# CCN Packet Formats

ICNRG Interim Meeting - Paris 2014-09-27

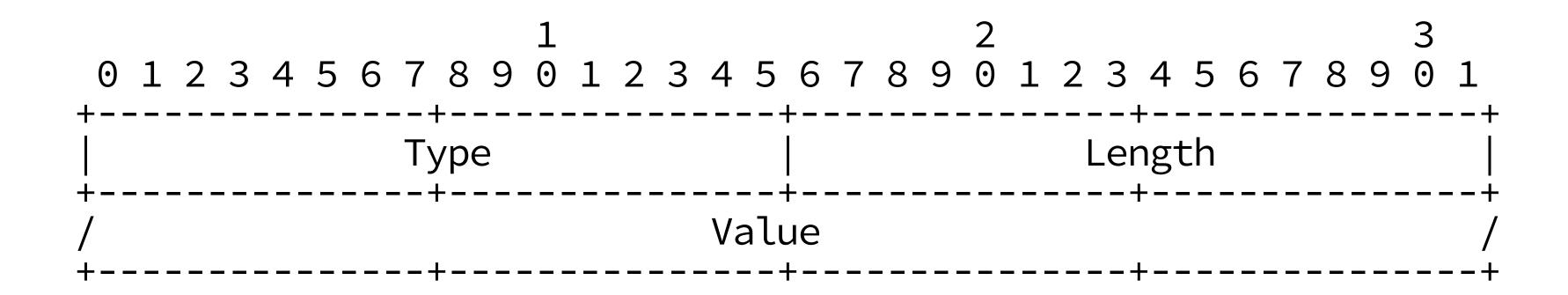
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## Packet Structure



### 2+2 TLV Format



#### 2-Byte Type

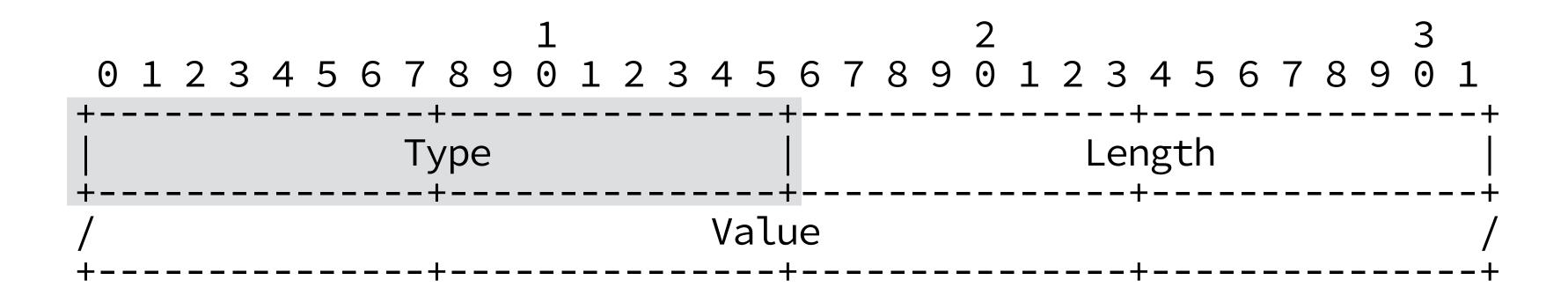
Enough for expansion and experiments Inherently hierarchical (not many types) Fast to jump over (no parsing needed) No aliasing (0 vs 00) Canonical sorting

#### 2-Byte Length

Don't cover what doesn't fit in a packet Enough for large fields like payload Fast to jump over (no parsing) No aliasing (0 vs 00) Canonical sorting



## Type space



#### **Flat Type**

Simple
No ambiguity
Coordination

#### Hierarchical

Compartmentalization
Typespace for name components
Vendor/App specific



### CCN Packet

```
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1

Version | PacketType | PayloadLength |
HopLimit (I)*| reserved | HeaderLength |
Optional header TLVs /
CCNx Message TLV /
Optional CCNx ValidationAlgorithm TLV /
Optional CCNx ValidationPayload TLV (ValidationAlg required) /
Optional CCNx ValidationPayload TLV (ValidationAlg required) /
```



### Static Header



## Optional Headers



## Validation



## CCN Message



### Interests



### Interests

```
PacketType
                                         PayloadLength
   Version
                                        HeaderLength
   HopLimit
                 reserved
Optional header TLVs
         T_INTEREST
                                       Interest Length
Name TLV
Optional Metadata TLV(s)
Optional Payload TLV
Optional CCNx ValidationAlgorithm TLV
Optional CCNx ValidationPayload TLV (ValidationAlg required)
```



## Interests

```
Version
                 PacketType
                                         PayloadLength
   HopLimit
                                         HeaderLength
                 reserved
Optional header TLVs
         T_INTEREST
                                       Interest Length
           T_NAME
                                          Name Length
                              NAME
Optional Metadata TLV(s)
Optional Payload TLV
Optional CCNx ValidationAlgorithm TLV
Optional CCNx ValidationPayload TLV (ValidationAlg required)
```



### Content Packet



## Content Objects

```
PacketType
                                        PayloadLength
   Version
                                         HeaderLength
  reserved *
                 reserved
Optional header TLVs
                                  Content Object Length
     T_CONTENT_OBJECT
Optional Name TLV
Optional Metadata TLV(s)
Optional Payload TLV
Optional CCNx ValidationAlgorithm TLV
Optional CCNx ValidationPayload TLV (ValidationAlg required)
```



## Content Objects

```
PayloadLength
   Version
                 PacketType
                                         HeaderLength
  reserved *
                 reserved
Optional header TLVs
                                   Content Object Length
     T_CONTENT_OBJECT
           T_NAME
                                          Name Length
                              NAME
Optional Metadata TLV(s)
Optional Payload TLV
Optional CCNx ValidationAlgorithm TLV
Optional CCNx ValidationPayload TLV (ValidationAlg required)
```



# Agreement Topics

Static header agreement

TLV agreement

Parsing agreement

Type agreement



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