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C. Holmberg
J. Axell
Ericsson

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IANA Registration of New Session Initiation Protocol (SIP) Resource-Priority Namespace for Mission Critical Push To Talk Service

Abstract

This document creates additional Session Initiation Protocol (SIP) Resource-Priority namespaces to meet the requirements of the 3GPP-defined Mission Critical Push To Talk (MCPTT) and places these namespaces in the corresponding IANA registry.

Status of This Memo

This document is not an Internet Standards Track specification; it is published for informational purposes.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Not all documents approved by the IESG are a candidate for any level of Internet Standard; see Section 2 of RFC 7841.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at http://www.rfc-editor.org/info/rfc8101.

Table of Contents

1. Introduction

The Third Generation Partnership Project (3GPP) has defined a Mission Critical Push To Talk (MCPTT) over LTE service [TS.3GPP.22.179]. The MCPTT service supports an enhanced Push To Talk (PTT) service that is suitable for mission critical scenarios and is based upon 3GPP Evolved Packet System (EPS) services. The requirements for the MCPTT service defined within 3GPP can also form the basis for other PTT services.

The MCPTT service is intended to support communication between several users (a group call), where each user can gain permission to talk in an arbitrated manner. However, the MCPTT service also supports private calls between pairs of users.

MCPTT is primarily targeted to provide a professional PTT service to, e.g., public safety, transport companies, utilities, and industrial and nuclear plants. In addition to this, a commercial PTT service for non-professional use (e.g., groups of people on holiday) may be delivered through an MCPTT system. Based on their operational model, the performance and MCPTT features in use vary per user organization, where functionality that is more mission-critical-specific (e.g., Imminent Peril Call) might not be available to commercial customers.

The MCPTT service provides its users with different priorities for the access to network resources in order to provide means to prioritize between calls when resources are scarce. Among other things, these priorities take into account the priority and role of the caller, the priority and type of the group, and the situation in which the call is made.

The SIP-level call control procedures using these namespaces are specified in [TS.3GPP.24.379]. The namespaces defined here will support a wide range of queuing options. The namespaces correspond to what can be supported over the 3GPP Rx interface, defined in

[TS.3GPP.29.214]. The usage of the namespaces can be tailored to the needs of the operator. The mechanism to do this is to configure which values a specific user is allowed to use. This configuration is specified in [TS.3GPP.24.384].

High-priority calls (when the life of either a public safety worker or anyone else is in danger) need to be set up immediately; thus, they require preemption. Other calls may be less sensitive in call setup time but have a high priority once established. For these calls, a queueing mechanism is more appropriate. The MCPTT data transfer service currently under development can benefit from a queueing mechanism. Another example is video-only calls that are not critical in call setup time but where keeping the call is important.

This document creates additional SIP Resource-Priority namespaces to meet the requirements of the 3GPP-defined MCPTT and places these namespaces in the IANA registry.

2. Applicability

This document defines namespaces applicable for MCPTT services defined by 3GPP that use the network services of a 3GPP-defined LTE network. The use of this namespace outside such networks is undefined.

3. New SIP Resource-Priority Namespaces Created

3.1. Introduction

This document introduces the following MCPTT namespaces: mcpttp and mcpttq. The names of which come from the 3GPP-defined MCPTT service.

3.2. The MCPTT Namespaces

The mcpttp namespace uses the priority levels listed below from lowest to highest priority.

mcpttp.0 (lowest priority)

mcpttp.1

mcpttp.2

mcpttp.3

mcpttp.4

mcpttp.5

mcpttp.6

mcpttp.7

mcpttp.8

mcpttp.9

mcpttp.10

mcpttp.11

mcpttp.12

mcpttp.13

mcpttp.14

mcpttp.15 (highest priority)

The Namespace Numerical Value is 46.

Intended algorithm for mcpttp is preemption.

New Warning code: No.

New SIP response code: No.

The mcpttq namespace uses the priority levels listed below from lowest to highest priority.

mcpttq.0 (lowest priority)

mcpttq.1

mcpttq.2

mcpttq.3

mcpttq.4

mcpttq.5

mcpttq.6

mcpttq.7

mcpttq.8

mcpttq.9

mcpttq.10

mcpttq.11

mcpttq.12

mcpttq.13

mcpttq.14

mcpttq.15 (highest priority)

The Namespace Numerical Value is 47.

Intended algorithm for mcpttq is queuing.

New Warning code: No.

New SIP response code: No.

4. Security Considerations

This document does not have any impact on the security of the SIP MCPTT protocol. Its purpose is purely administrative in nature.

5. IANA Considerations

Abiding by the rules established within [RFC4412] and [RFC7134], this is an Informational RFC creating two new namespaces, their associated priority-values, and intended algorithms.

6. Normative References

[RFC4412] Schulzrinne, H. and J. Polk, "Communications Resource Priority for the Session Initiation Protocol (SIP)", RFC 4412, DOI 10.17487/RFC4412, February 2006, <http://www.rfc-editor.org/info/rfc4412>.

[RFC7134] Rosen, B., "The Management Policy of the Resource Priority Header (RPH) Registry Changed to "IETF Review"", RFC 7134, DOI 10.17487/RFC7134, March 2014, <http://www.rfc-editor.org/info/rfc7134>.

[TS.3GPP.22.179]
3GPP, "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Mission Critical Push To Talk (MCPTT) over LTE; Stage 1", 3GPP TS 22.179 13.3.0, December 2015.

[TS.3GPP.29.214]
3GPP, "3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Policy and Charging Control over Rx reference point;", 3GPP TS 29.214 13.7.0, September 2016.

[TS.3GPP.24.379]
3GPP, "3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Mission Critical Push To Talk (MCPTT) call control; Protocol specification;", 3GPP TS 24.379 13.2.0, September 2016.

[TS.3GPP.24.384]
3GPP, "3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Mission Critical Push To Talk (MCPTT) configuration management; Protocol specification", 3GPP TS 24.384 13.2.0, September 2016.

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Authors' Addresses

Christer Holmberg
Ericsson
Hirsalantie 11
Jorvas 02420
Finland

Email: christer.holmberg@ericsson.com

Joergen Axell
Ericsson
Groenlandsgatan 31
Stockholm 16480
Sweden

Email: jorgen.axell@ericsson.com