Extended BFD

draft-mirmin-bfd-extended

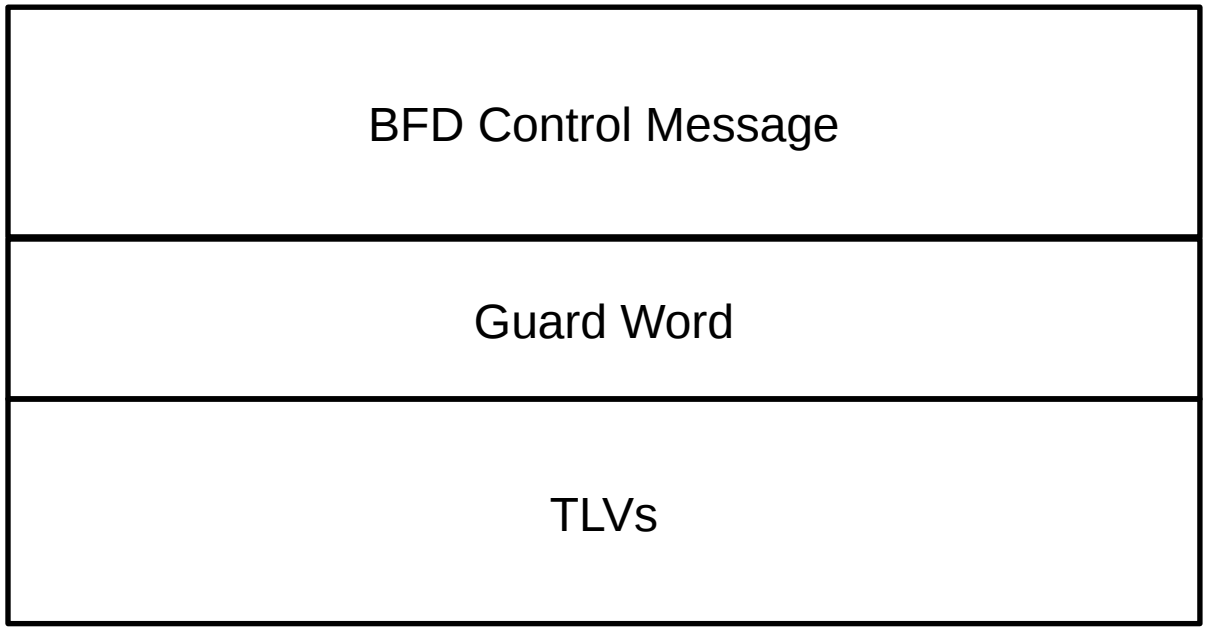
Greg Mirsky
Xiao Min

IETF-104 March 2019, Prague

Motivation

- Observed proposals to monitor:
  - quality of a BFD session;
  - performance;
  - path MTU
- Extend BFD beyond continuity checking/ connectivity verification to:
  - ensure backward compatibility;
  - extensibility

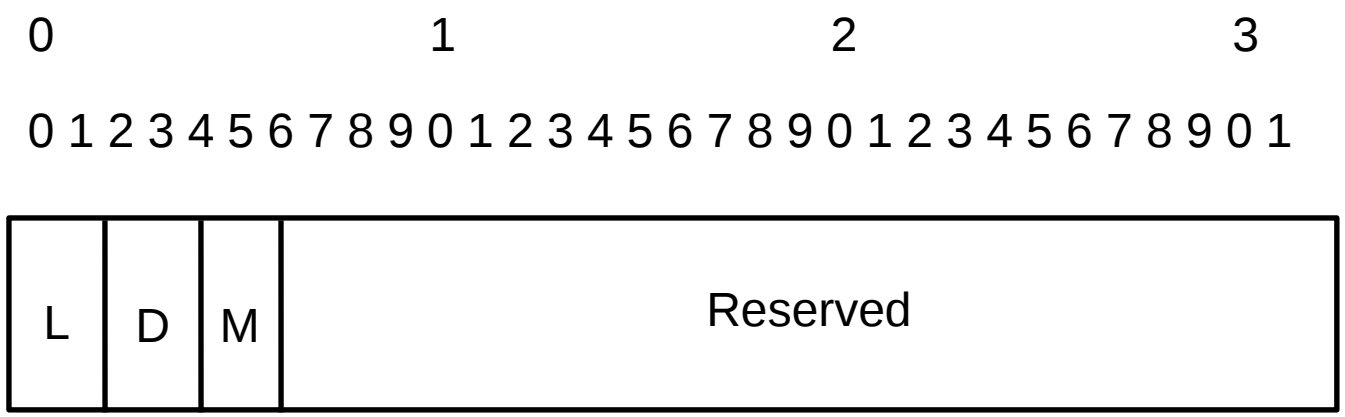
Extended BFD Control Message Format



- BFD Control Message as defined in RFC 5880
- Guard Word – unique four octets long word to identify Sender and Responder
- TLVs - optional

Capability Negotiation

- No Extended BFD by default
- Capability negotiation using the Poll sequence and the Capability TLV

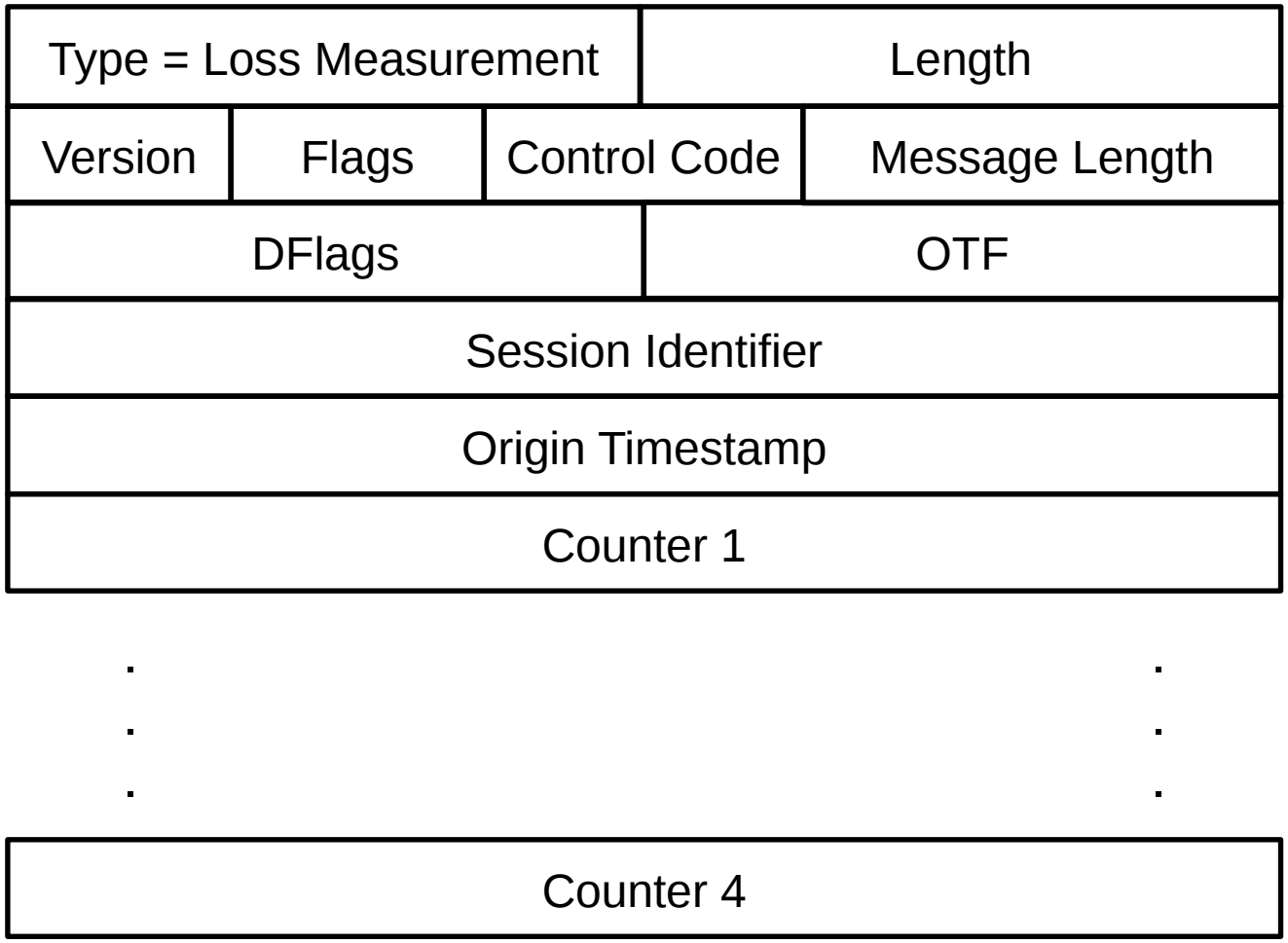


L – Loss measurement
D – Delay measurement
M – Link MTU discovery

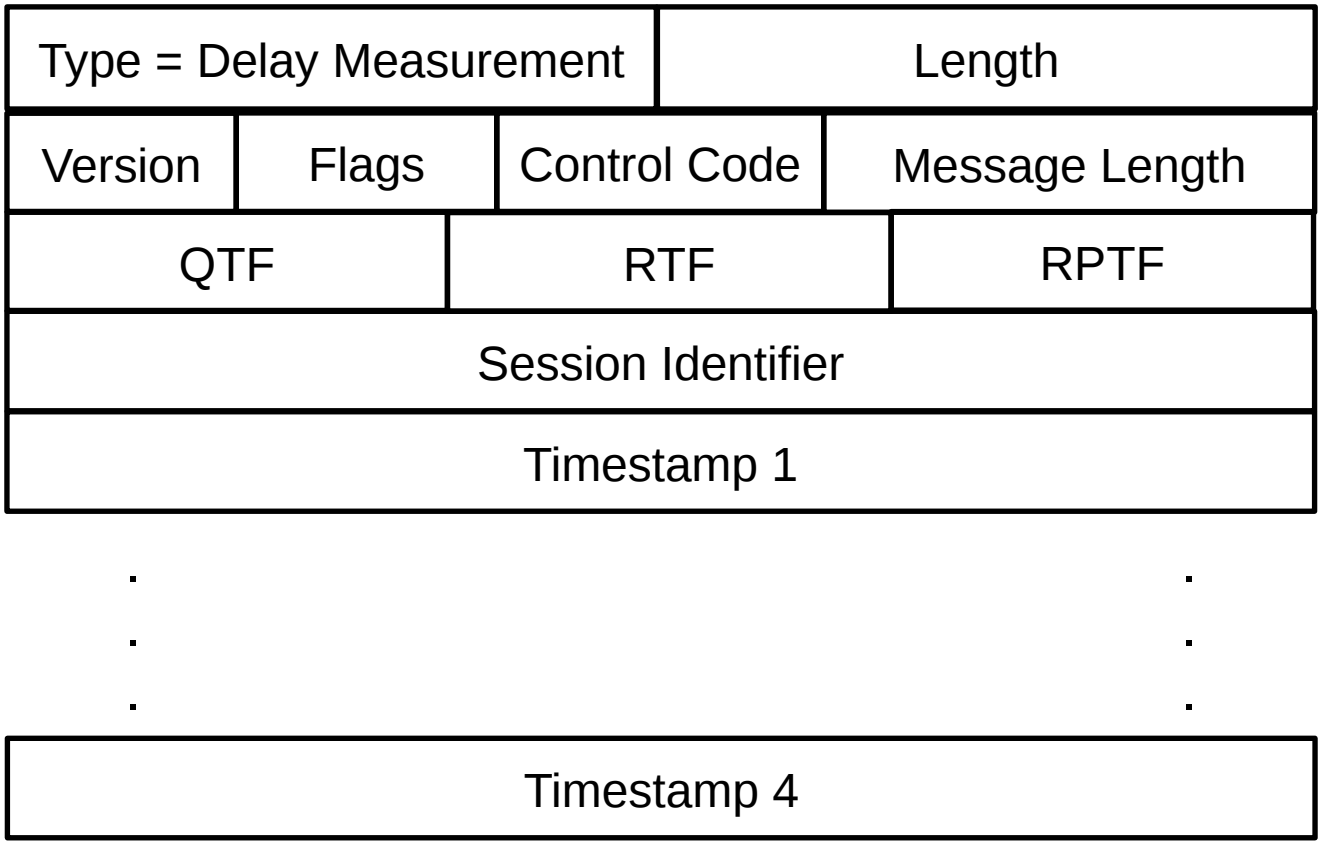
Performance Measurement

- Use Loss and Delay messages defined in RFC 6473:
  - Loss Measurement
    - Direct mode
    - Inferred, a.k.a. synthetic, mode
  - Delay Measurement
    - Explicit timestamp format of a Sender and Responder
  - Combined Loss/Delay Measurement
    - All of the above
- Telemetry query/collection in support of
  - one-way PM
  - direct LM

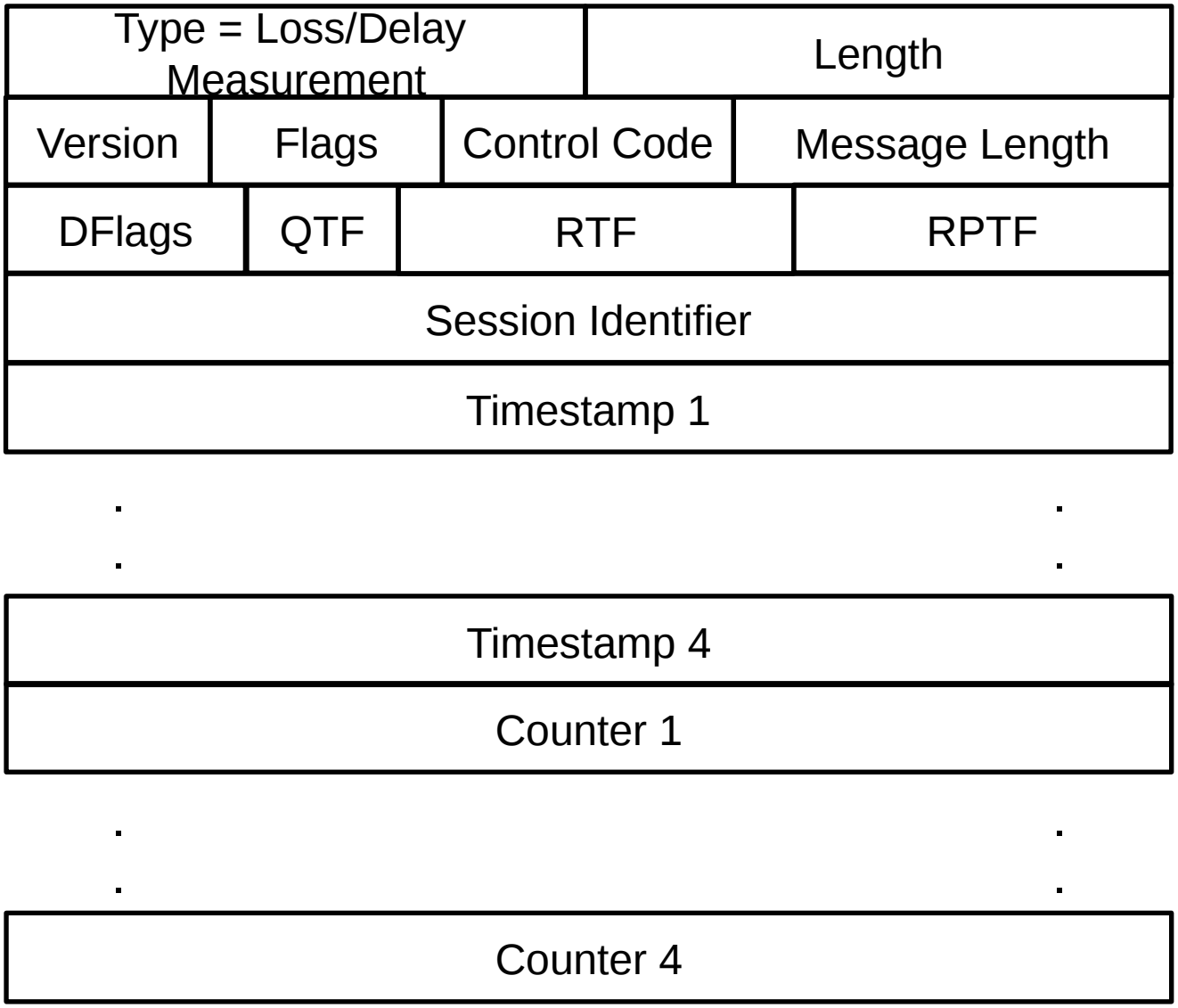
Loss Measurement



Delay Measurement

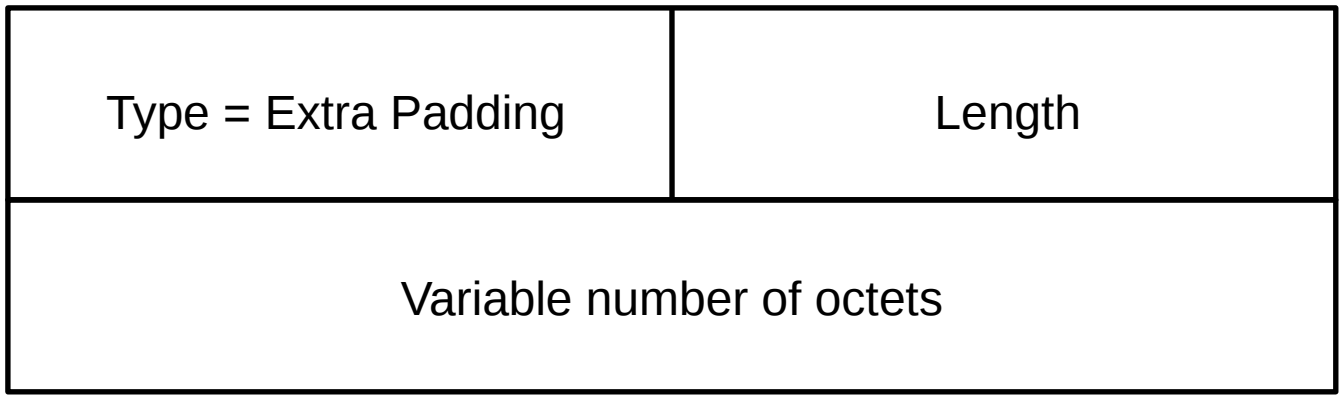


Combined Loss/Delay Measurement



Path MTU Monitoring

- Use the Extra Padding TLV



Next Steps

- Continue adding details
- Discuss, discuss, discuss
- Welcome comments, suggestions, and cooperation