

Multiparty Multimedia Session
Control (mmusic)
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**Signalling the Ability To Understand Packing of Multiple Telephony
Events Into One RTP Packet
draft-taylor-mmusic-multev-00**

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Abstract

[Section 2.5.1.5 of RFC 4733](#) specifies how an implementation of the telephony-event payload type can pack multiple short-duration event reports into one RTP packet. Because this capability was added to [RFC 4733](#) in a fashion which is not backward compatible with [RFC 2833](#), it is desirable that a sender have the means to determine whether the receiver understands such packets. This memo specifies a new SDP attribute, a=multev, to indicate that capability.

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1. Terminology

In this document, the key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" are to be interpreted as described in [RFC 2119](#) [[1](#)].

2. Introduction

[RFC 4733](#), recently published, has replaced [RFC 2833](#). The latter is best known as the preferred mechanism for in-band transmission of DTMF, but also had other applications including the transmission of data modem signals over RTP. [Section 2.5.1.5 of RFC 4733](#) introduced a new capability to optimize the usage of the telephone-event payload to carry a series of short-duration events such as those found in data modem signalling. This new capability allows the sender to pack multiple event reports into a single RTP packet, provided that they occur consecutively without a pause between them.

Unfortunately, packets containing multiple event reports cannot be processed properly by implementations of [RFC 2833](#). At best, an [RFC 2833](#) receiver would handle the first event in the packet successfully, but would ignore the remaining events in the packet. At worst, the [RFC 2833](#) receiver would identify the packet as malformed and discard it. In either case, meaningful information would fail to be transmitted.

As a result, it is desirable for an [RFC 4733](#) implementation to know in advance whether its peer acting as receiver has the capability to process multiple event reports in a single RTP packet.

3. Proposed New SDP Attribute a=multev

To meet the need just described, this memo introduces the

a=multev

SDP attribute. If this attribute is present in a session description, it indicates that the originator of the session description can properly decode RTP packets containing multiple event reports as specified by [RFC 4733](#) sections [2.5.1.5](#) and [2.5.2.4](#).

The a=multev attribute MAY be present at either the session level or media level. At the session level, this attribute indicates that the capability to decode multiple event reports in one RTP packet is applicable to any media stream within the session which carries the audio/telephone-event payload type. At the media level, the a=multev attribute indicates the capability of decoding multiple event reports in an RTP packet for this particular stream (which typically will be limited to a specific set of events.) If the attribute is present at both levels, the media-level occurrences serve as hints as to the particular streams in which packing of multiple events is expected.

An implementation of [RFC 4733](#) MAY choose always to report just one event per RTP packet, to guarantee backward compatibility. In the alternative, an implementation of [RFC 4733](#) that also supports the present memo MUST NOT encode multiple events into one RTP packet unless it has determined that its peer is able to decode those events properly. The receipt of a session description containing the a=multev attribute is one means of making such a determination. If this attribute is present only at the media level, the sender MUST NOT encode multiple events into one RTP packet for media streams other than those identified by the presence of the attribute.

4. Security Considerations

The a=multev attribute introduces no new security threats, with the possible exception that a man-in-the-middle attacker could insert the attribute into messages containing SDP where it was absent. This would constitute a rather weak denial of service threat, since the SDP receiver might not choose to use the event packing capability even though the SDP sender seemingly signalled willingness to accept packed events. Since since such an attacker is in a position to introduce much more effective attacks, there is little point to taking special measures to protect against this one. In general, this points to a requirement to provide message integrity for signalling.

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5. IANA Considerations

This document registers an additional SDP attribute "multev" as defined in this document, within the registry for "att-field (both session and media level)".

multev [RFCXXXX]

NOTE TO THE RFC EDITOR: Please replace all occurrences of RFC XXXX by the RFC number assigned to this document.

6. Normative References

- [1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [2] Schulzrinne, H. and T. Taylor, "RTP Payload for DTMF Digits, Telephony Tones, and Telephony Signals", [RFC 4733](#), December 2006.

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