**3GPP TSG-SA5 Meeting #142-e *S5-222247***

e-meeting, 4 -12 April 2022 (revision of xx-yyxxxx)

Source: China Unicom

Title: New SID on Advanced Alarm Management for 5G

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 Advanced Alarm Management for 5G

Acronym: FS\_5GAAM

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 |
|  |  |  |

Dependency on non-3GPP (draft) specification:

# 3 Justification

3GPP specifies typical 5G deployment and management scenarios, including eMBB (enhanced Mobile Broadband), URLLC (Ultra Reliable Low Latency Communications), and mMTC (massive Machine Type Communications).

Different 5G scenarios have different service characteristics. (For example, URLLC service characteristics include low latency, high reliability, etc. mMTC service characteristics include massive connections towards machines and smart terminals, whilst its latency and reliability requirements are generally lower than URLLC scenario.) This will introduces challenges and new requirements for traditional advanced alarm management (AAM). For example:

* Example of URLLC: URLLC services’ low latency and high reliability characteristics may result in that URLLC alarm may be ignored and URLLC services are likely to be interrupted via existing AAM rules. In addition, URLLC emergency alarms are difficult to be identified by existing alarm category, etc. These challenges and URLLC requirements need flexible 5GAAM alarm determination method, fast alarm treatment procedure, refined alarm category, etc.
* Example of mMTC: mMTC services’ massive connection requirements result in that mMTC alarm will impact a huge number of machines and terminals, however, existing AAM does not consider massive connections scenario. In addition, the emergency levels of mMTC alarms are difficult to be identified by existing alarm category. These challenges and mMTC requirements need precise alarm information enhancement, alarm priority justification, refined alarm category, etc.

Traditional advanced alarm management (AAM) specifies management information and rules. In order to address above-mentioned challenges, the 5G AAM requirements, rules, information and functionalities need to be defined for eMBB, URLLC, mMTC scenario.

In existing TS 32.121, TS 32.122, it is needed to enhance AAM (advanced alarm management) Itf-N (Interface-N).

In TS 32.121, TS 32.122, the existing AAM is based on IRP, not based on SBMA. For SBMA, it is needed to research SBMA based AAM.

It is needed to investigate whether all AAM functionalities in TS 32.121 and TS 32.122 can be applied for 5G.

# 4 Objective

The objective of this study item is to enhance the 5G advanced alarm management (AAM), by investigating the following aspects:

* For existing IRP based AAM of TS 32.121 and TS 32.122, investigate which could be reused for SBMA based 5G AAM. Furthermore, investigate what contents are needed to be added to SBMA based 5G AAM.
* Investigate the 5G AAM MnS. Specifically, this SID investigates information model for 5G AAM, and investigates how to employ 5G AAM information model to analyse alarm generation, alarm change, alarm clearing events, and categorize alarm, etc. In addition, this SID researches 5G AAM MnS interface based on relevant protocols (For example, Restful protocol, Netconf protocol, Socket protocol, etc).
* This SID studies URLLC’s impact and challenge on 5G AAM. Furthermore, this SID investigates the 5G AAM requirements and potential solutions for managing 5G URLLC scenario.
* This SID studies mMTC’s impact and challenge on 5G AAM. Furthermore, this SID investigates the 5G AAM requirements and potential solutions for managing 5G mMTC scenario.

# 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 | Internal TR | Study on Advanced Alarm Management for 5G | SA#97 (Sep 2022) | SA#98 (Dec 2022) | Lexi Xu, China Unicom, xulx29@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 |
|  |  |  |  |
|  |  |  |  |

# 6 Work item Rapporteur(s)

Lexi Xu, China Unicom, xulx29@chinaunicom.cn

# 7 Work item leadership

SA5

# 8 Aspects that involve other WGs

# 9 Supporting Individual Members

{At least 4 supporting Individual Members are needed. There is an expectation that these companies will provide resources to progress the work. Note that having 4 supporting companies is a necessary but not sufficient condition: the usual TSG approval process by consensus is needed for the WID approval}

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| --- |
| Supporting IM name |
| China Unicom |
| HUAWEI |
| ZTE |
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