

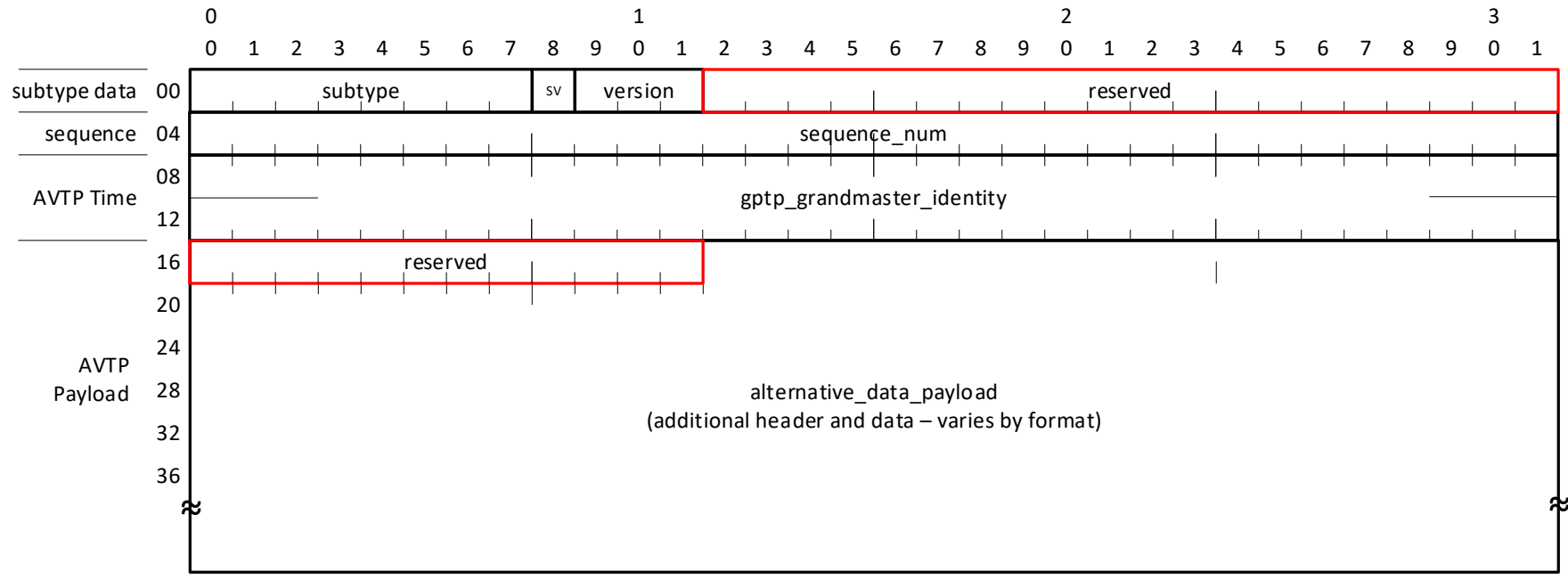
Proposal for Optimization of Alternative Header Version 1

Frank Bähren

IEEE 1722b Task Group

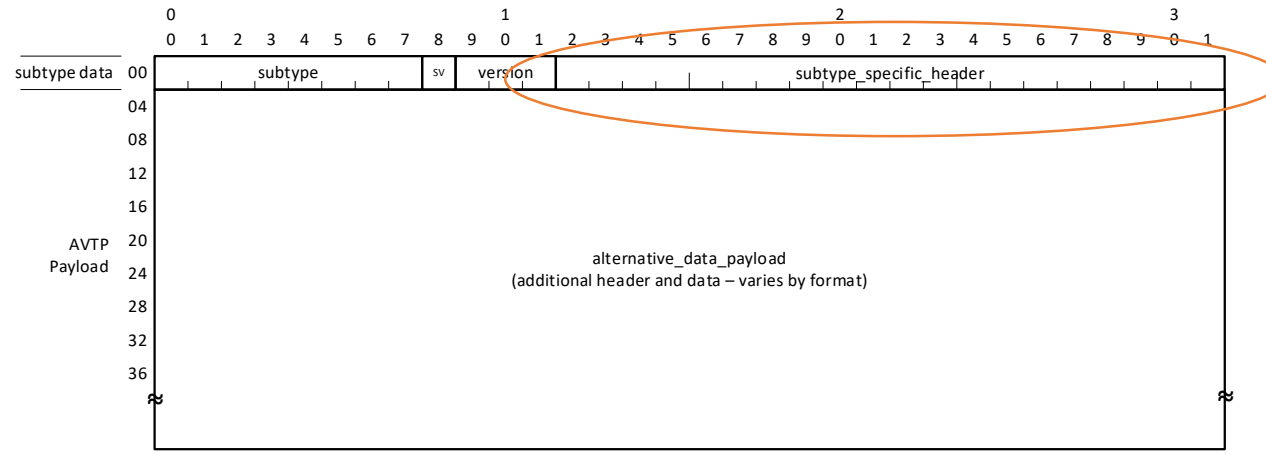
September 2022

Current Proposed Alternative Header



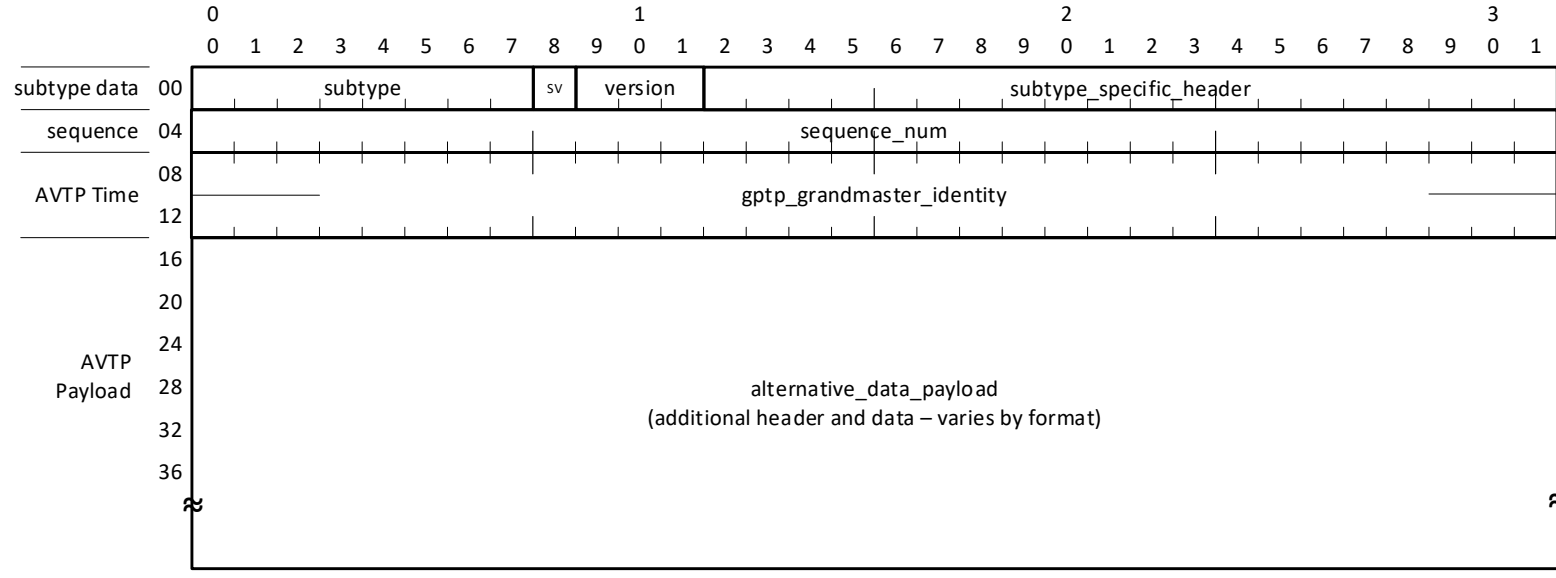
- We spare a full quadlet as „reserved“ to preserve alignment and cohesion of existing alternative data payload
- Is cohesion even needed?

Current Usage of subtype data Quadlet



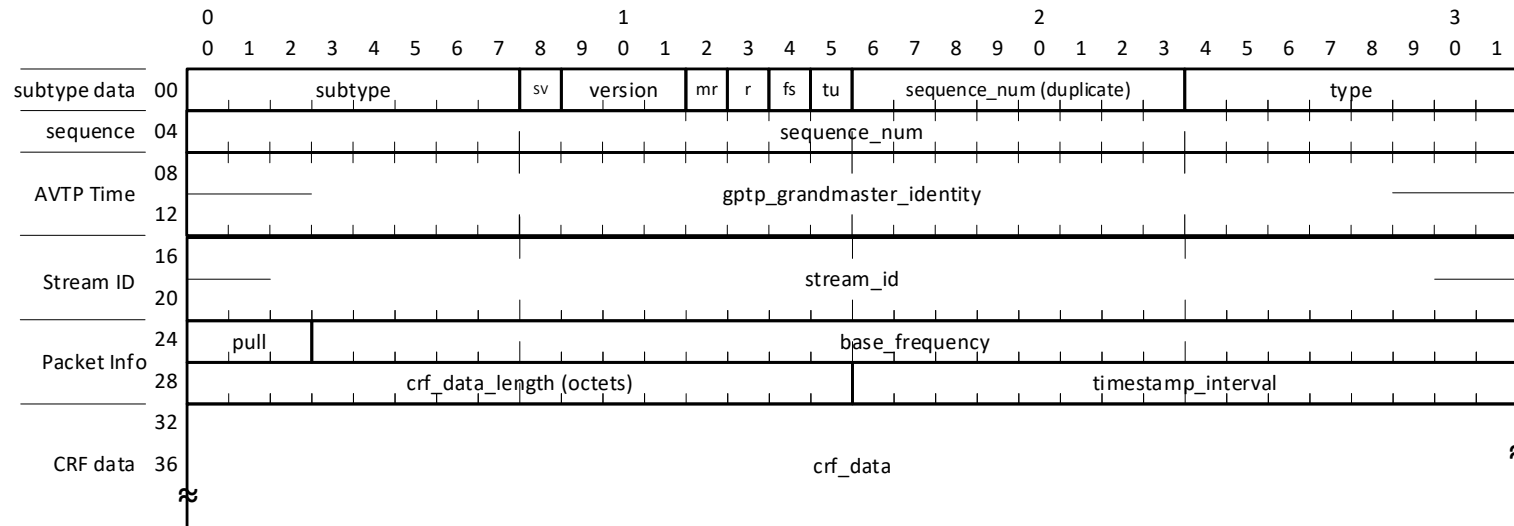
- All existing subtypes making use of the alternative header version 0 format today can be modeled as shown in the diagram: All subtype-specific fields within the first quadlet could be described as “subtype_specific_header” without colliding with any existing use and without “cutting” any existing fields into fragments
- **alternative_data_payload** might or might not contain additional subtype-specific header information, no change to today.
- I do *not* suggest to change the existing version 0 definition.

Proposal for Alternative Header Version 1



- For version 1, define a new placeholder field called “**subtype_specific_header**” in 4.4.6
- Eliminate “reserved” quadlet
- For each subtype using the alternative header format, make **subtype_specific_header** contain the existing fields at that location, preserving layout of the first quadlet
- Insert extended **sequence_num** and **gtp_grandmaster_identity** afterwards
- Then continue with the alternative payload, potentially including further subtype-specific header fields

Example for CRF Version 1 PDU Layout



- Text would state that **subtype_specific_header** contains the **mr**, **fs**, **tu**, **sequence_num (duplicate)** and **type** fields.
- Layout stays the same as for version 0, except for the inserted wide **sequence_num** and **gtp_grandmaster_identity**
 - Potentially simplifies HW-accelerated processing
- Debatable if “**sequence_num (duplicate)**” is actually needed
 - In any case, would require clarification that this is a duplicate of the least significant eight bits of the wide **sequence_num**, and the fields should have unique names