

SA5 active work items and study items at SA5#154

Progress tracker

UID	Agenda	Name	Acronym	Target Date	% at SA5#153	% at SA5#154	WID
1020007	6.19.01	Study on AI/ML management - phase 2	FS_AI ML_MGT_Ph2	SA#105 (Sept. 2024)	-	10%	SP-231780
1020019	6.19.02	Study on Management Data Analytics (MDA) - Phase 3	FS_eMDAS_Ph3	SA#105 (Sept. 2024)	5%	10%	SP-231726
1020008	6.19.03	Study on intent driven management services for mobile network phase 3	FS_IDMS_MN_Ph3	SA#105 (Sept. 2024)	-	30%	SP-231737
1020009	6.19.04	Study on closed control loop management	FS_CCLM	SA#105 (Sept. 2024)	5%	10%	SP-231735
1020018	6.19.05	Study on management aspects of Network Digital Twin	FS_NDT	SA#105 (Sept. 2024)	5%	40%	SP-231727
1020010	6.19.06	Study on Cloud Aspects of Management and Orchestration	FS_Cloud_OAM	SA#105 (Sept. 2024)	2%	20%	SP-231781
1020016	6.19.07	Study on Enablers for Security Monitoring	FS_SECM	SA#105 (Sept. 2024)	-	0%	SP-231736

UID	Agenda	Name	Acronym	Target Date	% at SA5#153	% at SA5#154	WID
1020011	6.19.08	Study on Service Based Management Architecture enhancement phase 3	FS_SBMA_Ph3	SA#105 (Sept. 2024)	-	10%	SP-231725
1020033	6.19.09	Study on Management of planned configurations	FS_PlanM	SA#105 (Sept. 2024)	-	25%	SP-231721
1020025	6.19.10	Data management phase 2	MADCOL_ph2	SA#108 (June 2025)	-	25%	SP-231746
1020012	6.19.11	Study on data management regarding subscriptions and reporting	FS_Data_SREP	SA#105 (Sept. 2024)	-	20%	SP-231732
1020026	6.19.12	5G performance measurements and KPIs phase 4	PM_KPI_5G_Ph4	SA#108 (June 2025)	-	12%	SP-231747
1020027	6.19.13	5G Advanced NRM features phase 3	AdNRM_ph3	SA#108 (June 2025)	-	5%	SP-231745
1020028	6.19.14	Subscriber and Equipment Trace and QoE collection management	TraceQoE_OAM	SA#108 (June 2025)	-	10%	SP-231748
1020013	6.19.15	Study on Management Aspects of NTN Phase 2	FS_NTN_OAM_Ph2	SA#105 (Sept. 2024)	-	25%	SP-231733
1020014	6.19.16	Study on management of IAB nodes	FS_NR_mobile_IAB_OAM	SA#105 (Sept. 2024)	-	30%	SP-231729

UID	Agenda	Name	Acronym	Target Date	% at SA5#153	% at SA5#154	WID
1020017	6.19.17	Study on management aspects of RedCap feature	FS_NR_RedCap_OAM	SA#105 (Sept. 2024)	-	25%	SP-231734
1020020	6.19.18	Study on Enhancement of Management Aspects related to NWDAF Phase 2	FS_NWDAF_OAM_Ph2	SA#105 (Sept. 2024)	-	40%	SP-231724
1020015	6.19.19	Study on Management of Network Sharing Phase 3	FS_NetShare_OAM_Ph3	SA#105 (Sept. 2024)	-	35%	SP-231731
1020021	6.19.20	Study on energy efficiency and energy saving aspects of 5G networks and services	FS_Energy_OAM_Ph3	SA#105 (Sept. 2024)	10%	20%	SP-231723
1020022	6.19.21	Study on Enhanced OAM for management exposure to external consumers	FS_MExpo	SA#105 (Sept. 2024)	5%	10%	SP-231728

OAM&P Rel-19 topics

6.19.01 Study on AI/ML management - phase 2 (FS_AIML_MGT_Ph2)

Overall WI progress: **10%**

Progress per Work Task:

- WT-1. **10%**
- WT-2. **0%**

- WT-2.1.
- WT-2.2.
- WT-2.3.
- WT-3. **0%**
 - WT-3.1.
- WT-4. **15%**
- WT-5. **15%**
 - WT-5.1
- WT-6. **0%**
 - WT-6.1
 - WT-6.2

Summary of the progress at this meeting:

- The discussion in Changsha evolved around set of submitted documents addressing WT-1, 4, 5 as planned for this meeting. The documents addressed number of topics including TR structure and contents arrangement, Concepts and terminologies, ML training, Sustainability & EE related, AI/ML inference, AI/ML emulation and learning techniques (e.g., Federated learning, Pre-training, and Fine tuning, etc.).
- A revised SID was discussed and agreed to change target document of the study to another 9xx TR to document the results of the study.
- The discussion on terminology was postponed to next meeting subject building up on relevant discussions during this week to revisit Rel-18 set of terminologies.
- Agreements have been reached on some basic use cases and corresponding requirements for AI/ML Energy saving/Energy efficiency. Discussion on other use cases including e.g., AI/ML Energy saving and Energy efficiency EE/ES metrics, model complexity impacts shall continue in the forthcoming meetings.
- Agreements have also achieved to revisit Rel-18 use cases for emulation, inference, and knowledge transfer per WT-1 in order to address any enhancements to the descriptions, corresponding potential requirements and solutions.
- Discussions have also taken place on the learning techniques including Federated Learning (FL), model pre-training and Fine tuning have also been discussed. The group agreed to revisit the topic in the forthcoming meetings.
- Overall good progress has been made specially on reaching common understanding on how to progress further on the key topics highlighted above.

6.19.02 Study on Management Data Analytics (MDA) - Phase 3 (FS_eMDAS_Ph3)

Overall WI progress: **10%**

Progress per Work Task:

- WT-1 **10%**
- WT-2 **10%**
- WT-3 **10%**
- WT-4 **10%**
- WT-5 **0%**
- WT-6 **0%**
- WT-7 **10%**
- WT-8 **10%**

Summary of the progress at this meeting:

- WT-1 Energy efficiency analytics
 - 1 contribution
 - A use case is proposed to analyze throughput to guide energy saving.
- WT-2 End-to-End performance analytics
 - 2 contributions (1 noted)
 - A use case is proposed to predict edge computing performance.
- WT-3 Data correlation analytics
 - 1 contribution
 - A use case is proposed to reduce the impact of redundant data for ML training.
- WT-4 ATSSS performance analytics
 - 1 contribution
 - A use case is proposed to analyze ATSSS rules.
- WT-5 Non-3GPP access performance analytics
 - No contributions to this meeting.
- WT-6 UE throughput analytics
 - 2 contributions not treated due to lack of time.
- WT-7 Fault management related analytics
 - 4 contributions
 - Discussion on problems with fault recovery.
 - A use case is proposed for providing statistic information for fault management.
 - A use case is proposed to improve alignment between fault prediction and alarm management.
 - A use case is proposed for providing statistic information for fault analysis.
- WT-8 Software Upgrade Validation
 - 1 contribution
 - A use case is proposed to predict the impact of a new software version.

6.19.03 Study on intent driven management services for mobile network phase 3 (FS_IDMS_MN_Ph3)

Overall WI progress: **30%**

Progress per Work Task:

- WT-1 **0%**
 - WT-1.1
 - WT-1.2
- WT-2 **50%**
 - WT-2.1
 - WT-2.2
- WT-3 **30%**
 - WT-3.1
 - WT-3.1.1
 - WT-3.1.2
 - WT-3.1.3
 - WT-3.2
 - WT-3.3

- WT-4 **0%**
- WT-5 **0%**
- WT-6 **30%**

Summary of the progress at this meeting:

- Following new scenarios were discussed and agreed to enhance the scenario specific radio network expectations and radio service expectations (WT-2).
 - Radio network traffic assurance
 - Radio service feasibility check and delivering
 - RAN Energy saving
 - Uncrewed Aerial Vehicle pre-flighting
 - Graded guarantee of 5G radio service
- Following new generic intent driven capabilities were discussed and agreed to enhance the generic Intent model (WT-3):
 - End-to-end intent handling state management
 - Implicit intent report subscription
- Following new scenarios and generic intent driven capabilities need more discussion in next meeting, the group would like to see the overview of intent negotiation functionalities first (WT-3).
 - Network preparation for Uncrewed Aerial Vehicle pre-flighting
 - Intent negotiation functionalities, including but not limited to feasibility check, intent outcome exploration, intent recommendations, intent preference.
- One contribution proposed to describe how to use the natural language is discussed and agreed.

Next steps (what to expect/to do at the next meeting)

- WT-2 : New scenario Uncrewed Aerial Vehicle pre-flighting and solution for Graded guarantee of service characteristics
- WT-3: The overview of intent negotiation functionalities.
- WT-5: Intent driven approach for network slicing.

6.19.04 Study on closed control loop management (FS_CCLM)

Overall WI progress: **10%**

Progress per Work Task:

- WT-1: **5%**
- WT-2: **5%**
- WT-3: **0%**
- WT-4: **5%**
- WT-5: **0%**
- WT-6: **0%**
- WT-7: **0%**

Summary of the progress at this meeting:

- Concept and Background got agreed with the basic principles and terminologies
- Use case for Conflict management, feedback, historical, multi-vendor CCL goes to next meeting
- Aim to converge on few basic UC/Requirements for next meeting

6.19.05 Study on management aspects of Network Digital Twin (FS_NDT)

Overall WI progress: **40%**

Progress per Work Task:

- WT-1: **50%**
- WT-2: **30%**

Summary of the progress at this meeting:

- WT-1 Investigate and define the terms related to Network Digital Twin in the 3GPP management system.
 - Term of NDT was discussed and agreed.
 - The background and overall concept description have achieved partial agreement.
- WT-2 Study scenarios and requirements for the use of NDT, e.g., for verification of the network operations. Scenarios may include RAN optimization and service assurance. Following new scenarios were discussed and agreed.
 - Emergency preparedness
 - Signaling storm analysis
 - RAN energy saving policy verification

Next steps (what to expect/to do at the next meeting)

- WT-1 : Further discussion and alignment are needed regarding additional definitions of the concept.
- WT-2 : Submissions on use cases, potential requirements and solutions are expected.

6.19.06 Study on Cloud Aspects of Management and Orchestration (FS_Cloud_OAM)

Overall WI progress: **20%**

Progress per Work Task:

- WT-1: **25%**
- WT-2: **25%**
- WT-3: **0%**

Summary of the progress at this meeting:

- WT#1:
 - Background on VNF generic functions was agreed. Use cases about use of different generic OAM functions were discussed. (to be updated)
 - Next steps: submissions on use cases, potential requirements and solutions expected.
- WT#2:
 - Use cases around the expressed need not to limit the solutions for LCM of cloud native NFs resulted in extensive discussions regarding the overall direction for the group. (to be completed)
 - Next steps: submissions on use cases, potential requirements and solutions expected.
- WT#3:
 - The single contribution submitted was not treated due to lack of time. Comments were collected offline.
 - Next steps: submissions on use cases, potential requirements and solutions expected.

6.19.07 Study on Enablers for Security Monitoring (FS_SECM)

Overall WI progress: **0%**

Progress per Work Task:

- WT-1: **0%**
 - WT-1.1
 - WT-1.2
 - WT-1.3

Summary of the progress at this meeting:

- no contributions at SA5#154

6.19.08 Study on Service Based Management Architecture enhancement phase 3 (FS_SBMA_Ph3)

Overall WI progress: **10%**

Progress per Work Task:

- WT-1 **20%**
- WT-2 **10%**
 - WT-2.1
 - WT-2.2
- WT-3 **10%**
 - WT-3.1
 - WT-3.2
- WT-4 **10%**
- WT-5 **0%**
- WT-6 **0%**
- WT-7 **0%**
- WT-8 **0%**
- WT-9 **0%**
- WT-10 **0%**
 - WT-10.1
 - WT-10.2
 - WT-10.3

Summary of the progress at this meeting:

- First time of R19 SI discussion, the group agreed the scope/structure/introduction for the study report.
- Discussed the following aspects:
 - WT-1:
 - connection between TS 28.537 and TS 28.622 for control NRM capabilities
 - Don't use support IOCs in SBMA
 - WT-2:
 - Inventory of 5G NRM specifications
 - WT-3:
 - Alarm definition in SBMA

- WT-4:
 - adiscovery of management capabilities of provisioning MnS supported by a MnS Producer
- email approval of draft TR 28.871-v010 after SA5#154 is needed
- next steps:
 - **candidate for the SA5 OAM Rapporteur calls:** Discussion on the potential solutions for each document listed in the contribution "Inventory of 5G NRM specifications".
 - **More contributions on all the WTs are welcome for SA5#155.**

6.19.09 Study on Management of planned configurations (FS_PlanM)

Overall WI progress: **25%**

Progress per Work Task:

- WT-1: **50%**
- WT-2: **50%**
- WT-3: **0%**
- WT-4: **0%**

Summary of the progress at this meeting:

- The use case for creating and updating planned configurations was agreed.
- The solution for creating and updating planned configurations was agreed.

6.19.10 Data management phase 2 (MADCOL_ph2)

Overall WI progress: **25%**

Progress per Work Task:

- WT-1: **40%**
 - WT-1.1
 - WT-1.2
 - WT-1.3
- WT-2 **40%**
- WT-3 **0%**

Summary of the progress at this meeting:

- WT-1: Historical Management data
 - 1 contribution approved
 - Update to ManagementDataCollection IOC
- WT-2: reporting of ManagementDataCollection
 - 1 contirbution approved
 - Adding condition to ManagementDataCollection
- WT-3: Managing external data
 - 1 contribution noted

6.19.11 Study on data management regarding subscriptions and reporting (FS_Data_SREP)

Overall WI progress: **20%**

Progress per Work Task:

- WT-1: **20%**
- WT-2: **20%**

Summary of the progress in this meeting:

- Problem description and requirements might be agreed for the the topics load on the NFs and/or 3GPP mgmt. system and reducing the load on the NFs and/or 3GPP mgmt. system.

6.19.12 5G performance measurements and KPIs phase 4 (PM_KPI_5G_Ph4)

Overall WI progress: **12%**

Progress per Work Task:

- WT-1: **2%**
 - WT-1.1
 - WT-1.2
 - WT-1.3
 - WT-1.4
 - WT-1.5
- WT-2: **10%**
- WT-3: **0%**
- WT-4: **0%**

Summary of the progress in this meeting:

- This is the first meeting to start discussing R19 PM_KPI. A total of 18 contributions were submitted to this meeting and all of them are treated. Two CRs for WT_1 and eight CRs for WT_2 are agreed.

Next steps (what to expect/to do at the next meeting)

- Continue the work per the plan.

6.19.13 5G Advanced NRM features phase 3 (AdNRM_ph3)

Overall WI progress: **5%**

Progress per Work Task:

- WT-1: **5%**
- WT-2: **5%**
- WT-3: **0%**
- WT-4: **10%**
- WT-5: **0%**

Summary of the progress in this meeting:

- Feature changes to NRM fragment related to NTN support and attribute value for ENUM type were discussed and agreed
- Rel19 common data Type Stage 2 discussed, the draftCR approved

- Topic of introducing generic view of 5GC functions NRM was discussed, but not agreed
- WID was revised to add EdgeApp.

Next steps (what to expect/to do at the next meeting)

- converting DraftCR to real CR, EdgeApp enhancement

6.19.14 Subscriber and Equipment Trace and QoE collection management (TraceQoE_OAM)

Overall WI progress: **10%**

Progress per Work Task:

- WT-1 **10%**
- WT-2 **10%**
- WT-3 **0%**

Summary of the progress at this meeting:

- adding the missing MBS indication
- adding the missing QoE parameters
- new requirements on new MRO reports

6.19.15 Study on Management Aspects of NTN Phase 2 (FS_NTN_OAM_Ph2)

Overall WI progress: **25%**

Progress per Work Task:

- WT-1: **30%**
- WT-2: **30%**
- WT-3: **10%**
- WT-4: **30%**

Summary of the progress at this meeting:

- Structure of TR and scope, background have been discussed and agreed.
- WT#1: New use cases of management capabilities to support new network architecture or functions for satellite regenerative payload have been discussed and agreed
- WT#2: New use cases to support Store and Forward (S&F) satellite operation and UE-Satellite-UE communication have been discussed and agreed
- WT#4: One use case of management enhancement for NTN-TN and NTN-NTN mobility coordination has been discussed and agreed.

Next steps (what to expect/to do at the next meeting):

- New use cases, potential requirements and potential solutions will be discussed on next meeting.

6.19.16 Study on management of IAB nodes (FS_NR_mobile_IAB_OAM)

Overall WI progress: **30%**

Progress per Work Task:

- WT-1: **100%**
- WT-2: **0%**
- WT-3: **0%**
- WT-4: **0%**

Summary of the progress at this meeting:

- There are 7 contributions were submitted:
 - 5 were treated: received comments and revision provided
 - 2 were not treated: received comments from one company, another company said not time to review thus pushed them to next meeting.

The progress could have been made on WT2 and WT3 but end up as zero accomplished.

- Assigned TU time wasn't fully used, one company said to provide offline comments but later no comments were given, we waste some portion of TU time which could have been used for discussion.
- To ensure the progress on track, this requires not only the contributors to deliver on time but also full support from all companies in term of time allocation to review the contributions, this issue need to be addressed by the group.

6.19.17 Study on management aspects of RedCap feature (FS_NR_RedCap_OAM)

Overall WI progress: **25%**

Progress per Work Task:

- WT-1: **40%**
 - WT-1.1
 - WT-1.2
 - WT-1.3
- WT-2: **30%**
 - WT-2.1
 - WT-2.2
- WT-3: **30%**
- WT-4: **0%**

Summary of the progress at this meeting:

- Structure of TR and scope, background have been discussed and agreed.
- WT#1: New use case, requirements and solutions of management of RedCap related initial BWP have been discussed and agreed
- WT#2: New use cases and requirements of RedCap related PM/KPI have been discussed and agreed
- WT#3: New use cases and requirements of RedCap related EE have been discussed and agreed

Next steps (what to expect/to do at the next meeting):

- New use cases, potential requirements and potential solutions will be discussed on next meeting.

6.19.18 Study on Enhancement of Management Aspects related to NWDAF Phase 2 (FS_NWDAF_OAM_Ph2)

Overall WI progress: **40%**

Progress per Work Task:

- WT-1: **60%**
- WT-2: **20%**

Summary of the progress at this meeting:

- For WT1, 7 Tdocs are discussed, 2 Merged Tdocs are proposed:
 - The use case, requirement and potential solution on management enhancement supporting the NWDAF Accuracy Checking Capability has been discussed.
 - The use case and requirements on management enhancement for supporting the NWDAF Roaming-Exchange scenario have been discussed. But no solution is agreed in this meeting;
 - The topics on management enhancement for NWDAF FL are controversial. This study focuses on the NWDAF related topics exclusively, but some companies think that there are potential overlapped contents between this study and the AI/ML study.
- For WT2, 2 Tdocs are discussed.
 - The use case and requirement about monitoring the relationship between the amount of data collected by NWDAF and the corresponding accumulated transmission overhead are discussed.
 - No solution is provided.

Next steps:

- Finish the study of WT1. Coordination and alignment before SA5#155 meeting on the contributions for this study and AI/ML study may be needed.
- Continue the study of WT2, solutions for the approved use cases/requirements and new use cases, requirements and potential solutions for the new scenarios can be provided.

6.19.19 Study on Management of Network Sharing Phase 3 (FS_NetShare_OAM_Ph3)

Overall WI progress: **35%**

Progress per Work Task:

- WT-1: **50%**
- WT-2: **40%**
- WT-3: **60%**

Updates (if any):

- change of target dates (add the new target date) : NO
- change of SA/RAN/CT impacts and dependencies (add the new impact/dependency) : SA1 and SA2 for WT-3

Summary of the progress at this meeting:

- For Objectives:
 - WT-2 Study issues related to Rel-18 and WT-3 Investigate potential enhancements for Indirect Network Sharing scenarios have been agreed and added and.
- For WT-1:

- Use case, requirements for Trace job and collection requirements for POPs has been discussed and agreed
- No solution is provided.
- For WT-2:
 - Use case, requirements for enhancements and scenarios for SBMA to support MOCN and access-rights-related scenarios has been discussed and agreed.
 - No solution is provided.

Next steps:

- For WT-1, solution for Trace job and collection requirements for POPs will be studied.
- For WT-2, solution for enhancements and scenarios for SBMA to support MOCN and access-rights-related scenarios will be studied.
- For WT-3, the progress of SA2 related to Indirect Network Sharing will be kept attention and OAM-related enhancements will be studied.

6.19.20 Study on energy efficiency and energy saving aspects of 5G networks and services (FS_Energy_OAM_Ph3)

Overall WI progress: **20%**

Progress per Work Task:

- WT-1:
 - WT-1.1 **0%**
 - WT-1.2 **30%**
 - WT-1.3 **20%**
 - WT-1.4 **0%**
- WT-2:
 - WT-2.1 **10%**
 - WT-2.2 **25%**
 - WT-2.3 **0%**
- WT-3:
 - WT-3.1 **0%**
- WT-4:
 - WT-4.1 **0%**
 - WT-4.2 **10%**
 - WT-4.3 **0%**
 - WT-4.4 **0%**
 - WT-4.5 **0%**
- WT-5:
 - WT-5.1 **0%**
 - WT-5.2 **0%**

Summary of the progress at this meeting:

- 16 contributions submitted and discussed
- Good preliminary discussions on carbon emission and renewable energy related information (what it means and how this information can be gathered by Network Operators). Use case description (merger of

input from Huawei, Nokia and China Mobile) and term definitions agreed

- Discussions on potential solutions for exposing this information. The potential solution involving Intent has not reached consensus.
- Two new key issues related to containerized VNF/VNFs were discussed. Potential solutions to be proposed once version 5 of ETSI NFV IFA 027 is published (end of May 2024)
- A use case on multi-dimensional EE KPI has been discussed
- Next steps (what to expect/to do at the next meeting):
 - For each use case in TR 28.880, propose potential solution(s)
 - Propose new use cases(s)
 - One important goal for SA5#155 is have use case(s) related to SA2 TR 23.700-66 and potential solution(s).

6.19.21 Study on Enhanced OAM for management exposure to external consumers (FS_MExpo)

Overall WI progress: **10%**

Progress per Work Task:

- WT-1: **10%**
 - WT-1.1 **0%**
 - WT-1.2 **10%**
 - WT-1.3 **0%**
 - WT-1.4 **50%**
- WT-2 **0%**
 - WT-2.1 **0%**
 - WT-2.2 **0%**
 - WT-2.3 **0%**
 - WT-2.4 **0%**
- WT-3 **0%**
 - WT-3.1 **0%**
 - WT-3.2 **0%**

Summary of the progress at this meeting:

- The group was able to agree on the following in this meeting:
 - the definition of the external MnS consumer.
 - background on existing telco exposure initiatives.
 - background concepts on exposing management services.

Next steps (what to expect/to do at the next meeting)

- The group tends to agree as part of discussions during this meeting that the CAPIF framework should be the considered mechanism for exposing management services to external MnS consumers. Conclusion on which framework to be considered needs to be agreed as the next step.
- Agree on the use cases, requirements and also possibly the potential solutions to be addressed as part of this study.
- The group discussed on use cases related to RAN sharing scenarios and Service management concepts in this meeting. It needs to be further discussed for the group to reach a consensus.

Reporting guidance for the rapporteurs

Each work item / study item needs to provide the following details:

- WI/SI Progress with completion:
- Progress per WT (work task numbers should match those declared/approved in the WID):
 - WT#1 %:
 - WT#2 %:
 - WT#3 %:
 - WT#4 %:
- Updates (if any):
 - change of target dates (add the new target date)
 - change of SA/RAN/CT impacts and dependencies (add the new impact/dependency)
- Summary of the progress at *this* meeting:
 - detailed (more than just # of contributions agreed) description of the progress
 - next steps (what to expect/to do at the next meeting)