**3GPP TSG-SA5 Meeting #141-e *S5-221360***

e-meeting, 17 -26 January 2022 (revision of xx-yyxxxx)

Source: China Unicom

Title: New SID on Knowledge Management Service

Document for: Approval

Agenda Item: 6.2

# 3GPP™ Work Item Description

Information on Work Items can be found at <http://www.3gpp.org/Work-Items>
See also the [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39 and the TSG Working Methods in [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm)

# Title: Study on Knowledge Management Service

Acronym: FS\_KMS

Unique identifier:

Potential target Release: *Rel-18*

# 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | X |  |  |
| No | X | X |  | X |  |
| Don't know |  |  |  |  |  |

# 2 Classification of the Work Item and linked work items

## 2.1 Primary classification

### This work item is a …

|  |  |
| --- | --- |
|  | Feature |
|  | Building Block |
|  | Work Task |
| X | Study Item |

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
|  |  |  |  |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 910027  | Rel-17 Work Item on enhancements of Management Data Analytics Service | Knowledge from MDA |

Dependency on non-3GPP (draft) specification:

# 3 Justification

* Current network management requires deep participation of human beings which produce and carry expertise in mind. Simultaneously Data analytic function with AI/ML models have been studied and addressed for several fields, including management and orchestration (e.g., MDA) and 5GC (e.g., NWDAF) while producing reports and recommendations. A management operation needs to consider both the expertise and the analytical suggestion to reason and decide. E.g., when addressing a coverage issue, an expert needs to manually refer to the coverage analytic report from MDAF or NWDAF coordinating with the standard signal process and the parameter configuration of the corresponding gNB. Due to existing management function cannot completely support this automated reasoning process, we suggest a knowledge management service to integrate knowledge from expertise, data analytic function, standard document, etc. as a generic knowledge model and deliver relevant, reliable and executable decision through interfaces to the right entities (e.g., MnS, human experts). The resulting knowledge management service should be able to assist with the assurance of QoS and resilience by providing a measurement-based framework that informs management decisions.
* Knowledge management aims to gather knowledge about the network and exploit that knowledge to manage the network. It is responsible for learning the behaviors of the network and, in some cases, automatically operate the network accordingly. Fundamentally, the knowledge management service collects the analytics by other management service, either pre-processed data or raw data, transforms them into the universal knowledge model , and provides the reasoning capability of knowledge to make decisions.
* The acquisition and use of knowledge in networks and networked systems has been hinted in ITU-T, TM Forum and ETSI; adopting and extending this idea should be investigated as an approach for building a situational awareness function along with network and service management. Therefore, to support/coordinate knowledge acquisition, organization and utilization in management and orchestration, the knowledge management needs to be studied. Coordinating with ITU-T network 2030 and semantic knowledge model may be required.

# 4 Objective

To study the knowledge management service in management and orchestration, the objectives of this study item including

* investigating the potential scenarios of the knowledge acquisition and utilization process for operators;
* the possible knowledge model to unify the human expertise and analytical report;
* investigation of coordination between the knowledge from MDAF and NWDAF;
* interface relation between knowledge management and other services/functions/entities (including MnSs and network functions/entities).

# 5 Expected Output and Time scale

|  |
| --- |
| New specifications {One line per specification. Create/delete lines as needed} |
| Type  | TS/TR number | Title | For info at TSG#  | For approval at TSG# | Rapporteur |
| Internal TR | 28.xyz | Study on Knowledge Management Service | SA#96 (June 2022) | SA#97 (Sep 2022) | Feibi Lyu, ChinaUnicom, lvfb@chinaunicom.cn |
|  |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| {e.g. "22.281"} | {Possible values: - either free text (e.g. “CS aspects to be removed") - or “Specification to be withdrawn”} | {e.g. "TSG#89"} | {Free text} |
|  |  |  |  |

# 6 Work item Rapporteur(s)

lvfb@chinaunicom.cn

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
| China Unicom |
|  |
|  |
|  |
|  |
|  |