A Sequence Number Extension for HTTP Datagrams

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Background

- 3GPP ATSSS - Study on access traffic steering, switching and splitting support in the 5G system architecture.

- Traffic splitting will be based on MP-QUIC and Masque.

- ATSSS endpoints should be able to support limited reordering to compensate for path delay differences.

- Reordering in the QUIC layer is either all or nothing.

- The ATSSS study proposes to extend HTTP datagrams with sequence numbers.
Datagrams with Numbers

- Increment sequence number for every transmitted datagram.

```
Sequence Number Datagram {
  Context ID (i),
  Sequence Number (8..64),
  Payload (..)
}
```
Registration

- Indicate support with HTTP header: **DG-Sequence: ?1**

- Register a sequence number space
- Indicate the size of the space (8, 16, 32 or 64).
- Indicate the format of the payload that follows a sequence number.

- Map multiple contexts to a single sequence if multiple payload formats are used.