

# 2020 Q4 (Oct, Nov, Dec)

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## 2020 12 16

Recording: [2020-12-16\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner): Thoralf Czichy
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		Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	X	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	X	Anil Umesh	
<a href="#">Nokia</a>	Juha Oravainen		Thoralf Czichy	X
<a href="#">Orange</a>	William Diego	X	Vincent Danno	
<a href="#">Radisys</a>	Ganesh Shenbagaraman		Sachin Srivastava	Sphoorthi Dayanand (Radisys) standing in even if not listed here. Jack asked her to coordinate with Ganesh if there's an updated name here.
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

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

3. Review and Agree to Minutes of Previous Meeting
  1. **Decision:** Motion by Thoralf, second by Jinri. No objections. 2020-12-09 minutes approved
4. Review of Today's Agenda.
5. Release Votes and Approval.
  - a. Cherry release status
    - i. All code has been branched. Tar ball already created and included in release page. All docker containers have been released. Ready. Most projects have updated their documentation. Felix working on "getting started" page. tar ball and getting started page link is available on Cherry page: [Cherry Release \(Dec 2020\)](#)
    - ii. Discussion on documentation
    - iii. Jack: Is it clear where to ask questions? Felix proposed that the integration team acts as contact as well as the PTLs of the individual subprojects.
    - iv. Jinri is working on blog/press release, but seems not yet approved by EC, but plan is to get it released today in the blog. Still discussion related to quotes from Radisys and WR (Gil H. asked about this in the meeting). EC makes final decision and we might not include quotes from everyone in every release to balance this out. Jack trying to see what EC policy on this is. Jinri also provided number of source code commits to EC.
    - v. Thoralf commented that the Dawn timeline needs an update for the week numbers and, e.g., Feb-3 should be Feb-1 (as that's a Monday). Jack will fix.

- vi. Q: there seems to be still changes? Felix confirmed that documentation and binary artifacts (tar balls, and release images) are fixed and available.
- vii. Jinri: What is the official release data for Cherry? Jack: depends on what you want to call it. Press release date vs last artifacts uploaded (Tue, Dec-15 confirmed by Felix): We decided on release date as Dec-15-2020. Jinri will update PR accordingly.
- 6. Copyright update.
  - 1. Copyright permission proposal to be approved by O-RAN EC.
    - 1. Jack: shared the proposal to TOC members. **Action point: TOC members** Please review copyright permission proposal and provide feedback and setup a meeting with Jack to discuss if needed
    - 2. 2020-12-16:
      - 1. Jack shared with TOC members the draft (last week). There's an update to the draft, which Jack will send out (post-meeting update: this was sent about 10min after the meeting). Refinements happened based of comments by some member (separating code and documentation). Word "copyright" added to the title.
      - 2. John-Paul asked for purpose of separating code and documentation. Jack: seemingly because they (the licenses) are structured differently. John-Paul might still send comments to Jack.
      - 3. Jack says he hopes this to be acceptable to 3GPP as well. But Jack not involved in 3GPP discussions.
      - 4. Jack hopes for end of January this being finalized and posted by O-RAN alliance, e.g., visible under the same page as the other "[o-ran.org/software](https://o-ran.org/software)" page talking about licenses.
  - 2. Copyright case to be resolved with 3GPP.
- 7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  - 1. WG1 MVP proposal by early December.
  - 2. OSC Cherry blog post and PR
    - 1. Gu Su has draft PR
  - 3. PoC on Dec 3.
  - 4. 2020-12-16: Re-election in O-RAN EC. The one going out is also sitting in O-RAN-SC TOC as well. We might have to talk about O-RAN-SC TOC composition.
    - 1. need to go back to our charter.
    - 2. we might want to do elections and work on this in the beginning of next year.
  - 5. 2020-12-16: MVP (minimum viable product) was discussed as well in EC. We need to pay attention to that plan. 2021 will be a critical year. For example, OCU being important. More participation is needed. More companies. We do have a challenge around the integration team, also on SMO side. We do need a PTL for the integration and test project ideally with five participants and better alignment with test focus group on O-RAN alliance side. Dawn will need an improvement in this area, also because use cases become more complex.
  - 6. 2020-12-16: once we come back next year we need to produce a session (middle/end of Jan) for O-RAN alliance to show what we achieved in Cherry and look for their feedback.
    - 1. Rittwik: traffic steering and network slicing was discussed in earlier O-RAN - O-RAN-SC virtual face-to-face, but unsure what actually makes up the MVP
    - 2. Jack promised to set up a call, probably part of Rittwik's architecture sessions.
    - 3. Jinri: end of Jan or beginning of Feb is next virtual f-2-f on O-RAN alliance side.
    - 4. key is to make sure what we aim for in Dawn and "E" release.
- 8. Status of Open Action Items (Old Business).
  - a. O-CU development and O-CU for Cherry traffic steering use-cases.
    - i. New O-CU PTL onboarding.
    - ii. Binary version of Radisys O-CU.
      - 1. Radisys legal document to be sent to Jack and Jinri in week of Nov 30.
      - 2. 2020-12-16: Ganesh sent the agreement to Jack and Jinri. Jinri to forward this to Stefan and follow up with Stefan to get this finalized. Use of a binary as a test fixture for OCU. Still a challenge to get an OCU implementing the O-RAN alliance interfaces.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. PTLs to keep summary page for Cherry release current and up-to-date.
    - ii. 2020-12-16: Close this
  - c. Dawn Release requirement
    - i. 2020-12-16: still open
  - d. "E" Release naming.
    - i. "E" Release voting ongoing.
    - ii. 2020-12-16: Jack proposed to continue with only letters. To remove any possibility of potential negative associations with colors in the diverse cultural backgrounds we operate in.
  - e. CII Badging
    - i. **Action Point** PTLs to go through the questionnaires to know gaps by Jan 2.
    - ii. Liaison with Security TG to be set up.
  - f. Cooperation with ONF, OAI and ONAP.
    - i. ONAP alignment to be discussed.
- 9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [Zhe Huang](#) (Felix) Integration and Test
    - i. **Decision:** Move by Jack , second by Jinri. No objections. Felix approved as a committer to it/int, it/otf and it/test repositories
    - ii. O-DU low contributions. **Action point Felix** please resolve with Trishan
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
    - iii. [Thoralf Czichy](#) RIC Platform (RIC)
    - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
    - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (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. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
  - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  11. Planning for Next Meeting
  12. Any Other Business (AOB)
    - a. This week will be the last TOC meeting of the year and we will continue on January 6th and begin the process for Dawn release. Juha will be scribe of Jan 6th meeting
      - i. **Next meeting: January-6-2021**
    - b. Tracy: not sure if press release will include reference to proof-of-concept. But note that PoC included WG1 November train output. Jinri to close out the press release.
  13. Meeting Summary (resolutions, new action items, etc.)

2020 12 9

Recording: [2020-12-09\\_toc.m4a](#)

#### Agenda

1. Call for Scribe (minutes owner): Juha Oravainen
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="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Nokia</a>	Juha Oravainen	x	Thoralf Czichy	
<a href="#">Orange</a>	William Diego		Vincent Danno	
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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
  1. **Decision:** Move by Juha, second by John-Paul. No objections. 2020-12-02 minutes approved.
4. Review of Today's Agenda.
5. Release Votes and Approval.
  - a. Cherry approval vote on Dec 9.
    - i. Cherry release status
      1. Felix presented O-RAN Cherry Release Integration and Testing readout: [Cherry-release-readout.pptx](#)
      2. Felix presented highlighted use cases
      3. Rittwik: Use cases are ok from RSAC point of view
      4. Felix: Delivery Status Overview
        - a. Release recommendation is green for all the other projects except for Integration/OTF, OAM and O-CU
      5. Jack: How many use cases did not get validated at this point?
      6. Felix: Use cases highlighted by RSAC are all validated
      7. Rittwik: Within the realms we have in open source we have got it to make it work. If the component doesn't exist, we can't make the full stack work.
      8. Jack: And it is documented what works and what doesn't?
      9. Rittwik: Yes
      10. Jack: Is there anything that has the light green tick, which won't be completed by Saturday
      11. Felix: No
      12. Jack: Let's see red boxes, O-CU clearly is not being released as part of Cherry release. Does anybody has any concerns to exclude O-CU from the release?
      13. **Decision:** O-CU is not supported in C-release, no objections
      14. Integration/OTF
        - a. Felix: My proposal is to defer OTF Framework to Dawn release because OTF Helm charts needs further integration
        - b. Jack: Do we defer this to Dawn or can we complete this in maintenance release? Does this require new code?
        - c. Felix: New code is needed but is doable by the end of January 2021
        - d. Jack: Proposal is to acknowledge that OTF Framework has some defects and will be postponed to maintenance release. Does anybody has any concerns with this?
        - e. **Decision:** OTF has been postponed to maintenance release, no objections
15. OAM

- a. Jack: EC raised some concerns how dependant OAM is from ONAP
  - b. Tracy: This will be discussed on Friday TSC meeting.
  - c. Jack: We are trying to find the right path through this and make sure both communities get what they need and move forward
  - d. Felix: OAM contains EPL-1.0 license. LF can't exactly identify which pieces of the code is under this license and they raised a question how code is downloaded from the upstream project? Could we use Apache-2 license instead?
  - e. Jack: Who will resolve this question because we can't release that particular repository until we get this resolved?
  - f. Martin: My proposal is not to release this part of the code
  - g. Tracy: I'm optimistic that this issue will be solved but not in this release
  - h. Jack: Proposal is not to release this part of the code
  - i. Jack: Two actions. 1. To remove TR69 part from the release and 2. to address the licensing issue
  - j. Felix: Most of the OAM code is in ONAP repositories. All container images and Helm charts are contributed to ONAP. My biggest concerns are that there is no source code in OSC, binaries are pointing to ONAP projects, platform integration and deployment are done through ONAP OOM, there are challenges in releasing E2E flows due to data model licensing issues (3GPP) and it is hard to recreate E2E flows in OSC labs. I need guidance from TOC on release strategy
  - k. Jack: There is minimum ONAP build you use. How many components you are using?
  - l. Martin listed the components
  - m. Rittwik: Why don't you fork the code?
  - n. Martin: I don't need to fork it because all the functionality is already existing and the problem is that we are now in the level and working more closely with ODL teams and we are now moving more from ONAP towards ODL. I'd not like to fork ODL.
  - o. Mahesh: SMO has also lot of dependencies and I'm not sure why we have SMO project?
  - p. Jack: OAM and non RT-RIC are very big components of SMO. If there is no code in OSC repos then there is nothing to release. We need to continue this discussion and figure out what is the best way to continue the structure of this work going forward
  - q. Jack: In Cherry there is no code or processes in OSC Cherry that need to be released for OAM?
  - r. Martin: There is something for YANG validation. One repository and one folder
  - s. Jack: There will be a minimum OAM released and documentation needs to be setup that way. The bigger issue is how this should work over time.
  - t. Tracy showed a slide, which was prepared for O-RAN TSC: [Attachments - Use case demonstration - OAM - Confluence \(o-ran-sc.org\)](#)
  - u. Jack: We are going to release Cherry. I make the motion to approve C-release, exclude O-CU, footnote OTF that it will be corrected in maintenance release and OAM will be minimised to repositories to support SMO. Does any TOC members have any concerns with this path?
  - v. Rittwik: Which Yang model we are using in open FH?
  - w. Martin: We can release like in B-release
  - x. **Decision:** Move by Jack, second by Jinri. No objections. C-release approved with exceptions
6. Copyright update.
- 1. Copyright permission proposal to be approved by O-RAN EC.
    - 1. Jack: shared the proposal to TOC members. **Action point: TOC members** Please review copyright permission proposal and provide feedback and setup a meeting with Jack to discuss if needed
  - 2. Copyright case to be resolved with 3GPP.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
- 1. WG1 MVP proposal by early December.
  - 2. OSC Cherry blog post and PR
    - 1. Gu Su has draft PR
  - 3. PoC on Dec 3.
8. Status of Open Action Items (Old Business).
- a. O-CU development and O-CU for Cherry traffic steering use-cases.
    - i. New O-CU PTL onboarding.
    - ii. Binary version of Radisys O-CU.
      - 1. Radisys legal document to be sent to Jack and Jinri in week of Nov 30.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. PTLs to keep summary page for Cherry release current and up-to-date.
  - c. Dawn Release requirement
  - d. "E" Release naming.
    - i. "E" Release voting ongoing.
  - e. CII Badging
    - i. **Action Point** PTLs to go through the questionnaires to know gaps by Jan 2.
    - ii. Liaison with Security TG to be set up.
  - f. Cooperation with ONF, OAI and ONAP.
    - i. ONAP alignment to be discussed.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [Zhe Huang](#) (Felix) Integration and Test
    - i. **Decision:** Move by Jack , second by Jinri. No objections. Felix approved as a committer to it/int, it/otf and it/test repositories
    - ii. O-DU low contributions. **Action point Felix** please resolve with Trishan
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)

- ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
  - iii. [Thoralf Czichy](#) RIC Platform (RIC)
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  - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
  - viii. [Alex Stancu](#) Simulations (SIM)
  - ix. [Xiaohua Zhang](#) Infrastructure (INF)
  - x. [weichen ni](#) Documentation (DOC)
  - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
  - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
- a. Next week will be the last TOC meeting of the year and we will continue on January 6th and begin the process for Dawn release. Juha will be scribe of Jan 6th meeting
13. Meeting Summary (resolutions, new action items, etc.)
- a. **Decision:** O-CU is not supported in C-release
  - b. **Decision:** OTF has been postponed to maintenance release
  - c. **Decision:** Approve C-release, exclude O-CU, footnote OTF that it will be corrected in maintenance release and OAM will be minimised to repositories to support SMO
  - d. **Action point: TOC members** Please review copyright permission proposal and provide feedback and setup a meeting with Jack to discuss if needed
  - e. **Decision:** Felix approved as a committer to it/int, it/otf and it/test repositories
  - f. **Action point Felix** please resolve O-DU low contribution issue with Trishan

## 2020 12 2

Recording: [2020-12-02\\_toc.m4a](#)

### Agenda

1. Call for Scribe (minutes owner): Juha Oravainen
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		Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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 TOC 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
  1. **Decision:** Move by Masafumi, second by Jinri. No objections. 2020-11-25 minutes approved.
4. Review of Today's Agenda.
5. Release Votes and Approval.
  - a. Cherry approval vote on Dec 2.
    - i. Jack: Rittwik, how is the documentation and preparation work for the C-release proceeding?
    - ii. Rittwik: Documentation is coming through and we are identifying some Dawn use cases
    - iii. Jack: Where in the Wiki is the documentation?
    - iv. Rittwik: We can put the pointers from the regular SW dev page to integration page
    - v. Jack: This should be put to Cherry release page. Introduction, how to get started, where to get SW and other relevant documentation/links should be found from Cherry release page
    - vi. John: Every project has their own documentation. Please add these links to documentation page
    - vii. Jinri: Do you need help in documentation?
    - viii. Rittwik: Yes, I'll contact to Weichen
    - ix. Jinri: Please copy also me when you contact Weichen
    - x. Jack: We have only 10 days left before release date, which is Dec 12th. We are not ready to vote yet but everything needs to be done by next week's TOC meeting
    - xi. Integration and Test status, please see chapter 9c below
6. Copyright update.
  1. Copyright permission proposal to be approved by O-RAN EC.

1. Jack: Proposal got from the legal team and this will be discussed on Friday how to proceed and after that we start sharing it. Expect me to start to reach out at the beginning of next week with a copy what we are proposing and setting up meetings.
2. Jack: Anyone who is interested in reviewing the copyright statement, please let me know.
3. Jack: This should cover all of the O-RAN original copyrighted material but it does not address 3GPP copyright items
2. Copyright case to be resolved with 3GPP.
  1. Jack: This work is done by standards group. We have some inputs to the process and tracking it but they are the one who are leading the work with 3GPP
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  1. WG1 MVP proposal by early December.
  2. OSC Cherry blogpost draft submission by Dec 2.
    1. Jinri: We are working with the blog post. We already got input from Rittwik but we need still input/highlights/summary from projects.
    2. Jinri: We need also short descriptions to highlight key features from each project. This is mainly for PR
    3. We need also quotes from the contributing companies to PR. So far we have input from WR, Nokia and Ericsson
    4. Jack: Cherry release date is 2020-12-12
    5. Jinri: Deadline for inputs is this Friday as there will be EC meeting next week
  3. PoC on Dec 3.
8. Status of Open Action Items (Old Business).
  - a. O-CU development and O-CU for Cherry traffic steering use-cases.
    - i. New O-CU PTL onboarding.
    - ii. Binary version of Radisys O-CU.
      1. Radisys legal document to be sent to Jack and Jinri in week of Nov 30.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. PTLs to keep summary page for Cherry release current and up-to-date.
  - c. Dawn Release requirement
  - d. "E" Release naming.
    - i. "E" Release voting ongoing.
  - e. CII Badging
    - i. **Action Point** PTLs to go through the questionnaires to know gaps by Jan 2.
    - ii. Liaison with Security TG to be set up.
  - f. Cooperation with ONF, OAI and ONAP.
    - i. ONAP alignment to be discussed.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [Zhe Huang](#) (Felix) Integration and Test
    - i. Jack: we need more people in Integration and Test project in D release. One person really can't do all this stuff.
    - ii. Felix: Cherry Release Testing Plans: [Cherry Release Testing Plans - Integration and Testing - Confluence \(o-ran-sc.org\)](#) Here you can find all the flows what we want to test
    - iii. Felix: near RT-RIC has some new flows
    - iv. Thoralf: In the worst case scenario we can't test all of these
    - v. Jack: Please make sure and say what flow is approved and part of the release and what isn't
    - vi. Jack: It is important to map use cases and e-2-e flows we are testing
    - vii. Rittwik: There is not one to one mapping
    - viii. Jack: It doesn't have to be but there should be a place where we can see which work flows support which use cases
    - ix. Felix: Some part of the non RT-RIC code is contributed to ONAP, which means we need to use artifacts from ONAP
    - x. John: I see no problems here as code is copied from ONAP and re-released via OSC + both releases use Apache-2 licence. So, licenses are compatible
    - xi. Jack: This is ok from open source point of view. The only question is, if they make changes to that code we are referencing in OSC and it breaks our downstream usage. PTL and the team is responsible to make sure it builds and works properly and delivers it to Integration and Test project
    - xii. David Kinsey: Why can't we use the boundary or container of that it is part of ONAP?
    - xiii. John: There are several possibilities but we see this the most feasible and flexible option at the moment
    - xiv. John: We can use the code in two different projects
    - xv. Felix: There is "Copyright 2020 Nordix Foundation" license headers in some non RT-RIC code
    - xvi. Jack: They are granting this code contribution under the Apache-2 license. That's the key, not who does it but what license they are doing it
    - xvii. Jack: has the license scan been run yet by the Linux Foundation
    - xviii. Felix: not yet
    - xix. Trishan: I will follow this with Steve
    - xx. Jack: we need to run this before we release the code
    - xxi. Felix: I'm pretty happy with the code but have some concerns with OAM. I will contact Martin off-line
    - xxii. Jack: what about SMO?
    - xxiii. Felix: My opinion is that tests have passed
    - xxiv. Rittwik: What about SIM and O-CU projects?
    - xxv. Felix: SIM project is contributing code directly to non RT-RIC code
    - xxvi. Felix: I have also concerns with O-CU but currently I don't have any flows that needs to be tested with O-CU
    - xxvii. Rittwik: How do we address O-CU, definitely for Dawn. And what do we do in Cherry
    - xxviii. Jack: currently we are using Radisys O-CU binary code as a test fixture
    - xxix. Jack: As far as I know, the code is contributed but there are no test use cases currently that leverage O-CU. Code sits in the repos but we are not using it in integration or e-2-e flows with that code and we should in the documentation call that in that way
    - xxx. Jack: the key issue is that we have still quite a lot of work to do in the coming week. Rittwik: you are working with Weichen on the documentation project and Felix is working with different teams to validate the remaining flows. And there is the scanning for the SW



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

- i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
  - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
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  - 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. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
  - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  11. Planning for Next Meeting
  12. Any Other Business (AOB)
  13. Meeting Summary (resolutions, new action items, etc.)

2020 11 25

Recording: [2020-11-25\\_toc.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Masafumi Masada
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		Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Nokia</a>	Juha Oravainen		Thoralf Czichy	x
<a href="#">Orange</a>	William Diego	x	Vincent Danno	
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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
  1. **Decision:** Move by Masafumi, second by John-Paul. No objections. 2020-11-18 minutes approved.
4. Review of Today's Agenda.
5. Release Votes and Approval.
  - a. Cherry approval vote on Dec 2.
6. Copyright update.
  1. Copyright permission proposal to be approved by O-RAN EC.
    1. Jack: O-RAN Legal Stefan is evaluating the proposals.
    2. John: Didn't we hope to have a written proposal you can share this week?
    3. Jack: We had a proposal we referred to last week and got an additional option last Friday. We hope to have a feedback we can share from Stefan early next week.
  2. Copyright case to be resolved with 3GPP.
    1. Jack: No update.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  1. Jinri: There is no specific item to mention. MVP discussion is ongoing. There were several discussions with WG2 and WG3 last week.
  2. Jack: We are approaching US/Europe holiday season. We need to finalize focus points in "D" Release.
  3. Jinri: WG1 is expected to come out with a MVP proposal by the end of this month. We will get that early December at the latest.
  4. Jack: We want to have a plan by Jan 2.
  - e. Jack: Last week, Tracy talked about PoC on Dec 3. No update on MWC LA.
  6. John-Paul: I have a question about OSC Cherry blogpost. Who is coordinating?
  7. Jack: It should be Jinri.
  8. Jinri: I can help with this.
  9. John-Paul: Is there a deadline for submission?
  10. Jack: We need it by next Wednesday.
  11. Jinri: Do we also need to prepare a PR?
  12. Jack: We are doing just blogpost. We need to discuss in EC.
8. Status of Open Action Items (Old Business).
  - a. O-CU development and O-CU for Cherry traffic steering use-cases.

- i. New O-CU PTL onboarding.
    - ii. Binary version of Radisys O-CU.
      - 1. Rittwik: We haven't received yet.
      - 2. Ganesh: Our legal team is working on a legal document. Who will be the person to send it to?
      - 3. Jack: Me and Jinri. We will forward it to Stefan to review.
      - 4. Jinri: When can we expect to receive the document?
      - 5. Ganesh: Next week.
      - 6. Rittwik: We have configured fronthaul. Viavi RU emulator TM500 is being shipped and to arrive at the lab by Dec 4. We will do the radio mode testing for Dawn Release.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. PTLs to keep summary page for Cherry release current and up-to-date.
  - c. Dawn Release requirement
    - i. Jack: Any progress on documentation?
    - ii. Rittwik: We got some documents from ODU. We started a discussion on 2 new use cases. We are moving and good to go for January.
    - iii. Jack: I don't see Mahesh to provide SMO status.
    - iv. Rittwik: He has tested Yang models. He is working to finalize.
    - v. Jack: Do you need any specific inputs?
    - vi. Rittwik: One thing from Viavi.
    - vii. Jack: We need to get our plan in place for "D" Release at the beginning of next year.
    - viii. Rittwik: I will reach out to PTLs.
    - ix. John: We still need to work on A1-based use cases.
  - d. "E" Release naming.
    - i. "E" Release voting ongoing.
  - e. CII Badging
    - i. **Action Point:** PTLs to look at CII Badging requirements and pick up 1 or 2.
    - ii. Trishan: Next step is to create a child page.
    - iii. Rittwik: Each sub-projects will get a badge, right?
    - iv. Trishan: Yes.
    - v. Rittwik: What's your guideline, Jack?
    - vi. Jack: We need initial assessment from each PTL going through the questionnaires to know gaps by Jan 2.
    - vii. Trishan: One item across the projects is around security.
    - viii. Jack: O-RAN has a TG for security. We don't have a specific security committee in the software community.
    - ix. Trishan: I would recommend to have a liaison.
    - x. Jack: You can go ahead and set up.
  - f. ONF update.
    - i. John: I saw press releases saying ONF is contributing to OSC. What's the current status?
    - ii. Jack: There were meetings with EC and ONF in terms of alignment. Discussion has been around RIC, little on rApp and mostly on xApp.
    - iii. Rittwik: Discussion is moving forward. They are contributing to WG3.
    - iv. Jack: Challenge is to bring the 2 projects together and keep them aligned. It's an open discussion driven by EC.
    - v. Gil: Is there a discussion to formalize an API into a spec?
    - vi. Matti: That's happening in WG3. ONF members have been there for a while.
    - vii. John: Are there any discussions touching O1 and rApp in WG2?
    - viii. Rittwik: Maybe it's beginning.
    - ix. Jack: There is a part that we can build in common to drive the concept, but we are not able to do that for everything.
    - x. John: There seems to be a lot of Incentive to get alignment between OSC and ONF. No desire to have a similar alignment with ONAP?
    - xi. Jack: Let's have the discussion next week.
  - g. OAI discussion.
    - i. Jack: We continue dialogue about copyright and other points.
    - ii. William: They are trying to work on license agreement.
    - iii. Jack: Discussions are going on. Nothing actionable.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
- a. Release Manager [Trishan de Lanerolle](#) /Release Planning: Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [Zhe Huang](#) (Felix) Integration and Test
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
    - iii. [Thoralf Czichy](#) RIC Platform (RIC)
    - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
    - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
    - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
    - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
    - viii. [Alex Stancu](#) Simulations (SIM)
    - ix. [Xiaohua Zhang](#) Infrastructure (INF)
    - x. [weichen ni](#) Documentation (DOC)
    - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
    - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)



# 2020 11 18

Recording: [2020-11-18\\_toc.m4a](#)

## Agenda

1. Call for Scribe (minutes owner): Masafumi Masada
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	
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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
  1. **Decision:** Move by Masafumi, second by David. No objections. 2020-11-11 minutes approved.
4. Review of Today's Agenda.
5. Release Votes and Approval.
  - a. Jack: We are approaching the time when we will take a vote on approving Cherry. We are going to do some work to be ready by the final approval date of Dec 2. After releasing, we will move on to a blogpost and press release process.
  - b. Tracy: Jus a reminder, we are doing a Proof of Concept on Dec 3.
6. Copyright update.
  1. **Action Point Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to. Also, a similar case to be resolved with 3GPP.
  2. Jack: We met last week and have a written up proposal for approval by EC. It doesn't address 3GPP, but at least O-RAN SC .
  3. John: What is the proposal?
  4. Jack: The proposal is to grant a copyright permission to the Software Community for the O-RAN specifications. It has nothing to do with patent or IPR.
  5. John: I'm not sure it's applicable for code, models, specs and documents.
  6. Jack: My understanding is that all those items are protected under copyright. That's what legal discussions are about.
  7. Juha: Is there a draft version our legal can read through?
  8. Jack: We will get a feedback this Friday. Let's have our legal team review first.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  1. Jack: Tracy has already mentioned Dec-3 PoC.
  2. Rittwik: There is MWC LA. I can send it to the email.
8. Status of Open Action Items (Old Business).
  - a. O-CU development and O-CU for Cherry traffic steering use-cases.
    - i. Jack: The new PTL Su Gu is not on due to the time difference. We might have to set anotehr time.
    - ii. Rittwik: Ganesh is figuring out the binary version of Radisys O-CU.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. PTLs to keep summary page for Cherry release current and up-to-date.
  - c. Cherry Release cut-ff.
    - i. Jack: Cut-off date is November 14th.
    - ii. Mahesh: SMO missed the deadline, but the demo is ready.
    - iii. Jack: Please work with Rittwik and Felix to set up a demo time and process the other steps.
    - iv. Vidhu: ODUHIGH missed the deadline, but the code is ready.
    - v. Felix: No problem.
  - d. "E" Release naming.
    - i. David: I sent a link of voting page via email.
    - ii. Jack: There is an unintentional correlation between colors and derogatory meanings. We need to remove Ebony and vote again.
    - iii. **Action Point "E" Release voting.**
  - e. ONF update.
  - f. OAI discussion.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
    - ii. Jack: We need to finalize documentation.
    - iii. Rittwik: OK.
    - iv. Jack: Felix, what do you need?
    - v. Felix: I need details from each team how to verify the use cases and test flows.

- vi. Jack: The goal is by Dec 3 meeting to have everything approved.
  - vii. Felix: It's durable.
  - viii. Jack: Please prioritize and support Felix. Trisian, I will get you involved in blog write-up.
  - ix. Trisian: Sounds good.
  - x. Jack: How are we getting ready for "D" Release requirement?
  - xi. Rittwik: Making progress. We need to get more integrated. That's our challenge for Dawn.
  - xii. Jack: The key part is how lifecycle management can deploy the functions.
  - xiii. Rittwik: The step 2 and 3 of the 4 steps are being done in Cherry.
  - xiv. Jack: We need process in place.
  - xv. Mahesh: I understand.
  - xvi. Jack: Even if it's not full production ready, at least the initial deployment.
  - xvii. John: A lot of functions needed just to get the first use case working.
  - xviii. Jack: We need to make some progress. Rittwik, do we have a roadmap?
  - xix. Rittwik: We still need particular use cases.
  - xx. Jack: Write up the whole scenario. We need to make sure these plans are laid out.
  - xxi. Rittwik: We've been working mainly on the user plane.
  - xxii. Jack: Make sure that the goal and how we make progress to that is clear.
  - xxiii. Rittwik: Use case is very high level. There is a gap OSC is trying to fill.
  - xxiv. Jack: The real item is what needs to be specified and what needs to be implementation. Let's continue the discussion.
  - xxv. Jack: We need to think about hand-off for "C" Release. We want to invite WG groups and do a demo in January. Based on the "D" Release schedule, the 16th is the last meeting in 2020 and we are going to resume on Jan 6.
- b. [user-59b16](#) Requirements Software Architecture Committee
- i. **Action Point** PTLs to look at CII Badging requirements and pick up 1 or 2.
  - ii. Rittwik: Trisian has created a link.
  - iii. Trisian: It's in Best Practice. There are 64 questions.
  - iv. Jack: The key thing is to get people go thorough.
  - v. Trisian: It's a good practice.
- c. [Zhe Huang](#) (Felix) Integration and Test
- i. **Action Point** Felix and Zhimin to work together to resolve issue of ICC Compiler access. (Not a barrier to complete Cherry.)
- d. Report out from PTL: Stand-Up & Report Out on Blockers
- i. [John Keeney](#) Non-Real Time RIC (RAN Intelligent Controller) (NONRTRIC)
  - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
  - iii. [Thoralf Czichy](#) RIC Platform (RIC)
  - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
  - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
  - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
  - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
  - viii. [Alex Stancu](#) Simulations (SIM)
  - ix. [Xiaohua Zhang](#) Infrastructure (INF)
  - x. [weichen ni](#) Documentation (DOC)
  - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
  - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

## 2020 11 11

Recording: [2020-11-11\\_toc.m4a](#)

### Agenda

1. Call for Scribe (minutes owner): Masafumi Masada
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="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Nokia</a>	Juha Oravainen	x	Thoralf Czichy	
<a href="#">Orange</a>	William Diego		Vincent Danno	
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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

1. **Decision:** Move by Masafumi, second by John-Paul. No objections. 2020-11-04 minutes approved.

### 4. Review of Today's Agenda.

### 5. Release Votes and Approval.

- a. Jinri: There was a request on new repo.
- b. Thoralf: On libe2ap repo.
- c. Jack: Who made the request?
- d. Thoralf: My request, I would suggest to vote now,
- e. Jack: Do you keep creating several repos for segments?
- f. Thoralf: This is a special case.
- g. Jack: As a general guidance, try not to create a repo each time. We'll go ahead with this case.
- h. **Decision:** Move by Jack, second by Jinri. No objections. New repo "o-ran-sc/libe2ap" approved.

### 6. Copyright update.

1. **Action Point Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to.
2. Jack: We had a meeting last Friday including O-RAN Legal Stefan and Scott Nicholas from LF. He has generated his blog being reviewed. Another topic we discussed is 3GPP copyright. I'm looking for an example of 3GPP specification we need copyright permission. We've made some progress on copyright for O-RAN Alliance. It will include copyright forward permission, meaning goal here is OSC permission. We are getting closer.
3. Thoralf: That was a discussion with O-RAN SC and O-RAN Alliance. Do we still have a similar discussion with 3GPP?
4. Jack: Correct. I'm less involved.
5. Rittwik: Why is it such a difficult thing? We end up releasing anyway.
6. Jack: The challenge is copyright is a thing that has to be enforced. We are trying to close the legal gap. We are trying to get a clarity around the right permission.
7. John: I think it's time to push down.

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

1. Jinri: EC touched the copyright issue. Second thing is regarding MVP. MVP group is discussing with each WG co-chairs. That's the current status.

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

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
  - i. **Action Point** planning for 2021 elections.
  - ii. Jack: We approved the new PTL for O-CU.
- b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
  - i. Jack: PTLs, please keep summary page for Cherry release current and up-to-date.
- c. Cherry Release cut-off.
  - i. Jack: Let's see we can pull in the code by November 14th.
- d. "E" Release naming.
  - i. **Action Point** David to start a poll for the naming of "E" Release.
  - ii. David: I will send an email.

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

- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
  - i. [CherryTimeline](#)
- b. [user-59b16](#) Requirements Software Architecture Committee
  - i. **Action Point** Trishan/Rittwik to sync up on CII Badge passing.
  - ii. Rittwik: We had a meeting with Near-RT RIC. My request for PTLs is to look at requirements and pick up 1 or 2 items.
  - iii. **Action Point** PTLs to look at CII Badging requirements and pick up 1 or 2.
- c. [Zhe Huang](#) (Felix) Integration and Test
  - i. **Action Point** Felix and Zhimin to work together to resolve issue of ICC Compiler access.
  - ii. Felix: We had several meetings. The idea is that at the end of Cheery Release we should be able to deploy all the projects. We also talked about testing environment. There are multiple projects ongoing.
  - iii. Jack: How is the documentation going?
  - iv. Felix: I just get started. I need help from PTLs. That's about testing. Who is working on documentation?
  - v. Jack: There is a documentaiton lead. You can reach out.
  - vi. Jinri: Weichen is working on this. I was suggesting him to give feedback or update in the next call. I can connect Felix to Weichen.
  - vii. Jack: The other item is license scan.
  - viii. Felix: Yes.
  - ix. Jack: How is the testing going with DU and use cases?
  - x. Rittwik: DU-RU testing is moving ahead. Fronhaul server has already been installed. RU emulator TM500 is still getting installed. Checking with Viavi. DU-low - DU-high testing has happened to some extent. We are still waiting for Radisys to provide a binary version of CU. Once that comes in, we can hook up.
  - xi. Jack: Ganesh, are you aware?
  - xii. Ganesh: Yes. I should have update in the next meeting.
  - xiii. Jack: How do we get it and pull into the documentation package so that other people can see?
  - xiv. Rittwik: I can take the action.
  - xv. Jack: We usually create a link. We shoul also talk about what has been done and what is know to work.
  - xvi. Rittwik: We have some slides.
  - xvii. Felix: I will check with Integration team.
  - xviii. Jack: Are you going to have a follow-up meeting?
  - xix. Felix: No. I'm going to reach out to individual teams.
  - xx. Jack: Has ICC Compiler access been resolved?
  - xxi. Felix: No.
  - xxii. Jack: Is that a barrier to complete Cherry?
  - xxiii. Felix: No.

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

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

1. Rittwik: What A1 EI code is there? How will we test it using A1 simulator?
2. John: That function has been delivered and being tested to be deployed in Cherry.
3. Jack: You are expanding use cases.
4. John: We had brain storming.

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

iii. [Thoralf Czichy](#) RIC Platform (RIC)

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

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

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

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

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

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

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

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

1. Jack: How is SMO going?

2. Mahesh: Copyright is one issue we've already discussed. LCM package work is going on. The team is working on pre-standard implementation. Work is going on.

3. Jack: Do you think you'll be wrapping up something for "C" Release in the next few weeks?

4. Mahesh: Yes. We should be able to demonstrate LCM and Yang model testing.

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

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

a. ONF update

i. Jack: They came out with a blog about there are interested in aligning with O-RAN Alliance and with OSC. There is overall planning discussion going on. They are particularly interested in xApp APIs and software development kit. They built their own Near RT RIC. One of the objectives is to try to understand how we can build xApp. They will start joining the call. The goal is in time for Dawn Release.

ii. Rittwik: Are we creating a new project?

iii. Jack: We are trying to figure out. The goal would be common pieces. Deciding about what's upstream and what's downstream is part of the discussions. Principle right now is OSC would be upstream activities. Our concern is how do they interoperate, test and do demonstrations utilizing things from O-RAN Alliance if you don't have any activities demonstrating alignment or compliance. ONF is interested in O-RAN compliance, but what does that mean.

b. OAI discussion

i. Jack: Christian is organizing OAI discussions. Challenge is that licensing is not compatible. We are trying to see if we can do something similar to what we are doing with Intel O-DU. There are a couple of additional meetings coming up.

ii. Rittwik: Say, we want to use O-DU from OAI, but OSC will build E2 adapter to talk to O-DU. Where would the E2 part be maintained?

iii. Jack: E2 should be built in OSC.

iv. Rittwik: We will just download from OAI?

v. Jack: Just like we download Intel FlexRAN code.

11. Planning for Next Meeting

12. Any Other Business (AOB)

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

2020 11 04

Recording: [2020-11-4\\_toc.m4a](#)

Agenda

1. Call for Scribe (minutes owner): Masafumi Masada
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	
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Nokia</a>	Juha Oravainen	x	Thoralf Czichy	
<a href="#">Orange</a>	William Diego		Vincent Danno	
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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

1. **Decision:** Move by John-Paul, second by David. No objections. 2020-10-28 minutes approved.
4. Review of Today's Agenda
  1. Jack: Let's discuss release plan. The release date of "C" Release is Dec-12. We need to do test and license scan, to have documentation review in week of 23rd and to write a summary and pull together the package at the beginning of December. Any questions?
  2. Mahesh: Code freeze is supposed to be week 40. We need some extension for some projects. We don't have the final code in the repo yet.
  3. Jack: Is your case that large amounts of code that haven't been tested or looked at yet or is there some specific pieces of a bigger release? Your are talking about the except, right?
  4. Mahesh: Yes. We are hoping to get the Machine Learning version of the QP except in this release. The ML code is not in the repo yet. I will find out.
  5. Jack: We would like to see the code there as soon as possible. The question is how close it is. We need to bring the code into the repos so that we can start running scans and packing things up. Let's get an update this week.
  6. Mahesh: I will find it out in today's meeting.
  7. Jack: Who is the lead?
  8. Mahesh: An AT&T guy.
  9. Jack: Does any other PTLs have any outstanding items or concerns?
  10. Thralf: RIC Platform has a few items.
  11. Jack: How open are they?
  12. Thralf: We have 3 items on which review ongoing last week and 2 items to finish over the next few weeks.
  13. Jack: Let's see we can pull in in the next week and half before the 14th.
  14. Thralf: When do we expect is the date after which everything that goes in has to be especially managed?
  15. Jack: After the 14th, we need to cut it off.
  16. Thralf: I agree.
  17. Matti: Sounds good.
  18. Zhimin: O-DU - RU testing is still ongoing. I don't think we can make the 14th.
  19. Jack: The question is whether all the code is in the repo.
  20. Zhimin: That's fine.
  21. Jack: We need to make sure that we are bringing this to a point where people can start to download and use it. That's a big part of the goal.
  22. Jack: The schedule shows us starting up the 1st week of January for the "D" Release. We need to start talking about what's going to be in. Also, there is a maintenance window for the Cherry Release. David, maybe you should start a poll for the naming of "E" Release.
  23. David: OK.
  24. **Action Point** David to start a poll for the naming of "E" Release.
5. Release Votes and Approval.
  - a. None.
6. Copyright update.
  1. **Action Point Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to.
  2. Jack: I'm waiting for an email from Scott Nicholas at LF on the copyright blog. The goal is to articulate what 3GPP, ETSI and others might need to consider when supporting open source communities in what they need in terms of copyright permissions from their specifications. I was trying to use that as a way to give an assist these organizations with information on how the open source community looks at their needs for this issue to be addressed.
  3. John: It doesn't directly address the issue. It's getting close to the stage where we are going to have to consider stopping code contributions until we get this clarity.
  4. Jack: Understood. I'll highlight it again in the EC meeting.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  - a. Jack: LF re-published O-RAN blog post about Plugfest 2.
8. Status of Open Action Items (Old Business).
  - a. O-CU development and O-CU for Cherry traffic steering use-cases.
    - i. **Decision:** Move by Ganesh, second by Juha. No objections. Su Gu for O-CU PTL position approved.
    - ii. Beginning of April, we should be running an election cycle for renewing the elections for the key positions in the TSC as well as the PTLs. We want to have overlap, hand-off and preparation time for "D" Release. We have some issues in O-CU area to address. Going forward, hopefully Su Gu can help the dialogue move forward and we will make that decision at that time.
    - iii. **Action Point** planning for 2021 elections.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. Jack: PTLs, please keep summary page for Cherry release current and up-to-date.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
    - i. Rittwik: We met with the Security Committee. They are requesting us to control CII Badge passing requirement. Each PTL needs to pick 1 or 2 items in the list for Dawn Release to fill out forms. Trishan can help coordinate the form filling and be responsible for what level of badging each project obtains. Pick up maybe 1 item for Dawn Release to avoid too much burden and more for "E" and "F" Releases. The only concern Security Committee has is continuity.
    - ii. Jack: We need a checklist saying which project has completed which tasks.
    - iii. Trishan: One way to maintain is to create a table with a check list on the O-RAN SC Wiki. I can take care. We usually do it at a main project (O-RAN SC in this case) not each sub project. Let me check.
    - iv. Jack: As a group, we need to focus on the threshold.
    - v. Trishan: Rittwik, let's sync up off-line.
    - vi. **Action Point** Trishan/Rittwik to sync up on CII Badge passing.
    - vii. Jack: How are we on track for getting early work done on the "D" Release requirements?
    - viii. Rittwik: We are aligned except traffic steering. They expect to have a service model by the March Train.
    - ix. Jack: What is the major control action on the each interface?
    - x. Rittwik: Control action on E2.

- xi. Jack: Is there a full loop on O1 and A1?
  - xii. Rittwik: There are some aspects of O1 that we are able to control. There are some models that are getting tight in the small project. The only control except is traffic steering. The others are directives.
  - xiii. Martin: That's correct. Currently we get the alarm list and those kind of things. Most of the problem is that we cannot contribute based on the Yang models from 3GPP. That's what currently happens in O1. We depends on 3GPP that is one of the main issues.
  - xiv. Jack: We need to take a look broader than just E2. We need to get a demonstrable system that exercises that full range of control for "D" and "E" Releases.
  - xv. Martin: That's already there since Amber and Bronze. What's missing is taking an action doing closed-loop or performance based.
  - xvi. Jack: We completed them for at least O1. We need to look at the whole area so that everybody can see all the functionality of O1, A1 and E2.
  - xvii. Rittwik: I understand your request. That also depends on the specs. What's your viewpoint on MVP?
  - xviii. Jack: I agree with MVP bringing focus, but my concern is that we are focusing on such a narrow piece for each release. I want to make sure we are covering that around the 3 interfaces.
  - xix. Martin: What is necessary is that we exchange topology information of O1, A1 and E2.
  - xx. John: I agree. What's missing is a node in RAN producing some monitoring data we can use to drive use cases. I can't see that coming from simulation functions. Just alarm type of data coming up from PM would be useful.
  - xxi. Rittwik: That's what we are trying to set the system up so that at least functional system is working. Without all the pieaces working, it's difficult to get any PM data. You don't have a full functional E2E stuck. I get John and Jack's point.
- c. [Zhe Huang](#) (Felix) Integration and Test
- i. **Action Point** Felix and Zhimin to work together to resolve issue of ICC Compiler access.
- d. Report out from PTL: Stand-Up & Report Out on Blockers
- i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTIC)
  - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
  - iii. [Thoralf Czichy](#) RIC Platform (RIC)
  - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
  - v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
  - vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
  - vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
  - viii. [Alex Stancu](#) Simulations (SIM)
  - ix. [Xiaohua Zhang](#) Infrastructure (INF)
  - x. [weichen ni](#) Documentation (DOC)
  - xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
  - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

## 2020 10 28

Recording: [2020-10-28\\_toc.m4a](#)

### Agenda

1. Call for Scribe (minutes owner): John-Paul Lane
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		Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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
  1. **Decision:** Move by John-Paul, second by Jinri. No objections. 2020-10-21 minutes approved.
4. Review of Today's Agenda
  1. Jinri: Trishan working between LF and O-RAN Alliance and will present Cherry release overview been.
5. Release Votes and Approval.



- a. Alex: Approval request to update SIM repo with Viavi simulated data. License used is the LF data license (CDLA). The contribution is coming from Viavi.
  - b. Jinri: What kind of data is this repo for?
  - c. Alex: E2 data i.e. data consumed by xApps.
  - d. Juha: Linux Foundation has no problems with this proposal?
  - e. Matti: It is a trace of the simulated environment.
  - f. Jinri: Does the Viavi simulator generate E2 data?
  - g. Matti: It simulates RAN data which is consumed by the E2 simulator. The E2 simulator then generates E2 data which, in turn, are consumed by the xApps.
  - h. Alex made motion to approve repo, seconded by Jinri. No objections. Motion approved.
6. Copyright update.
1. **Action Point Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to.
  2. Jack: Made some progress in the past week. Dave Kinsley (Qualcomm) made a presentation during the O-RAN virtual F2F. Had a meeting with Linux Foundation legal team - Scott Nicholas - he is creating a public LF blog post which highlights copyright issues from SDOs and describes open source guidelines for incorporating that code. There was an ask to the O-RAN EC, requesting members to expedite copyright discussions with ETSI. This discussion has been running for almost 1 year without resolution. Need to encourage the EC to drive resolution of this issue in a specified time window.
  3. Mahesh: The main issue for OSC SMO is the usage of the 3GPP data models. Two clarifications would be helpful here: 1) We are trying to use the models internally within OSC. 2) We also need to consume and use these 3GPP models in OSC projects. Is it ok to continue this WoW?
  4. Jack: If OSC does not publicly publish the 3GPP models then generally there is no copyright issue. Should be possible to read and execute the models, running them in OSC labs, but they shouldn't be stored / replicated in the LF repo. Instead, use references - pointing to links to the the models on 3GPP servers.
  5. Tracy: The method for using the 3GPP models is not crystal clear. It is assumed that OSC is not disallowed from using the 3GPP models. However, there is a need to establish a clear process such as the one which exists with IETF.
  6. Jack: Has this been raised with O-RAN SDFG?
  7. Tracy: Yes, I have raised this with SDFG ATT rep and this is a topic of discussion at SA5 but currently there is no clear path to resolution. Need something more than a WG liaison statement.
  8. Jack: I'll work to get clarification on that and revert to this group.
  9. Tracy: This is also being pursued with the SA5 chair. May yield better results.
  10. Jack: What are the different paths here?
  11. Tracy: If SA5 votes in favour of a formalised process which allows 'managed use' (as opposed to 'restricted use') then we may be out of the woods. Similar to WoW with IETF models in O-RAN / OSC.
  12. Jack: It is worth raising at this point that LF favours using TM protection on content rather than copyright protection. Controlling via TM is perceived to be more effective than controlling copyright and it is also the LF view that TM protection enables open source development more so than copyright protection.
  13. John-Paul: There was a recent discussion where the O-RAN Alliance was considering given a written permission to OSC to implement Alliance specifications/ At the time, the permission discussion was divided into two parts: 1) O-RAN granting copyright permission to OSC; 2) O-RAN granting patent permission to OSC. Is there any update on this discussion?
  14. Jack: There was an EC vote on the ASN.1 code permission. This question relates to the guidelines from LF. O-RAN Alliance legal brief (Stefan) is willing to create a statement and publish. LF recommends that this is shared under license rather than a written statement of permission. A written letter of permission could work in a one-off situation. However, we need a solution which works going forward and which also works for other downstream projects, not just a bespoke solution for OSC. This is the nature of the discussion between OSC, LF and O-RAN Alliance. Other EC activities have taken priority up to this point but hopefully time should free up to focus on this important activity soon.
  15. Jinri: The copyright concern was raised with the EC in the past week. Specifically, the topic was raised in relation to the 60 day IPR window and how OSC can work within this directive. Confirmed by O-RAN Alliance Legal that EC can give copyright permission during the IPR window. This does not need to be ratified by the O-RAN board, the EC has authority here. The specific mechanism for EC to grant an exemption to OSC has not been agreed. This needs further discussion.
  16. John-Paul: There are two separate but related items under discussion: 1) there is the need for a general process for granting access to O-RAN alliance specifications; 2) there is a recognition that OSC needs an exemption to the 60 day IPR window. Is this a correct understanding?
  17. Jinri: The two items are related. Our initial concern is that we thought we might have to get O-RAN board to approve permission to reproduce Alliance specifications. This is no longer the working assumption. The EC has authorisation to grant permissions.
  18. John-Paul: There are two aspects to the granting of permission from O-RAN: 1) granting of copyright from O-RAN alliance to the OSC; 2) granting of permission to include any patents which may be contained in the O-RAN specifications. A lot of OSC contributions are made under Apache 2.0 license which has a copyright grant but also grants the user a right over patents contained within the contribution. Will O-RAN Alliance provide written permission for OSC to encode any patents which may be contained in the Alliance specifications? Is there a risk that by using Apache 2.0 license we, in OSC, could be contributing other companies' patents?
  19. Jack: All work around the O-RAN specifications is subject to copyright. Copyright does not convey rights over patents. If we include parts of the O-RAN specifications in OSC documentation then CC4 license is applicable (not Apache 2.0). Then, moving to the code contribution, Apache 2.0 references to the person which makes the contribution. This gets a little fuzzy when we talk about OSC projects and determining who made a code contribution. The intent here is to discourage contributors from packing open source code with specific patents, thereby making the open source software unusable. The companies contributing under Apache 2.0 are the only ones which have to understand their rights relative to that contribution.
  20. Jack: At the next meeting, we should either have clarification or alternatively, we may look to form a broad sub-committee to conclude the discussion.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
1. Jinri: The new O-RAN board meeting took place this week. There are 4 new board members + the 11 original members.
  2. Jinri: O-RAN published a blogpost about the O-RAN plugfest 2.
  3. Trishan: Can LF re-publish the O-RAN blog post about the Plugfest?
  4. Jack: You just need permission from the TSC to re-publish.
  5. **Action point** Jinri to raise at upcoming TSC call and will revert.
  6. Tracy: We've been referencing links to O-RAN web sites in our OSC wikis. Is this an issue?
  7. Jack: As long as these are links back to the original sites then there should not be any issue.
  8. Tracy: Next demo is taking place on Thursday December 3rd. Live demo across many of the OTIC sites. Planned to include LF members, in addition to O-RAN members.
  9. Jack: The biggest event which affects OSC is the November train of Alliance specifications. Will be used as a basis for the OSC Dawn release.

10. Jack: Are there any IM / DM which are unique to O-RAN or are they all pointing to 3GPP models?
11. Tracy: There is a mix of O-RAN, 3GPP and IANA models.
12. Jack: Are the 3GPP models published outside of the copyright discussion?
13. Tracy: Need to think about that.
14. Jack: Let's see how O-RAN wishes to manage its models.
8. Status of Open Action Items (Old Business).
  - a. O-CU development and O-CU for Cherry traffic steering use-cases.
    - i. **Action Point** is needed to raise the question to the EC for a way forward for OSC O-CU.
    - ii. Jack: I got email with candidate name for O-CU PTL.
    - iii. Jinri: SU Gu is experienced and also working in WG8 which is a big benefit for O-CU project.
    - iv. Jack: Can you please self-nominate for O-CU PTL role? Send email to the reflector. Then, we will go ahead and review candidacy, take a vote, etc. **Action point** SU Gu to send self-nomination email to OSC reflector.
  - b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
    - i. Jack: PTLs, please keep summary page for Cherry release current and up-to-date.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle](#) /Release Planning: Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [Zhe Huang](#) (Felix) Integration and Test
    - i. Felix: Finished testing YANG models for SMO. Working on O-DU integration testing. Licensing issue with Intel ICC C++ compilers. Need to work together with LF to create a process so companies can sign the license.
    - ii. Jack: Could we isolate the ICC compiler from the rest of the lab so only those wishing to use the compiler have to sign a licensing agreement? I want to avoid a situation where everyone needs to sign an agreement even where ICC compiler access isn't required.
    - iii. Zhimin: This relates to ICC compiler, not to the Intel contribution. So, it sounds a reasonable solution. However, we would need help to implement isolation of ICC.
    - iv. Felix: We can help with this. This could solve our problem.
    - v. Jack: Let's work to put those procedures in place.
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - 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 (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. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
    - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

## 2020 10 21

Recording: [2020-10-21\\_toc.mp4](#)

### Agenda

1. Call for Scribe (minutes owner): John-Paul Lane
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		Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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

1. **Decision:** Move by John-Paul, second by Jinri. No objections. Minutes 20201014 approved.

4. Review of Today's Agenda

5. Release Votes and Approval.

6. Copyright update.

1. **Action Point Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to.

1. Supposed to have meeting last Friday between OSC, LF and O-RAN Alliance but due to scheduling conflicts this meeting has been moved to this Friday.

2. John K: It is important to prioritise this meeting and focus on questions between OSC and O-RAN Alliance.

3. Jack: Understood.

4. Jinri: SDFG held recent discussion on copyright for 3GPP. Securing copyright permission alone does not appear to be sufficient to re-use ASN.1 and YANG models in OSC. This has been raised to TSC.

5. Jack: There are 2 separate threads on copyright: 1) O-RAN Alliance OSC - process for OSC use of O-RAN specifications and; 2) External SDOs O-RAN - process for O-RAN (Alliance and Software Community) use of SDO material.

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

1. Jinri: O-RAN Virtual Face to Face meeting discussed security concerns in OSC. CII badging principles, similar to those used in other open source projects, were presented and discussed.

2. Jinri: MVP discussion took place last Friday. At this stage, it looks like there is no concrete conclusion on how the MVP processes should work. However, each O-RAN Alliance WG has an action point to investigate how MVP could work for Network Slicing and Traffic Steering use cases. Further discussion needed.

3. Jinri: TSC meeting will take place tomorrow (Thursday).

4. John K: Can you comment briefly on likely impacts to OSC from the MVP discussions?

5. Jack: There are so many topics to cover. One of the main aims of the MVP process is trying to zero in on the use cases and features which can demonstrate the most value from O-RAN to operators and other stakeholders. One of the ways to make O-RAN relevant is to see operators adopting O-RAN concepts into their product plans. MVP is an attempt to look at operator needs and identify which parts of O-RAN we should prioritise for immediate elaboration. Operator survey is being parsed to understand requirements on MVP and how to communicate this to the broader community.

6. John K: How would these requirements be addressed by OSC?

7. Jack: RSAC would look at the MVP priority list, analyse what the topic means in terms of requirements and then proceed from that point. There are challenges here for OSC. Some of these MVP topics will likely need some analysis in order to generate OSC requirements.

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

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

- i. Jinri: O-CU contribution team cannot commit to making contributions on an ongoing and consistent basis. Need to call for new contributors to this project.

- ii. Jack: O-CU project needs to be re-planned and contributors need to be assigned. How to move forward with testing plans and simulation plans with O-CU. Impacts are felt outside of O-CU project. **Action Point** is needed to raise this to EC.

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

- i. Jack: The Cherry release deliverables have been reviewed over last TOC meetings. These deliverables have also been presented at the O-RAN Virtual F2F meeting.

- ii. Jack: Something we need to consider from the O-RAN Virtual F2F meetings. Which aspects of the O-RAN Virtual F2F meetings do we need to include in our Dawn release plans e.g. POR, Security.... OSC Dawn is a critical release. Need to focus on what we are really going to accomplish in the Dawn release to show value from OSC. This will be a theme of the coming weeks' Dawn requirements discussions with PTLs. Dawn should demonstrate O-RAN capabilities by ensuring that contributions can be used by other projects / companies. Also, Dawn release should demonstrate value from the O-RAN mission.

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

a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling

i. [CherryTimeline](#)

- ii. Jack: It's getting close to the end of Cherry release. We are currently finishing up development cycle sprint 4. PTLs need to consider updating wiki etc. Also, PTLs should start to raise which items will make the release and which items won't. How do we push important items over the line to be included in the release?

- iii. Rittwik: In Cherry, O-DU (High and Low) should deliver most of its commitments. For example, almost all parts of the Traffic steering use case are working. A video has been created for the MWCA virtual exhibition. SMO use cases are also looking good to be included in Cherry. O-DU (Low) and O-RU integration is looking like it may be a stretch goal. Being set up in the lab now. UE attach is the focus of the activity at the moment.

- iv. Jack: O-RU and O-DU integration sounds like it is mostly test configuration. There is a test and integration window at the end of each release which can be used to finalise scenarios such as O-DU and O-RU integration.

- v. Jinri: For O-DU (Low) and O-RU what is the expected output?

- vi. Rittwik: Successful acceptance tests. FAPI interface should be working correctly - messages between the O-DU and O-RU being sent and received successfully.

- vii. Jack: Felix's integration and test responsibility is to ensure people can re-create the systems. The INT project is not responsible for testing the functionality of individual components. Something we should start to consider is the relationship between OSC and TIFG in the Alliance. For example, how does TIFG take this hand-off and do something with it? How do we encourage TIFG to become more engaged with a broader test plan, not just a software and integration test program? Need a discussion with TIFG to understand their plans moving forward. **Action point** Rittwik to set up meeting with TIFG to align deliverables and make more use of use cases.

b. [user-59b16](#) Requirements Software Architecture Committee

- i. Jack: Where do we stand on our plans for requirements in Dawn release?

- ii. Rittwik: PTLs have provided inputs.

- iii. Jack: What are the 3 major focus areas that Dawn release will advance?

- iv. Rittwik: 1) Getting more sophistication into SMO. 2) Use ML to create more sophisticated traffic steering. 3) Near RT RIC platform to address dimensioning and scalability.

- v. Rittwik: In addition to the 3 areas mentioned we should also consider

- O-DU low and high are at a point where they are interacting with each other - the capabilities are minimum viable. Should we enhance these capabilities? Request guidance from TOC.
  - Non-RT RIC focus on A1-EI.
- vi. Jack: Any security related items?
  - vii. Rittwik: Amy wants to sit down with each PTL and address CII badging requirements for each project.
  - viii. Jack: I think we should view security as a 4th major theme / focus area for the Dawn release. Security assessment and compliance with security task group to bring existing software "up to code" with security rules. Badging has a lot to do with documentation and procedures.
  - ix. John K: A lot of OSC components and functions are not production grade. However, some of the security task group requirements are looking for production grade support. This has the potential to reduce capacity to deliver 'functional' requirements from the OSC.
  - x. Jack: Agree with some of what you say. The focus of the security engagement is to: 1) Document what they ask for and 2) Assess what is meaningful to OSC. More discussion is needed in the community on these two points.
  - xi. Jack: Regarding SMO project, this is a complex topic. The first objective of SMO should be to deploy and manage all other OSC components. Support an OSC deployment and LCM of O-RAN components. Need to refer to the SMO and its progress in terms of how far along the LCM use case support we are. Can then be used by OTIC and test teams - this demonstrates value of OSC. RSAC might want to take this into account when discussing SMO requirements for Dawn.
  - xii. Jack: Anyone else have other comments about what should be high priority for the Dawn release?
  - xiii. Matti: The new E2-AP spec is released in November. How do we prioritise inclusion of this in Near RT RIC for Dawn?
  - xiv. Jack: First step is to understand the development effort required to implement all aspects of the new spec. How much work is it to get to full compliance for existing traffic steering use cases in time for the Dawn release? For example, simulator stubs may need to be updated. Needs some more investigation into the impact.
  - xv. Matti: Not likely to impact the xApps but E2-AP would likely impact integration between E2 nodes and Near RT RIC platform, some capabilities for load balancing of the connections to the different E2 termination points. Most impacts are likely to be seen on the E2 simulator and Near RT RIC platform.
  - xvi. Jack: We are use case driven. How would this affect the use cases themselves? Up to now, the use cases didn't include some of the new functionality. Do we need to change use cases or add new ones?
  - xvii. Rittwik: I think most of the existing use cases would continue to function.
  - xviii. Jack: What is the motivation to implement messages from the new E2-AP specification in Dawn? Is it to be able to state compliance to the E2-AP spec? Or is there some other driving factor to steer which parts of the spec are implemented? More discussion needed here.
  - xix. Tracy: Wanted people to give some thought to the results of the operator survey recently undertaken in the O-RAN Alliance. Also, wanted to ensure people were aware we recently completed the O-RAN Plugfest 2. A follow-on event is being planned for Q1 2021 with OSC Dawn release. This might also include a sneak preview of OSC E release. This group should consider the message that OSC wants to promote / convey.
  - xx. Jack: Good points. This aligns well with my comments that we should follow the functionality that people want to see and want to use. Let's continue that conversation.
  - xxi. Tracy: We are doing a cross-regional OTIC / MVP live demo, Thurs Dec 3rd. The reason for this is because OSC Dawn release PoC is being pushed out to Q1 2021. However, we want to give the team working on these cross-regional OTICs an opportunity to share their accomplishments. It will be a live demo - an interactive session - with Q&A.
  - xxii. Jack: Any interest in the OTIC to reproduce the test bed that has been used to evaluate the software?
  - xxiii. Tracy: Yes. Eventually, we want to be in a position to have the official integration tested OSC release x code base and use this to certify xNF via an automated test suite. This is the ambition - the Holy Grail.
  - xxiv. Jack: Anything which is required to support this wanted position should be brought to RSAC.
  - xxv. Tracy: Absolutely.
  - xxvi. Jack: How would we best build better ties with the integration and test function group?
  - xxvii. Tracy: There was discussion about having an O-RAN Alliance TIFG representative join OSC INT project and vice versa.
  - xxviii. Jack: Has this been discussed in the test group? Any feedback from these conversations?
  - xxix. Tracy: Yes, it has been discussed. Feeling is that the time is right to bring the 2 groups together. Should try to use the Dec 3rd event to promote this O-RAN - OSC collaboration.
  - xxx. Jack: Outside of AT&T is there other operator engagement here?
  - xxxi. Tracy: Within each region there are interested operators e.g. Orange, DT and Verizon. Discussions are ongoing with other operators too.
  - xxxii. Jack: TOC members (operators) - please reach out to your colleagues working on testing in the O-RAN Alliance. Would be good if someone could act as liaison to some of these OTIC environments.
- c. [Zhe Huang](#) (Felix) Integration and Test
- i. **Action Point Felix** Update the INT project wiki with PTL name and include update on plans for Cherry / Dawn.
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - 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. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
    - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  11. Planning for Next Meeting
  12. Any Other Business (AOB)
  13. Meeting Summary (resolutions, new action items, etc.)

## Agenda

1. Call for Scribe (minutes owner): John-Paul Lane
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="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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

1. **Decision:** Move by John-Paul, second by David. No objections. 20201007 minutes approved.

### 4. Review of Today's Agenda

### 5. Release Votes and Approval.

### 6. Copyright update.

1. **Action Point Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to.

1. Last week there was a meeting between O-RAN Alliance and LF to review copyright options moving forward. Focus of the meeting is on how to get a good solution to the copyright issue taking examples and experiences from other LF communities. Follow-up meeting planned for this week.

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

1. Jack: Good meeting last Friday - almost 100 people on the call. RSAC led the discussion with PTL support on Cherry release content and plans for the Dawn release. O-RAN Minimum Viable Plan (MVP) was one of the main discussion points and should help inform OSC content and deliverables going forward. Some concerns raised around O-CU progress. Overall, the feeling is that OSC is making progress. Link to RSAC presentation included [here](#).
2. Jinri: O-RAN virtual F2F meeting is ongoing and there are a number of OSC related discussions planned for the coming days.
3. Jack to present statement from ONF.
4. Jack: O-RAN Alliance is always in discussions with other organisations about potential collaboration to build relationships. ONF is one such organisation. ONF made an announcement about SD-RAN over the summer. O-RAN Alliance sought some clarifications about parts of the ONF statement. ONF published an [update](#) this week to affirm their intention to collaborate and align with O-RAN Alliance on various topics. The O-RAN community promotes collaboration and will work with ONF to advance the goals of the greater community. ONF collaboration will start to become visible in the OSC plans over the coming weeks / months. John Keeney asked if there were any OSC plans for working with ONF open source. Jack: A bit too early at this point. Things will become clearer over the coming weeks / months.

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

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
  - i. Jinri has provided updates to Rittwik. Next step is to determine which parts could be delivered in Cherry and which parts will target Dawn. This will be discussed at the O-RAN Virtual F2F.
  - ii. A replacement PTL is needed for this project - it is not viable to proceed without a functioning O-CU project.
  - iii. Jack: Longer term working item that O-CU is one of the OSC's main challenges now.
  - iv. Jinri: Need to wait 1 more week to determine whether current O-CU team can continue to contribute.

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

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

- a. Release Manager [Trishan de Lanerolle](#) /Release Planning: Weekly TOC Scheduling

- i. [CherryTimeline](#)

- b. [user-59b16](#) Requirements Software Architecture Committee

- i. John-Paul: There is a LF Networking Virtual Technical Meeting taking place this week and one of the topics being discussed tomorrow (Thursday) at 09:00 EST / 15:00 CET is ONAP - O-RAN collaboration. Link to the LFN event and schedule is [here](#)
- ii. Rittwik: RSAC wants to accelerate development in OSC and has some concerns about some things which may work against this goal. OSC / O-RAN doesn't have control over other open source bodies. It is important that "O-RAN inherent" code resides in OSC and only downstreamed where appropriate. OSC purpose is two-fold: 1) To align with O-RAN specifications when published; 2) OSC also serves a pre-specification function - provide input to the Alliance. The two way flow between OSC and O-RAN Alliance is important for the success of O-RAN.
- iii. Rittwik: Also, the current status of the OSC O-CU project is a concern. The Amber release is monolithic and not being used very much. O-CU is lagging behind from a contribution perspective. Progress meetings would be helpful. RSAC recommendation is to work with OAI to source a more feature rich O-CU for OSC use. Need a longer term plan for O-CU.
- iv. Dave Kinsey: Referring to the cross-project topic. I am concerned about pushing functions which are O-RAN inherent into other open source projects and maintaining them there. If functionality is O-RAN specified it should be implemented in OSC, not in



other open source projects e.g. ONAP. Take A1 Policy Management in Non-RT RIC as an example. The A1 controller should be seen as platform functionality and therefore can reside in ONAP. However, the A1 Policy Management service is a function which is specific to O-RAN and should therefore be located in OSC. We need cleaner boundary / lines between OSC and other open source initiatives.

- v. John Keeney: Implementing the A1 controller and policy management features in ONAP was a response to RSAC requirements at the time.
- vi. Dave K: OSC A1 adapter is ok in ONAP (physical termination ok in SMO). A1 Policy Management is not in the same category. SMO doesn't need A1 Policy Management. Need a strategy on how to de-couple these things.
- vii. John K: One of the main reasons the A1 controller and policy manager was to ONAP was in response to other companies developing similar functionality in ONAP, thereby splitting / fragmenting the development. Moving A1 functions to ONAP was an effort to prevent fragmentation.
- viii. Dave: Understood. Need a process / procedure to agree on how to draw lines between OSC and other groups.
- ix. Tracy: When you said we used the ONAP based A1 controller for expediency, is there a different A1 controller implementation which we could / should use?
- x. Dave: No, the ONAP A1 controller is the chosen one.
- xi. Tracy: A1 Controller was not implemented in ONAP for expediency. This was implemented in ONAP because it was the right place to locate the A1 controller function.
- xii. Dave / Rittwik: Agree.
- xiii. Rittwik: The concern is where source code which is inherent to O-RAN is implemented and needs to be maintained in ONAP.
- xiv. Jack: There is a delicate balance between not replicating code unnecessarily and creating complicated relationships / dependencies between open source projects delivering on different cycles.
- xv. Rittwik: There are other 5G stack initiatives such as OAI and ONF and we need to have a clearer view on how to collaborate between OSC and these groups too.
- xvi. Jack: Agree that collaboration is important. Need more discussion on this. Licensing is an issue as there are different licensing models in place across, for example, OAI and OSC. ONF is still in the early phases of discussions within O-RAN. More work required on how collaboration might look. O-RAN EC was clear that all upstream projects are good places not to duplicate work, however there is no single commitment to take ONAP implementation for OSC SMO. EC wants a partnership with other open source projects but does not want to yield the work to non-O-RAN groups. Looking to something which works for entire O-RAN community, not just OSC.
- xvii. **Action Point Rittwik** set up a meeting to review and discuss collaboration models and principles between OSC and other open source initiatives e.g. OAI, ONAP etc.
- c. **Zhe Huang** (Felix) Integration and Test
  - i. **Action Point Felix** Update the INT project wiki with PTL name and include update on plans for Cherry / Dawn.
- d. Report out from PTL: Stand-Up & Report Out on Blockers
  - i. **John Keeney** Non-RealTime RIC (RAN Intelligent Controller) (NONRT RIC)
  - 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. Finished the O-DU LOW FAPI development and verified with 3rd party stack. Integration with O-DU High ongoing and progress is being made.
    - 2. Jack: How is integration with Viavi O-RU Emulator progressing?
    - 3. Zhimin: We will start integration in Cherry timeframe but will likely need to complete the task in the Dawn release. Need to discuss CI for O-DU Low with Integration team.
  - vii. **Martin Skorupski** Operations and Maintenance (OAM)
  - viii. **Alex Stancu** Simulations (SIM)
    - 1. Implemented more message types in collaboration with Samsung. HCL is working on assessing benchmarking. OTF integration of E2 likely to move to OSC Dawn release. Working on upgrading Netconf server framework for O1. Looking good to be delivered in OSC Cherry. Aligning with latest models from O-RAN Alliance is an ongoing activity.
    - 2. Jack: We are doing a lot of work on the emulators and stubs for the emulators. Is any of the code being contributed to OSC?
    - 3. Alex: Some work in progress. Plan to create new repo in SIM project to host Viavi data - licensing discussions ongoing with Viavi - on target to be available in Cherry.
    - 4. Jack: Do you need resources to advance E2 issue?
    - 5. Alex: Samsung and HCL are working now so shouldn't be any issues.
    - 6. Jack: Just raise your hand if you need resource help.
  - ix. **Xiaohua Zhang** Infrastructure (INF)
    - 1. Presented at O-RAN F2F. Finished AIA with HA. Working on AIA with additional node. Integration ongoing.
    - 2. Jack: Are there any discussions to support non-Intel framework?
    - 3. Xiaohua Zhang: Yes, that will happen in the Dawn release.
    - 4. Jack: O-DU Low is not suited for this configuration. Do we need another O-DU Low implementation or another software project to progress? Need to discuss at RSAC.
  - x. **weichen ni** Documentation (DOC)
    - 1. Jack: It would be good to get an update on this project.
    - 2. Jinri: Will raise with Weichen.
  - xi. **Mahesh Jethanandani** Service Management and Orchestration (SMO)
    - 1. Cross-project planning is ongoing.
  - xii. (TBD) O-RAN Radio Unit (ORU)
- 10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- 11. Planning for Next Meeting
- 12. Any Other Business (AOB)
- 13. Meeting Summary (resolutions, new action items, etc.)



# 2020 10 07

Recording: [2020-10-07\\_toc.mp4](#)

## Agenda

1. Call for Scribe (minutes owner): John-Paul Lane
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	
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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

1. Decision. Move by John-Paul. Juha seconded. No objection. 20200930 minutes approved.

4. Review of Today's Agenda

1. Jack: O-RAN Virtual F2F starting on Thursday 8th October.
2. Juha: Is there any update on the OAI Meeting which can be shared? Jack: Meeting took place, good discussion, no action items yet. Issue has always been how to synchronise two different software projects. OAI uses FRAND licence which is a challenge for OSC. The meeting addressed three discussion points: 1) Alignment between OAI and OSC objectives. 2) How do we incorporate and use copyrights. 3) How can OSC and OAI collaborate on software and testing. Current thinking is to use a similar approach as Intel in the O-DU project. Needs to be resourced by people interested in bringing OAI closer to OSC. Discussions ongoing.

5. Release Votes and Approval.

6. Copyright update.

1. **AP Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC with O-RAN legal to clarify what spec. version it relates to.

1. Jack has a meeting this week with O-RAN legal team and LF legal team. Hoping to make progress on copyright issues at this meeting.

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

1. **AP PTLs:** One-pager about strategy/challenges and what could be leveraged from O-RAN Alliance for Dawn. Please send to RSAC, preparation for O-RAN F2F.
2. O-RAN Virtual F2F Agenda is published on the O-RAN Alliance Wiki. From an OSC perspective, at least the following sessions will be of interest:
  1. Friday 9th October, OSC will kick off Dawn release discussion. RSAC will lead the discussion. Rittwik has received input from some PTLs. Rittwik and David have drafted some of the Dawn epics but would like more visibility on the spillover items from Cherry into Dawn and their prioritisation relative to Dawn activities. Rittwik to follow-up with Viavi about a possible new xApp / rApp use case.
  2. Wednesday 14th October, Cross-OSC discussion on security requirements. Working to improve security principles and review current tooling. Emphasis on interface transport security.
  3. Friday 16th October, Discussion on functional architecture or SMO. Important to establish SMO project to enable and demonstrate functionality from all OSC projects.

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

- a. O-CU development and O-CU for Cherry traffic steering use-cases.
  - i. Jinri has provided updates to Rittwik. Next step is to determine which parts could be delivered in Cherry and which parts will target Dawn. This will be discussed at the O-RAN Virtual F2F.
  - ii. A replacement PTL is needed for this project - it is not viable to proceed without a functioning O-CU project.
- b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.

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

- a. Release Manager [Trishan de Lanerolle](#) /Release Planning: Weekly TOC Scheduling

- i. [CherryTimeline](#)

- b. [user-59b16](#) Requirements Software Architecture Committee

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

- i. Integration meeting scheduled after this TOC meeting. Agenda includes Dawn planning and licence scan plans.

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

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

1. Working on prototyping AI-Enrichment Information coordination services. Implementing Hello World registration / catalog function. Supporting evolution of A1-Policy specification from WG2. Documentation and integration testing ongoing. No blockers.
2. Jack: Capture the ONAP Guilin activities and explain the dependencies in the Non-RT RIC One Pager for OSC Cherry.
- ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
  1. Helping on E2 Simulator and xApp framework. Needed for KPIMON from Samsung. Still working on delivering this for the maintenance release. Would like to get ready in time for MWC North America.
  2. Development proceeding on xApps - SSD, Load Prediction and Anomaly Detection. These xApps beef up support for the Traffic Steering use case.
  3. Jack: What should we really be trying to accomplish for xApps in Dawn? Matti: KPIMON working with E2 Simulator and Viavi RAN simulator is a big step forward. Push the use case beyond the Near RT Platform and start to integrate with other O-RAN components.
- iii. [Thoralf Czichy](#) RIC Platform (RIC)
  1. Contributions from HCL and Samsung are ongoing. Working on Sonarqube for repos. They are also helping on the Simulator. Upgrade to latest Helm version, Nokia will work on K8s upgrade. Some items moved from Cherry. Matti and Thoralf gave Near RT RIC presentation at ONES. Clarifying and resolving copyright/licensing issues between O-RAN and OSC is very important for making progress in Near RT RIC project.
  2. Jack: What is the major advancement for Near RT RIC in Cherry? Thoralf: Finalising the E2-AP support in Cherry. Support for getting statistics on A1 and E2 messages.
- iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
- v. [Sachin Srivastava](#) O-RAN Distributed Unit High (ODUHIGH)
  1. Working on UE attach. Testing needed. Integrating with O-DU (Low). O1 interface support getAlarmList for the HealthCheck use case. Facing some issues pushing code to Gerrit. Hoping to resolve issues soon.
  2. Jack: O-DU is important component - it demonstrates a lot of the interfaces across O-RAN NFs. How do we get a measure of overall progress on O-DU (High)? How is project tracking performed on each of the main functional areas so we can see overall progress? Ganesh: There are dependencies from O-DU (High) to other O-RAN NFs and specifications. Need a baseline across all NFs based use cases. RSAC should be the place to drive this common functionality / use case driven approach. Jack: We have spent first 3 releases putting building blocks in place. Now, we need to look to the next 3 OSC releases to understand how we can demonstrate the value from an open source and integrated O-RAN environment. Rittwik: We have consensus agreement between some O-RAN projects for an O-RAN MVP but we need to push forward more with this. Next immediate goal is to focus on getting attachment of a UE.
- vi. [Zhimin Yuan](#) O-RAN Distributed Unit Low (ODULOW)
- vii. [Martin Skorupski](#) Operations and Maintenance (OAM)
  1. Adopted all existing specifications. In discussions with SMO on App LCM use cases. Handover from OAM to SMO is in early discussion, no handover as yet. O-RAN Alliance WG1 has draft versions of O1 YANG interfaces based on 3GPP. These are almost ready to be tested towards the SIM project.
  2. Jack: What do you see as the next big step for Dawn? Martin: Complete deployment of vNFs, CNFs and PNFs too. Jack: How is the OAM interface towards Near RT RIC? Martin: Needs some more discussion to align the OAM protocols. Jack: Should be a focus to bring the Non-RT RIC, Near RT RIC and SMO closer together from an OAM perspective. Please bring this to the relevant O-RAN Virtual F2F discussions.
- viii. [Alex Stancu](#) Simulations (SIM)
- ix. [Xiaohua Zhang](#) Infrastructure (INF)
- x. [weichen ni](#) Documentation (DOC)
- xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
- xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
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12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc).

2020 09 30

Recording: [2020-09-30\\_toc.mp4](#)

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2. Roll Call & Quorum Check

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Radisys	Ganesh Shenbagaraman		Sachin Srivastava	
Verizon	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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. **Decision: Moved by David, seconded by Juha, no objection, 20200923 minutes approved.**

### 4. Review of Today's Agenda

### 5. Release Votes and Approval.

1. Matti requests approval for new XApp repos via e-mail
  - signal storm protection use-case (ORAN Licence)
  - load prediction to extend traffic steering (Apache License)

### 6. Copyright update.

1. Jack: Discussed with EC, 2 aspects
  1. 3GPP - more complex as they are outside entity
  2. For O-RAN documents - in process to schedule meeting with O-RAN Legal and LF Legal. Voted to approve ASN.1 and tables and messages from O-RAN spec by board. Board also allows EC to deal with individual requests.
2. Jinri: Volunteers from Qualcomm and TIM are now working with SDFG on 3GPP related topic. Gu Su also helping with it and in contact with Stefan.
3. Thoralf: We need ANS.1. Are you confident we will end up with workable solution with ASN.1 code in LF CI?
 

Jack: I believe ANS.1 approval was given by board.

Jinri: Yes, but there is 60 day IPR review going on in O-RAN.

Thoralf: Is it OK to use ASN.1 from older specification?

Jack: I believe that is what the approval is for.

Thoralf: Can we push it so we have the approval in format that we can proceed with ASN.1 use in OSC?

Jack: I will arrange it with Stefan. **AP Jack/Jinri:** Check approval to use O-RAN ASN.1 by OSC to clarify what spec version it relates to.

Jinri: Lets be careful, this review process will involve also the older specification.

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

1. ~~**AP Rittwik:** Setup separate meeting about OSC RSAC and relationships between components ... invite the TOC members.~~ **DONE**
  1. Rittwik: I am creating one short slide deck for TOC to review it. Will send it to TOC.
2. Schedule for F2F meeting:
  1. Jinri: Agenda is available on O-RAN wiki for members. We have session from kick-off discussion for Dawn release on October 9th 8-10AM EST but we need to align it with RSAC.
  2. Rittwik: We can do it but maybe no for full 2 hours.
 

David Kinsey: We would like one-pager strategy/challenges/status and what they could leverage from PTLs. **AP PTLs:** One slide about strategy/challenges and what they could leverage from O-RAN Alliance for Dawn.

Jinri: I propose to have two parts for the session as last time. First review of Cherry and then plan for Dawn.
  3. Jinri: There was first O-RAN review of proposed demos for MWC. There are 24 demos from OSC.
  4. Jack: Paul Smith is working on survey to select and organize priority items in TIFG. We should take the results into account when planning our activities.
 

Jinri: This is related to minimal viable product. On the F2F there will be at least 1 dedicated session on this topic.

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

- a. O-CU development and O-CU for Cherry traffic steering use-cases
  - i. Jinri: We did not get positive result from the negotiation with the supplier company yet. It is still ongoing. Gu Su is organizing meeting with PTLs to get requirements from other project for O-CU to know what needs to be implemented.
  - ii. Jack: We need to raise this to EC as risk.
  - iii. Jinri: I plan to have it as item on EC meeting this Friday.
- b. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.

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

- a. Release Manager [Trishan de Lanerolle](#) /[Release Planning](#): Weekly TOC Scheduling

- i. [CherryTimeline](#)

- b. [user-59b16](#) Requirements Software Architecture Committee

- i. Rittwik: Radisys may be able to provide close-source CU for testing of Traffic steering use-case.
 

DU low and DU hi in lab are starting to interact. Viavi is working on delivery of RU emulator and EPC, shipped today.

Jack: Does it include Matti's XApp activity or is it separate activity?

Rittwik: This is about DU high and low interaction and getting DU attached. The other traffic steering work has 2 stages. First stage is for MWC LA to upstream measurements into XApp, second stage will allow control action to the O-CU for MWC Barcelona. It exercises the XApps but it is separate from the O-CU and O-DU pairwise testing now.
- ii. Jack: S out of the E2E Use-cases for Cherry what is covered?
- iii. Rittwik: DU is incorporating health-check and traffic steering. And also call flow num. 2. and 3 work is starting in SMO.

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

- i. ~~**AP Felix:** Make ticket with LF, Trishan with help speed up the solution for image retention in CI/CD pipeline.~~ **DONE**
- ii. Felix: Reviewing automation jobs for Licence scanning. Plan to have meeting with LF Release team to understand available options.
- iii. Felix: There was proposal for policy to allow some 3rd party licences on July 15th but was not voted on. I would like to ask about current status.
- iv. Jack: I don't think we have enough info to have a vote. We need to figure out update and share it with everyone to explain as there was number of question. It could have impact on IPR policy so we need to write it up and check with O-RAN legal team.
- v. Felix: Maybe I can follow it and have call with all the PTLs. It has direct impact on the selection of license scanning tools. And also we would like to address outstanding issues in some of the repos.

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

- i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
- ii. [Matti Hiltunen](#) RIC Applications (RICAPP)

1. Matti: New proposed XApp will not be part of cherry officially but work will start in it. Anomaly Detection progresses well, On KPIMON good progress was done on integration with RIC platform. There are small differences between E2 Simulator output and what KPIMON expects, it will be addressed by Samsung. We are getting data from Viavi simulator. We should be getting throughput and UE Id this week to start training.
2. Rittwik: This simulator need to move to SIM project. It now sits in Azure. Viavi is looking into possibility of open-sourcing it.
3. Matti: Can we put the simulator data in LF infrastructure?
4. Jack: It is question of licence. We should check with Trishan
5. Jinri: Open data sets can be published under CDLA. It is stated in our charter. The data-set can be placed on gerit but for more options you should check with LF.
6. Jack: It is slightly different as it is artificial data from simulator and not data from real network so we need to evaluate it carefully.
- 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)
1. Martin: Looking into XApp deployment.
- viii. [Alex Stancu](#) Simulations (SIM)
- ix. [Xiaohua Zhang](#) Infrastructure (INF)
- x. [weichen ni](#) Documentation (DOC)
- xi. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
- xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  - a. Jack: Call with OAI later today, topic will be cooperation with OAI and how both orgs. could cooperate.
  - b. John: Progress status with legal on copyright. *Discussed in agenda item 6*
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc).

2020 09 23

Recording: [2020-09-23\\_toc\\_audio.m4a](#)

#### Agenda

1. Call for Scribe (minutes owner): David Streibl
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	
<a href="#">Deutsche Telekom</a>	David Streibl	x	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	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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. **Decision: Moved by David, seconded by John-Paul, no objection, 20200916 minutes approved.**
4. Review of Today's Agenda
5. Release Votes and Approval.
  1. **Decision: Mahesh made motion to approve new SMO repositories (details in mailing list), Ganesh seconded, motion passed.**
6. Copyright update.
  1. AP: William to contact Orange OAI representative and schedule a meeting between OSC and OAI. (DONE)
    1. Jack: There is plan to have a call next week with broader topic.
    2. John-Paul: Is it reboot of conversation that happened earlier.
    3. Jack: It covers 3 topics:
      1. General relationship between OAI and ORAN
      2. Copyright material question
      3. How we could work together ... we can't easily use their code because of the license but it could be used in similar way as code from Intel but it would require joint project to align.
  2. Jack: copyright was discussed on EC and by email

1. Getting alignment with 3GPP and ETCI for copyright permission
2. Copyright issues in O-RAN. Jack is working on clarification from O-RAN legal
3. OSC is getting questions from external projects. OAI, ONF and ONAP are asking about specifications and access to them.
3. Jack: Copyright permitting for OSC from specifications is in place. Anyone that uses OSC code downstream inherits this permission. One option solve it (7.2.3) is to document any information required from spec as part of OSC documentation so it can be used by external projects and work with OSC. For e.g. ASN.1 messages, error messages, API docs. We are trying to figure out good process for this.
4. Thoralf: Is there now agreement between O-RAN Alliance and OSC on the possibility that OSC contributed has some kind of licence for the specification?
5. Jack: For any copyright material the the spec. OSC uses and is released as part of our docs and code under Apache 2 and Doc. licence is granted downstream copyright privileges for that information. I confirmed that with Stefan from the legal team.
6. Thoralf: Do we have it written down anywhere?
7. Jack: I am process of getting that clarified and confirmed. It should simplify the process for other organizations line ONAP and others.
8. Mahesh: There is also question of changes and modifications. What to do If we find issue in copyright material and want to propose changes/fixes. E.g. from 3GPP?
9. Jack: With 3GPP it is more complicated. O-RAN is not member itself, it has to be thure O-RAN member companies that are part of 3GPP and would sponsor the proposal. Then we would coordinate with other O-RAN members that would support it in 3GPP.
10. Jack: ORAN has standards committee you can reach out to. Specifically Brian Daly as co-chair.
11. John: Is it correct that OSC can use any spec. produced by ORAN and use, refer to, reproduce or redistribute code produces by O-RAN Alliance?
12. Jack: For purposes of open-source software we do not have permission to reproduce whole spec., we can reproduce portions of spec that is related to implementation of open-source SW. Tables, APIs, messages that are documented, etc.
13. John: That would be bypassing the bypassing the ORAN licence in my opinion. Why would anyone contribute IPR material to ORAN if the spec can leak out via OSC under Apache Licence?
14. Jack: It only allows for ANS.1, API, error messages, etc. only needed for he SW. The specific textual representation is covered by copyright. Copyright does not grant any patent protection or rights. It allows you to reproduce the representation of the material. It has no implication on patents.
15. John: The Apache licence comes with patent grant. Does OSC have patent grant from ORAN?
16. Jack: This still falls under O-RAN Alliance common patent agreement. You still have to get the permission from O-RAN to use that material, that the whole point of the contributions trough O-RAN and O-RAN IPR protection. Apache patent clause only covers the contributor where contributor states that he/she is OK with others to use the code. It does not imply anything from anyone else. As am not legal expert we should get the legal experts together on this.
17. John: Does not that move the burden to OSC contributors?
18. Jack: As am not legal expert we should get someone from legal team to talk about this. From my understating writing the code or talking out the patent does not violate it. We should get experts on that together.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

1. **AP Rittwik:** Setup separate meeting about OSC RSAC and other OSS relationships ... invite the TOC members.
8. Status of Open Action Items (Old Business).

- a. AP: Ganesh ONF SD-RAN investigation summary (DONE)
  - i. Ganesh: Check with lead developer of SD-RAN RIC. He wanted to clarify that they don't want to compete with OSC and they want to build RIC platform using their microONOS controller. The synergy and OSC and ONF is that there are external interfaces like A1. They plan to explore collaboration with other RIC contributors. There is not yet formal call for it.
  - ii. John-Paul: If ONF is interested in creating separate community can it make another challenge and fragmenting our efforts? The concern is speeding the effort too thin.
  - iii. Jack: I agree with your concern. It is big task and if they do not bring their development here it is concerning. If one company makes XApp for one RIC and it will not work with the other, that would be a problem. Interoperability is really key. I have heard comments from different companies. ATT is involved with addressing this issue. ONF has body of SW they want to leverage to move forward. This is really issue of not just ONF, OAI, TIP, ONAP, Acumos. All these entities need to be
  - iv. Tracy: I agree. There is Rivalry between these organization in one for or the other but I don't see any obstacle for OSC to import anything from ONF.
  - v. Jack: The challenge always is that without the people having the in-depth expertise it is hard to reuse the code from external projects.
  - vi. We hope we can make sure we can interoperate and make more useful system.
- b. O-CU development and O-CU for Cherry traffic steering use-cases
  - i. Jack: We are in trouble with this project. Current O-CU project is being reorganized. We have initial contribution from company sponsored by CMCC. This is very important topic for OSC and I think we need to raise it also to EC.
  - ii. Rittwik: There are couple of alternatives. We need O-CU to work for traffic steering. Asked Ganesh if they could make close-source contribution. That is the first option.
    1. Ganesh: Had to do due diligence to make sure it will be compatible. We should give you update next week.
    2. Rittwik: Second one is option from Viavi that is NSA. It may be usefull but not immediately for traffic steering that needs SA. Third is OAI CU but it does not have E2.
    3. Rittwik: You can buy CU simulators but they do not have E2 also. From open-source CMCC approach was right way but it it got stalled. It is good idea to bring to EC.
    4. Rittwik: Traffic steering use-case will flow into Dawn so we will need O-CU going forward.
- c. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
  - b. [user-59b16](#) Requirements Software Architecture Committee
  - c. [Zhe Huang](#) (Felix) Integration and Test
  - d.
    - i. Initiated discussion with Mahesh to set up the CI/CD pipeline. Also working with O-DU team to address problem with CI jobs.
    - ii. Our current docker repos in CI pipeline will constantly remove images after a while ... this creates problem for the CI pipelines. Should discuss this with LF to find better solution.
      1. **AP Felix:** Make ticket with LF, Trishan with help speed up the solution.
  - e. Report out from PTL: Stand-Up & Report Out on Blockers

- 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. [Mahesh Jethanandani](#) Service Management and Orchestration (SMO)
  - xii. (TBD) O-RAN Radio Unit (ORU)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
- a. Security aspects brought by security team.
    - i. Jack: OSC would like to have new screening tool. It is 3rd party pay to use tool. LF has comparable tool the would be free but it is not same so I need to go back to security group. There is overall focus in O-RAN to address the security. The team is looking into our procedures and how to improve them from security perspective. More security items are to come. We need to make sure we are up to speed on security guideline as we produce more useful modules.
  - b. There is also badging in LF. I am looking for volunteer there if someone has interest or experience with it.
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc.)

2020 09 16

Recording: [2020-09-16\\_toc.mp4](#)

#### Agenda

1. Call for Scribe (minutes owner): David Streibl
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="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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. **Decision: Moved by David, seconded by Jinri, no objection, 20200909 minutes approved.**
4. Review of Today's Agenda
5. Release Votes and Approval.
6. Copyright update.
  - a. ~~AP Jinri: Will check with EC about the O-RAN contrib. withdrawls concerning copyright.~~ DONE  
Jinri checked with EC, they promised to expedite.
  - b. Jinri review copyright questions sent by John Keeney but the answer needs copyright expertise so Jinri asked in mailing list for volunteer from OSC that would help with this and also generally with copyright as longstanding issue for OSC. Gu Su would like to help with this topic and act as interface between OSC and other parties concerning copyright.
    - i. John Keeney: For clarification, questions I asked are related to OSC and O-RAN. ETSI and 3GPP discussions are separate.
    - ii. Jinri: I believe Gu Su will reach out to you offline.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  - 1. ONF SD-RAN relation to OSC:
    - 1. Jinri: Based on info from EC, ONF is preparing blog post to clarify some misunderstanding created by the original articles.
    - 2. Jinri: EC requested for OSC to create blog post about possible of collaboration with different OSS communities. I will reach out to Jack, Rittwik and others about the text.
      - 1. Rittwik: Do you mean down-streaming other communities for use in OSC or up-streaming?
      - 2. Jinri: It should be general statement stating our willingness to cooperate with other communities to avoid fragmentation of the ecosystem.
      - 3. Rittwik: One Item here is the collaboration with OAI. Is there progress? I saw article stating they are providing full 5G SW stack.



4. Jack: There is licencing complication. We can't use the lower layer code from OAI with the current licence as upstream project. Discussion about it was delayed over the summer but I am willing to discuss plan forward. Some of the higher level code is Apache 2.0 and could be used as upstream.
5. Rittwik: One of our challenges is the O-CU. Even their O-CU could be helpful but they do not have E2 interface. We could extend the O-CU by E2 and contribute it to OSC but that needs resolved licencing first.
6. William: I propose to schedule a meeting between OSC and OAI to reopen the discussion. **AP: William will contact Orange OAI representative and schedule a meeting between OSC and OAI.**
2. Trishan: O-RAN received positive press on FCC 5G Open RAN forum. I think it was represented in one of the panels.
  1. Jinri: I don't think it was O-RAN Alliance represented there but individual companies.
  2. Trishan: Does O-RAN plan an promotion on that front?
  3. Jack: O-RAN Alliance is very supportive of the Open RAN aspect but it is non-political entity and does not delve into political forums. This is up to individual companies if they want to do so. As the organization O-RAN tries to stay out of politics.
  4. Tracy: There were principal investigator from Uni. of Utah and Rutgers Uni. as participants from OTIC US East and West describing the demos and use-cases but to specifically referencing O-RAN. I don't think anybody spoke in the voice of the O-RAN Alliance.
  5. Jack: Basically the Universities were presenting the work they are doing.
3. Jinri: The was email call for demo on O-RAN Alliance plugfest virtual exhibition for canceled MWC America and MWC 2021. Interested O-RAN members should contact Paul Smith.
8. PTL to provide information regarding O-RAN-related open source communities.
9. Status of Open Action Items (Old Business).
  - a. O-CU PTL to organize a meeting and invite all the relevant projects (O-DU-HIGH, OAM, RIC etc.) and discuss the cooperation /requirements b/w O-CU and the other projects
  - b. O-CU PTL to prioritize the items shown on the presentation slide (<https://wiki.o-ran-sc.org/download/attachments/10715432/OSC%200-CU%20RelC%20ICT-8.12.pptx?api=v2>) to make sure some key features such as handoff could be supported for traffic steering use case.
  - c. The team to arrange an offline meeting to further discuss the challenges.
    - i. Rittwik: We are tracking 3 items in RSAC.
      1. Setting up the O-DU subsystem - going well, supported from Intel and Radisys, requires connection to Viavi emulator and O-CU
      2. We are not sure what is current status of OSC O-CU. As a interim replacement I proposed to use stripped down Radisys commercial SW as test fixture. We need it to attache UE and test O-DU-low and O-DU-high and hand-off between cells. There are 2 usecases: DU testing and traffic steering testing, both need O-CU.
      3. SMO item that Mahesh presented earlier.
    - ii. Jack: Yingying will not be cover O-CU PTL anymore. Is that correct?
    - iii. Jinri: Yes, we need to have a call for new PTL. I talked with ICT, they are doing internal evaluation but are not optimistic. Progress on current CU will be difficult.
      1. ~~AP Jinri: Will talk with ICT DONE~~
    - iv. Jack: So need to replan O-CU development as current implementation is partially done. It is difficult to continue on such low-level code if original developers move on. We need to raise it as open issue. We have to use alternative solution.
    - v. Rittwik: Viavi has internal R&D O-CU that could be potentially used.
    - vi. Ultan (Viavi): We are bringing it from internal lab, it is NSA currently.
    - vii. Rittwik: Could this be used in Cherry timeline
    - viii. Ultan: We will check, depend on our availability.
    - ix. Sphoori (Radisys): O-DU-high currently supports SA only.
  - d. Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) . Update once a month and review on first TOC call of a month.
10. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [CherryTimeline](#)
      1. Jack: We are in week 34, dev sprint 3. Is there any item that PTLs need to address?
  - b. [user-59b16](#) Requirements Software Architecture Committee
    - i. Rittwik: Work is progressing and PTLs are checking integration status of the projects. We have the flows that are usually checked by Felix towards the end of integration testing. So it will be Felix's responsibility to see how much of those flows is validated.
    - ii. Jack: Is the lab stable and accessible to work in?
    - iii. Rittwik: There are small access issues but we progressed to point where it is used for work.
    - iv. Rittwik: We are also looking into items that will flow from Cherry to Dawn and also working on preliminary draft for Dawn.
  - c. [user-d3360](#) Integration and Test
    - i. Felix will replace Lusheng as PTL until end of Cherry release and following that there will be vote on new PTL for I&T
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - 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)
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    - viii. [Alex Stancu](#) Simulations (SIM)
    - ix. [Xiaohua Zhang](#) Infrastructure (INF)
    - x. [weichen ni](#) Documentation (DOC)
    - xi. [Mahesh Jethanandani](#) SMO (SMO)
    - xii. (TBD) O-RAN Radio Unit (ORU)
11. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  - a. Mahesh presented SMO Cherry development plan.

- i. Mahesh: It is plan on what could we do in Sprint 2 and 3, essentially demonstration of pre-O2 LCM features
  - ii. For details see: [https://wiki.o-ran-sc.org/x/Voo\\_AQ](https://wiki.o-ran-sc.org/x/Voo_AQ)
  - iii. Jack: Felix and Trishan can help you with admin tasks. Also it is important to get something working so as new project you could target end of of Sprint 4 with you demo and get couple more weeks for development.
  - iv. Jack: I expect that SMO will eventually leverage work in OAM project and NONRTRIC. It is umbrella project I would like all the OSC companies to participate in. There is interest from E///, IBM and others but broad cooperation on SMO will be needed.
  - b. I&T project changes
    - i. Felix replaces Lusheng as PTL until end of Cherry release
      - 1. ~~AP Felix: To send self nomination e-mail for I&T PTL~~ DONE
    - ii. Jack and Jinri plan to ask if TIFG could provide PTL for I&T
    - iii. Jack: We need to create I&T team with representatives from other projects and multiple companies as the activity grows. This is basically *open call to get involved in I&T*.
      - 1. John-Paul: Should we put this as item on F2F agenda?
      - 2. Jinri: Paul Smith is drafting the F2F agenda, 2 slots will be available for OSC
      - 3. Jack: Rittwik and David as part of RSAC, let's make sure this is part of the agenda for meeting with TIFG. I will raise it with EC.
      - 4. David Kinsey: It will be probably cross-organizational type meeting, I will reach out to Paul
      - 5. Jack: We could go to TIFG meeting also.
      - 6. David: There is currently listing of cross-organizational items before individual WGs get their time slots. Let's see if we have enough to talk about to have it as separate item from RSAC and road-map.
  - c. **AP Ganesh self-nominated to investigate SD-RAN**
    - i. Jack: Ganesh will talk about the SD-RAN next week.
12. Planning for Next Meeting
  13. Any Other Business (AOB)
  14. Meeting Summary (resolutions, new action items, etc).

2020 09 09

Recording: [2020-09-09\\_toc.mp4](#)

#### Agenda

1. Call for Scribe (minutes owner): David Streibl
2. Roll Call & Quorum Check

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<a href="#">China Mobile</a>	Jinri Huang Co-Chair	x	Weichen Ni	
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<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	Anil Umesh	
<a href="#">Nokia</a>	Juha Oravainen	x	Thoralf Czichy	
<a href="#">Orange</a>	William Diego		Vincent Danno	
<a href="#">Radisys</a>	Ganesh Shenbagaraman	x	Sachin Srivastava	
<a href="#">Verizon</a>	Viswa Kumar		Kristen Young	

\*Quorum: 50% or more of total TOC 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. **Decision: Moved by David, seconded by Ganesh, no objection, 20200902 minutes approved.**
5. Release Votes and Approval.
6. Copyright update.
  1. Usage of 3gpp models in O-CU develop
    1. Jinri talked with co-chair of STFG and also raised the issue on last TSC call
    2. SDFG delayed by holiday season, request also forwarded to O-RAN legal team
  2. 60 day review windows time
    1. Jinri: EC is preparing motion for board to delegate the right to give copyright permission to OSC to EC even during 60 day review window
    2. John-Paul: How should OSC handle code based on unpublished O-RAN spec if there is withdrawal of contribution in O-RAN
    3. Jinri: There is no detailed guideline from EC. Should be very uncommon.
    4. Jack: There should not be multiple decision levels. We should keep the decision on one level, in this case on EC.
    5. **AP Jinri: Will check with EC about the Withdrawals**
  3. Mahesh: What does copyright allow us if we want to make fixes/changes to improve 3GPP models or submitting the changes back to 3GPP?
    1. Jinri: We are not allowed to modify the models.
    2. Martin: There is preparation of process in WG1 where O-RAN Alliance members that are also 3GPP members would contribute the change requests to 3GPP.
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)

1. Jinri provided status report to TSC last week -
  1. SMO Project PTL decision
  2. ONF SD-RAN
    1. EC is aware of the PR issue
    2. John-Paul: Is there any plan/activity to collaborate between O-RAN and ONF on RIC?
    3. Jinri: Not aware on any activity.
    4. Rittwik: There is official PR from ONF and separate news article with comments from ONF staff member not representing ONF official view. Collaboration is happening on working level. ONF sees SD-RAN as one of the RIC implementations, this one specifically using ONF ONOS controller.
    5. Juha: In which project does ONF contribute/plan to contribute?
    6. Rittwik: ONF has discussion paper contribution for ORAN WG3.
    7. John-Paul: It would be good to know details about the SD-RAN project, potential fragmentation and overlap.
    8. **AP Ganesh self-nominated to investigate SD-RAN**
8. Status of Open Action Items (Old Business).
  - a. O-CU PTL to organize a meeting and invite all the relevant projects (O-DU-HIGH, OAM, RIC etc.) and discuss the cooperation /requirements b/w O-CU and the other projects
  - b. O-CU PTL to prioritize the items shown on the presentation slide (<https://wiki.o-ran-sc.org/download/attachments/10715432/OSC%20O-CU%20RelC%20ICT-8.12.pptx?api=v2>) to make sure some key features such as handoff could be supported for traffic steering use case.
  - c. The team to arrange an offline meeting to further discuss the challenges.
    - i. Rittwik: We will need more meeting to align.
    - ii. Jinri: I will reach out to O-CU PTL and Gu Su.
    - iii. Rittwik:
      1. Bottleneck is O-CU emulator, it does not exist today
        - a. Viavi can provide O-RU emulator and EPC
        - b. Viavi requesting if Radisys or ICT could provide O-CU emulator
        - c. Ganesh: Started internal discussion if Radisys O-CU could be used, will have tech details on RSAC meeting later this week
        - d. Rittwik: Close-source binary O-CU for testing would help, ICT plans to provide OSS one.
        - e. **AP Jinri: Will talk with ICT**
  - d. ~~Jinri will bring the copyright issue to TSC/EC (to push the process), Jinri will follow up with O-RAN manager Zbynk concerning 60 days copyright topic-DONE~~
  - e. ~~Ganesh will elaborate the copyright issue regarding O-CU and O-DU. Sachin will check on O-CU and O-DU part with Ganesh-DONE~~
  - f. ~~PTL to fill in the goal and the scope in the Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) first. To have update once a month.-DONE~~
  - g. ~~Mahesh will make quick report on SMO plan~~
    - i. There will be starting discussion about SMO on Tuesday RSAC meeting
  - h. PTL to provide information regarding O-RAN-related open source communities for Jinri
    - i. Jack: Lets keep this item long-term.
9. Standing Agenda Items (Brief Status of Ongoing Activities)
  - a. Release Manager [Trishan de Lanerolle](#) /Release Planning: Weekly TOC Scheduling
    - i. [Bronze Maintenance Release](#)
    - ii. [CherryTimeline](#)
    - iii. **AP: Jinri will reach out to Trishan**
  - b. [user-59b16](#) Requirements Software Architecture Committee
    - i. Rittwik and David are tracking tickets in Jira to provide scorecard based on RSAC objectives and what has been implemented in Cherry
  - c. [user-d3360](#) Integration and Test
    - i. Felix: How should be proceed with select PTL replacement?
    - ii. Jinri: We could vote on PTL this now or on next TOC.
    - iii. Jack: Let Felix self-nominate via mailing list with little background. Team is very small, so it should be easy.
    - iv. Jack: We need to expand Integration and Test as we add other components and there will need to be interface between other project and IaT. More participation in Integration and Test team is needed.
    - v. **AP Felix: To send self-nomination e-mail.**
    - vi. Jinri: This is area where TOC members and future potential TOC members could contribute.
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - 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)
10. New Agenda Items (New Business): New Items Submitted (+speaker) & Open Call to TOC For Additional Items.
  - a. ONF SD-RAN details proposed by Juha - **addressed in 7.**
  - b. Integration plan and timeline by Rittwik - **addressed in 8. c.**
11. Planning for Next Meeting
12. Any Other Business (AOB)
13. Meeting Summary (resolutions, new action items, etc).

2020 09 02

Recording: [2020-09-02\\_toc.mp4](#)

## Agenda

1. Call for Scribe (minutes owner): David Streibl
2. Roll Call & Quorum Check

Company	Contact Name	Attendance	Alternate Contact	Attendance
<a href="#">AT&amp;T</a>	Jack Murray Co-Chair		Lusheng Ji	x
<a href="#">China Mobile</a>	Jinri Huang Co-Chair	x	Weichen Ni	
<a href="#">Deutsche Telekom</a>	David Streibl	x	Ondej Hudousek	
<a href="#">Ericsson</a>	John-Paul Lane	x	John Keeney	
<a href="#">NTT DOCOMO</a>	Masafumi Masuda	x	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 TOC 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. **Decision: Moved by David, seconded by John-Paul, no objection, 20200826 minutes approved.**
4. Review of Today's Agenda
  - a. No new items added,
    - i. Planned plugfest status raised by John-Paul Lane will be addressed in 7.
    - ii. STFG and TSC/EC update raised by John Keeney will be addressed in 6.
5. Release Votes and Approval.
  1. None needed.
  2. New committers for integration project approved by mail
6. Copyright update.
  1. No update on 60 days issue from EC. **AP: Jinri will follow up with O-RAN manager Zbynk.**
  2. Copyright issue description (Old business 8.e.)
    1. Martin sent mail to TOC mailing list with details
    2. **AP: Sachin will check on O-CU and O-DU part with Ganesh**
    3. **AP: Jinri will bring the copyright request to TSC call September 4th**
  3. No update from STFG as of last week
7. O-RAN-related business (marketing, WG interaction, TSC/EC update etc.)
  1. Tracy: Plug-fest preparation is moving forward. There will be virtual/ semi virtual demo in EU, USA, Asia, India  
More details for O-RAN members on <https://oranalliance.atlassian.net/wiki/spaces/TTIFG/pages/503971932/PF2+General>.  
If there is interested member of O-RAN willing to present, please contact TIFG  
Followed up by US based event after Cherry release last week of November
8. Status of Open Action Items (Old Business).
  - a. O-CU PTL to organize a meeting and invite all the relevant projects (O-DU-HIGH, OAM, RIC etc.) and discuss the cooperation /requirements b/w O-CU and the other projects
  - b. O-CU PTL to prioritize the items shown on the presentation slide (<https://wiki.o-ran-sc.org/download/attachments/10715432/OSC%20O-CU%20RelC%20ICT-8.12.pptx?api=v2>) to make sure some key features such as handoff could be supported for traffic steering use case.
  - c. The team to arrange an offline meeting to further discuss the challenges. Gu Su from China Mobile can help.
    - i. Rittwik: Created plan for O-RU, O-DU, O-CU integration with Intel, Radisys and Viavi, details in RSAC meeting notes
    - ii. **AP: Rittwik will reach out via email, will include Gu Su**
  - d. Jinri will bring the copyright issue to TSC/EC (to push the process)
    - i. Addressed in 6.
  - e. Ganesh will also elaborate the copyright issue regarding O-CU and O-DU. ~~Martin will send the written copyright issue description to Jinri and Jack so that Jinri could follow up.~~ DONE.
  - f. PTL to fill in the goal and the scope in the Cherry deliverable summary page (see [Cherry Release \(Dec 2020\)](#)) first. To have update once a month.
    - i. Partially complete. Few missing projects
    - ii. Review will be done every first call of the month
  - g. SMO Project PTL Nominations
    - i. **Trishan: Mahesh Jethanandani from VMware was selected as SMO PTL via condorcet method by TOC.**
    - ii. **AP: Mahesh will make quick report on SMO plan, targeting next week TOC**
  - h. PTL to provide information regarding O-RAN-related open source communities
    - i. Still in process, needs to be done by 3rd, so it can be presented on Friday TSC call. If it is not completed by then, Jinri will postpone presentation to next TSC call.
9. Standing Agenda Items (Brief Status of Ongoing Activities)

- a. Release Manager [Trishan de Lanerolle /Release Planning](#): Weekly TOC Scheduling
    - i. [Bronze Maintenance Release](#)
    - ii. [CherryTimeline](#)
    - iii. Still in progress, Jinri and Trishan will discuss offline.
  - b. [user-59b16](#) Requirements Software Architecture Committee
    - i. Rittwik : Plan for integration of O-CU / O-DU-high / O-DU-low created - targeting traffic steering use-case
    - ii. Zhimin: Professor Ray-Guang Cheng plans contribution in future, targeting mainly Documentation project
    - iii. Jinri : There is question if we can use individual CLA in combination with OSC licence
    - iv. Ray-Guang Cheng : Will check status of the CLA with his students
  - c. [user-d3360](#) Integration and Test
    - i. Trishan: Integration and Test project can make recompilation for new PTL for TOC.
  - d. Report out from PTL: Stand-Up & Report Out on Blockers
    - i. [John Keeney](#) Non-RealTime RIC (RAN Intelligent Controller) (NONRTRIC)
      - 1. John:
        - a. Focus on up-streaming A1 controller to ONAP - almost finished, next step is work on it's utilization in OSC as part of O-RAN and OSC use-cases
        - b. Starting work on A1 enrichment information coordination
        - c. Preparations for Cherry, ongoing alignment with RSAC use-cases - health-check and traffic steering still needs a lot of activity
      - 2. Jinri: Where do we get the enrichment information?
      - 3. John: New concept in O-RAN, will need enrichment info registry and coordination function.
      - 4. Jinri: What is code split between OSC and ONAP?
      - 5. John: Not clear yet, needs alignment - A1, O1, O2 need development from SMO side
    - ii. [Matti Hiltunen](#) RIC Applications (RICAPP)
    - iii. [Thoralf Czichy](#) RIC Platform (RIC)
    - iv. [user-a934b](#) O-RAN Centralized Unit (OCU)
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