Meeting notes

Meeting Info

AI/ML Framework meetings are open to the public and held on Tuesdays at noon UTC. [World Time Zone Map](#)

Zoom 1 Info:

- Join from PC, Mac, Linux, iOS, or Android: https://zoom.us/j/9644759813
- Meeting ID for dial-in: **9644759813**

UTC-time	Tuesday 12:00 (Summer)	Tuesday 13:00 (Winter)	https://zoom.us/j/9644759813
Seoul (KST / UTC+9)	Tuesday 21:00	Tuesday 22:00	TODO
Delhi (IST / UTC+5:30)	Tuesday 17:30	Tuesday 18:30	TODO
Seattle (PST / UTC -8)	Tuesday 04:00		
New York (EDT / UTC -4 during DST (-5 in the winter))	Tuesday 08:00	Tuesday 09:00	+1 669 900 6833 // +1 646 558 8656 // 855 880 1246 (Toll Free) // 877 369 0926 (Toll Free)
Beijing (CST / UTC+8)	Tuesday 20:00	Tuesday 21:00	+86 10 87833177 // +86 10 53876330 // 400 616 8835 (Toll Free) // 400 669 9381 (Toll Free)
Tokyo (JST / UTC+9)	Tuesday 21:00	Tuesday 21:00	+81 524 564 439 // +81 3 4578 1488 // 0 800 100 5040 (Toll Free)
Other international numbers	World Time Zone Map		International numbers available: https://zoom.us/u/acyy3hylQi

All meeting notes

2024-05-28 (Tuesday)

Recording link: [Zoom1 O-RAN SC's Personal Meeting Room - Zoom](#)

Topics:

- Deployment failure **AIMLFW-96** - Getting issue details... `STATUS`   **AIMLFW-86** - Getting issue details... `STATUS`
- New CLI repository https://gerrit.o-ran-sc.org/r/admin/repos/aiml-fw/awmf/cli,general
- Jira board : https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=39&projectKey=AIMLFW&view=detail&selectedIssue=AIMLFW-88#
- Jimmy presented UAV path prediction user story : ppt – **AIMLFW-90** - Getting issue details... `STATUS`

2024-05-14 (Tuesday)

Recording Link:

Topics:

- ONE Summit Presentation: https://oranscworkshop2024.sched.com/
- Build failure fixed
- New CLI Repository
- "J" Release discussion

2024-04-16 (Tuesday)

Recording Link: [Zoom1 O-RAN SC's Personal Meeting Room - Zoom](#)

Topics:

- PTL Change announcement :
- "J" Release discussion
- ONES Summit participation
  - https://docs.google.com/spreadsheets/d/1KZbyU7MRR66kV9pMrrxHCA4CxcwKOKTStjtOna5jSdI/edit?usp=sharing

2024-04-02 (Tuesday)

Recording Link: TBD

Topics:

- "J" Release discussion
- CLI for AIMLFW – request TOC (sprint-2)
- ONES Summit participation
  - https://docs.google.com/spreadsheets/d/1KZbyU7MRR66kV9pMrrxHCA4CxcwKOKTStjtOna5jSdI/edit?usp=sharing

Action Item:

- Document pairwise testing procedure with nearRT RIC and nonRT RIC
- Offline discussion with Vishal Varvate for preparing content for ONE Summit.
- Demo presentation on Flyte pipeline management.

2024-03-19 (Tuesday)

Recording Link: TBD

Topics:

- "J" Release discussion
- demo on cli for AIMLFW
- ONES summit
- Use case discussion :
  - New usecases from NTUST
  - Energy savings usecase
    - TIM's data
    - Viavi's data

2024-03-05 (Tuesday)

Recording Link: TBD

Presentation: NA

Topics:

- "J" Release discussion (Sprint Planning)
- F2F demo planning :
  2024-02 O-RAN F2F Athens (event details)

  2024-02 F2F Presentation Material (Presentation Material)
- Use case discussion :
  - New usecases from NTUST
  - Energy savings usecase
    - TIM's data
    - Viavi's data

2024-02-20 (Tuesday)

Recording Link: https://zoom.us/rec/share/lKeMsbGSWclREGVkbObf4x6YSAFlBfbvSr1nZzhyEORDoHPv9eJvFzBY-Thhz3iF.JSaxjFRKq3mg796v

Presentation:

Topics:

- "J" Release discussion (Sprint Planning)
- F2F demo planning
- Use case discussion :
  - New usecases from NTUST
  - Energy savings usecase
    - TIM's data
    - Viavi's data

2024-02-06 (Tuesday)

Recording Link: https://zoom.us/rec/share/ma5P3bPTkPpJpnei8DJirDSzuudhaOWd34gv-4EQg057U4bDL9hzb0UZoJPs2vu3.fGNYEuB5YQI0WAF

Presentation: To be added

Topics:

- "J" Release discussion
- New usecases from NTUST
- Energy savings usecase
- Flyte for model training [Rajdeep]

2024-01-23 (Tuesday)

Recording Link: Zoom1 O-RAN SC's Personal Meeting Room - Zoom

Topics:

- I Release discussion
- New usecases from NTUST
- Energy savings usecase
- Topics to be considered for J release
  - New Kubeflow version support
  - Other platform integration (similar to kubeflow)
  - CRD based approach
  - Kserve approach to deploy rapp

2024-01-09 (Tuesday)

Recording Link: To be added

Presentation: To be added

Topics:

- "I" Release discussion
- New usecases from NTUST
- Energy savings usecase
- Topics to be considered for J release
  - New Kubeflow version support
  - Other platform integration (similar to kubeflow)
  - CRD based approach
  - Kserve approach to deploy rapp

2023-12-12 (Tuesday)

Recording Link: https://zoom.us/rec/share/D1SQMOS1fpzDIVapOQhFj-BpiwhdxbdDrv_3VRYaYHandfD_pljI-kOwUYFJJzGp.DZGWGfh6u2R7mRaJ

Presentation: NA

Topics:

- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 5 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management [Completed]
    - Generic Training pipeline   [Beyond I release]
    - Support dynamic change of data source [Completed]
    - Training service [Beyond I release]
    - Handle restart of VM or system hosting AIMLFW [Completed]
  - Updates from NTUST
  - Discuss topics for HCLTech contribution to AIMLFW
    - AD usecase
    - Any other topics
  - Energy savings usecase. Dataset shared. AIMLFW team to look at creating a simple prediction model.
  - Contribution of AIML model monitoring feature

Discussion points:

- I release page is updated : I Release#AIMLFramework(AIMLFW)
- Need to check where the UAV dataset can be stored. Can it be stored in nexus. Need to check in RSAC.
- NTUST presented slides describing their integration and use of AIMLFW for UAV data set.
- NTUST presented plan to demonstrate AR/VR usecase in the future.

2023-11-27 (Tuesday)

Recording Link: https://zoom.us/rec/share/SRuTuyxvC3iShHAuQJgeIKd7TjtIaC0_9cFiy2GQTtIIFsQmk_FsJ1hx5bVK6mTn.8AkrwDiiwpudLM-G

Presentation:

- Demo link: https://wiki.o-ran-sc.org/download/attachments/101416993/aimlfw_e2e_mme_i_release.mp4?api=v2
- Callflow: AIMLFW Callflows

Topics:

- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 5 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management
    - Generic Training pipeline   [Beyond I release]
    - Support dynamic change of data source [Completed]
    - Training service [Beyond I release]
    - Handle restart of VM or system hosting AIMLFW [Completed]
  - Updates from NTUST
  - Discuss topics for HCLTech contribution to AIMLFW
    - AD usecase

- Any other topics
  - Energy savings usecase. Dataset shared. AIMLFW team to look at creating a simple prediction model.
  - Contribution of AIML model monitoring feature

Discussion points:

- We will move Generic Training pipeline   feature to beyond I release.
- We will also consider the Energy saving usecase beyond I release.
- For model management feature, we have completed initial coding and testing.
- Rajdeep Singh has shown the demo of integrated Model management service.
- I release videos will be uploaded here: Files for I release
- Implementation is done according to callflows here: AIMLFW Callflows

2023-11-14 (Tuesday)

Recording Link: https://zoom.us/rec/share/sN17KGPA7TbV0j94nZr4dyhadrSy9Ynhl4pkX13v9AeYZVcNcWe3if2XG8RGVIkK.YiX600goxmG1gNl_

Presentation: NA

Topics:

- O-RAN F2F meetings
- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 4 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management
    - Generic Training pipeline
    - Support dynamic change of data source
    - Training service
  - AIMLFW bring up in NTUST
  - Discuss topics for HCLTech contribution to AIMLFW
    - AD usecase
    - Any other topics
  - Energy savings usecase. Dataset shared. AIMLFW team to look at creating a simple prediction model.
  - Contribution of AIML model monitoring feature
  - Handle restart of VM or system hosting AIMLFW

Discussion points:

- Model management: SANDEEP KUMAR JAISAWAL has updated the basic service APIs are ready. Gave an initial demo of the services. SANDEEP KUMAR JAISAWAL and Rajdeep Singh working on he integration of Model management and training manager. Plan is to show an end to end demo in the next meeting.
- Generic Training pipeline: No update in this meeting.
- NTUST: Investigating on creating new model using new pipeline. After this plan is to deploy the model using kserve.
- Energy savings usecase: No update this week
- Handle restart of VM or system hosting AIMLFW: The feature is complete. In the latest installation, the VM that is hosting the AIMLFW can be shutdown and started again. After starting the VM, no reinstall of AIMLFW is required.

2023-10-31 (Tuesday)

Recording Link: https://zoom.us/rec/share/MjEMRMH1Bta8G--Xd2PfZ_F-DLRwtaS7fWwcIxee98L0o3d6jEbuEeA5cUdu3Zib._e7wQto0wKRVN_lB

Presentation: NA

Topics:

- O-RAN F2F meetings
- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 4 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management
    - Generic Training pipeline
    - Support dynamic change of data source
    - Training service
  - AIMLFW bring up in NTUST
  - Discuss topics for HCLTech contribution to AIMLFW

- AD usecase
- Any other topics
  - Energy savings usecase. Dataset shared. AIMLFW team to look at creating a simple prediction model.
  - Contribution of AIML model monitoring feature
  - Handle restart of VM or system hosting AIMLFW

Discussion points:

- Model management: SANDEEP KUMAR JAISAWAL updated that core functions of model management services are created using golang. Explained the final demo scenario. Can show an initial demo of model management services can be presented in the next meeting.
- Generic Training pipeline: Navaneethan Rajasekaran provided update offline. He was able to create the generic training pipeline and test using kubeflow adapter APIs.
- Support dynamic change of data source: This activity is completed, code is reviewed and merged.
- Training service: Not planned for I release, based on MVP-C slides presented, the training service APIs are yet to be finalized.
- AIMLFW callflows: N.K. Shankaranarayanan gave an overview of the slides prepared. the AIMLFW callflows are not complete. Will have an offline discussion to make an initial set of callflows for AIMLFW. O-RAN alliance has approved AIML workflow as a new function as part of the SMO.
  - Links shared:
    - https://oranalliance.atlassian.net/wiki/download/attachments/2844918001/TIM.AO-2023.09.25-WG1-CR-0001-DEC_SMO-TR_AIML_WF_services_v02.docx?api=v2
    - https://wiki.o-ran-sc.org/download/attachments/89784359/dec_smo_flows_v0.6_20231018.pptx?api=v2
- NTUST: Successfully deployed OSC near-rt ric. Also developing a new pipeline for the AIMLFW for a new usecase. Detailed installation document uploaded for H release. https://wiki.o-ran-sc.org/download/attachments/81297504/OSC%20AI%20ML%20Framework%28Release%20H%29%20Install%20Notes.pdf?api=v2
- Contribution of AIML model monitoring feature: May not be considered as part of I release.
- Energy savings usecase: Navaneethan Rajasekaran is looking into this topic. As first step to look into the analyzing the data.
- Handle restart of VM or system hosting AIMLFW: Yet to start working on this topic.

2023-10-17 (Tuesday)

Recording Link: https://zoom.us/rec/share/nRcyBEOuUcid1TZsfVLLg8PrSzD5Vs3LkCQiUgkeYujvd0pfm-70jHD0DpprKigI.3OStoQDEd4-2fqos

Presentation: O-RAN F2F discussion

AIML in O-RAN in...ov 2023 F2F.pptx

Topics:

- O-RAN F2F meetings
- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 1 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management
    - Generic Training pipeline
    - Support dynamic change of data source
    - Training service
  - AIMLFW bring up in NTUST
  - Discuss topics for HCLTech contribution to AIMLFW
    - AD usecase
    - Any other topics
  - Energy savings usecase
  - Contribution of AIML model monitoring feature
  - Handle restart of VM or system hosting AIMLFW

Discussion points:

- O-RAN alliance F2F
  - Joseph Thaliath mentioned there was a dedicated session on AIML and AIML MVP-C representative presented their plans for the specifications. We also presented our plan regarding the model management feature.
  - They had clarified the query related to AIML model registration. It is possible an untrained or pretrained model can be provided as one of the inputs.
- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 1 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management
      - SANDEEP KUMAR JAISAWAL mentioned that Initial POC using golang completed. Will proceed with implementation of model register, get model metadata, upload model APIs.
    - Generic Training pipeline
      - Navaneethan Rajasekaran created a generic training pipeline with feature list argument. Will try using KF adapter APIs directly to test.
    - Support dynamic change of data source
      - Joseph Thaliath mentioned that Rajdeep has completed the coding, review is progress and corresponding changes in progress.
    - Training service
      - Joseph Thaliath mentioned that APIs are not completely approved in O-RAN alliance.
  - AIMLFW bring up in NTUST
    - @antony ntust mentioned that all issues are currently solved. Working on AIMLFW to SMO integration. Cannot use GPU to train the model. Will share the installation document with further details.
  - Discuss topics for HCLTech contribution to AIMLFW
    - AD usecase
    - Any other topics
    - No further updates
  - Energy savings usecase
    - Discussed about energy saving use case in F2F. Need to get access to data. Navaneethan Rajasekaran interested to work on this topic.
  - Contribution of AIML model monitoring feature
    - Contributor not joined in this week for the presentation. Requested to be present the feature in the next meeting. They have added the design details in this link: AIML Monitoring System
  - Handle restart of VM or system hosting AIMLFW

2023-10-03 (Tuesday)

Recording Link: https://zoom.us/rec/share/u9wfP0yOSLk1PSozpS7hzToveihIkspmmI-TxcNghpzN1koF64ir1IFHR29sVGQD.UYwxz_AegC0KFv2Y

Presentation: To be added

Topics:

- O-RAN F2F meetings
- "I" Release discussion
  - "I" Release
  - Jira tasks added and dev sprint 1 ongoing.
    - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
    - Model management
    - Generic Training pipeline
    - Support dynamic change of data source
    - Training service
  - AIMLFW bring up in NTUST
  - Discuss topics for HCLTech contribution to AIMLFW
    - AD usecase
    - Any other topics
  - Energy savings usecase
  - Contribution of AIML model monitoring feature
  - Handle restart of VM or system hosting AIMLFW

Discussion points:

- SANDEEP KUMAR JAISAWAL updated on the model management service implementation. Looking at implementing this service using go language. Will try a PoC, to use go SDKs to access the leofs DB.
- Joseph Thaliath mentioned that the repository creation is approved in the TOC meetings and the repository creation is in progress. TOC has requested for a demo for the model managment services.
- No update on the Generic training pipeline.

- Support dynamic change of data source: Coding and testing is completed. Code needs to be updated.
- Training service: No update.
- @Antony (NTUST) was able to bring up the AIMLFW and was able to test DME. Will try different model to train using the AIMLFW. Working on the Near-RT RIC side.
- Energy saving usecase: Data is available, need more information on how to proceed.
- AIML model monitoring feature: Deploying the model and obtain feedback and trigger retraining. The concerned person has not joined this week. Will allocate time during the next meeting.

2023-09-19 (Tuesday)

Recording Link: https://zoom.us/rec/share/DEdaOovygWC2xKOgg721ILZnoqv9Ym7EZ9gi0UWbczM1EJV1-pX4hgzk_I3Zs5xy.Y-dj_i74PTaejRdm

Presentation: To be added

Topics:

- "I" Release discussion
    - "I" Release
    - Jira tasks added and dev sprint 1 ongoing.
        - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
        - Model management
        - Generic Training pipeline
        - Support dynamic change of data source
        - Training service
    - AIMLFW bring up in NTUST
    - Discuss topics for HCLTech contribution to AIMLFW
        - AD usecase
        - Any other topics
    - Energy savings usecase
    - Handle restart of VM or system hosting AIMLFW,

Discussion points:

- SANDEEP KUMAR JAISAWAL discussed the architecture for model management services. Requested to create a new repository for the model management service. To be raised in the TOC meeting for approval.
- SANDEEP KUMAR JAISAWAL had queries related to the Non-RT RIC SME. John Keeney clarified that it will be based on implementation. Some parts of SME is implemented. Studies ongoing from F- release. In I release, there will be some implementation of SME. Suggested to add a first step that rApp requests SME for the model management services.
- Joseph Thaliath , Sandeep can start working on some of the features mentioned and maybe towards the end we can integrate with SME if it is available from Non-RT RIC team.
- Rajdeep Singh updated that regarding dynamic change of data source, coding and testing is complete and will start committing the changes.
- @Antony (NTUST) was facing issue that the data insertion in the DB is taking more that 3 hours. Joseph Thaliath mentioned that it is not normal and would be an issue with CPU/memory resources in their lab.
- Deepanshu Karnwal mentioned that he is interested to work on the AD use case. Joseph Thaliath mentioned that Navaneethan Rajasekaran was interested to work on this. We can check with him if he has made some progress.

2023-09-05 (Tuesday)

Recording Link: https://zoom.us/rec/share/eRFT_GelEYA1Wrrhe2J8sC1MfvLLbg89I_xtNbunzwxhZRv7mQHD07auH-O8bCw.ZqW8rb57FzQMsguB

Presentation: To be added

Topics:

- "I" Release discussion
    - "I" Release
    - Jira tasks added and dev sprint 1 ongoing.
        - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
        - Model management
        - Generic Training pipeline
        - Support dynamic change of data source
        - Training service
    - AIMLFW bring up in NTUST
    - Energy savings usecase
    - Handle restart of VM or system hosting AIMLFW,

Discussion points:

- JIRA tasks discussion

- Generic Training pipeline: Jira task created. Joseph Thaliath mentioned Navaneethan was able to bring up the AIMLFW and is continuing to work on this topic.
- Training service: Jira task created. Rajdeep Singh to work on this topic and identify the gaps that can be implemented in next sprint.
- Support dynamic change of data source. Rajdeep Singh is working on this topic.
- Model management: SANDEEP KUMAR JAISAWAL is working on this topic. Presented and discussed initial thoughts on this topic. To check if model sdk can be reused.
    - SANDEEP KUMAR JAISAWAL had a question on the SME functionality of Non-RT RIC. John Keeney clarified they are working on the implementation of SME.
    - John Keeney mentioned that the terms Non-anchored and anchored terminology used in the Non-RT RIC architecture might be obsolete.
- Energy svaing use case
    - Bimo (NTUST) working on this topic along with Rittwik
    - Link shared by Bimo : https://hackmd.io/JgjZvaMMTii0lTnG8TlH2Q?view
- James Li was checking on the status of the pair wise testing. It needs to be reported to TSC.

2023-08-22 (Tuesday)

Recording Link: https://zoom.us/rec/share/VAvGZnOr09U9ITOpPQdTSrK_CKF1NlMCZ8dxWIOwSVJQZWu5mRsvUoBdVOtnySg.GDpDKhG2EqNwjedZ

Presentation: NA

Topics:

- "I" Release discussion
    - "I" Release
    - Jira tasks added and dev sprint 1 started.
        - https://jira.o-ran-sc.org/secure/RapidBoard.jspa?rapidView=38&projectKey=AIMLFW
        - Discussion with Navaneethan
    - Discussion with NTUST
    - Energy savings usecase
    - Installing and bring up AIMLFW dashboard in GCP.

Discussion points:

- JIRA tasks discussion
    - Generic Training pipeline: Jira task created. Navaneethan Rajasekaran to work on this topic.
    - Training service: Jira task created. Rajdeep Singh to work on this topic and identify the gaps that can be implemented in next sprint.
    - Support dynamic change of data source. Rajdeep Singh already started working on this topic.
    - Model management: SANDEEP KUMAR JAISAWAL will work on this topic. Need to analyze the need for new repository and design for the implementation. To check if model sdk can be reused.
- Energy saving usecase: Need to check for AIMLFW impact in RSAC. Need to understand which apps will use AIMLFW APIs and what APIS need to be supported.
- NTUST bringing up the AIMLFW in their lab.
- Kevin Timoney mentioned that he had sent an email regarding new docker compose way of installing ranpm.
- Joseph Thaliath shared the installation done on GCP and discussed on how to access the dashboard. Also discussed how on how to upload a new pipeline.
- Deepanshu Karnwal was interested to contribute to AIMLFW and will contact by email.

2023-08-08 (Tuesday)

Recording Link: https://zoom.us/rec/share/eb6rzgXsosVd3wg3fVwiHXmOPZN2TVLObrgV6x81WVJD4fPajMtBtjmvk3ARrezw.GISqzFjvw_tlVFk8

Presentation:

AIMLFW-I-Release-Plan.pptx

20230808-OSC Report.pdf

20230808-Demo.mp4

Topics:

- H release maintenance release
- "I" Release plan discussion
    - "I" Release
    - RSAC presentation
    - EPICs added to JIRA
    - Jira tasks that can started in Dev sprint 1 to be added by next week.
    - Presentation and demo by NTUST

Discussion points:

- Joseph Thaliath mentioned that H release maintenance is ready
- Professor and students from NTUST presented slides and showed on a demo on their implementation. They had some questions as mentioned below:
    - Q1. What is the feature store? What is inside it? Why called SDK?
        - Joseph Thaliath clarified, that it is for storing features required for training. SDK is required to abstract the type of feature store DB and give a simple API for user.
    - Q2.How does the API update the job status and notify if the job status is changed, and what protocol is adopted?
        - Joseph Thaliath We have notification http post API which can be enabled. Other wise the current training job status can be queried using a GET API.
    - Q3. Can the general training pipeline do the training if the data source or characteristic is different?
        - Joseph Thaliath clarified that the general training pipeline for training a particular types of AI/ML model (e.g. time series) and not specific to every usecase (e.g. qoe prediction)
    - Q4. What is the purpose to have an automated testing for AI/ML Framework?
        - Joseph Thaliath clarified that we require an automated testing framework to test the installation of AIML framework and the APIs.
- Rittwik Jana asked how a model is packaged with an rApp.
    - Joseph Thaliath clarified, that the model is deployed as separate pod by the kserve and it will expose http APIs to provide input and get prediction results.
- Joseph Thaliath was proposing to have a deeper dive session with NTUST to discuss more on the collaboration.
- Rittwik Jana asked if we have an idea about how to get data for the energy saving usecase. Joseph Thaliath said it is not clear now on how to get data.
- Joseph Thaliath mentioned that EPICs for I release is created.

- Joseph Thaliath mentioned that for generic training pipeline, we can have separate discussion with Navaneethan Rajasekaran

2023-07-25 (Tuesday)

Recording Link: https://zoom.us/rec/share/03IX-dUJUDig4e2N1LcAqhJzbXYs8ysXuqlubwIHA6hzz5EOHnjf2CeY6jAsMX7c.lk_d6K_WGh3rEcnH

Presentation:

AIMLFW-I-Release-Plan.pptx

Topics:

- Changes required to support DME interface changes.
- "I" Release plan discussion
  - "I" Release
  - Request to review the "I" Release plan
  - Request for contributors

Discussion points:

- Joseph Thaliath presented the I release plan. Summary and more details are there in the "I" Release page.
- Joseph Thaliath mentioned that a slot has been requested in the upcoming RSAC to discuss the plan for feedback.
- James Li asked if there is any plan included which targets pair wise testing with another project for realizing an end to end usecase.
- Joseph Thaliath , has mentioned that we have added couple of epics considering this (usecases, DME integration)
- James Li mentioned that we can discuss with ric-app project regarding rapp/xapp plan for Energy saving usecase.

2023-07-11 (Tuesday)

Recording Link: https://zoom.us/rec/share/Nn2SnLRtIx3HvUv4oufH6sHpiQFM1Q1IW4sxrazpTLczhcSSrn6G8bpa8f7eyqFO.E-SPtPP360f22Vos

Presentation:

AIMLFW-I-Release-Plan.pptx

Topics:

- "I" Release plan discussion
    - "I" Release
    - Request to review the "I" Release plan
    - Request for contributors

Discussion points:

- Joseph Thaliath presented the I release plan. Summary and more details are there in the "I" Release page.
- Joseph Thaliath mentioned that if anyone is interested to discuss on those topics or willing to contribute, please send an email to jo.thaliath@samsung.com
- @Navaneethan asked about the pre-processing step that is required before training the model. How is it handled or it is assumed it will not be there ?
- Joseph Thaliath mentioned that in the current framework it can be handled as part of training pipeline or limited instructions for data transformation can be given to data extraction component. But it is not clear how it is handled from O-RAN alliance point of view.
- @Navaneethan asked if we are storing the model in the pickle format or any other form recommended?
- Joseph Thaliath mentioned that the framework is transparent to the format, any format, the model sdk zip the file/folder in Model DB. We are assuming the entity using the model knows how to use the model after unziping
- Deepanshu Karnwal asked if continuous training flow is supported?
- Joseph Thaliath mentioned that the current framework supports only one time offline training and if training is required again, it needs to be triggered again using the training API. There is no option to currently use previous model for further training.
- SANDEEP KUMAR JAISAWAL mentioned that the current framework has option to trigger training API again and again but the only thing that we are not doing is retaining as soon as the new set of data is available.
- John Keeney mentioned that there will some changes in the interface used by AIMLFW for the H-release maintenance
- Kevin Timoney will clarify the changes in the interface used by AIMLFW by email.
- Joseph Thaliath will look at these changes and see if it can be integrated easily and if there are any queries will contact Kevin or John.

2023-06-27 (Tuesday)

Recording Link: https://zoom.us/rec/share/Uhw2gtCrMgXNNke9v_iabcpRFlSGGcTjIrPPpoPrOJLZrcX70j_TjfDag53lcsza.jRMw8otHjlg1e1LG

Presentation:

AIMLFW-2023-06-...-report-v1.pptx

Topics:

- H Release preparation
  - Sonar checks - Completed
  - Jenkin jobs for Docker build - Kserve adapter - Completed
  - Release tag creation - Completed
  - Documentation - Completed
  - Demos - Demo recorded and stored in Files for H release.
  - Integration testing - Completed
  - H release page update - Completed (H Release#AIMLFramework(AIMLFW))
  - Joseph Thaliath mentioned that all tasks for H release completed. Release voting will be on 29th June.
- AIMLFW Requirements gathering from community
  - MVP-C presentation during O-RAN alliance F2F
  - O-RAN SC community feedback
  - Discussion to be planned in O-RAN alliance F2F. Need to check update in RSAC meeting.
  - "I" Release
  - Joseph Thaliath discussed the MVP-C presentation during the O-RAN alliance F2F. There is progress in Non-RT RIC and little progress in Near-RT RIC. We can focus on implementation for R1 APIs which will be defined by July end.
  - Joseph Thaliath mentioned that we can prepare and plan and present it to RSAC and also discuss with MVP-C.
  - @Navaneethan asked about APIs that will be defined for Near-RT RIC, will it be similar to Non-RT RIC ?
  - Joseph Thaliath , during the MVP-C discussion, they mentioned it will be separate APIs used for Non-RT RIC and Near-RT RIC.

2023-06-13 (Tuesday)

Recording Link:

https://zoom.us/rec/share/aAuv-8YjMe2W--C5LjHdzwwgFuOG1GyfRtlL8AEJSyiicJnbZ-U6ncBzJqrWrOky.SdcsZbRAVpuqn9Wd

Presentation:

OSC_ONAP_SMO_...ework_v1.pptx

Topics:

- AIMLFW integration
  - DME
  - SMO
    - No update
  - Discussion with James Li regarding adding deployment of AIMLFW as a test case as part of integration and testing project.
  - James Li has provided his email id. Joseph Thaliath will sync up with him using this email.
- AIMLFW features
  - Edit, retrain and delete training jobs - Completed
  - Training pipeline Enhancement: Provide sample pipelines by default - Completed
  - Feature group creation with DME source - Completed
  - Kserve adapter
    - for xApp (Integration with RIC DMS completed)
    - for rApp (Done by Non-RT RIC team as part of ONAP)
  - Joseph Thaliath mentioned that all features and integration is completed,
- H Release preparation
  - Sonar checks - Completed
  - Jenkin jobs for Docker build - Kserve adapter - Completed
  - Release tag creation - To be done
  - Documentation - Updated installation document, Need to update release notes
  - Demos - Demo recorded and stored in Files for H release. Joseph Thaliath Presented kserve adapter demo today.
  - Integration testing - Completed
  - H release page update - To be done
- AIMLFW Requirements gathering from community
  - O-RAN SC community feedback
  - Discussion to be planned in O-RAN alliance F2F. Need to check update in RSAC meeting.
  - "I" Release
  - N.K. Shankaranarayanan presented the slides "OSC_ONAP_SMO_PoC_Framework_v1.pptx".
    - Main goal is to get synergy between O-RAN alliance, ONAP, O-RAN SC.
    - It is planned to be presented to O-RAN alliance F2F. An example end to end usecase like Energy saving is required to demonstrate working of all the end to end functionality defined in O-RAN alliance including AI/ML framework.
    - Andrea Buldorini mentioned that there is proposal related to AIML in ATG, WG1. We need to check in RSAC/TOC about presenting the presentation in O-RAN alliance F2F.
    - There is also an analytics function being defined in O-RAN alliance.

2023-05-30 (Tuesday)

Recording Link:

https://zoom.us/rec/share/3b57BbZ9OCY2oi304Ju5WvkWq1oN7nqNztBUZemWQYaP8elD6GyLhKh89oSGwvVs.L94Ad9iP-eu2NMyo

Presentation:

NA

Topics:

- AIMLFW integration
  - DME
  - SMO
    - No update
  - Discussion with James Li regarding adding deployment of AIMLFW as a test case as part of integration and testing project.
- AIMLFW features
  - Edit, retrain and delete training jobs - Completed
  - Training pipeline Enhancement: Provide sample pipelines by default - Completed
  - Feature group creation with DME source - Completed
  - Kserve adapter
    - for xApp (Integration with RIC DMS ongoing)
    - for rApp (Done by Non-RT RIC team as part of ONAP)
- H Release preparation
  - Sonar checks
  - Jenkin jobs for Docker build - Kserve adapter
  - Release tag creation
  - Documentation
  - Demos
  - Integration testing
  - H release page update
- AIMLFW Requirements gathering from community
  - O-RAN SC community feedback
  - "I" Release

2023-05-16 (Tuesday)

Recording Link:

https://wiki.o-ran-sc.org/download/attachments/78217533/video_16May2023.mp4?version=1&modificationDate=1685434655612&api=v2

Presentation:

https://wiki.o-ran-sc.org/download/attachments/78217260/AIMLFW-2023-05-11-TOC-AIMLFW-report-v1.pptx?api=v2

Topics:

- AIMLFW integration
  - DME
    - Joseph Thaliath discussed the following :
      - Tested with DME as part of ranpm repository
      - Created scripts for pushing data for qoe usecase using file ready events. Will commit these scripts to aimlfw-dep repository.
  - SMO
    - No update
  - James Li was asking if the deployment of AIMLFW can be added as a test case as part of integration and testing project.
  - Joseph Thaliath mentioned it is possible. Will provide the details of the installation instructions by email.
- AIMLFW features
  - Delete training jobs
    - Joseph Thaliath mentioned it is completed, Unit testcases in progress.
  - Feature group creation with DME source
    - Joseph Thaliath mentioned it is completed, Unit testcases in progress.
  - Kserve adapter
    - for xApp
      - Joseph Thaliath Code commit for kserve client is pending. Integration testing is pending. Dependency on RIC DMS changes to be complete.
    - for rApp
- AIMLFW Requirements gathering from community
  - O-RAN SC community feedback
  - Kevin Timoney mention about Release H: ksqldb which will be good to analyze and see if it can used for feature engineering related feature.
  - Joseph Thaliath discussed the I release plan. The list of proposed items are added here : "I" Release, if there is any comments or any new items to added, please add/comment on this page.

2023-05-02 (Tuesday)

Recording Link:

https://zoom.us/rec/share/Xl1ZSAz-i4JrslGq41QdIcNnUnjQ8vUhSXhkY9-OvUQuB5IebbIWIx5IfHhQyHN7.je4fj9b9220cB_n9

Presentation: NA

Topics:

- AIMLFW integration
  - DME
    - Joseph Thaliath showed demo of Feature group creation with DME option
      - Demo videos:
        - https://wiki.o-ran-sc.org/download/attachments/71762231/feature_group_create_final_lowres.mp4?api=v2
        - https://wiki.o-ran-sc.org/download/attachments/71762231/feature_group_create_training_final_lowres.mp4?api=v2
    - Joseph Thaliath mentioned that there was some issue when brining up components as part of nonrtric/plt/ranpm repository. Also wanted to check which the right producer component to integrate with AIMLFW
    - John Keeney mentioned, it is better to have an offline meeting to discuss these points for integration.
  - SMO
    - Vishal Varvate mentioned he was facing problem in brining up AIMLFW components when there is a restart of VM
    - Joseph Thaliath mentioned that the provided steps in offline call should be enough but we will look at making changes to make it easier to bring up AIMLFW components when there is VM restart.
- AIMLFW features
  - Delete training jobs
    - Joseph Thaliath mentioned that this item is not started
  - Feature group creation with DME source
    - Joseph Thaliath showed demo of Feature group creation with DME option
- Kserve adapter
  - for xApp

- - Joseph Thaliath updated that most of components code is committed. Code commit for Kserve client component is pending. Code will be committed in this sprint and demo will be shown in one of the meeting.
    - for rApp
  - AIMLFW Requirements gathering from community
    - O-RAN alliance WG2 and WG3
      - Joseph Thaliath mentioned that requirements are being analyzed from WG2 and consolidating all the requirements and we can discuss the same in the next meeting to decide on priority of the items and prepare plan for next release.
    - O-RAN SC community feedback
  - Change in timing from next week
    - Joseph Thaliath asked if the AIMLFW meeting timing can be preponed to one hour earlier from next week due to conflict with AIML WG2 draft meeting.
    - There was no objection to this. Joseph Thaliath will update the calendar to reflect this change.

2023-04-18 (Tuesday)

Recording Link:

https://zoom.us/rec/share/36YZKmoxsWzWs4Bj4M1dhUiA-Qz5W7nSzzL25SfCpPNYtHGnQzBgUoJ4ircvivoG.VLe0kSE6kiNIRdMH

Presentation: NA

Topics:

- AIMLFW integration
  - DME
    - Joseph Thaliath updated that the feature development is ongoing. Will show demo of the same in the next meeting.
    - Joseph Thaliath checked if there is an update on the Non-RT RIC side.
    - John Keeney mentioned that it is already available in nonrtric/plt/ranpm repository and we can try it out.
  - SMO
    - Joseph Thaliath Vishal is trying to bring up the AIMLFW and upload the data in SMO influx DB
- AIMLFW features
  - Delete training jobs
    - Joseph Thaliath this feature is not yet started. Will work on it after the feature group implementation.
  - Feature group creation with DME source
    - Joseph Thaliath updated that the feature development is ongoing. Will show demo of the same in the next meeting.
- Kserve adapter
  - for xApp
    - Joseph Thaliath updated code commits in kserve adapter repository and aimlfw deployment repository is ongoing
  - for rApp
    - Aravindhan Ayyanathan mentioned that we can check the ONAP clamp documentation to enable kserve participant.
- AIMLFW Requirements gathering from community
  - O-RAN alliance WG2 and WG3
    - Plan is to prepare requirements based on the discussions in the specification meetings and contributions.
  - O-RAN SC community feedback
    - Joseph Thaliath mentioned that we will try to reach out individually to check if there are any requirements that anyone would like to see implemented in the AIMLFW.
- Kevin Timoney was asking if we have looked at Apache druid which similar to Influx DB. Joseph Thaliath mentioned we have not looked at it. and it will be good to check it.
- Kevin Timoney was also asking if we had looked at InfluxDB scrapers which gets data from prometheus endpoints and store in influx DB.

2023-04-04 (Tuesday)

Recording Link:

https://zoom.us/rec/share/_6XaeLdzcV2hDbOjZ2nNEoDE8_FEkORVNytHAT-TrzxG2EreaTQRzGJsEpp826qI._gfuTOUOmYWVu6ha

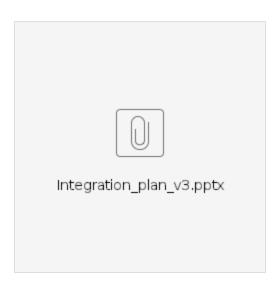Presentation:

featuregroupcreation.pptx

Topics:

- AIMLFW integration
  - DME
    - Joseph Thaliath mentioned that we are looking at enhancing the manual approaches used to interact with DME with changes on AIMLFW. Details of approach presented. Slides are attached in the meeting minutes.
  - SMO
    - Vishal Varvate mentioned he was facing issue with AIMLFW installation. Joseph Thaliath clarified that the it was tested with ubuntu 18.04. For ubuntu version 20.04, the installation script requires few changes.
    - Joseph Thaliath mentioned that after installation, need to check if the SMO influx DB will work with AIMLFW.
- AIMLFW features
  - Delete training jobs
    - Joseph Thaliath mentioned we will work on this feature in this sprint.
  - creating an abstraction for pipelines
    - Joseph Thaliath mentioned it is completed in the previous sprint.
  - Feature group creation with DME source
    - Joseph Thaliath mentioned that we are looking at enhancing the manual approaches used to interact with DME with changes on AIMLFW. Details of approach presented. Slides are attached in the meeting minutes.
    - SANDEEP KUMAR JAISAWAL asked how the feature names are obtained. Joseph Thaliath mentioned that currently we need to mention manually. In future, we can provide option to user to select possible features.
- Kserve adapter
  - for xApp
    - Joseph Thaliath the update on this item is that testing is complete for installation part, code will be committed this week. In the current sprint, Kserve adapter changes are ongoing.
  - for rApp
    - Joseph Thaliath mentioned we have installed the smo, but could not find kserve participant. We will check with Aravindhan Ayyanathan offline by email.
- AIMLFW Requirements gathering from community
  - O-RAN alliance WG2 and WG3
  - O-RAN SC community feedback
  - Joseph Thaliath asked the meeting participants for any inputs on any new features that need to be supported in AIMLFW or if any other forums e need to track to get requirements for AIMLFW.
  - John Keeney mentioned if we could look at other approaches for providing/deploying the models (e.g. docker image or helm charts).

2023-03-21 (Tuesday)

Recording Link:

https://zoom.us/rec/share/easTGqJaQJ9vQL_E_jU7ko7g8J5rJfit3YGI_GqyAheQlOLhlZxhtjM9EfiP36Sz.fqdLxoo3aWSUb1Sl

Presentation:

Integration_plan_v3.pptx

Topics:

- AIMLFW feature addition
  - Joseph Thaliath mentioned Currently working on creating an abstraction for pipelines. AIMLFW-32
  - Joseph Thaliath mentioned today the Chart museum installation error is fixed.
- AIMLFW integration
  - DME
    - Joseph Thaliath showed an initial demo of how data generated by DME in influx DB can be used for AIMLFW for training.
    - VIdeo links:
      - https://wiki.o-ran-sc.org/download/attachments/71762231/icsjob_qoedata.mp4?api=v2
      - https://wiki.o-ran-sc.org/download/attachments/71762231/trainingjob.mp4?api=v2
    - Kevin Timoney asked the Influx DB we are using. SMO is using Influx DB version 1. There will be minor difference between version and version 2.
    - John Keeney Working with O1 simulators team to generate the data , so that data is available at the right time. This will give a complete end to end flow.
    - John Keeney asked how the data was generated and mentioned mostly they will pre-spec.
    - Joseph Thaliath mentioned that a python code was used to read data from csv file, generate xml files, uploaded to http server, and generate file ready events
    - Joseph Thaliath was suggesting a one time historical job for retrieving data along with notification. We can discuss this further in offline meeting or non-rt ric meeting
  - SMO
    - Joseph Thaliath mentioned that a Jira task is added for this activity. We have fixed the installation errors. The latest version in the aimlfw-dep repository can be used for installation. As Kevin mentioned the SMO might be using version 1 and there might compatibility issues with AIMLFW. Need to check this.
    - Joseph Thaliath need to check if SMO has plan to upgrade influx DB version to v2.
- Kserve adapter
  - for xApp
    - Joseph Thaliath mentioned minha lee is not able to join today. The update on this item is that coding is complete, review and testing is ongoing. Will be committed by next sprint.
  - for rApp
    - Joseph Thaliath was asking if there is steps for installing this.
    - Aravindhan Ayyanathan mentioned the commits related to kserve is merged and it should be available as part of the SMO install. It should be specifically be enabled. It is part of OAM.
    - John Keeney mentioned installation should be part of the it-dep repository.
    - John Keeney mentioned that in the charts we've the added the extension to enable case kserve.

2023-03-07 (Tuesday)

Recording Link: https://zoom.us/rec/share/l56W82pnH7YnLbcvnVTIbDAn5Za-PsWDqcx-28QEF9z7U_GvPoynBZ4tWLIAjv9V.1PomUCDM0o6CXjoz

Presentation: N/A

Topics:

- AIMLFW feature addition
  - Joseph Thaliath mentioned that edit and retraining features are added and committed to gerrit
  - Joseph Thaliath mentioned the next feature is to create simplified approach for training pipelines.
- AIMLFW integration
  - DME
    - Joseph Thaliath mentioned the PM file demo by non-rt ric team using ICS and kafka was tried out.
    - Björn Magnusson showed a demo of PM file demo using PM logger approach which stored data in influx DB. There are two approaches of how data is stored in influx DB. Joseph Thaliath to check which one is a better approach.

- - - **Joseph Thaliath** mentioned that we will try out the new approach of filtered data stored in influx DB. We analyze and see which type of data organization is better. or maybe in different usecases , we can have different data organization options.
    - Regarding milliseconds information to be captured as part of QoE dataset, we can have an offline discussion.
  - SMO
    - **Joseph Thaliath** mentioned that , we need to try the SMO Influx DB option. Need to check if this can skipped as DME itself has an option to store filtered data in Influx DB.
- Kserve adapter
  - for xApp
    - **minha lee** mentioned that design is shared with Subhash from Near-RT RIC team. Development is in progress.
  - for rApp
    - **Aravindhan Ayyanathan** showed a demo of ACM approach of deploying models on Kserve. He will share the steps on how to try it out once the final commits are complete.
    - **John Keeney** mentioned via chat that what we saw in the demo will be likely be wrapped up inside an ORAN rApp manager, when we have a clear R1 spec for app management, and the app package defn etc will likely evolve too. But this is the basis /internals for what we plan for osc.

2023-02-21 (Tuesday)

Recording Link: https://zoom.us/rec/share/B_bvqVEu8BHiZt7wJYcQ8s8jByrTx7tN7oR94-_cG3_Nuxn36u8vV5uOgUtrvvur.YKD9j34luqPdVfyj

Presentation:

Integration_plan_v2.pptx

Activities

- Share integration discussion result and demo plan of SMO/Non-RT RIC
  - **Joseph Thaliath** shared the existing plan for integration with Non-RT RIC DME
  - **Joseph Thaliath** suggested an end notification to be provided , so that AIMLFW knows all the historical data requested is provided, so that training can be started
  - **John Keeney** mentioned that pm data needs to be in xml format as used in the demo flow
  - **Patrik Buhr** described pm logger approach where data can be stored in influx db and AIMLFW can retrieve it from it directly.
  - **Patrik Buhr** asked about the preferred influx DB version, data schema required.
  - **Joseph Thaliath** said will check and inform and after trying out the new approach will have a better idea on the requirements and gaps.
  - **Björn Magnusson** mentioned that by end of this week, this approach will be integrated to end to end flow, so that we can try it out.
  - **Kevin Timoney** mentioned he was working on Apache camel and kafka connect, whic can be another option for data access
- Share Kserve Adapter design
  - Update integrate plan for xApp Onboarder and RICDMS
  - Kserve Adapter - AI/ML Framework - Confluence (o-ran-sc.org)
  - **John Keeney** and **Aravindhan Ayyanathan** discussed about the Automation Composition Management: Architecture and Design - Developer Wiki - Confluence (onap.org) and new kserve based component based on ACM.
  - **Aravindhan Ayyanathan** mentioned they have demo of Kserve deployment of a sample model.
  - **John Keeney** said we can have a demo of it in 2 weeks to get better understanding.
  - Links shared during the meeting
    - https://wiki.onap.org/display/DW/Automation+Composition+Management%3A+Architecture+and+Design
    - https://docs.onap.org/projects/onap-policy-parent/en/latest/clamp/acm/acm-architecture.html

2023-02-07 (Tuesday)

Recording Link:

Presentation:

Integration_plan_v1.pptx

- Discuss cooperation with Viavi solution that could be useful for us to put together a use case - Baruch Friedman from Viavi Avinash Bhat
- JIRA tasks
  - H Release Epics
    - [AIMLFW-13] All Test for H Release - ORAN Jira (o-ran-sc.org)
    - [AIMLFW-23] Installing Kserve inference service CRD in RIC cluster - ORAN Jira (o-ran-sc.org)
    - [AIMLFW-26] Diversify training data source for Training host - ORAN Jira (o-ran-sc.org)
    - [AIMLFW-25] training pipeline modification, retraining triggering - ORAN Jira (o-ran-sc.org)
    - [AIMLFW-24] Integrated installation - ORAN Jira (o-ran-sc.org)
  - H Release Sprint
    - H release timeline - Releases - Confluence (o-ran-sc.org)

      O-RAN Software Community "H" Release Revised - Sprint Calendar 2023

  - Active Works
    - [AIMLFW-22] fixing sonar issues - ORAN Jira (o-ran-sc.org) -   Rajdeep Singh
    - [AIMLFW-14] Define requirements - ORAN Jira (o-ran-sc.org) - Joseph Thaliath, Vishal Varvate
    - [AIMLFW-11] Define requirements - ORAN Jira (o-ran-sc.org) - Minha Lee, Youhwan Seol
    - [AIMLFW-16] Define requirements - ORAN Jira (o-ran-sc.org) - Joseph Thaliath
    - [RIC-955] Integrate kserve adapter as optional component in RIC - ORAN Jira (o-ran-sc.org) - Subhash (RICPLT), Minha Lee, Youhwan Seol

2023-01-24 (Tuesday)

Recording Link: https://zoom.us/rec/share/-mPBxtpibaCe-xluB7SSUg-Yx4PHPhmj9Q2KabmuRaprbtnW1EwGPx_hpruvhjP5.7B5c3tcV6JxbbuMs
Presentation: Integration_plan.pptx , KserveAdpater plan.pptx

- Open RAN gym framework Demo - Northeastern university
  - https://openrangym.com/
  - Prof. Salvatore D'Oro(s.doro@northeastern.edu), Prof. Melodia(t.melodia@northeastern.edu), Michele Polese(m.polese@northeastern.edu), Leonardo Bonati(l.bonati@northeastern.edu)
  - (Open RAN Gym Team) introduced Open RAN Gym and showed live demo
  - Since our seed code cannot handle RL model in RIC, so we need research about how to integrate demo scenario and simulator with AIML framework.
  - We need to get training data via O1 from simulator and deploy ML xApp and training pipeline in the RIC as well.
  - We will keep discussing offline about the cooperation.
- Integration AIML FW with Non-RT RIC/ SMO plan postponed
  - Work items for obtaining training data from DME in Non-RT RIC, InfluxDB in SMO
- Kserve adapter Concept discussion postponed
  - How to handle Kserve inference service
    - (Hoejoo) We need to attend RICPLT meeting to share our idea
    - As an ML xApp : Need to do registration to Appmgr and notify to SMO via O1
    - As a platform service : Need to manage them by platform

2023-01-10 (Tuesday)

Recording Link: https://zoom.us/rec/share/ZksdZ4Pcy8SHAuja_Y5XV3h749SrdzL1jNCsRWscCoR_vI7mEMu_vzLvUqxSy_s3.XhBSwcFvMQgbdYIP
Presentation:

- Sprint planning
  - Period : Jan. 10, 2023 ~ Jan. 23, 2023 (AIMLFW Board - Agile Board - ORAN Jira (o-ran-sc.org))
  - Sprint goal : Define H release scope by discussion with other projects and WGs
  - TASKs ([AIMLFW-17] Discussion with other projects and WGs - ORAN Jira (o-ran-sc.org))
    - DME Integration with AIML FW
      - Discuss about the R1 interface, DME related demo in Non-RT RIC project
      - Need to install DME available in g-release and check how it works.
      - Integration plan based on the existing implementation.
    - Training pipeline Enhancement

      - Add sample pipelines by default, reducing user effort
      - Simplify the process of adding new training pipeline (reducing the amount of code written by user)
      - Implementation plan
    - Integrated installation

      - Integrate with SMO Influx DB
        - (+ Vishal will work on it)
      - Plan to install as part of SMO first
    - Kserve adapter

      - Implementation plan for deploying models in Near-RT RIC
      - (+Jone Keeney suggest dicuss about Implementation plan for deploying models in Non-RT RIC, too)
      - Need to define how to integrate DMS Cli and Management Func.
  - AI/ML related discussion and features in O-RAN alliance meetings
    - MVP-C:
      - Present our current implementation and get feedback on the direction from specification point of view.
      - (+ James asked about any plan for alignment with MVP-C plan)
      - (+ Joseph answered that we will look into the plan about R1 and Non-RT RIC architecture)
      - (+ Hoejoo answered that we will prepare clear idea for AIML module in Near-RT RIC)
    - Identify gaps with framework in O-RAN SC and specification plan in O-RAN alliance
    - AI/ML meetings in WG2 (https://oranalliance.atlassian.net/l/cp/j21ufRL3)
    - Any other meetings related to AI/ML topics ?
  - Presentation and discussion of AIML workflow and integration points in RSAC meeting.
- Open RAN gym framework Demo - Prof. Salvatore D'oro from Northeastern university => postponed!
  - Prof Prof. Salvatore D'oro shared information about open ran gym (https://openrangym.com/)
  - In the next meeting , Prof. Salvatore D'oro will show a live demo.
  - contact email id: s.doro@northeastern.edu

2022-12-13 (Tuesday)

Recording Link: https://zoom.us/rec/share/psMPyq9rt0f7d6hMhlrK4RGU6YylB77ObJq0zVbP6pI4kdTMSH7CCN3ZnOGFEaDb.6M2uBwSzhhtSUQ5K

Presentation:

H Release plan.pptx

OSC_AIML_openrangym.pdf

- Sprint 5 progress
  - Prepare for release G
    - Prepare Demonstration videos
      - Installation of framework
      - QoE usecase Training
      - ML xApp and Assist xApp deployment and inference
      - Videos uploaded here: Files related to G release
      - Joseph Thaliath mentioned demonstration is uploaded in the above link
    - Documentation
      - Adding docs as part of aimlfw-dep repository to explain the steps for installation
      - Add docs for all repository and update in main o-ran documentation page (https://docs.o-ran-sc.org/)
      - Joseph Thaliath mentioned docs folder is added to all the repositories.
    - Add README and LICENSE files in all repositories
      - Joseph Thaliath added License files in all repositories
    - Sonar integration (https://sonarcloud.io/organizations/o-ran-sc/projects)
      - Joseph Thaliath mentioned AIMLFW repositories are integrated to sonar
    - G release branch creation
      - Joseph Thaliath will create g release branch by tomorrow.
- H-release plan
  - Plan for integration of AIMLFW with other projects in oran sc,
  - Discuss about the R1 interface, DME related demo in Non-RT RIC project
  - AI/ML related discussion and features in O-RAN alliance meetings
    - MVP-C:
      - Present our current implementation and get feedback on the direction from specification point of view.
    - Identify gaps with framework in O-RAN SC and specification plan in O-RAN alliance
    - AI/ML meetings in WG2 (https://oranalliance.atlassian.net/l/cp/j21ufRL3)
    - Any other meetings related to AI/ML topics ?
  - Presentation and discussion of AIML workflow and integration points in RSAC meeting.
  - Discuss and finalize overall list of items for H release - Sprint 6
  - Joseph Thaliath added H release plan presentation and gave an overview. Joseph Thaliath has asked for comments and review of the presentation and provide suggestion to add new features/topics
- Open RAN gym framework - Prof. Salvatore D'oro from Northeastern university
  - Prof Prof. Salvatore D'oro shared information about open ran gym (https://openrangym.com/)
  - In the next meeting , Prof. Salvatore D'oro will show a live demo.
  - contact email id: s.doro@northeastern.edu

2022-11-29 (Tuesday)

Recording Link: https://zoom.us/rec/share/7UjPD3y1af93tvkcVb-kZ2i2aBayMuZDVye7TD31g565L72vXNM4PilNw39owZbt.Fs5N7UXcmstz7VXX

Presentation:

AIMLFW_workflow_v2.pptx

Agenda and meeting minutes:

- Sprint 4 progress
  - Review the status of JIRA tasks created
    - Prepare installation scripts for AIMLFW . Joseph Thaliath mentioned that it is completed and the code is updated in gerrit.
    - Create jenkins job for all AIMLFW repositories. Joseph Thaliath mentioned that Jenkins job for 2 repositories are created and working. For 2 more repositories, there is issue with authentication. Tickets have been raised with Linux foundation helpdesk.
    - Adding unit tests, Integration with SONAR. Joseph Thaliath mentioned that unit tests for single repository has been tested and test and coverage is shown in the logs but not updated in SONAR, We are still checking this issue.
    - QoE assist xapp minha lee mentioned that integrated testing is complete, will create a demonstration video for the same.
    - Integrated testing. Joseph Thaliath mentioned we need to download the code back from gerrit and verify the end to end working.
- Sprint 5 plan
  - Prepare for release G
    - Prepare Demonstration videos
      - Installation of framework
      - QoE usecase Training
      - ML xApp and Assist xApp deployment and inference
      - Joseph Thaliath mentioned that we will upload videos for the above scenarios.
    - Documentation
      - Adding docs as part of aimlfw-dep repository to explain the steps for installation
      - Joseph Thaliath mentioned that we are looking at the steps to create documentation for the project in https://docs.o-ran-sc.org/. We are checking the steps mentioned in Configure Repo for Documentation.
    - Add README and LICENSE files in all repositories
    - G release branch creation
- H-release plan
  - Plan for integration of AIMLFW with other projects in oran sc,
  - Discuss about the R1 interface, DME related demo in Non-RT RIC project
  - AI/ML related discussion and features in O-RAN alliance meetings
    - MVP-C:
      - Present our current implementation and get feedback on the direction from specification point of view.
    - Identify gaps with framework in O-RAN SC and specification plan in O-RAN alliance
    - AI/ML meetings in WG2 (https://oranalliance.atlassian.net/l/cp/j21ufRL3)
    - Any other meetings related to AI/ML topics ?
  - Presentation and discussion of AIML workflow and integration points in RSAC meeting.
  - Discuss the open questions and priorities of integration interfaces to consider
  - Joseph Thaliath mentioned we are looking at presenting the attached presentation in the rsac meeting to get feedback.
  - @Hunje Yeon asked if any new usecase will be considered for h release?
  - Joseph Thaliath mentioned that we can look at the other ML xApp as part of traffic steering usecase which is the anomoly detection xApp. Also we can check with others in the community if any other usecase we can demonstrate on top of the framework.

2022-11-15 (Tuesday)

Recording Link: https://zoom.us/rec/share/l7t4MTcc2q1MPdLgxdO7ABNsFbdoDdhYm60QUW1KJ7ZeEflxyYufStZhfmuITT8.xdrL7swckXX4mr15

Presentation:

AIMLFW_workflow_v2.pptx

Agenda and meeting minutes:

- Sprint 3 progress
  - Review the status of JIRA tasks created
    - Prepare installation scripts for AIMLFW
    - Create jenkins job for all AIMLFW repositories
    - Adding unit tests
    - Creation of repositories
    - Creation of QoE assist xapp
  - Joseph Thaliath mentioned that installation scripts are locally tested. Will start contributing the code by tomorrow.
  - Joseph Thaliath mentioned that aiml-fw/aimlfw-dep, ric-app/qp-aimlfw repositories are created
  - minha lee mentioned that QoE assist xapp will be completed by this week
- Sprint 4 plan
  - Commit installation scripts for AIMLFW
  - Create jenkins job for all AIMLFW repositories
  - Adding unit tests
  - Creation of QoE assist xapp
  - Integrated testing
  - Joseph Thaliath mentioned that we have moved the above Jira items to sprint 4
  - Joseph Thaliath mentioned that maybe we can try to show a demo of the end to end flow of the AIMLFW during the next AIMLFW meeting
- H-release plan
  - Plan for integration of AIMLFW with other projects in oran sc,
  - Discuss about the R1 interface, DME related demo in Non-RT RIC project
  - AI/ML related discussion and features in O-RAN alliance meetings
    - MVP-C:
      - AI/ML for O-RAN feature proposal is approved in MVP-C meeting (https://oranalliance.atlassian.net/wiki/spaces/MVPC/pages/2698445926/Meeting+Minutes+2022-11-14+Technical+session+-+Draft).
      - Present our current implementation and get feedback on the direction from specification point of view.
    - Identify gaps with framework in O-RAN SC and specification plan in O-RAN alliance
    - AI/ML meetings in WG2 (https://oranalliance.atlassian.net/l/cp/j21ufRL3)
      - Joseph Thaliath mentioned that the first meeting was held 2 weeks back. They have started defining the services for AI/ML in Non-RT RIC
    - Any other meetings related to AI/ML topics ?
  - Joseph Thaliath shared the attached presentation which describes the AI/ML workflow according to our understanding. In the workflow, we have marked the interfaces that requires integration with other projects.
  - @Hunje Yeon mentioned that we need to present this presentation describing AI/ML workflow in the RSAC meeting for feedback and priority.

2022-11-01 (Tuesday)

Recording Link: https://zoom.us/rec/share/1hsavyCSMJ9FuXROFxf8GnR6ADmTGgcmgq_ZOSWz84uSD3x95EMa9A3_2vJWqNz-.DZldEzGBmBfxCrto

Presentation: N/A

Agenda and meeting minutes:

- Sprint 3 progress
  - Review the status of JIRA tasks created
    - Prepare installation scripts for AIMLFW
    - Create jenkins job for all AIMLFW repositories
    - Adding unit tests
    - Creation of repositories
    - Creation of QoE assist xapp

- - - **Vishal Varvate** (from Capgemini) mentioned they are looking into the QoE xApp. **minha lee** from Samsung is also looking into this activity. To be discussed offline for collaboration.
    - **Vishal Varvate** mentioned we need to have offline discussion. **Joseph Thaliath** to setup offline call to discuss about this activity.
  - **Vishal Varvate** was asking if the source code is available in the repositories.
  - **Joseph Thaliath** mentioned that source code for all the components are uploaded.
- In the previous meeting, **John Keeney** mentioned about a demo from Non-RT RIC project regarding accessing PM data (including historical data) using the R1 interface. Implementing Authenticated access to the data is in progress. Demo might be planned during Non-RT RIC/RSAC meeting
  - Demo link: https://wiki.o-ran-sc.org/download/attachments/57377869/20221019-OSC-NONRTRIC-PMFileCollection-rApp-ICS-R1DME.mp4?version=1&modificationDate=1666210546930&api=v2
  - **Joseph Thaliath** mentioned about going through the demo video and asked about the interface to datalake,
  - **John Keeney** mentioned that the current demo is not integrated with data lake in SMO yet. If the job has been running for a while some of the historical information will be there already cached. Also, we need to look at the usefulness of the solution right now instead of the checking the standardization part. It is important to have an interface to the data wherever it is, rather than going directly into the database to get it.
  - **Joseph Thaliath** to check further on this implementation and demo and discuss further in the Non-RT RIC project meeting.
- In the previous meeting, **Joseph Thaliath** mentioned about the problem of showing the commits mapped to unknown organization in LF insights page. **John Keeney** said it is best to follow-up using LF helpdesk Jira tickets.
  - **Joseph Thaliath**, mentioned this issue is resolved using LF tickets.
- Trigger License screening of seed code committed.
  - **Joseph Thaliath** to check further in RSAC and TOC calls.
- H-release plan
  - Plan for integration of AIMLFW with other projects in oran sc,
  - Discuss about the R1 interface, DME related demo in Non-RT RIC project
  - AI/ML related discussion and features in O-RAN alliance meetings
    - Should we initiate offline discussion with MVP-C members working on AI/ML proposal?
      - Present our current implementation and get feedback on the direction from specification point of view.
    - Identify gaps with framework in O-RAN SC and specification plan in O-RAN alliance,
  - **Joseph Thaliath** asked if any volunteers will be able to study this activity?
    - **John Keeney** mentioned that it is best to get directions from O-RAN alliance.
    - **Vishal Varvate** mentioned about joining these meetings in O-RAN alliance community and we can sync up on the understanding in the AIMLFW meetings,
    - **Joseph Thaliath** mentioned that we need to look at integration points like data collection for training/inference, Model deployment interface (maybe O2) , Model performance/feedback interfaces, Model formats etc.
- **James Li** requested if it is possible to change timing of this meeting since it will be very early in the west coast.
  - **Joseph Thaliath** to check if it is possible to postpone the meeting by an hour.

2022-10-18 (Tuesday)

Recording Link: https://zoom.us/rec/share/rTAOMvhLN2pdpbgdWJEjlJ-CLBb9pdbFaJQAJGklAJuxHm6vKP6e-gt6WmQ4w4SD.nG9Qckk02BnS8ANv

Presentation: N/A

Agenda:

- oran alliance F2F meeting
  - **Joseph Thaliath** added the slides and demo video in RSAC contributions page.
  - Presentation: https://wiki.o-ran-sc.org/download/attachments/3604609/AIMLFW%20Project_f2f.pptx?api=v2
  - Demo video: https://wiki.o-ran-sc.org/download/attachments/3604609/AIMLFW_demo_f2f_oct2022.mp4?api=v2
- Sprint 2 update
  - Repo creation
    - **Joseph Thaliath** All repositories created for the seed code
    - Todo: Close JIRA sub task : AIMLFW-3
  - Seed code commit
    - **Joseph Thaliath** Most of the source code is updated in the new repositories. Refer AIMLFW-2 for the details of the commits
    - Todo: Complete initial source code commits by end of this week and close JIRA task: AIMLFW-2
- Sprint 3 plan
  - ToDo: Add JIRA tasks for the new sprint
  - Tasks pending
    - Development of End to end deployment scripts
    - Jenkins job configurations for the new repositories
    - QoE assist xApp development
    - **Vishal Varvate** (from Capgemini) mentioned they are looking into the QoE xApp. **minha lee** from Samsung is also looking into this activity. To be discussed offline for collaboration.
    - Unit test cases
- **John Keeney** mentioned about a demo from Non-RT RIC project regarding accessing PM data (including historical data) using the R1 interface. Implementing Authenticated access to the data is in progress. Demo might be planned during Non-RT RIC/RSAC meeting
- **Joseph Thaliath** mentioned about the problem of showing the commits mapped to unknown organization in LF insights page. **John Keeney** said it is best to follow-up using LF helpdesk Jira tickets.

2022-10-04 (Tuesday)

Recording Link: https://zoom.us/rec/share/TlexsI44mmpMsU6wfiiHWeFVsKgjr2bKmqrCAPt7HMm4ACPgEiV24IBidCW1XGU.D1HoThZyZ4ffClbE

Presentation: N/A

Agenda:

1. Sprint update
   a. repo creation
   b. seed code contribution
      - portal/aiml-dashboard
      - aiml-fw/awmf/tm
      - aiml-fw/athp/tps/kubeflow adapter
      - aiml-fw/athp/sdk/feature store
      - aiml-fw/athp/sdk/model storage
      - aiml-fw/athp/data extraction
2. Next Sprint Tasks
   a. aiml-fw/dep
   b. ricapp/qp-aimlfw
3. ~~Discussion about cooperation with Keysight~~ (Eng Wei Koo)
4. Joseph Thaliath updated on the status on the previous sprint and the activities planned for the current sprint.
5. Regarding the repository creation hoejoo lee suggested to check with Sridhar for next steps if the repository is not created.
6. Vishal Varvate (from Capgemini) would like start looking at the QoE xApp changes required to adapt to the new AIML Framework and will start looking into the existing QoE xApp code. Joseph Thaliath described the basic requirement and suggested to sync up again in the next meeting.
7. hoejoo lee suggested to upload the Demo video to this AIMLFW project page when it is ready.

2022-09-20 (Tuesday)

Recording Link: https://zoom.us/rec/share/JmgqxJfFPqSd84_JCWvY2MQEnnQfES32H81VmP80lcvVSeTTHlx2GBS8iQVkxWfE.1eAvbXfsHQKphONX

Presentation: N/A

Agenda:

1. Holding regular meetings every other week
   a. hoejoo lee wants to have an official meeting every other Tuesday.
   b. It is also possible to arrange unscheduled meeting if needed
   c. we can discuss offline by email or confluence pages for a certain issue.
2. Sprint
   a. The first sprint has started (Sprint #1)
      i. https://wiki.o-ran-sc.org/pages/viewpage.action?pageId=57377588
   b. Repo creation
      i. For this sprint
         1. portal/aiml-dashboard
            aiml-fw/awmf/tm
            aiml-fw/athp/tps/kubeflow adapter
            aiml-fw/athp/sdk/feature store
            aiml-fw/athp/sdk/model storage
            aiml-fw/athp/data extraction
      ii. Next sprint
         1. aiml-fw/dep
         2. ricapp/qp-aimlfw
3. Action item of the previous meeting
   a. Joseph Thaliath about deployment repository
      i. keep the separate repository from it/dep as RICPLT
4. About F2F Demo
   a. Joseph Thaliath shared the situation and then we need to discuss the demo scope and quality.
5. Marwan Mansour (from Dell) is interested in the inference platform, so Joseph Thaliathgave him the presentation about the flow again.
6. Vishal Varvate (from Capgemini) is working on ONAP, already has a training manager, and wants to discuss how to contribute
7. Deepanshu Karnwal(from HCL) is interested in xApp-related contribution, his company has already contributed several xApps such as AD xApp
8. ~~Discussion about cooperation with Keysight~~ (~~Eng Wei Koo~~)

2022-09-06 (Tuesday)

Recording Link: https://zoom.us/rec/share/aGhbxgdk6Ql6J-tGxi_Nb87znEDESSOhlV5Iwi1M0IQ53owkoNDpan0O3YRB5-Hr.hYHSHbfEyFrDc5-J

Presentation:

AIMLFW-KickOffMeeting.pdf

1. Greetings
2. hoejoo lee The First sprint will start on the 12th - O-RAN SC's dev sprint2 begins on the 12th and ends on the 30th Sep.(Releases - Releases - Confluence (o-ran-sc.org)
3. hoejoo lee Jira Task creation is in progress. For seed code contribution, we will use an epic name as 'seed code', after that I will bring the names for the next features.
4. G release
   a. G Release
      i. G Feature Scope / Achievements:
         - Stand-alone installation with Kubeflow as a Training host backend and Kserve as an Inference host backend
         - Manual Deployment of ML rApp and ML xApp
         - Initial Training Job Management (Data extraction/feature management)
         - Sample ML pipeline and ML xApp: QoE Prediction model using LSTM with data from ricapp/qp) => will bring this issue as a discussion point to RICAPP project
5. Introduction of the project
   a. Initial Repositories :
      i. Joseph Thaliath said that we would create aiml-fw/dep repository and link to it/dep
      ii. James Li worried about the separate deployment repository from it/dep. He thinks of integrating all deployment flows and manage together in the same repository.
      iii. Avinash Bhat suggested discussing in the 'integration' meeting
   b. Architecture Flow for Initial Seed Code Contribution
      i. James Li said that about the seed code, for python language, it is required to put on the dependencies in the requirements.txt to check on the license standing in the dependencies quickly.
      ii. James Li also said that there might be some researchers who are interested in this project. They are mostly focusing on developing models, they might want to see the data set availability.
      iii. Joseph Thaliath said that currently, this project focuses on the development of the framework, and we try to show the demonstration with a sample use case and test the framework. Jack from the TOC meeting also worries about data management. After the G release we can discuss data management as well because then we secure the basic version framework.
      iv. Sridhar Rao suggests working with ITU-T since there is data for many RAN use cases.
6. Discussion with projects
   a. MVP contribution related to AIML workflow
      i. Joseph Thaliath mentioned that we would provide some feedback to get a better understanding of the expected end-to-end workflow
      ii. Joseph Thaliath/ Avinash Bhat said that we will be following the discussion from the MVP-C meeting and presenting our views.
   b. EMCO framework
      i. Joseph Thaliathsaid that we are checking the cooperation with EMCO project, and they would be presenting a demo in the follow-up meeting. We will keep an eye on it.
7. CII badging
   a. Joseph Thaliathsaid that we also need to keep in mind about this