

# YANG for Static Context Header Compression (SCHC)

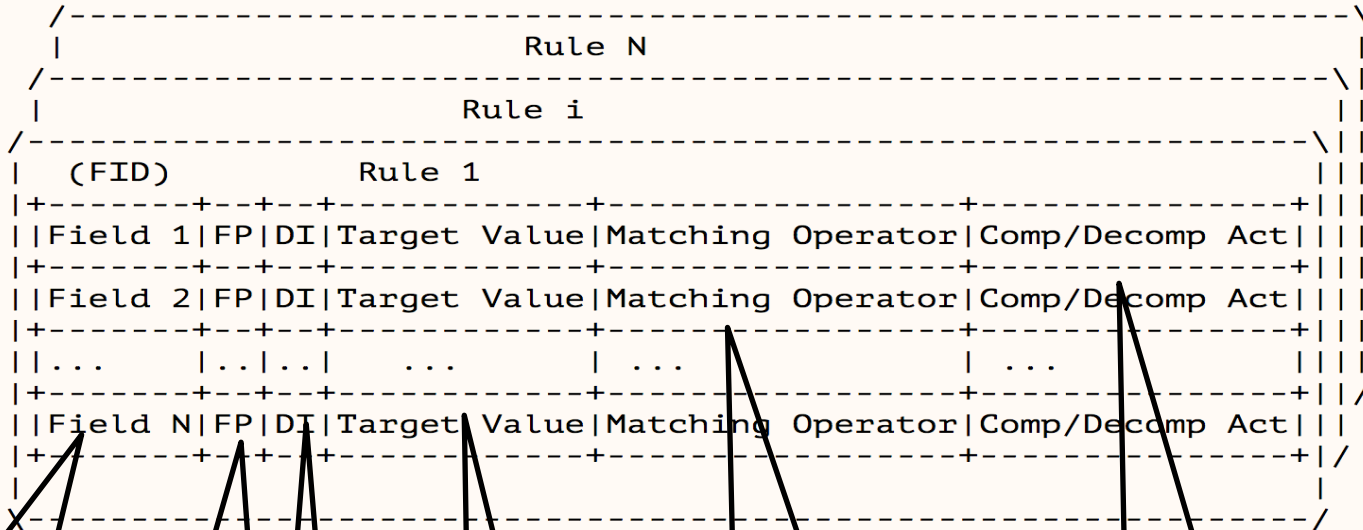
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[draft-toutain-lpwan-yang-static-context-hc-00](#)

# Context fields



IPv6.version  
CoAP.URI-Path  
....

1, 2, 3...

Bi, up,  
dw

Number,  
String,  
Arrays,  
..

Ignore,  
Equal  
MSB(x)  
Match-mapping  
..

Not-sent, value-  
sent, LSB(y),  
mapping-sent,  
compute-\*, devIID,  
applID  
..

```

rule_coap2 = {"ruleid" : 2,
  "content" : [
    ["IPv6.version", 1, "bi", 6, "equal", "not-sent"],
    ["IPv6.trafficClass", 1, "bi", 0x00, "equal", "not-sent"],
    ["IPv6.flowLabel", 1, "bi", 0x000000, "equal", "not-sent"],
    ["IPv6.payloadLength", 1, "bi", None, "ignore", "compute-length"],
    ["IPv6.nextHeader", 1, "bi", 17, "equal", "not-sent"],
    ["IPv6.hopLimit", 1, "bi", 30, "ignore", "not-sent"],
    ["IPv6.prefixES", 1, "bi", 0xFE80000000000000, "equal", "not-sent"],
    ["IPv6.iidES", 1, "bi", 0x0000000000000001, "equal", "not-sent"],
    ["IPv6.prefixLA", 1, "bi", 0xFE80000000000000, "equal", "not-sent"],
    ["IPv6.iidLA", 1, "bi", 0x0000000000000002, "equal", "not-sent"],
    ["UDP.PortES", 1, "bi", 5682, "equal", "not-sent"],
    ["UDP.PortLA", 1, "bi", 5683, "equal", "not-sent"],
    ["UDP.length", 1, "bi", None, "ignore", "compute-length"],
    ["UDP.checksum", 1, "bi", None, "ignore", "compute-checksum"],
    ["CoAP.version", 1, "bi", 1, "equal", "not-sent"],
    ["CoAP.type", 1, "up", CoAP.CON, "equal", "not-sent"],
    ["CoAP.type", 1, "dw", 2, "equal", "not-sent"],
    ["CoAP.tokenLength", 1, "bi", 1, "equal", "not-sent"],
    ["CoAP.code", 1, "up", 2, "equal", "not-sent"],
    ["CoAP.code", 1, "dw", [69, 132], "match-mapping", "mapping-sent"],
    ["CoAP.messageID", 1, "bi", 0, "MSB(12)", "LSB"],
    ["CoAP.token", 1, "bi", 0x80, "MSB(5)", "LSB"],
    ["CoAP.Uri-Path", 1, "up", "measure", "equal", "not-sent"],
    ["CoAP.Option-End", 1, "up", 0xFF, "equal", "not-sent"]
  ]
}

```

2500 characters : BIG + no schema to validate

# Why YANG+CoMI?

- Compact and unique representation for:
  - Well-known Field ID, MO, CDA
- Compact exchanges between SCHC C/D
  - NGW-> dev: Prefix assignment
  - Dev-> NGW: setup port numbers, destination addresses,...
  - Compresses well with SCHC!
- Protocol bindings defined

# ietf-lpwan-schc.yang

```
module: ietf-lpwan-schc
  +--rw compression-context
    +--rw context-rules* [rule-id]
      +--rw rule-id          uint8
      +--rw rule-fields* [name occurrence direction]
        +--rw name          string
        +--rw occurrence    uint8
        +--rw direction     enumeration
        +--rw target-value? lpwan-types
        +--rw matching-operator? matching-operator-type
        +--rw matching-operator-parameter? lpwan-types
        +--rw compression-decompression-action? compression-decompression-action-type
        +--rw compression-decompression-action-parameter? lpwan-types
```