

# Highlights of NDN Packet Format Specification

v0.2a2

<http://named-data.net/doc/ndn-tlv/>

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ICNRG Interim Meeting  
Cambridge, MA, January 13-14, 2015

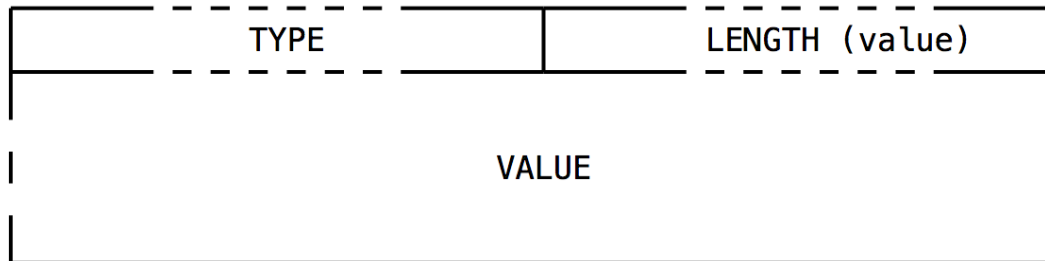
# Outline

- TLV encoding
- Interest and Data are TLVs
- Signature Encoding
- Name encoding
- Encoding Key-Value in Names

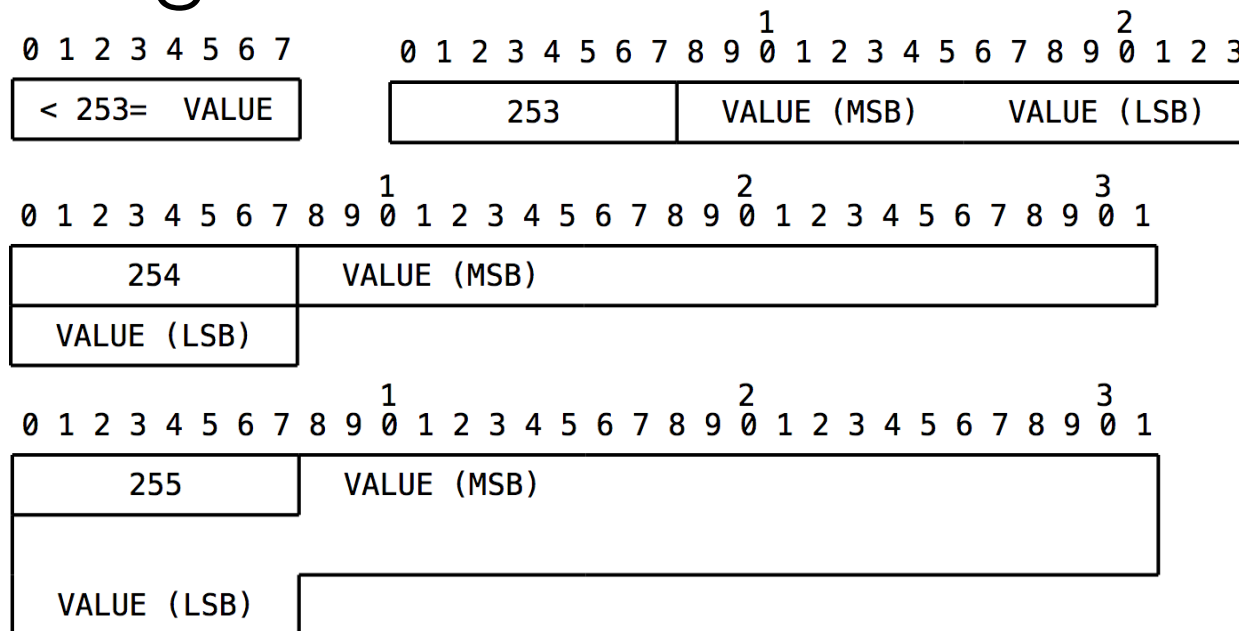
# Goals

- Support the architecture
- Allow experimentation
  - A set of TLV that can be extended or reduced; no fixed part
- Universality, the same wire format support
  - Today's constrained environments
  - Future's > 64k MTUs
- Self-contained
  - same bits on I3-wire and applications
- Be as efficient as possible
  - Quick access to Name
  - Interest: group elements that can be used to match “similar” interests
  - Data packet: contiguous memory block for signing

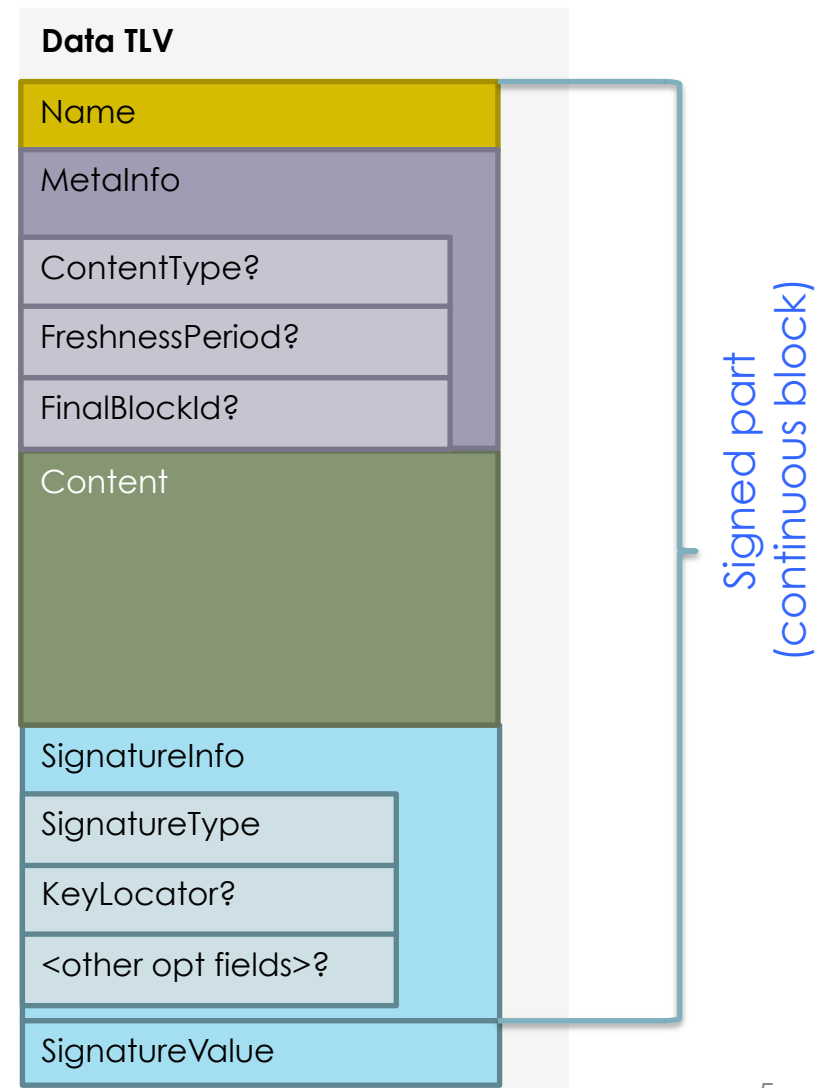
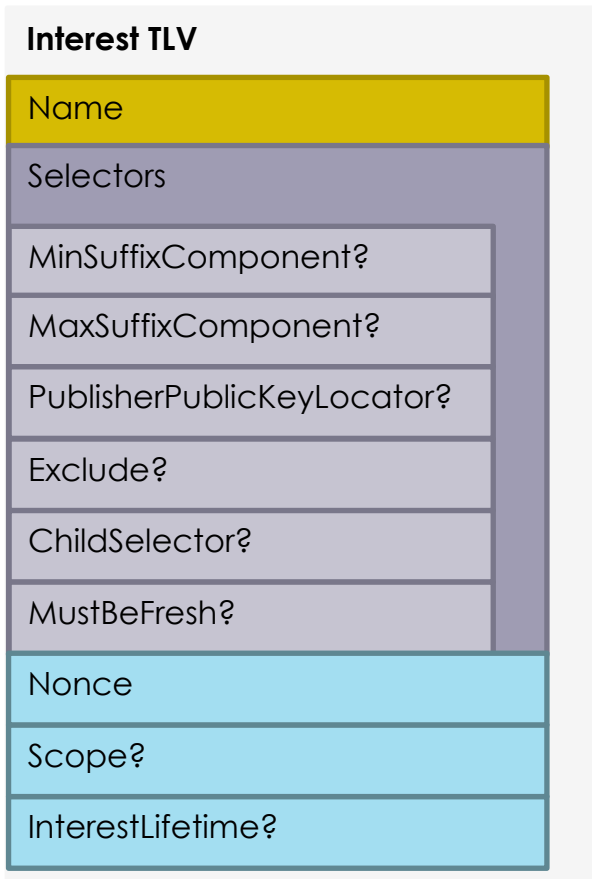
# TLV Encoding



- TYPE and LENGTH use variable length encoding



# Interest and Data NDN packets



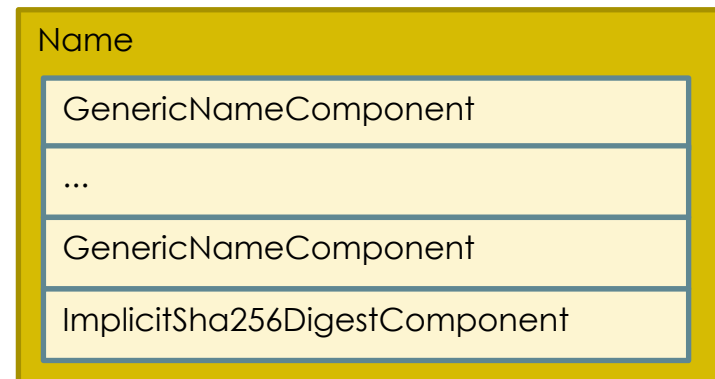
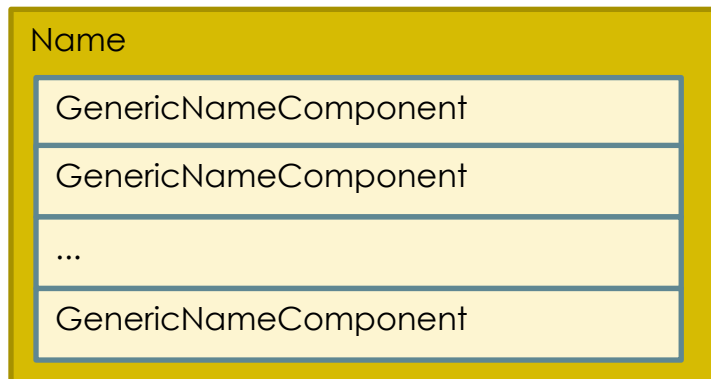
# Updated Encoding of Name

```
Name ::= NAME-TYPE TLV-LENGTH NameComponent*
```

```
NameComponent ::= GenericNameComponent |  
                  ImplicitSha256DigestComponent
```

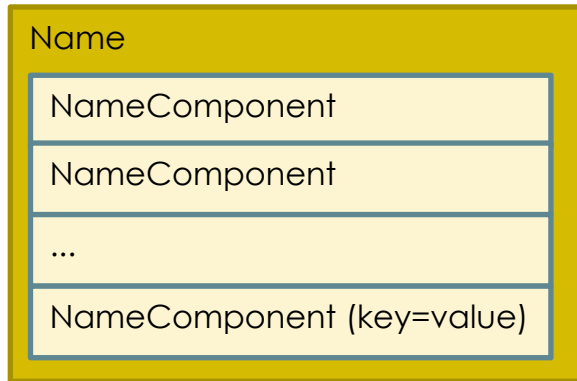
```
GenericNameComponent ::= NAME-COMPONENT-TYPE TLV-LENGTH BYTE*
```

```
ImplicitSha256DigestComponent ::= IMPLICIT-SHA256-DIGEST-COMPONENT-TYPE  
                                  TLV-LENGTH(=32) BYTE{32}
```

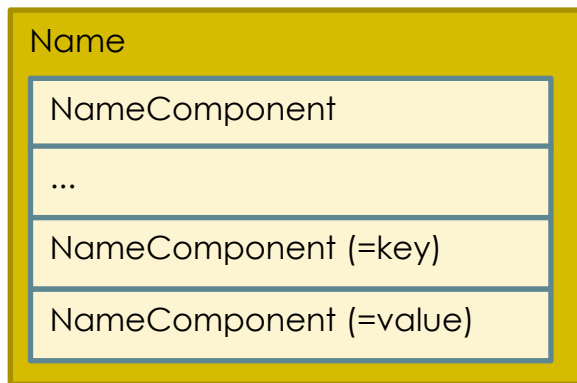


# Encoding Key-Value in Names

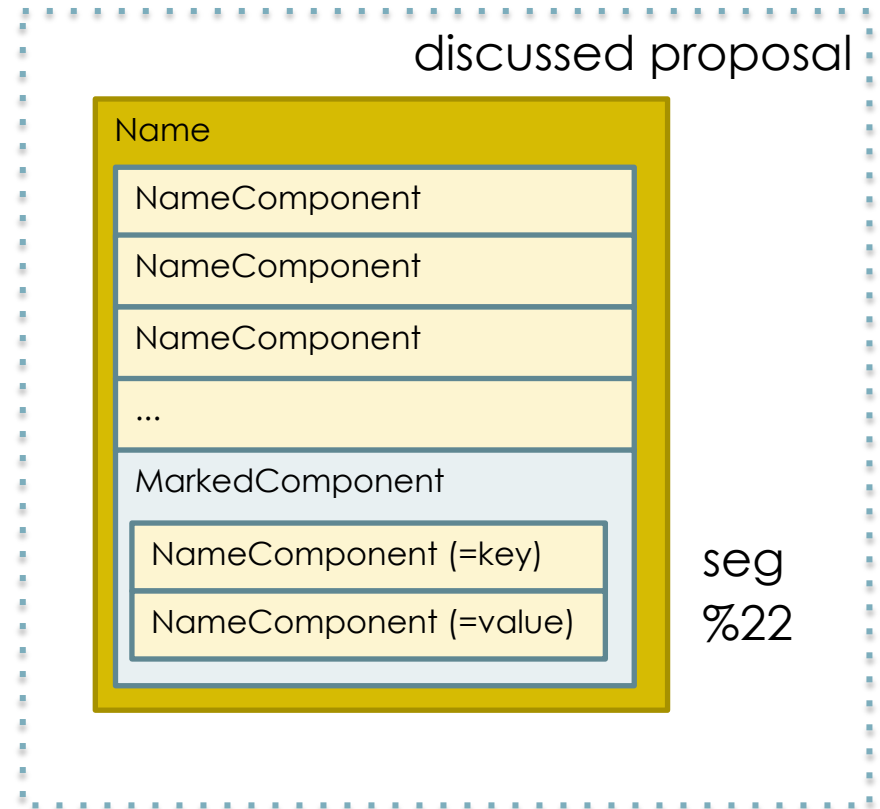
- Application have freedom to use **names** to express anything they desire



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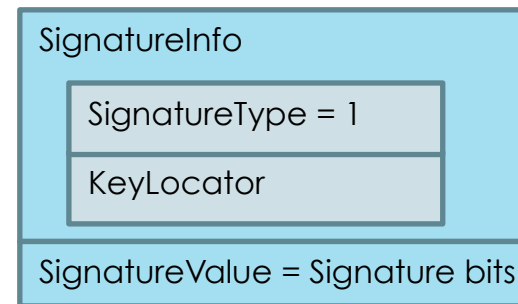


\_seg  
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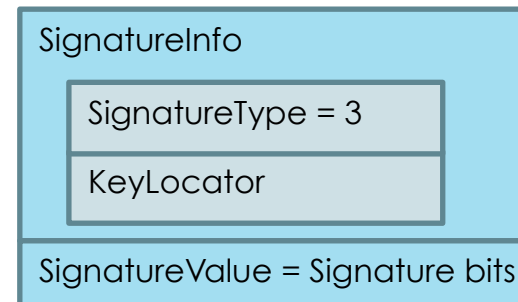


# Signature Encoding

- SignatureSha256WithRsa



- SignatureEcdsa256WithRsa



- DigestSha256

