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| Technical Report | |
| 3rd Generation Partnership Project;  Technical Specification Group Services and System Aspects;  Management and orchestration;  Study on YANG-Push;  (Release 17) | |
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Contents

Foreword 5

Introduction 6

1 Scope 6

2 References 6

3 Definitions of terms, symbols and abbreviations 6

3.1 Terms 6

3.2 Symbols 7

3.3 Abbreviations 7

4 Functionality of YANG-Push 7

4.1 Summary of comparison 7

5 Other SDOs/Groups 7

6 Using YANG-Push for Provisioning, Fault supervision, Performance assurance, Heartbeat management 7

6.1 YANG-Push for Provisioning management 8

6.2 YANG-Push for Fault supervision management 8

6.3 YANG-Push for Performance assurance management 8

6.4 YANG-Push for Heartbeat 8

7 Impact on existing specification 8

8 Conclusions and recommendation 8

Annex <X> (informative): Change history 9

# Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document..

In the present document, modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

# Introduction

# 1 Scope

This document investigates the possibility, the possible advantages and possible drawbacks of introducing YANG-Push [2],[3] as a 3GPP protocol for provisioning, fault supervision, performance assurance and Heartbeat management.

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] IETF RFC 8641 Subscription to YANG Notifications for Datastore Updates (Yang-Push)

[3] IETF RFC 8639 Subscription to YANG Notifications (Subscribed Notifications)

[4] 3GPP TS 28.532 “Generic management services”

# 3 Definitions of terms, symbols and abbreviations

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

**<defined term>:** <definition>.

**example:** text used to clarify abstract rules by applying them literally.

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

<ABBREVIATION> <Expansion>

# 4 Functionality of YANG-Push

Editor’s note: this clause should describe the functionality of IETF YANG-Push including RFC 8641 and 8639 and compare them to the corresponding existing 3GPP specifications’ functionality. For each mentioned feature and advantage, drawback should also be listed.

## 4.1 Summary of comparison

Editor’s note: The clause should list the most important differences together with main advantages, drawbacks.

# 5 Other SDOs/Groups

Editor’s note: This clause should describe any specifications, liaison statements, opinions expressed by other standard organizations or industry groups which have a demand for 3GPP MnS’s to support YANG notifications.

# 6 Using YANG-Push for Provisioning, Fault supervision, Performance assurance, Heartbeat management

Editor’s note: This clause and its subclauses should describe how YANG-Push could be used for provisioning management, fault supervision management, etc. The proposal will include use cases, potential requirements and solutions for potential changes in the 3GPP specifications. Include proposals for any needed new interfaces and any interfaces that may no longer be needed for the YANG/Netconf SS.

## 6.1 YANG-Push for Provisioning management

## 6.2 YANG-Push for Fault supervision management

## 6.3 YANG-Push for Performance assurance management

## 6.4 YANG-Push for Heartbeat

# 7 Impact on existing specification

Editor’s note: The clause should describe how any proposed use of YANG-Push in 3GPP would impact existing technical specifications and whether SA5 can have protocol agnostic stage 2. The chapter may include separate subchapters for provisioning, fault supervision, performance assurance, heartbeat management if needed.

# 8 Conclusions and recommendation

# Annex <X> (informative): Change history

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| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2020-11 | - | n/a | - | - | - | Initial skeleton | 0.0.0 |