

Internet Engineering Task Force
Audio-Video Transport Working Group
[draft-ietf-avt-cellb-08.txt](#)

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July 7th, 1996
Expires: January 7th, 1997

RTP Payload Format of Sun's CellB Video Encoding

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Abstract

This draft describes a packetization scheme for the CellB video encoding. The scheme proposed allows applications to transport CellB video flows over protocols used by RTP. This document is meant for implementors of video applications that want to use RTP and CellB.

All fields are 16-bit unsigned integers in network byte order, and are placed at the beginning of the payload for each RTP packet. The Cell X and the Cell Y Location coordinates are expressed as cell coordinates, not pixel coordinates. Since cells represent 4x4 blocks of pixels, the X or Y dimension of the cell coordinates range in value from 0 through 1/4 of the of the same dimension in pixel coordinates.

2.3 Packetization Rules

A packet can be of any size chosen by the implementor, up to a full frame. All multi-byte codes must be completely contained within a packet. In general, the implementor should avoid packet sizes that result in fragmentation by the network.

3 References

1. "Cell Image Compression Byte Stream Description,"
<ftp://playground.sun.com:/pub/multimedia/video/cellbytestream.ps.Z>
2. Thierry Turletti, Christian Huitema INRIA, "RTP Packetization of H.261 Video Streams", Internet Draft, March 8th, 1995.
3. H. Schulzrinne, S. Casner, R. Frederick, V. Jacobson, "RTP: A Transport Protocol for Real-Time Applications", Internet [RFC 1889](#)
4. H. Schulzrinne, "RTP Profile for Audio and Video Conferences with Minimal Control", Internet [RFC 1890](#)

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0 1 2 3 4 5 6 7


```

+---+---+---+---+
|1 0 0 S S S S S|
+---+---+---+---+

```

[A.3 CellB Y/Y Table Code](#)

The single byte "new Y/Y table" code is used to tell the decoder that the next 512 bytes are a new Y/Y quantization table. The code and the representation of the table are shown below. The sample encoder/decoder pair in this document do not implement this feature of the CellB compression. However, future CellB codecs may implement this feature.

```

0 1 2 3 4 5 6 7
+---+---+---+---+
|1 1 1 1 1 1 1 0|
+---+---+---+---+

```

The format of the new Y/Y table is:

```

0          1          2          3
0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   Y1_000   |   Y2_000   |   Y1_001   |   Y2_001   |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
.
.
.

```

```

0          1          2          3
0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
|   Y1_254   |   Y2_254   |   Y1_255   |   Y2_255   |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+

```

[A.4 CellB U/V Table Code](#)

The single byte "new U/V table" code is used to tell the decoder that the next 512 bytes represent a new U/V quantization table. The code is shown below. The sample encoder/decoder pair provided in this document do not implement this feature of the CellB compression. However, future CellB codecs may implement this feature.

```

v          0 1 2 3 4 5 6 7
+---+---+---+---+
|1 1 1 1 1 1 1 1|
+---+---+---+---+

```


Appendix B - Availability of CellB

It is the viewpoint of Sun Microsystems, Inc, that CellB is publically available for use without any license.