**SIH 2020 NM-402 instrumentalists**

Header compression problem.

Approach: dividing the header into three parts.

**INFERRED**

These fields contain values that can be inferred from other

values (for example, the size of the frame carrying the packet)

and thus do not have to be handled at all by the compression

scheme.

**STATIC**

These fields are expected to be constant throughout the

lifetime of the packet stream. Static information must in some

way be communicated once.

STATIC fields whose values define a packet stream. They are in

general handled as STATIC.

These STATIC fields are expected to have well-known values and

therefore do not need to be communicated at all.

**CHANGING**

These fields are expected to vary randomly within a limited

value set or range or in some other manner.

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| **Field**  | **Size (bits)** | **Class |**

**+---------------------+-------------+----------------+**

| Version | 4 | STATIC |

| Header Length | 4 | STATIC-KNOWN |

| Type Of Service | 8 | CHANGING |

| Packet Length | 16 | INFERRED |

| Identification | 16 | CHANGING |

| Reserved flag | 1 | STATIC-KNOWN |

| Don't Fragment flag | 1 | STATIC |

| More Fragments flag | 1 | STATIC-KNOWN |

| Fragment Offset | 13 | STATIC-KNOWN |

| Time To Live | 8 | CHANGING |

| Protocol | 8 | STATIC |

| Header Checksum | 16 | INFERRED |

| Source Address | 32 | STATIC-DEF |

| Destination Address | 32 | STATIC-DEF |

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| --- | --- | --- |
|  |  |  |

feedback

Packet flow Compression Error Check Error Decompression

**Compression**

The compressor first sends the initialization packets which give the decompressor required information

to start with which contains static fields.

Then the compressor sends the compressed packets which are consist of changing fields.

IR = First or initial stage

FO= First compression

SO= If error occurs

| |

| Optimistic approach Optimistic approach |

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| | | | | |

| | v | v v

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| IR State | | FO State | | SO State |

+----------+ +----------+ +----------+

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| | Error | | Error / Update | |

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**Decompression**

The decompressor tries to derive the inferred value from the help of compressed data and initial data.

Then, it goes through an error check, and if there is any difference it sends feedback to the compressor.

**WHAT WE ARE DOING TODAY?**

It is Compression based on Zlib.

Free

Commonly used for Data Compression.

**References:** ROHC paper RFC 3095, White Paper Header Compression The portion are partially or completely taken from different resources, We don’t claim to own anything. This is just a presentation to show our understanding.