Redundant Encodings in RTP

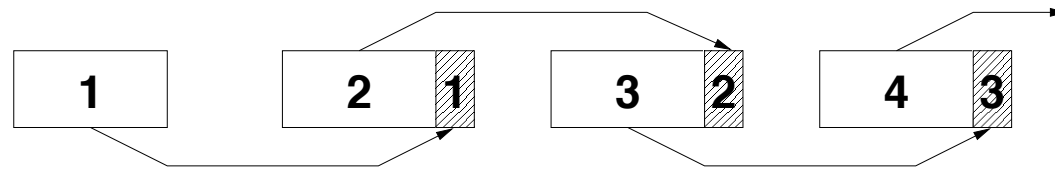## Colin Perkins

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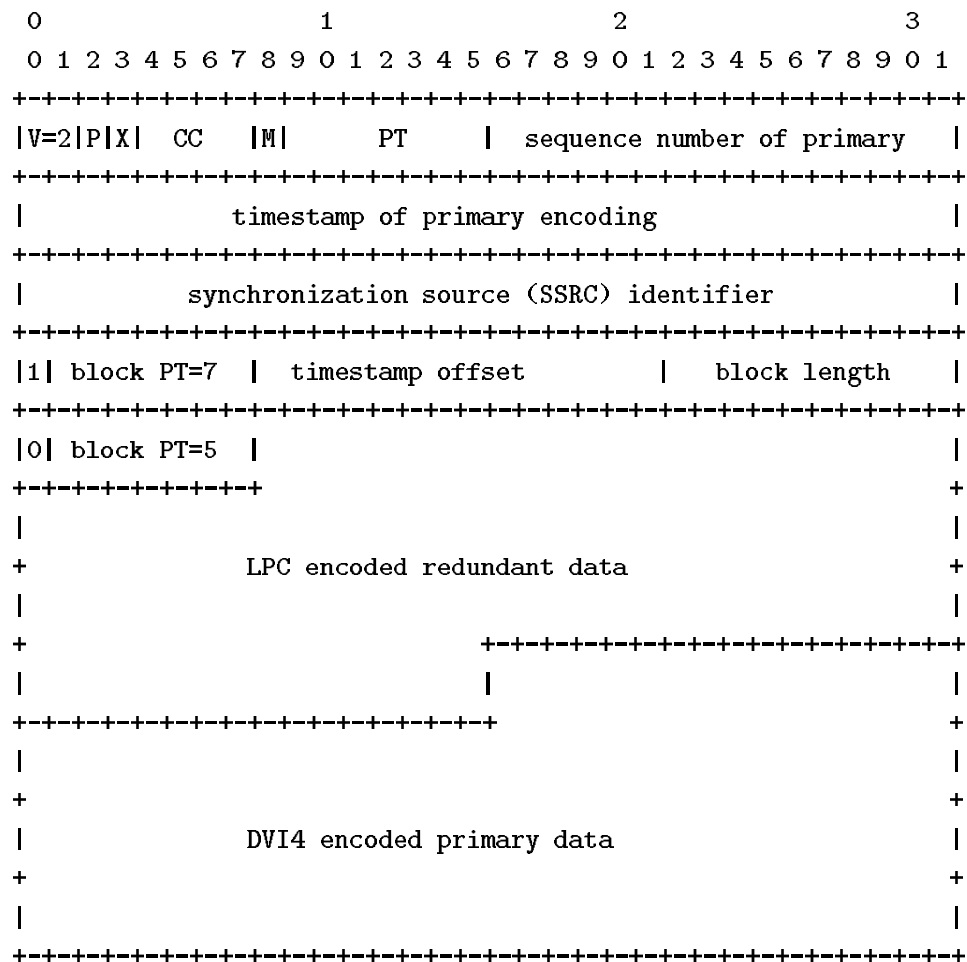Gower Street

London WC1E 6BT

Overview

- A solution to the packet loss problem.

- Originally intended for real-time audio.

- Each packet contains an alternative version of the previous packet:

- Typically, the redundant copy of a packet is more heavily compressed than the primary, to reduce overheads.

Packet Format: Example

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|V=2|P|X|  CC   |M|     PT      |   sequence number of primary  |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                  timestamp of primary encoding                |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|              synchronization source (SSRC) identifier         |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|1| block PT=7  |   timestamp offset        |   block length    |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|0| block PT=5  |                                               |
+-+-+-+-+-+-+-+-+                                               +
|                                                               |
+                   LPC encoded redundant data                  +
|                                                               |
+                               +-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                               |                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+                               +
|                                                               |
+                                                               +
|                   DVI4 encoded primary data                   |
+                                                               +
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

Status

Originally presented at the Montreal IETF. Minor modifications as agreed there have been implemented.

Two interworking implementations for network audio:

- UCL RAT v2.6 or later

- INRIA FreePhone v3.0.x

Internet draft: draft-perkins-rtp-redundancy-01.txt

Move to proposed standard?