

1 **4 Radio over Ethernet (RoE) base protocol**

2 **4.2 RoE common frame format**

3 **4.2.5 Ordering information (orderingInfo)**

4 Ordering information can be presented in one of two methods, a **timestamp** or **SeqNum**. The definition of
5 each packet type determines which format is used for the orderingInfo field.

8 RoE mappers

This clause defines mappers to/from existing radio framing formats to/from RoE native transport encapsulation format.

8.1 Overview

///Editor's note: Introduction here

8.2 Simple tunneling mapper

///Editor's note: A simple tunneling mapper shall only generate one flow from one CPRI link.

The simple tunneling mapper captures bits from one end of a constant bit rate link, packetizes the bits into Ethernet packets, sends the packets across the network, and then recreates the bit stream at the far end of the link. While the general expectation is that the tunneled data will likely be CPRI data streams, the data could be any binary constant rate data stream within the range of data rates supported by that equipment.

In distinction to the agnostic mapper, the simple tunneling mapper does not remove any line coding bits and does not interpret any special characters (such as K-characters). If the source data is 8b/10b-encoded, the 10-bit symbols present on the line will be tunneled by this mapper as 10 bits of data. Similarly, 66-bit symbols will be sent for 64b/66b-encoded data as 66 bits of data.

Data that is not evenly divisible into 8-bit octets is not padded; instead, packet payloads are truncated to the last full octet, and the remainder bits are sent at the beginning of the next packet. This means, for example, that data from a 66-bit symbol at the end of a payload may actually be split across two packets with successive packet numbers.

8.2.4 (de) Mapper Parameters

///Editor's note: Mapper is told how many octets to packetize. Mapper does not (de)interleave the IQ samples.

The bit rate for the stream is defined when the stream is initiated. The length field in the common header (see §4.2.4) defines the number of octets in the packet.

8.2.4.1 Use of sequence number

///Editor's note: Since all frame timing, including K28.5, HFN and BFN are preserved within the fully encapsulated CPRI stream in the payload, the sequence number is only useful to detect dropped packets.

All simple tunneling packets shall use sequence numbers in the orderingInfo field. The first sequence number in the stream shall be 0x0001, and sequence numbers shall monotonically increase by 1 with each packet, wrapping to 0x0000 after hitting 0xFFFF.

8.2.5 Use of RoE control packets

///Editor's note: The simple tunneling mapper does not have any effect on the CPRI control plane or user plane content and as such it does not use or require any RoE control packets.

The simple tunneling does not require any special control packets. Any control or management information embedded in the tunneled data is not interpreted by the mapper and is passed through as binary data.

1 **8.2.6 Simple tunneling CPRI data packet (00 0001b)**

2 This packet type is associated with a simple tunneling mapper.

3 **8.2.6.1 Version (ver) field**

4 See subclause **Error! Reference source not found..**

5 **8.2.6.2 Packet type (pktType) field**

6 The **pktType** field for a simple tunneling data packet shall be set to value 00 0001b (see **Error! Reference**
7 **source not found.**).

8 **8.2.6.3 Flow identifier (flowID) field**

9 For packets being sent from the RoE node, the flowID field is populated with the mapperID defined in the
10 by mapper[].flowID=mapper[].mapperID. For packets being received by the RoE node, the flowID field is
11 populated with the deMapper[].flowID defined in the mappers parameter list .

12 **8.2.6.4 Ordering information (orderInfo) field**

13 *///**Editor's note: TEXT HERE***

14 The 32-bit orderInfo field shall be used as a sequence number, with successive packets increasing the
15 sequence number by 1. A gap in sequence numbers indicates a missing packet. Packets received out of order
16 due to network traffic may be output in order if egress buffering is used and the out of order packets are
17 received within the window of egress buffering.

18 **8.2.6.5 Length field**

19 See subclause **Error! Reference source not found..**

20 **8.2.6.6 Payload field**

21 *///**Editor's note: TEXT HERE***

22 The payload data shall be comprised of the binary stream of tunneled bits without interpretation.