**3GPP TSG-SA5 Meeting #141-e *S5-* *221767d2***

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

**Source: Lenovo**

**Title: Revised SID for FS\_CICDNS**

**Document for: Approval**

**Agenda Item:**

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 continuous integration continuous delivery support for 3GPP NFs.**

## Acronym: FS\_CICDNS

## Unique identifier: 940026

Potential target Release: Rel-18.

## 1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  |  | x | x |  |
| **No** | 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

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| --- |
| 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 Items (if any) |
| Unique ID | Title | Nature of relationship |
|  |  | *{optional free text}*  |

**Dependency on non-3GPP (draft) specification**:

**ETSI GR NFV-TST 006 v.1.1.1 NFV testing, Report on CICD and DevOps:** has previously studied CI-CD support for VNFs. The learnings from that report will be incorporated into this study.

## 3 Justification

Various parts of the operator infrastructure are increasingly based in software. Let’s take NFs as an example of software artefacts. Most NFs are expected to be provided to the operator as software entities. With the advent of different types of network slices to support the newer use cases for different verticals, operators may continuously request a different set of features for individual network functions (NFs). This requires:

* Versioning: NFs may be continuously upgraded with new features, bug fixes and other changes
* Horizontal integration: NFs may be delivered by multiple vendors, using different development and integration platforms.
* Vertical integration: an NF from a given vendor may run on a virtualized execution (NFV enabled) environment from another vendor.

 This can apply to all software artefacts in the 3GPP system. In this study we focus on the delivery of the 3GPP NFs and the virtualization environment they run on.

Prior to deployment in an operational network the operator should be able to ensure that these software artefacts will not cause operational issues in the network. Hence the development of these entities, their individual and joint testing with artefacts delivered by other vendors as well as their final deployment in the operational network may need to have common aspects across vendors.

## 4 Objective

Identify aspects of the continuous integration and delivery platform that need to be compatible across different vendors. These may include

* Common aspects/information models used in release models across vendors
* Version control: enabling operators to recognise and integrate different vendor versions as they are released
* Automation of the CI-CD pipeline
* Multi-vendor joint testing environment including testing of NFs in operational environment (including as part of NSSI or NSI instances)

The SID will study such and other relevant aspects of CI-CD automation for software artefacts relevant to the 3GPP system, in particular 3GPP NF and their execution environment. It will provide possible recommendations towards specification.

## 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 |
| *TR* | *28-xxx* | *Automated Continuous Integration-Continuous Delivery for 3GPP Software artefacts*  | *Mar 2021* *SA#91e* | *Jun 2022**SA#95e* | *Vaishnavi, Ishan*Chuyi Guo |

## 6 Work item Rapporteur(s)

## Vaishnavi, Ishan (ivaishnavi@lenovo.com) will help review and document the concepts and the key issues and possible solutions that are specific to 3GPP NFs.

Chuyi Guo (guochuyi@chinamobile.com) will handle the current status of work in ETSI NFV, the possible gaps in relation to 3GPP Management as well as the reuse of the work done in ETSI NFV to support the solution options in this study.

## 7 Work item leadership

*SA5*

## 8 Aspects that involve other WGs

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## 9 Supporting Individual Members

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| --- |
| Supporting IM name |
| Lenovo |
| Motorola Mobility |
| Telefonica |
| CMCC |
| Alibaba |
| DT |