**3GPP TSG-SA5 Meeting #157 *S5-246134d1***

**Hyderabad, India, 14 - 18 October 2024**

**Source: China Unicom**

**Title: New WID on Management Aspects of RedCap features**

**Document for: Approval**

**Agenda Item: 6.2.3**

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: Management Aspects of RedCap features

Acronym: NR\_RedCap\_OAM

Unique identifier:

Potential target Release: Rel-19

# 1 Impacts

{For Normative work, identify the anticipated impacts. For a Study, identify the scope of the study}

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Affects: | UICC apps | ME | AN | CN | Others (specify) |
| Yes |  |  | X |  |  |
| No | X | 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 …

|  |  |
| --- | --- |
|  | Study  |
| X | Normative – Stage 1 |
| X | Normative – Stage 2 |
| X | Normative – Stage 3 |
|  | Normative – Other\* |

**\* Other = e.g. testing**

## 2.2 Parent Work Item

|  |
| --- |
| Parent Work / Study Items  |
| Acronym | Working Group | Unique ID | Title (as in 3GPP Work Plan) |
| FS\_NR\_RedCap\_OAM | SA5 | 1020017 | Study on management aspects of RedCap feature |

### 2.3 Other related Work Items and dependencies

|  |
| --- |
| Other related Work /Study Items (if any) |
| Unique ID | Title | Nature of relationship |
| 970080 | Enhanced support of reduced capability NR devices |  |
| 970013 | NR RedCap UE with long eDRX for RRC\_INACTIVE State |  |

**Dependency on non-3GPP (draft) specification:** none

# 3 Justification

RedCap (Reduced Capability) represents a lightweight access technology within the 5G NR network, designed to meet the requirements for cost-effective, energy-efficient, and moderate-data-rate solutions. Typical use cases, such as industrial sensors, video surveillance, and wearables, are specified in TR 38.865. The performance requirements of RedCap UEs differ from conventional UEs. To meet these requirements, several studies and normative works have been conducted by TSGs, such as RAN1, RAN4 and SA2.

Existing 3GPP specifications for the management of RedCap feature have some limitations, which are addressed in the study item FS\_NR\_RedCap\_OAM. The study identifies several use cases in the aspects of NG-RAN configuration management, performance management, and energy efficiency for RedCap services. Once the requirements and solutions are accepted, they will be recommended for normative work. It includes enhancing configuration management to support RedCap service, enhancing current measurements or KPIs in RedCap granularity, and estimating of energy consumption and energy efficiency for RedCap service.

The target of this WI is to specify the management enhancement of NG-RAN related to RedCap.

# 4 Objective

The objectives of this work item are to enhance the management of RedCap-related NG RAN by specifying the following aspects:

WT-1: Specify requirements and solutions for enhancement to 3GPP NRM supporting:

WT-1.1: Configuration management to support Multi-Initial BWP in co-existence scenario.

WT-1.2: Configuration management to control the RedCap UEs’ access to communication service.

Wt-2: Specify requirements and solutions for enhancement to performance management:

WT-2.1 Monitoring the resource load of RedCap service especially when different types of UEs exist, such as

* + - Measurements related to RedCap RRC connection/inactive number
		- Measurements related to RedCap PRB usage

WT-2.2: NR-RAN measurements or KPIs for evaluation of throughput of RedCap service.

WT-3: Specify requirements and solutions for the estimation of RedCap energy consumption and energy efficiency.

## TU estimates and dependencies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Work Task ID | TU Estimate(Study) | TU Estimate(Normative) | RAN Dependency(Yes/No/Maybe) | SA Dependency(Yes/No/Maybe) |
| WT-1 | *1* | *0.5* | No | No |
| WT-2 | *1* | *1* | No | No |
| WT-3 | *1* | *1* | No | No |

# 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 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

|  |
| --- |
| Impacted existing TS/TR {One line per specification. Create/delete lines as needed} |
| TS/TR No. | Description of change  | Target completion plenary# | Remarks |
| TS 28.540 | *Add requirements for RedCap management* | Sep 2025 (SA#109) |  |
| TS 28.541 | *Add new and/or enhance existing IOCs/attributes for RedCap* | Sep 2025 (SA#109) |  |
| TS 28.552 | *Add new and/or enhance existing measurements for RedCap* | Sep 2025 (SA#109) |  |
| TS 28.554 | *Add new and/or enhance existing KPIs for RedCap* | Sep 2025 (SA#109) |  |

# 6 Work item Rapporteur(s)

# 7 Work item leadership

SA WG5

# 8 Aspects that involve other WGs

Co-ordination with SA2, RAN2 if needed.

# 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| China Unicom |
| China Mobile |
| Huawei |
| ZTE |
| AsiaInfo |
| CATT |
| China Telecom |