# RoE OAM TLV

A new packet subtype is proposed for exchanging parameters

# Background

- Current PAR precludes defining OAM methodology/procedures – how to set up a flow
- Does not preclude (probably requires) us to define how parameter values are encapsulated in packets
- We already have the parameter nomenclature outlined
- All we need to do is enumerate our objects and parameters and define new opCode(s)

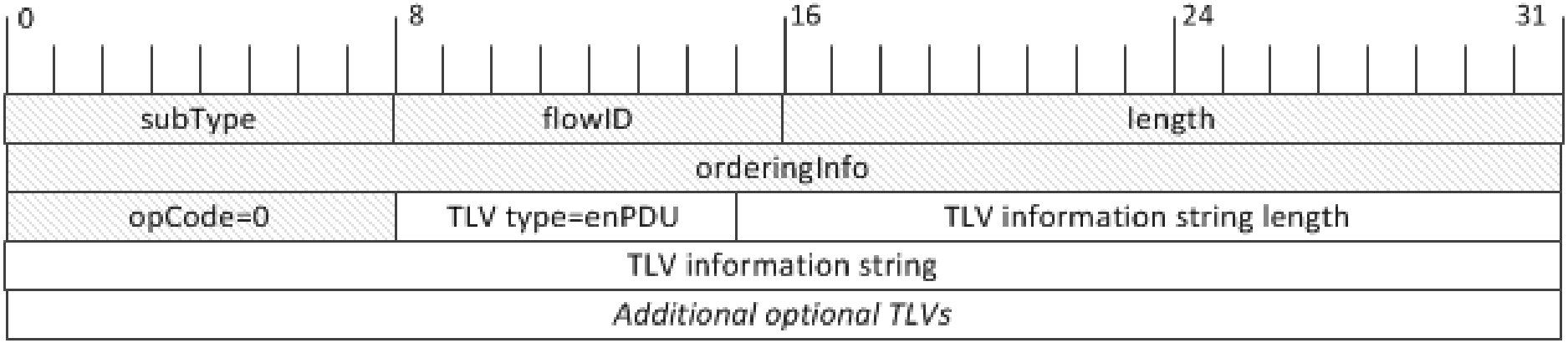
# Object enumeration

- enPDU= TLV type

1. Ethernet Link – eth[ethID]. *parameter name=parameter value*
2. CPRI links – cpri[cpriID].*parameter name=parameter value*
3. Mapper – mapper[mapperID]. *parameter name=parameter value*
4. Mapper Container - mapper[mapperID].[contID]. *parameter name=parameter value*
5. Demapper – demapper.[demapperID]. *parameter name=parameter value*
6. Demapper Container - demapper[demapperID].[contID]. *parameter name=parameter value*
7. *SeqNum*

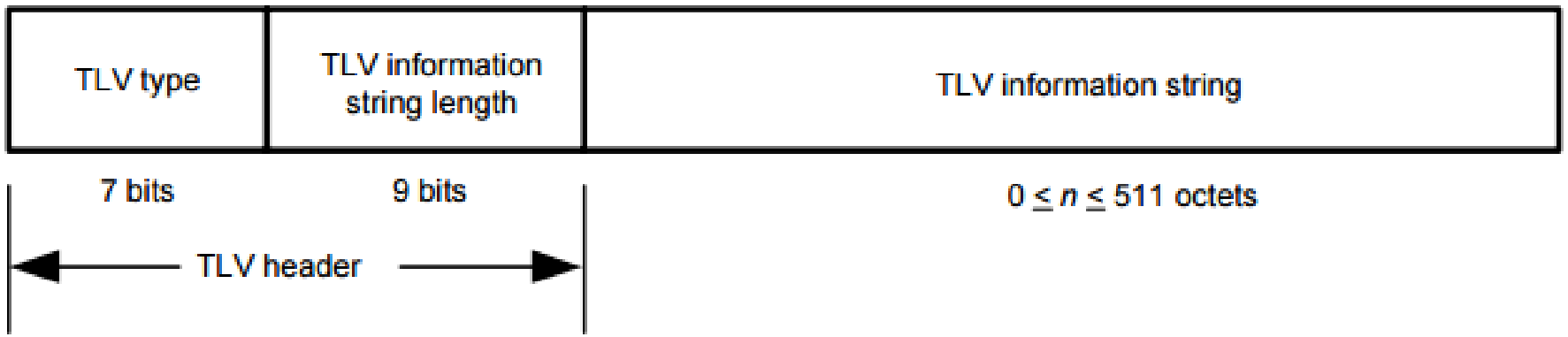
# OAM TLV Packet description

- subType = 0, opCode=0, flowID=0
- orderingInfo = seqNum
- TLV type = enPDU: points to object type



# TLVs from 802.1AB

- TLV type = enPDU
- TLV information string length
  - The length of this TLV (they can be concatenated)
- TLV information string
  - TLV specific. RoE would have
    - enParam (8 bits)
    - ID (8 bits)
    - value (8-32 bits)



# Parameter enumeration

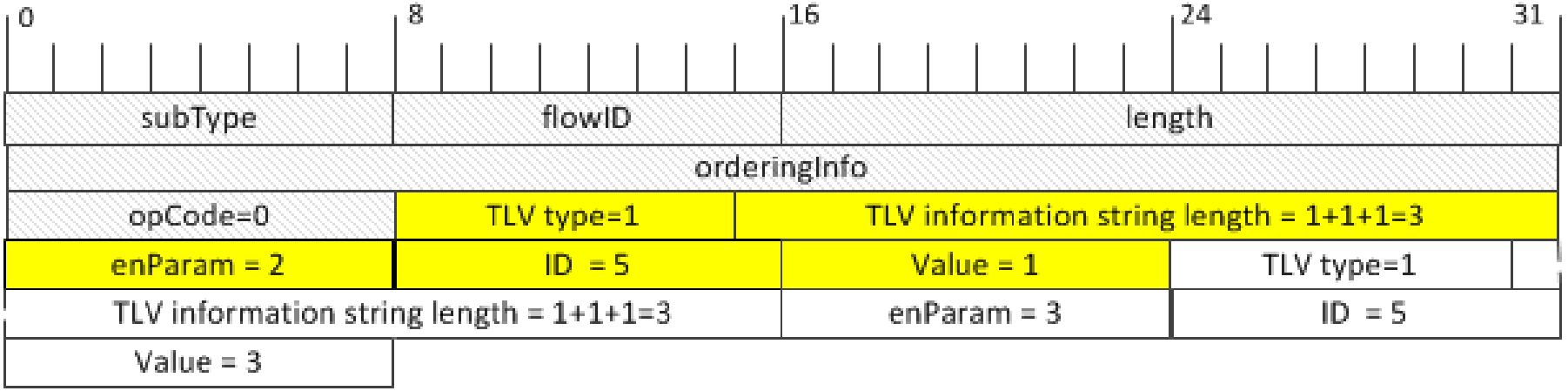
- Ethernet object example

| ID | Parameter | Bits | Name | Default | Description |
|---|---|---|---|---|---|
| 0 | Identifier | 8 | **.ethID** | 0 | Each Ethernet port in a given node has a unique identifier |
| 1 | Encryption | 4 | **.encypt** | 0 | Selects/enables encryption on the entire Ethernet link. 0x0 is no encryption |
| 2 | Compression | 4 | **.compress** | 0 | Selects/enables compression on the entire Ethernet link. 0x0 is no compression |

- enParam=
  1. Identifier
  2. Encryption
  3. Compression

# Example

- We want to set the 5th ethernet port to use encryption scheme 1 and compression type 3
- Ethernet PLV is `eth[5].`*`encrypt=1`*
  - subType = 0 (RoE control)
  - opCode = 0 (new - currently reserved)
  - enPDU = 1 (enumerated object type for ethernet port)
  - enParam= 2 (enumerated parameter for encryption)
  - ID= 5 (the 5th ethernet port in this example)
  - value = 1 (encryption scheme 1)



# Baseline proposal

- Add enumeration to parameters and objects in the hierarchy
- Define new opCode= 0
  - RoE OAM TLV control type
- Add some text to describe this type
- Further work? (probably under 1914TF) seqNum & flowID handling
  - ACK/NACK scheme (or responseCode)
  - Parameter enquiry? Value empty?
  - More PDUs for enabling loopback, status etc.