

Simple Two-Way Active Measurement Protocol (STAMP) Extensions for Residual Bit Error Rate Measurement

[draft-gandhi-ippm-stamp-ber-04](#)

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Agenda

- Requirements
- Updates
- Summary
- Implementation
- Next Steps

Requirements, Goals and Scope

Requirements

- Residual Bit Error Rate Measurement
 - Measure bit errors that escape CRC detection and FEC correction
 - Result in L3/L4 bit errors (e.g., UDP checksum errors)
 - Forward and Reverse directions

Goals

- Reasonable approximation of the Residual Bit Error Rate

Scope

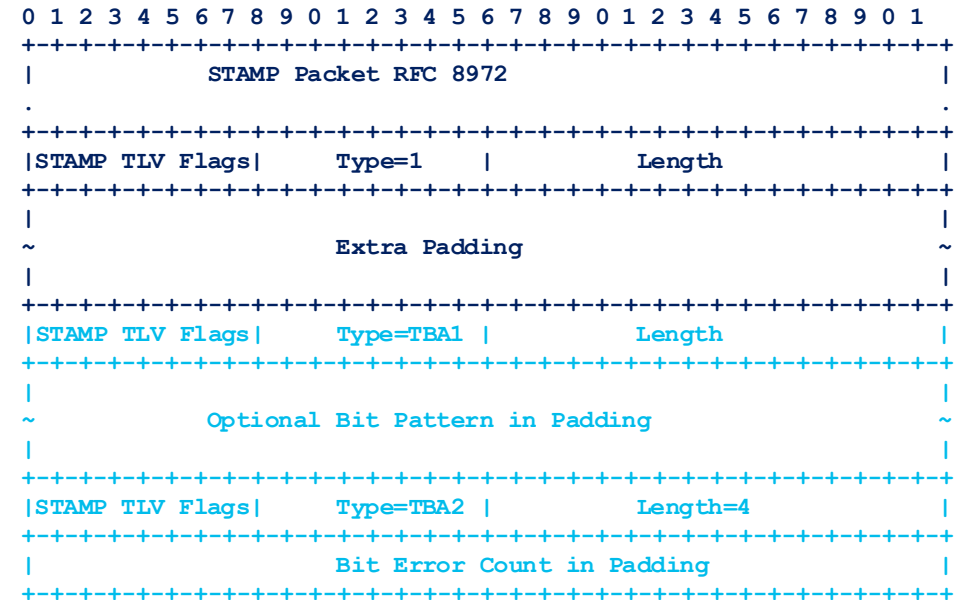
- STAMP [RFC 8762]
- STAMP Optional Extensions [RFC 8972]

Updates

- Welcome [Footer](#) as a co-author
- Addressed review comments from [Footer](#) and [Li Zhang](#)
 - Various clarifications

Residual BER Measurement Procedure

1. STAMP is used for Residual BER measurement, in addition to latency and loss measurement
2. Residual BER measured in STAMP “Extra Padding” TLV (Type=1) defined in [RFC8972]
3. Sender fills data in extra padding TLV with repeated bit pattern
4. Reflector checks the extra padding for bit errors by pattern matching with the expected bit pattern that can be signaled or locally configured
 - a. Returns the bit error count back to the sender in a new STAMP TLV
 - b. Clears the bit errors in the extra padding using pattern matching and reflects the TLV to measure Residual BER in the reverse direction



STAMP Extensions: Define two new STAMP TLVs.

1. TBA1: Bit Pattern in Padding TLV
2. TBA2: Bit Error Count in Padding TLV

Implementation

An open-source implementation of the STAMP [[RFC 8762](#)] available in Teaparty.

- <https://github.com/cerfcast/teaparty>

Implementation of Residual BER:

- <https://github.com/cerfcast/teaparty/commit/592558a38dbcf9b273acb2a2fe8ab0d8f16d0709>

And (bonus!) there is support for Residual BER in the Wireshark dissector:

- <https://github.com/cerfcast/teaparty/commit/608b9e89fce2f25ed88eaa367d0bacc693845da2>

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Next Steps

- Welcome further review comments and suggestions
- Requesting WG adoption

Thank you!