Audio/Video Transport Working Group
Internet Draft
Intended status: Informational

RTP Payload Format for SPIRIT IP-MR Speech Codec Software draft-ietf-avt-rtp-ip

Status of this Memo

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Abstract

This document specifies the payload format for packetization of SPIRIT IP-MR en

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1. Introduction
This document specifies the payload format for packetization of SPIRIT IP-MR en

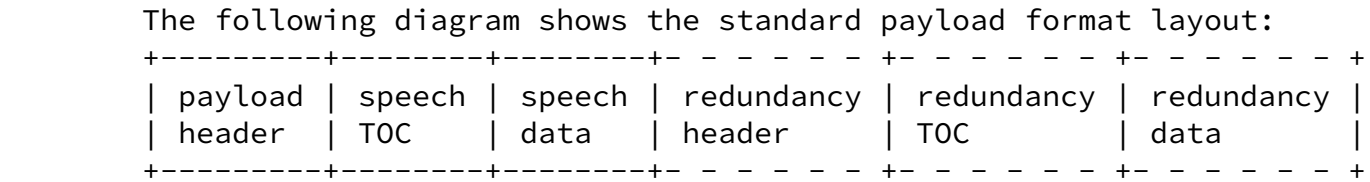
2. IP-MR RTP Payload Formats
The payload has two formats: standard optimized for current use-cases and exten

2.1. Standard Payload Format

2.1.1. Payload Format Structure

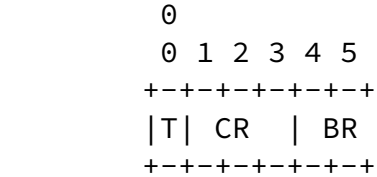
The standard payload consists of a payload header with general information abou

The following diagram shows the standard payload format layout:



2.1.2. Payload Header

The payload header has the following format:



o T (1 bit): Reserved compatibility with future extensions. Should be set to

o CR (3 bits): coding rate of frame(s) in this packet, as per the following

CR	avg. bitrate
0	7.7 kbps
1	9.8 kbps
2	14.3 kbps
3	20.8 kbps
4	27.9 kbps
5	34.2 kbps
6	(reserved)
7	NO_DATA

Table 1 Coding rates of IP-MR codec

The CR value 7 (NO_DATA) indicates that there is no speech data (and speech TO

- BR (3 bits): base rate for core layer of frame(s) in this packet. Values i
- D (1 bit): indicates if the DTX mode is allowed or not.
- A (1 bit): byte-aligned payload. If A=1 then all speech frames MUST be
- GR (2 bits): number of frames in packet (grouping size). Actual groupi
- R (1 bit): redundancy presence bit. If R=1 then the packet contains redund

2.1.3. Speech Table of Contents

The speech TOC contains entries for each frame in packet (grouping size in to

- E (1 bit): frame existence indicator. If set to 0, this indicates the

Note that if CR field from coding flags is 7 (NO_DATA) then speech TOC is em

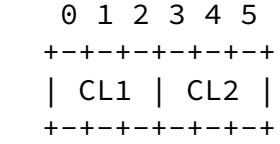
2.1.4. Speech Data

Speech data of a payload contains one or more speech frames or comfort noise fr

Each speech frame represents 20 ms of speech encoded with the rate indicated in

2.1.5. Redundancy Header

If a packet contains redundancy (R field of payload header is 1) the speech d

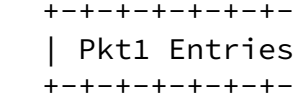


Redundancy header consists of two fields. Each field contains class specifier f

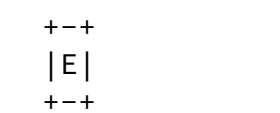
CL	amount redundancy
0	NONE
1	CLASS A
2	CLASS B
3	CLASS C
4	CLASS D
5	CLASS E
6	CLASS F
7	(reserved)

Each specifier takes 3 bits, thus the total redundancy header size is 6 bits. I

2.1.6. Redundancy Table of Contents



The redundancy TOC contains entries for redundancy frames from preceding and



o E (1 bit): frame existence indicator. If set to 0, this indicates the corr

o For each preceding and pre-preceding packet the number of entries is equal

o If class specifier in the redundancy header is CL=0 (NO_DATA) then there

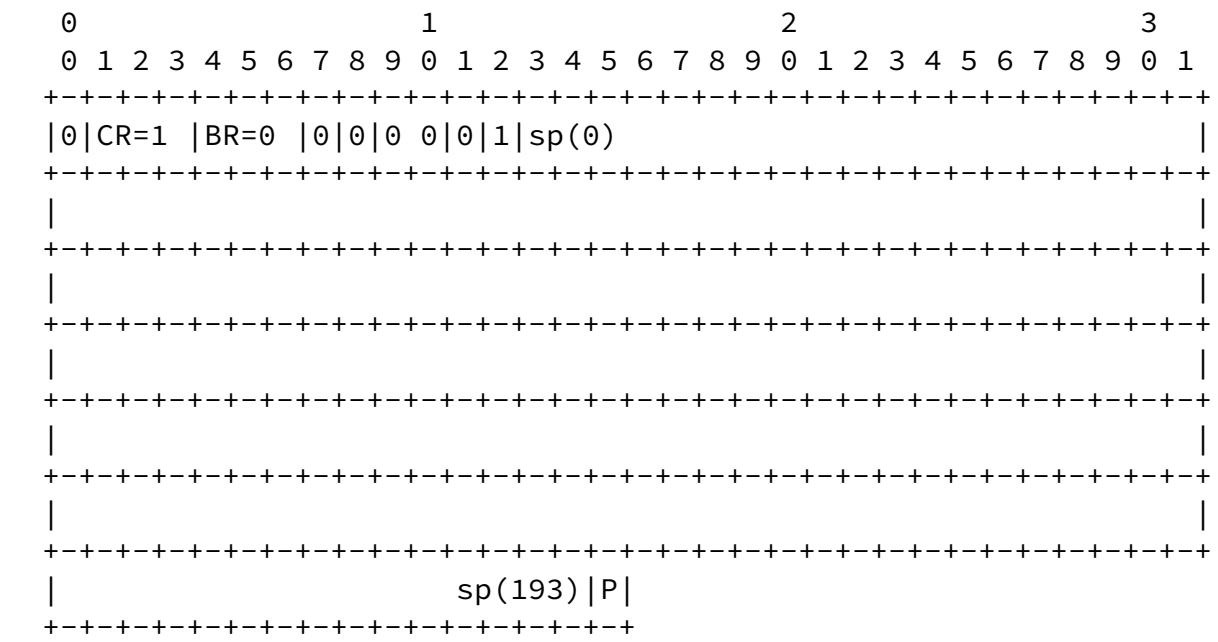
2.1.7. Redundancy Data

Redundancy data of a payload contains redundancy information for one or more

2.2. Payload Examples

2.2.1. Standard Payload Carrying a Single Frame

The following diagram shows a standard IP-MR payload carrying a single speech frame without redundancy:



In the payload the speech frame is not damaged at the IP origin (E=1), the codi

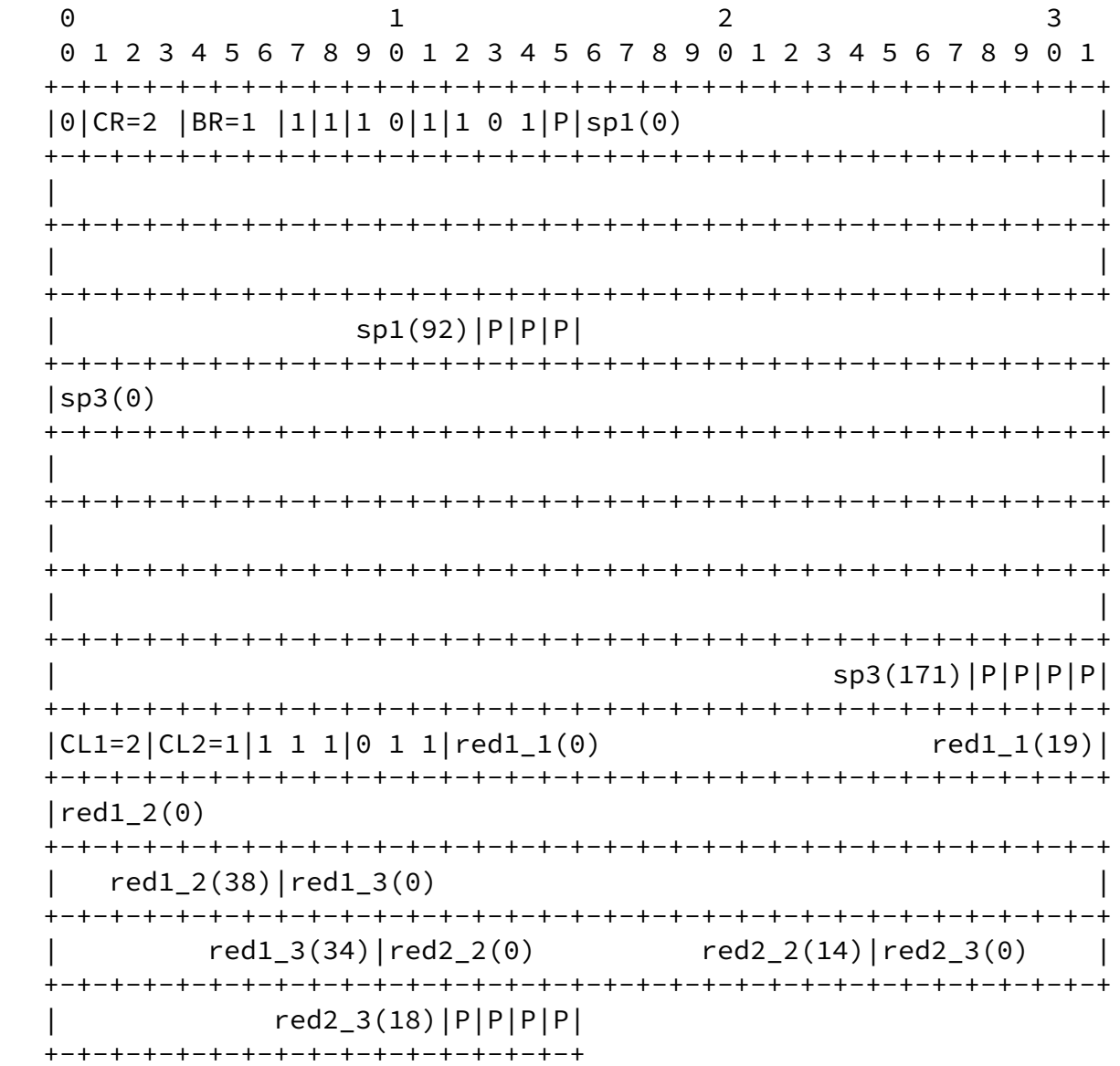
2.2.2. Standard Payload Carrying Multiple Frames with Redundancy

The following diagram shows a payload that contains three frames, one of them w

The first speech frame consists of bits sp1(0) to sp1(92). After that 3 bits ar

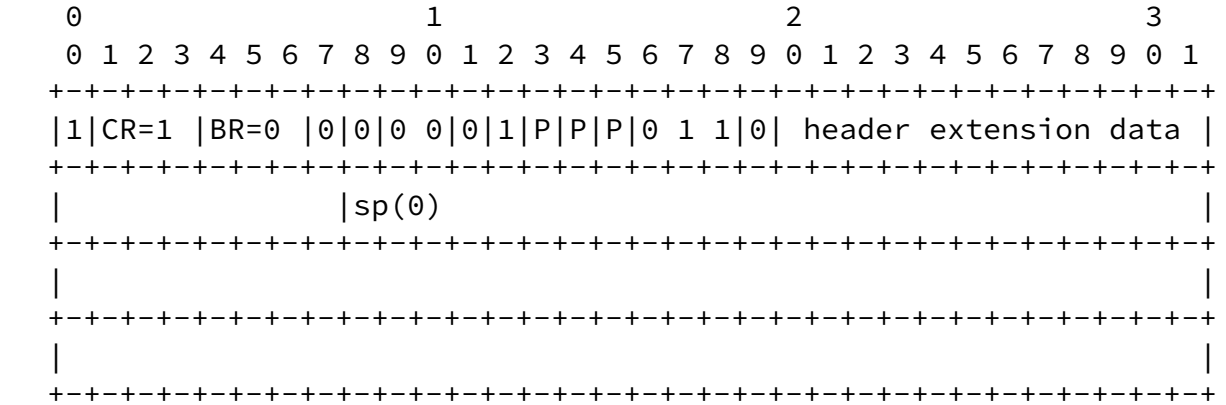
The redundancy header follows after speech data. The one-packet- delayed redund

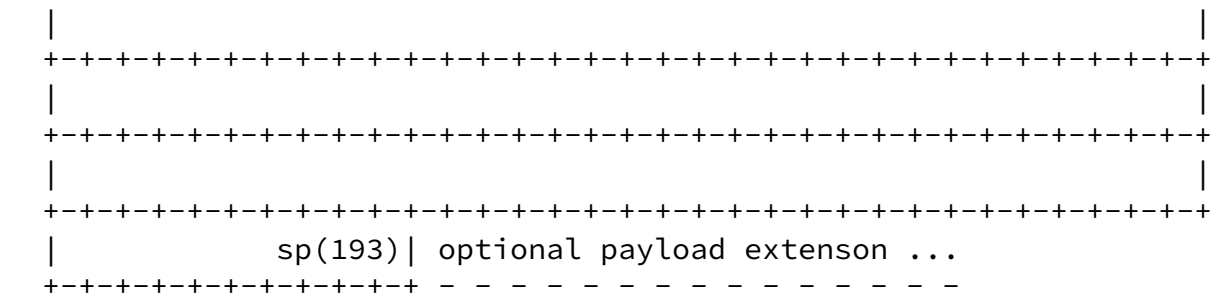
Note that all speech frames are padded with zero bits for byte alignment.



2.2.3. Extended Payload Carrying a Single Frame

The following diagram shows an extended IP-MR payload carrying a single speech





The standard header is the same as in example 2.3.1 except for the first bit th

3. Media Type Registration

This section describes the media types and names associated with this payload f

3.1. Registration of MIME media type audio/ip-mr_v2.5

Type name: audio

Subtype name: ip-mr_v2.5

Required parameters: none

Optional parameters:

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  o ptime: Gives the length of time in milliseconds represented by the media i

Encoding considerations:

This media type is framed binary data (see RFC 4288, Section 4.8).

Security considerations: See RFC 3550

Applications that use this media type:

Audio and video streaming and conferencing tools.

Additional information: none

Intended usage: COMMON

Restrictions on usage:

This media type depends on RTP framing, and hence is only defined for transfer

3.2. Mapping Media Type Parameters into SDP

The information carried in the media type specification has a specific mapping

* The media type ("audio") goes in SDP "m=" as the media name.

* The media subtype (payload format name) goes in SDP "a=rtpmap" as the encodin

* The parameters "ptime" and "maxptime" go in the SDP "a=ptime" and "a=maxptime

Any remaining parameters go in the SDP "a=fmtp" attribute by copying them direc

4. Security Considerations

RTP packets using the payload format defined in this specification are subject

This payload format does not exhibit any significant non-uniformity in the rece

6. Normative References

[1] SPIRIT IP-MR v2.5 User Guide, website http://spiritdsp.com
[2] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels",
[3] Schulzrinne, H., Casner, S., Frederick, R., and V. Jacobson,
"RTP: A Transport Protocol for Real-Time Applications", STD 64, RFC 3550
[4] Handley, M., Jacobson, V., and C. Perkins, "SDP: Session Description Pro

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Expiration date

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Legal Terms

Berlizova, E SPIRIT IP-MR Speech Codec Software