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Contents

Foreword

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Introduction

Multimedia telephony over IP (3GPP TS 22.973 [2]) is a standardized IMS telephony service in 3GPP Release 7 that builds on the IMS capabilities already provided in 3GPP Releases 5 and 6. The objective of defining a service is to specify the minimum set of capabilities required in the IP Multimedia Subsystem to secure multi-vendor and multi-operator inter-operability for Multimedia Telephony and related Supplementary Services.

While the user experience of Multimedia telephony is expected to have some similarity to existing telephony services, the richer capabilities of IMS is exploited. In particular, multiple media components, such as voice and video, can be used and dynamically added or dropped during a call.

1 Scope

The present document:

- identifies opportunities for optimization of service quality and efficiency of Multimedia telephony over IP in a qualitative sense;
- provides the basis for developing a set of optional backward-compatible tools implementing such optimizations.

The optimized multimedia telephony targets many different system configurations and operating conditions, e.g. GERAN, UTRAN, inter-working between GERAN, UTRAN, GAN, and different PLMNs. Of the various use cases for multimedia telephony, the main focus of the present document is on voice calls, but the focus also includes other core media components, such as video. In particular, areas with optimization opportunities include handling of degraded channels, delay jitter, packet losses, efficiency, inter-working with other voice systems, etc.

The scope includes proposing solutions that maintain backward compatibility in order to ensure seamless inter-working with existing services available in the CS domain, such as CS voice telephony and 3G-324M, as well as with terminals of earlier 3GPP releases. Alignment with legacy media formats avoids transcoding and even allows realizing at least parts of the optimization gains. All optimizations are hence based on the default codecs specified in 3GPP TS 26.235 [3] and 3GPP TS 26.141 [6].

The optimizations identified in the present document address mainly. media transport and signalling. Most of the SIP signalling is out of scope and is handled by other 3GPP groups. Issues regarding registration to the network and/or to IMS at power-on or at other occurrences are not included either.

The optimization tools are not specified in the present document per se, but will be specified as amendments to existing (pre-Release 7) Technical Specifications (3GPP TS 26.235 [3] and 3GPP TS 26.236 [4]) and possibly new Technical Specifications. Furthermore, a characterization of the optimized multimedia telephony over IMS will be available in a separate Technical Report.

2 References

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

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

[2] 3GPP TR 22.973: "IMS Multimedia Telephony Communication Enabler and supplementary services".

[3] 3GPP TS 26.235: "Packet switched conversational multimedia applications; Default codecs".

[4] 3GPP TS 26.236: "Packet switched conversational multimedia applications; Transport protocols".

[5] 3GPP TR 26.935: "Packet Switched (PS) conversational multimedia applications; Performance characterization of default codecs".

[6] 3GPP TS 26.141: "IP Multimedia System (IMS) Messaging and Presence; Media formats and codecs".

[7] 3GPP TS 43.318: "Generic access to the A/Gb interface; Stage 2".