - iii. Seconded by [William DIEGO](#)
    - iv. **VOTE:** Vote taken, item passed
4. Review of Today's Agenda
  1. Email from OAI
    1. Jack needs to share that Jinri and Jack received an email from Open Air Interface with concerns with this project. Jack forwarded the email to the legal team to review. Jack will be able to address when he has clarification from legal.
    2. Lusheng: I would like to request a time slot during the 04/01 ToC weekly meeting to present the current plan for integration and testing Bronze release.  
It will take about 5 minutes.
5. Release Votes and Approval
6. Marketing of the current release (WG, LF, PR)
  1. ONES = LF Networking Conference tentatively August/ September (Los Angeles). [Open Networking & Edge Summit Event](#)
  2. Virtual O-RAN demo was about to be activated. The site has been constructed and is being reviewed by EC. Will notify Farheen when the site is public. There are around 20 demos.
7. Status of Open Action Items (Old Business) Jack - How does the OSC evolve from where we're at. Every piece is under construction. O-U Emulation will help with that.
  - a. **Action /** [ENGWEI KOO](#) - will add a deck to RSAC wiki.
  - b. **Action /** [Jinri Huang](#) work with Farheen to add the MWC demos and presentations to the O-RAN SC wiki once posted to the O-RAN Alliance.
  - c. **Action /** [Tracy Van Brakle](#) clarify Open Testing and Integration (OTIC) North America
  - d. **Action/** [Farheen Cefalu](#) work with [Tracy Van Brakle](#) to update the events page with plugfests.
  - e. **Action/** [user-59b16](#) upload the UE emulator short/long term slide deck to the RSAC page.
  - f. **Action/** TOC provide feedback to Jack regarding the Cherry and D Release calendars on the [Releases](#) page
  - g. **Action/** [Jinri Huang](#) will point [Thoralf Czichy](#) to the appropriate WG specification times. There are 3 trains for the specifications.
  - h. **Action/** [user-2057e](#) update [Vote Release Name](#) page with the D release name options.
    - i. you can now vote on name for release D here: <https://wiki.o-ran-sc.org/display/REL/Vote+Release+Name>
  - i. **Action/** [Jinri Huang](#) provide the TOC with the new O-RAN Alliance timeline.
  - j. **Action/** [Trishan de Lanerolle](#) let us know the outcome of the ticket that [John Keeney](#) opened regarding the Calendar synchronization.
    - i. Should we set a single to a common time zone?
      1. projects use UTC.
        - a. Find the best solution to the problem.
  - k. **Action/** PTLs update your project summaries with your sprint 2 status updates. Be prepared to review your sprint 2 deliverables with the TOC.
  - l. **Action/** Jack will review Thoralf's [How to request committer changes](#)
  - m. **Action/** [user-d3360](#) add the wiki link for SONAR to the Integration and Test wiki where people can easily find.
  - n. **Action/** [user-59b16](#) set up a meeting with Viavi, O-RAN Alliance test committee (whoever is leading the test committee (David Orloff)), and the TOC.
  - o. **Action/** [William DIEGO](#) we need a test coordinator with the O-RAN test group so we can come up with a common plan between the test groups
  - p. **Action/** [user-d3360](#) add the link in the Integration and Test wiki to the SONAR instructions that you discussed on 25 Mar 2020 TOC meeting.
  - q. **Action/** PTLs provide [user-d3360](#) with your sprint 2 demos.
8. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Project Bronze Release](#)
      1. Rittwik - In the virtual F2F most of the projects met with their working group reviews.
      2. Jinri - Sees a gap in Cherry. Overlap of WG.
        - a. Jack - We have our ETE use cases that drive what we focus on in a release. Right now we have two. Traffic and self-test. Think of it as something that is driving RAM functionality and OAM functionality. Consider those and other tracks that are meaningful at pushing our community agenda. The RSAC committee can provide the specifications that are changing in the window. People that are interested please engage and help drive what are the important functionality. C and D are important releases in delivering and driving value. It is important that everyone get involved and the use

- cases in the C and D releases drive value to the O-RAN community participants and service providers otherwise we have to question whether we are going down the right path. Please get involved and help us get there. Let us see what we can do with the RSAC committee and see if our specs are frozen to make recommendations.
- b. Report out from PTL: Stand-Up & Report Out on Blockers - next week we will start to cover this list. Are there any major items that anyone would like to raise to the TOC this week?
    - i. [Matti Hiltunen](#) RIC Applications (RICAPP)
      1. We are working on 6 xapps. 4 are traffic steering, 1 demo, 1 measurement campaign xapp.
        - a. Is there a simulator requirement?
          - i. Even if we decide to go with Viavi I don't think they committed to the E2 interface.
            1. The strategy was to get offline data. If that is available we can replay the E2 simulator.
              - a. Are there committed resources?
                - i. Alex - This is an open issue no one has volunteered.
              - b. How can we help? Who can step up and work with Alex to get this critical part done? Is Viavi incremental to this need? Is it available in this time frame?
                - i. Not E2, we want the metric that the EU and DU can provide.
                - ii. RAN simulation data is critical. We can work the E2 delivery in parallel.
                - iii. Is the simulator critically needed or not?
                  1. If we are using the RIC platform and we use the KPI. We say we are using e2 then we need the simulator. If we by pass e2 and kpi mon then we can populate the SDL layer.
              - iv. Jack - yes it's needed. Is there anyone on the call who can step up and help in this space?
    - ii. [Thoralf Czichy](#) RIC Platform (RIC)
      1. note I updated the committer change process as per discussion last week: [How to request committer changes](#).
    - iii. [user-a934b](#) O-RAN Centralized Unit (OCU)
    - iv. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
    - v. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
    - vi. [Martin Skorupski](#) Operations and Maintenance (OAM)
    - vii. [Alex Stancu](#) Simulations (SIM)
    - viii. [Xiaohua Zhang](#) Infrastructure (INF)
    - ix. [weichen ni](#) Documentation (DOC)
    - x. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
    - xi. (TBD) O-RAN Radio Unit (ORU)
  - c. [user-59b16](#) Requirements Software Architecture Committee
    - i. David Kinsey, Rittwiki, RSAC team discussed one Dynamic (performance mgt.) data collection set agenda pushed to ONAP. It is the responsibility in SMO. There is no SMO project. We are submitting.
      1. Action [user-59b16](#) add [Martin Skorupski](#) to conversations around dynamic data collection.
      2. Is there a cutoff point this week for your requirements because the ONAP G release gate is closing.
        - a. Rittwik - Yes, we are working on the requirements.
        - b. Action/ [user-59b16](#) send @John Paul Lane from Ericsson the RSAC requirements.
    - ii. WLF files? [Zhimin Yuan](#) we are in the process.
    - iii. Will that happen once we do the integration
      1. We are preparing for the Bronze release.
  - d. [user-d3360](#) Integration and Test
    - i. Plan for Integration and Test
      1. We have one development sprint left. First we will do integration in two separate groups.
      2. ODU Low and ODU high and
      3. OTF, OAM, NONRT RIC, Near RT RIC APP, SIM (Cloud), INF, O-DU LOW, O-DU High, SIM (Bare metal deployment)
      4. Integrated testing is lead by each PTL. Every project is delivering multi-containers. They are expected to do their own integration testing.
      5. Pairwise testing requires a need to interact. Next level is our use case testing. We will have a working session call and try to run the integrated testing together.
    - ii. How we will execute (be mindful of automated cleaning process)
      1. We have a Nexus Staging Docker Registry (images on this registry only live for 30 days) after that an automated cleaner will remove. There are ways to regenerate but keep the 30 day limit in mind.
      2. merge jobs are automatically run weekly, which keeps images fresh in the staging registry :)
      3. There is a container tag.
      4. Nexus Release Docker Registry. Images on release repo live "forever". Images on release registry CANNOT be overwritten.
    - iii. Lusheng proposing to formally adopt semantic versioning for tagging released O-RAN docker containers. After passing the component communicate through wiki, lists, and jira.
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.)