

# SPIRIT IP-MR™ features

SPIRIT IP-MR™ bit rate adapts on-the-fly to network conditions to fit available bandwidth and prevent significant information loss

- Wideband speech
- Voice quality comparable with G.722.2
- Adaptive Multi Rate - 7, 12, 18, 24, 34 kbps are average bit rates - allows changing desirable bit rate on-the-fly
- Variable Bit Rate - encoder bit rate depends on the actual speech content (voiced/unvoiced, pauses, stationary/non-stationary voiced etc.)
- Adjustable Bit Rate Scalability - the ability to switch off the scalability when it's not needed
- Discontinuous Transmission (DTX)
- Built-in tools for packet loss robustness

Selected  
deployments:



**ORACLE**

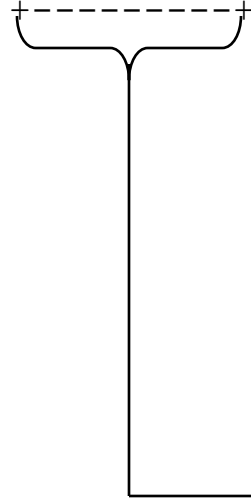
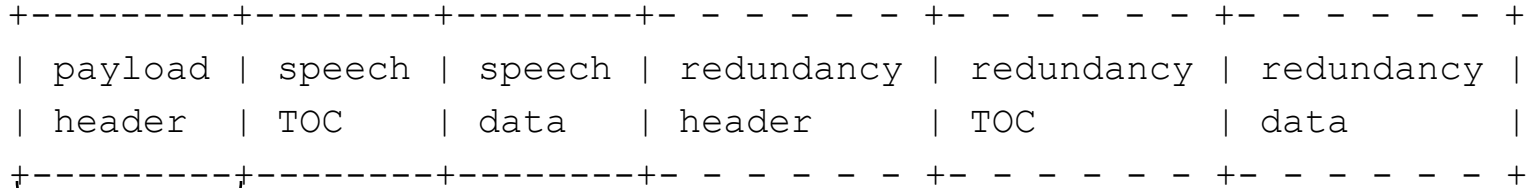
The payload format of SPIRIT IP-MR™ codec is in *draft-ietf-avt-rtp-ipmr-02*

The changes from version 1 of IETF draft “RTP Payload Format for SPIRIT IP-MR™ Speech Codec Software are:

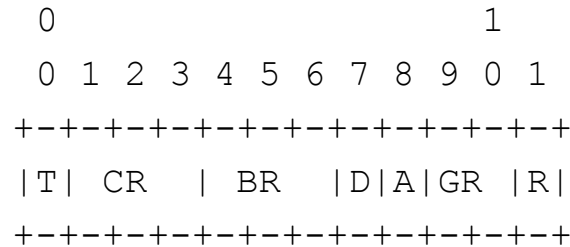
- The introduction section describing the SPIRIT IP-MR™ codec is added
- ‘Audio/ip-mr\_v2.5’ is kept because customers already deploy it. There is no optional payload subtype parameter version.
- IANA consideration section is added
- The section “2.2.1 Standard Payload Carrying a Single Frame” the payload itself is a byte-aligned. Even if data sections inside payload are not aligned. This is common practice, for example ARM (<http://tools.ietf.org/html/draft-ietf-avt-rtp-amr-bis-06#section-4.3.5.1>)
- Implemented other minor changes for the formal document fields

*The updated version 2 is IETF draft “RTP Payload Format for SPIRIT IP-MR™ Speech Codec Software”, draft-ietf-avt-rtp-ipmr-02.txt dated February 25, 2009*

## Payload Structure:



## Payload Header Structure:



## Payload Header Options

- Type (T: 1 bit) – for future versions compatibility
- Coding Rate (CR: 3 bits) – coding bit rate of frame(s) inside the RTP packet
- Base Rate (BR: 3 Bits) – bit rate for base (core) layer, denotes level of scalability
- DTX mode (D: 1 bit) – indicates is DTX mode on or off
- Aligned packing (A: 1 bit) – indicates is speech frames inside the byte-packet aligned or not
- Grouping Size (GR: 2 bits) – indicates number of frames in packet
- Redundancy (R: 1 bit) – indicates that packet contains redundancy for packet loss recovery procedure

Header options allow to change transfer parameters on-the-fly