**3GPP TSG RAN Meeting #68RP-150813**

**Malmö, Sweden, 15 - 18 June 2015**

**Source: CMCC**

**Title: New Study Item Proposal: Study on Scenarios and Requirements for Next Generation Access Technologies**

**Document for: Information**

**Agenda Item: 13**

3GPP™ Work Item Description

For guidance, see [3GPP Working Procedures](http://www.3gpp.org/About/WP.htm), article 39; and [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm).  
Comprehensive instructions can be found at <http://www.3gpp.org/Work-Items>

# Title: Study on Scenarios and Requirements for Next Generation Access Technologies

## Acronym:

## Unique identifier:

NOTE: If this is a RAN WID including Core and Perf. part, then Title, Acronym and Unique identifier refer to the feature WI. Please tick (X) the applicable box(es) in the table below:

|  |  |
| --- | --- |
| **This WID includes a Core part** |  |
| **This WID includes a Performance part** |  |

## 1 3GPP Work Area

|  |  |
| --- | --- |
| X | **Radio Access** |
| X | **Core Network** |
| X | **Services** |

## 2 Classification of WI and linked work items

### 2.0 Primary classification

This work item is a …

|  |  |
| --- | --- |
| X | Study Item (go to 2.1) |
|  | Feature (go to 2.2) |
|  | Building Block (go to 2.3) |
|  | Work Task (go to 2.4) |

NOTE: Core, Performance and Testing parts of RAN WIs are usually Building Blocks.  
If you are in doubt, please contact MCC.

### 2.1 Study Item

|  |  |  |
| --- | --- | --- |
| Related Work Item(s) (if any] | | |
| Unique ID | Title | Nature of relationship |
|  | Study on 5G Scenarios and Requirements |  |

Go to §3.

### 2.2 Feature

|  |  |  |
| --- | --- | --- |
| Related Study Item or Feature (if any) | | |
| Unique ID | Title | Nature of relationship |
|  |  |  |

Go to §3.

### 2.3 Building Block

|  |  |  |
| --- | --- | --- |
| Parent Feature (or Study Item) | | |
| Unique ID | Title | TS |
|  |  |  |

This work item is …

|  |  |
| --- | --- |
|  | Stage 1 (go to 2.3.1) |
|  | Stage 2 (go to 2.3.2) |
|  | Stage 3 (go to 2.3.3) |
|  | Test spec (go to 2.3.4) |
|  | Other (go to 2.3.5) |

#### 2.3.1 Stage 1

|  |  |  |
| --- | --- | --- |
| Source of external requirements (if any) | | |
| Organization | Document | Remarks |
|  |  |  |

Go to §3.

#### 2.3.2 Stage 2

|  |  |  |
| --- | --- | --- |
| Corresponding stage 1 work item | | |
| Unique ID | Title | TS |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Other source of stage 1 information | | |
| TS or CR(s) | Clause | Remarks |
|  |  |  |

**If no identified source of stage 1 information, justify:**

Go to §3.

#### 2.3.3 Stage 3

|  |  |  |
| --- | --- | --- |
| Corresponding stage 2 work item (if any) | | |
| Unique ID | Title | TS |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Else, corresponding stage 1 work item | | |
| Unique ID | Title | TS |
|  |  |  |

|  |  |  |
| --- | --- | --- |
| Other justification | | |
| TS or CR(s) or external document | Clause | Remarks |
|  |  |  |

**If no identified source of stage 2 information, justify:**

Go to §3.

#### 2.3.4 Test spec

|  |  |  |
| --- | --- | --- |
| Related Work Item(s) | | |
| Unique ID | Title | TS |
|  |  |  |

Go to §3.

#### 2.3.5 Other

|  |  |  |  |
| --- | --- | --- | --- |
| Related Work Item(s) | | | |
| Unique ID | Title | Nature of relationship | TS / TR |
|  |  |  |  |

Go to §3.

### 2.4 Work task

|  |  |  |
| --- | --- | --- |
| Parent Building Block | | |
| Unique ID | Title | TS |
|  |  |  |

## 3 Justification

A fully mobile and connected society is expected in the near future, which will be characterized by a tremendous amount of growth in connectivity, traffic volume, and a much broader range of usage scenarios. Some typical trends could be summarized as follows:

* Explosive growth of data traffic: There will be explosive growth in traffic. The global data traffic will increase by more than 200 times from 2010 to 2020, and about 20000 times from 2010 to 2030.
* Great increase of devices in connection: While smartphones are expected to remain as the main personal device, the number of other kinds of devices, including wearable devices, MTC devices, etc, will continuously increase.
* Continuous emergence of new services: Different kinds of services, e.g. services from enterprises, from vertical industries and from Internet companies, etc. will be exploited.

Besides the requirements from market, the mobile communication society itself also requires a sustainable development of the eco-system, which produces the needs to further improve system efficiencies, such as energy efficiency, operational efficiency and cost efficiency.

To meet the above ever-increasing requirements from market and mobile communication society, a next generation access technologies (5G) is expected to emerge in the near future. The capability of the new generation system should be much higher than that of existing system.

Based on the above understanding, a study item is proposed to identify typical usage scenarios for next generation access technologies and the required capabilities in each corresponding usage scenarios. The inputs from other organizations and WGs, e.g., NGMN, ITU, and 3GPP SA1, can be referred in the discussions. The study item will convert required capabilities in those inputs to technical metrics that can be evaluated from RAN perspective.

Moreover, the study item can analyse the gap between the required capabilities and that of existing systems. The capability that could not be fulfilled could be studied at early stage.

## 4 Objective

The study item aims to develop usage scenarios and requirements of next generation access technologies, and provide guidance to the following work. In order to achieve this, the study item should fulfil the following objectives:

* Identify the typical usage scenarios and radio requirements for RAN
  + Develop corresponding deployment description, e.g. indoor hotspots, urban micro, etc. and corresponding traffic model, for usage scenarios
  + Define corresponding radio requirements such as user data rate, connection density, traffic density, etc. for usage scenarios
  + As part of the above top level goal, the SI should then clearly identify:
  + Requirements needed for IMT 2020
  + Scope / use cases / requirements for the new radio
* Identify the radio requirements which cannot be satisfied by existing LTE based system, e.g. Rel-13

To complete the above work, the ITU IMT.VISION recommendation should be the baseline, and the inputs from other organizations could be referred.

## 5 Service Aspects

## 6 MMI-Aspects

## 7 Charging Aspects

## 8 Security Aspects

## 9 Impacts

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

## 10 Expected Output and Time scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| New specifications [If Study Item, one TR is anticipated] | | | | | | |
| Spec No. | Title | 1st rsp. WG | 2nd rsp. WG(s) | Presented for information at plenary# | Approved at plenary # | Comments |
| TR XX.XXX | Study on Scenarios and Requirements for Next Generation Access Technologies |  |  |  |  |  |
|  |  |  |  |  |  |  |

NOTE: If this is a RAN WID including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Comments for each spec.  
By default a new specs can only be new for one of both parts.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Affected existing specifications [None in the case of Study Items] | | | | |
| Spec No. | CR | Subject of the CR | Approved at plenary# | Comments |
|  |  |  |  |  |
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NOTE: If this is a RAN WID including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Comments for each spec.  
If an existing spec is affected by both (Core part and Perf. part), then it has to be listed twice with appropriate approval dates.

## 11 Work item rapporteur(s)

<FamilyName>, <GivenName>

**Company: CMCC**

**Email:**

## 12 Work item leadership

NOTE: If this is a RAN WID including Core and Perf. part, then this WG specifies the WG leading the Core part.  
RAN WG4 is by default leading the Perf. part.

## 13 Supporting Individual Members

|  |
| --- |
| Supporting IM name |
|  |
|  |
|  |
|  |

form change history:

2013-12-06 v1.14.1 modified §11 to read: <FamilyName>, <GivenName>, (If the person is new to 3GPP work, give full contact coordinates, in particular, email address.)

2013-10-03 v1.14.0 removal of embedded help text

v1.13.2: adds tdoc header

v1.13.1: minor changes resulting from discussions at CT#41 & SA#41

v1.13.0: mods to enforce linkage amongst stages 1, 2, 3

draft mods Scarrone-Meredith 2008-07 ff

v1.12.1: removes revision marks following approval at SP-29  
v1.12.0: includes provision for Study Items (SP-29)

v1.11.0: includes those changes from v1.8.0 agreed at SP-25.

v1.10.0: full circle

v1.9.0: a clean sheet

v1.8.0: includes comments from SA#24

v1.7.0: includes comments from RAN, CN and T #24; also includes “early implementation” data

v1.6.0: includes comments made during review period prior to TSGs#24

v1.5.0: includes comments made at TSGs#23 (Phoenix)

v1.4.0: offered to SA#23 for approval

v1.3.0: offered to CN#23, RAN#23 and T#23 for comments

DRAFT4 v1.3.0: 2004-03-09: Incorporation of comments from Leaders list

DRAFT3 v1.3.0: 2004-02-19: Incorporation of comments from MCC members

DRAFT2 v1.3.0: 2004-01-29: Complete redraft:

v1.2.0: 2002-07-04: "USIM" box changed to "UICC apps"

2003-05-28: spelling of “rapporteur” corrected

2002-07-04: "USIM" box changed to "UICC apps"