**Report on RTP Payload Discrepancy Leading to Call Silence**

**1. Overview**  
This report examines an issue involving Real-time Transport Protocol (RTP) streams exchanged between the source IP 192.10.1.65 and the destination IP 208.93.9.179. The primary issue identified is the transmission of an oversized payload, which deviates from the expected standard, causing periods of silence during the call.

**2. Issue Summary**  
The client was expected to send an RTP payload with a size of 20 ms. However, the captured data shows that the payload size transmitted was 30 ms. This inconsistency directly contributed to silence in the call, as the Vega system was unable to properly process the larger-than-expected payload.

**3. Call Flow Analysis**  
Below is a summary of the key events from the SIP and RTP flows:

* **SIP INVITE** from 192.10.1.65 to 208.93.9.179 initiated the call.
* The session was established successfully with a **200 OK** response, and RTP streams began flowing between the two endpoints.
* RTP streams with **SSRC 0x19A85265** and **SSRC 0x4D3C8D43** were exchanged between 192.10.1.65:10044 and 208.93.9.179:24342.

**4. RTP Analysis**  
A review of the RTP packets revealed the following key details:

| **Source Address** | **Source Port** | **Destination Address** | **Destination Port** | **SSRC** | **Start Time** | **Duration (s)** | **Payload** | **Packets** | **Lost** | **Min Delta (ms)** | **Mean Delta (ms)** | **Max Delta (ms)** | **Min Jitter** | **Mean Jitter** | **Max Jitter** | **Status** | **SSRC formatted** | **Lost %** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 192.10.1.65 | 10044 | 208.93.9.179 | 24342 | 430461541 | 55.15717 | 38.651138 | g711U | 1285 | 2 | 29.776 | 30.102 | 100.001 | 0.00244 | 0.09148 | 2.53189 | Problem | 0x19a85265 | 0.16 |
| 192.10.1.65 | 10040 | 208.93.9.179 | 42138 | 3331846846 | 4.19609 | 32.870571 | g711U | 1094 | 1 | 29.224 | 30.074 | 110.043 | 0.02354 | 0.08760 | 3.12769 | Problem | 0xc697f2be | 0.09 |
| 208.93.9.179 | 42138 | 192.10.1.65 | 10040 | 3985705944 | 4.18013 | 32.920705 | g711U | 1645 | 2 | 16.118 | 20.025 | 40.106 | 0.00625 | 0.07054 | 0.54847 | Problem | 0xed910bd8 | 0.12 |
| 208.93.9.179 | 24342 | 192.10.1.65 | 10044 | 1295813955 | 55.21338 | 38.659701 | g711U | 1933 | 1 | 18.299 | 20.010 | 40.024 | 0.00550 | 0.08502 | 0.47806 | Problem | 0x4d3c8d43 | 0.05 |

**5. Root Cause Analysis**  
The root cause of the problem is the deviation in the RTP payload size. The client was expected to transmit a 20 ms payload but instead transmitted a 30 ms payload. The Vega system, which is configured to expect a 20 ms payload, could not handle the larger payload size. This caused momentary silences during playback as Vega had to buffer or drop excess data.

**6. Technical Explanation**  
RTP payload size impacts the timing of audio packetization. When the payload size exceeds the expected duration, the receiving system’s jitter buffer may overflow or be unable to decode the payload properly. This misalignment results in call silences or audio clipping. The following discrepancies were observed:

* **SSRC 0x19A85265**: Expected 20 ms, but received 30 ms, impacting 1285 packets.
* **SSRC 0x4D3C8D43**: Same discrepancy of 30 ms vs. 20 ms, affecting 1933 packets.

**7. Impact Analysis**  
The increased payload size affected the RTP streams’ consistency and call quality. End users likely experienced silence or choppy audio during the call. The issue was further exacerbated by packet loss (up to 0.16%) on certain streams, compounding the impact on call quality.

**8. Recommendations**  
To prevent similar issues in the future, the following recommendations are made:

1. **Payload Configuration**: Ensure that the client’s RTP payload size is correctly set to 20 ms.
2. **System Alerts**: Implement monitoring alerts to detect when RTP payload size exceeds the configured threshold.
3. **Vega Configuration**: Verify that the Vega system’s jitter buffer can accommodate slight deviations in payload size, if possible.
4. **Testing and QA**: Perform end-to-end call testing after configuration changes to verify payload compliance.

**9. Conclusion**  
The analysis concludes that the silence observed in the RTP stream was due to a mismatch between the expected and actual RTP payload sizes. Corrective actions, including proper payload size configuration and enhanced monitoring, are recommended to prevent future occurrences of this issue.