RTCP extensions for Single Source Multicast sessions

<draft-ietf-avt-rtcpssm-00.txt>

Previously <draft-chesterfield-avt-rtcpssm-02.txt>

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Overview

- Security considerations
- Summary Packet changes
- Summary Mechanism motivation
- SDP attributes for feedback identifier
- Miscellaneous Changes and Outstanding Issues

Security

- Security considerations clarified to outline requirements
  - Enumerates the relevant contexts
  - Identifies potential threats
  - For each case addresses appropriate security requirements

Current focus is to identify an existing security mechanism to address the requirements.

Summary Mechanism Modularised

- LJS becomes Generic Summary Report => GSR
- Facility to define new summary distribution types
- New types suggested:
  - Round Trip Time distribution
  - SSRC distribution?
- Distributions are variable length

Summary Packet Header

```
 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|   BC  |       PT      |             Length            |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                         SSRC of Sender                        |
+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
|                 ....   report  blocks                         |
```

Summary Report Block

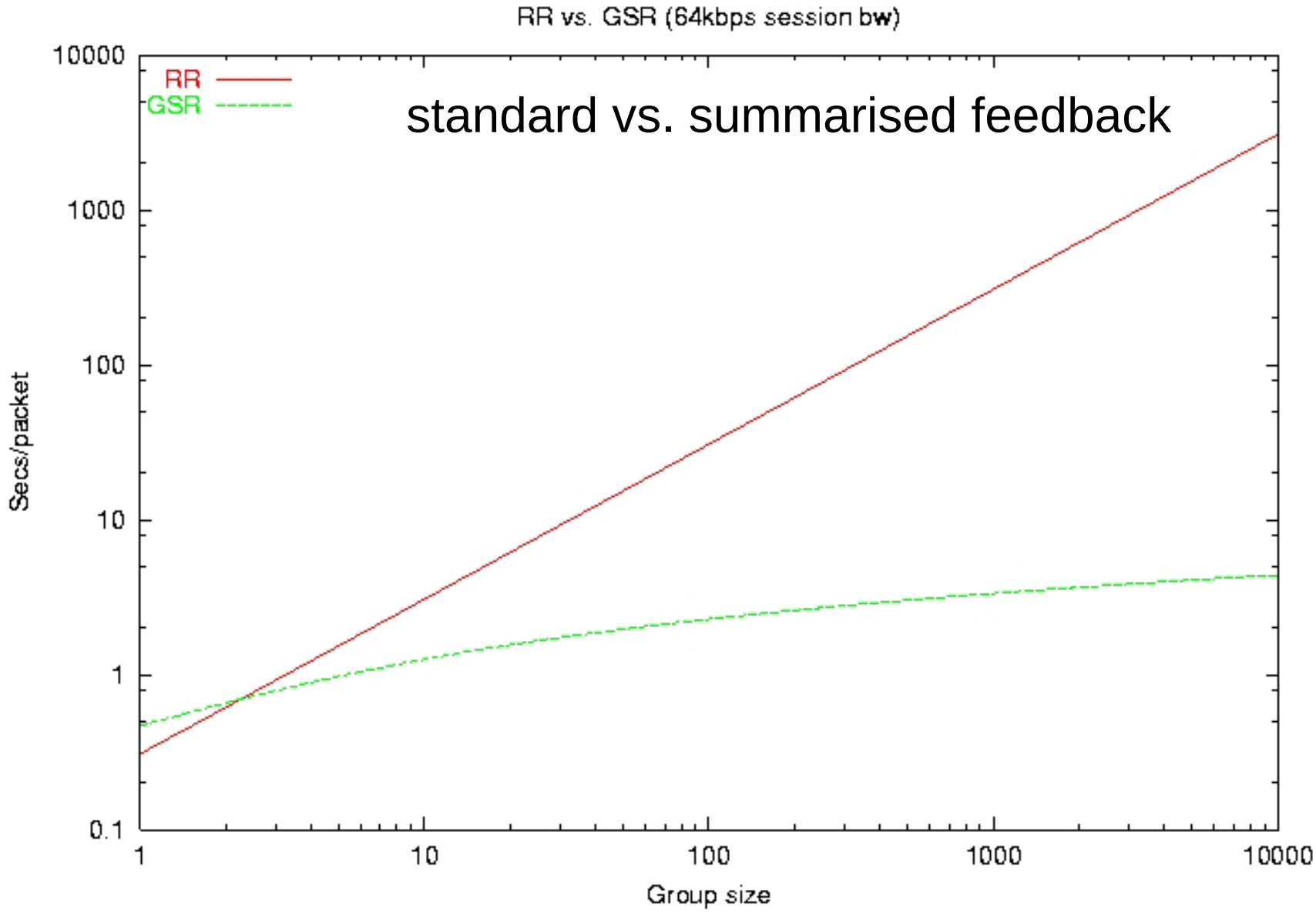
```
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
|       DT      |            NDB          |   MF  |    Length     |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                     Minimum Distribution Value                |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                     Maximum Distribution Value                |
+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
|                       Distribution Buckets                    |
|                              ...                              |
|                              ...                              |
+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+
```

Motivation for Summarisation

Substantial data compression for very large multicast groups enables:

1. greatly increased packet frequency (i.e. lower reporting interval without increasing bandwidth)
2. “create” additional reporting bandwidth for other distribution type information

Comparison of packet frequency:



Mathematical results available online from http://irg.attlabs.net/rtcp_ssm

Feedback Target Identifier

- For stating a different feedback address at the start of the session, an SDP attribute has been identified:

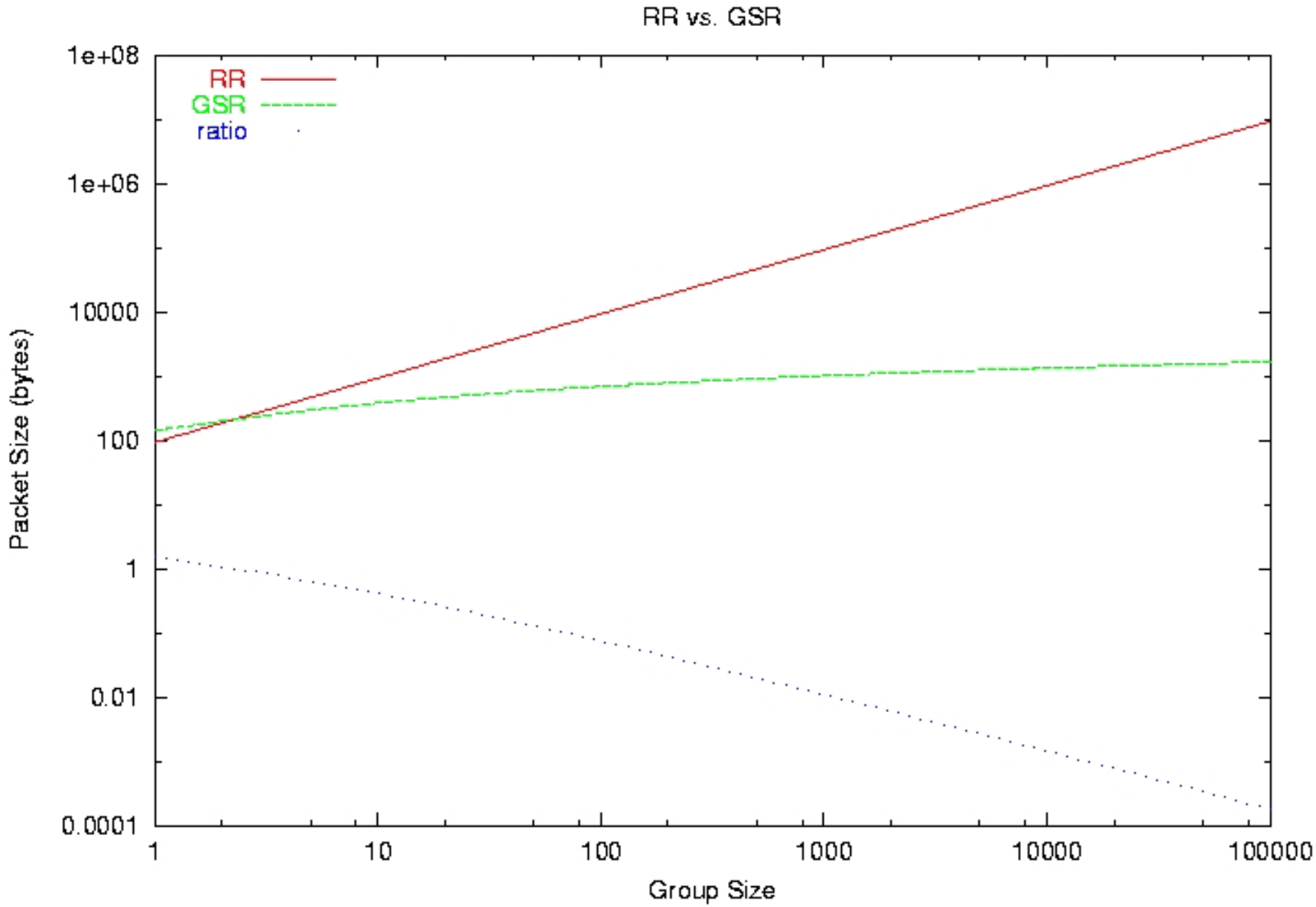
‘an optional alternative feedback address may be supplied using an attribute such as a=rtcp: IN IP4 192.168.1.1. ‘

- Security considerations must address this feature

Miscellaneous Changes and Open Issues

- SSRC collisions detected by SSRC + CNAME state at the source.
- Allow for greater frequency of unicast feedback reports to the source
  - Provided that the source can handle it
  - Specified using the RSI bandwidth field
  - Congestion control implications?
    (N.B. source to receiver bandwidth does not change)
- Editorial stuff

Data Compression Comparison



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