

Flexible FEC

ietf-payload-flexible-fec-scheme-01

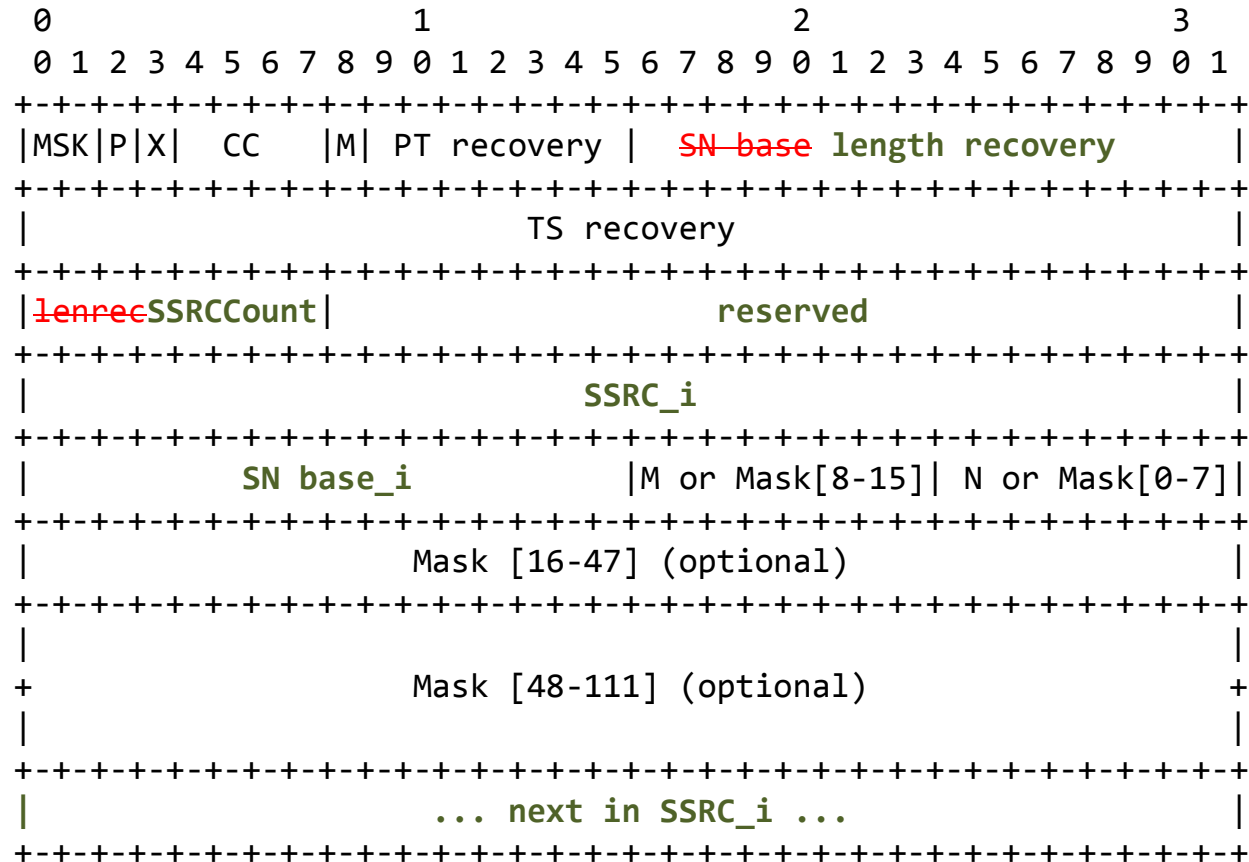
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Updates since -00

- One update: <https://tools.ietf.org/rfcdiff?url2=draft-ietf-payload-flexible-fec-scheme-01.txt>
- Incorporated feedback from Prague, IETF 93
 - Do not signal changes in L and D values via SDP
 - Support protection of multiple SSRCs via a single FEC packets
 - Minor updates everywhere
 - Updated SDP registration
 - **application/flexfec**, audio/flexfec, video/flexfec, text/flexfec,
- Added Giri as co-author

Change since -00



Open issue 1: SSRC vs ...?

- Editor's note:
 - An alternate stream ID may replace SSRC.
 - Do we want to? 😊
 - Currently no clear motivation to do this.

Open issue 2: SDP Signalling

- Indicating FEC code
 - XOR, Reed Solomon, Raptor, or something else.
 - IANA registry for it?
 - <http://www.iana.org/assignments/rmt-fec-parameters/rmt-fec-parameters.xhtml>
 - Built for other uses, is incomplete.

Open issue 3: bitmask 0th bit?

- What does the mask's 0th bit imply?
 - is the SN_Base
 - an offset of 1, i.e., SN_Base + 1

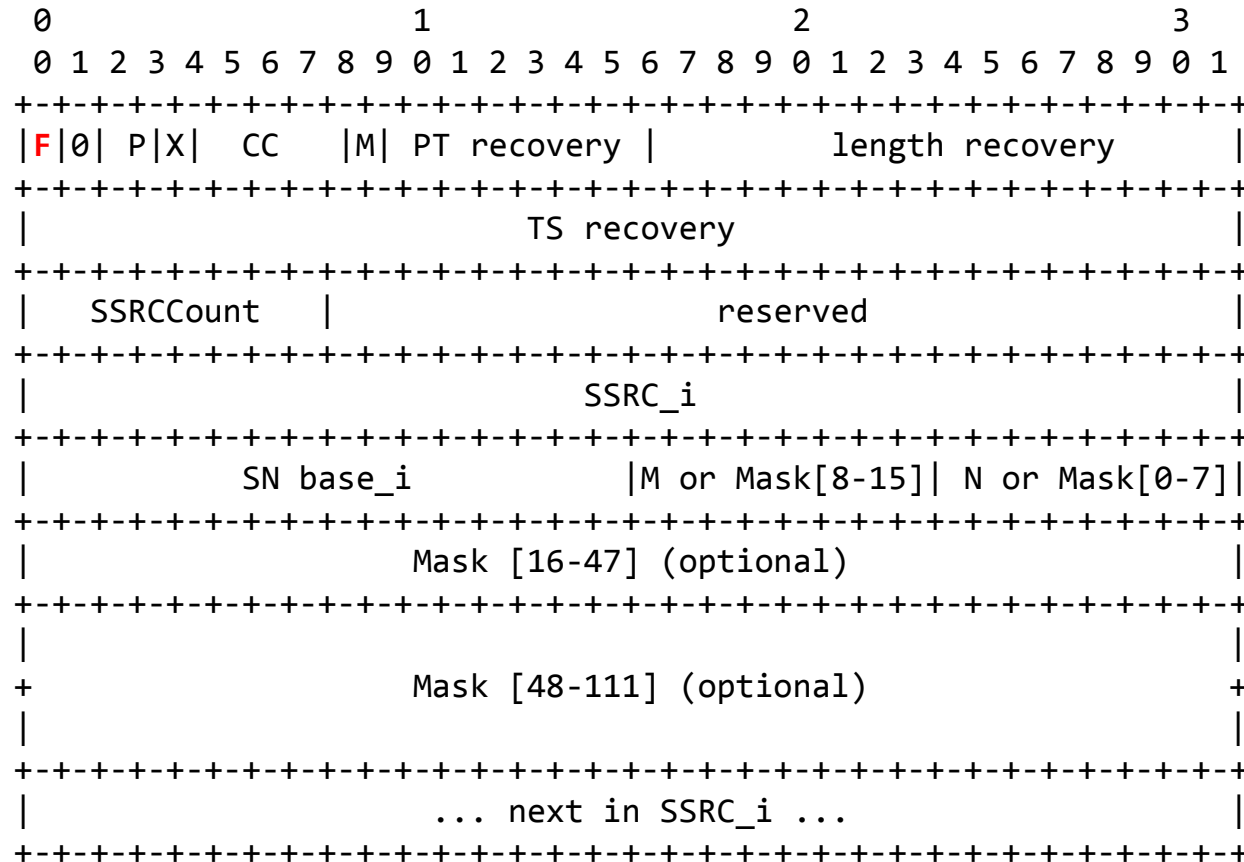
Open issue 4: Retransmissions

- If $SSRC_count=1$, retransmitting a single packet
 - $M=0, N=0$
 - (bitmask) Depending on previous slide

Open Issue 5

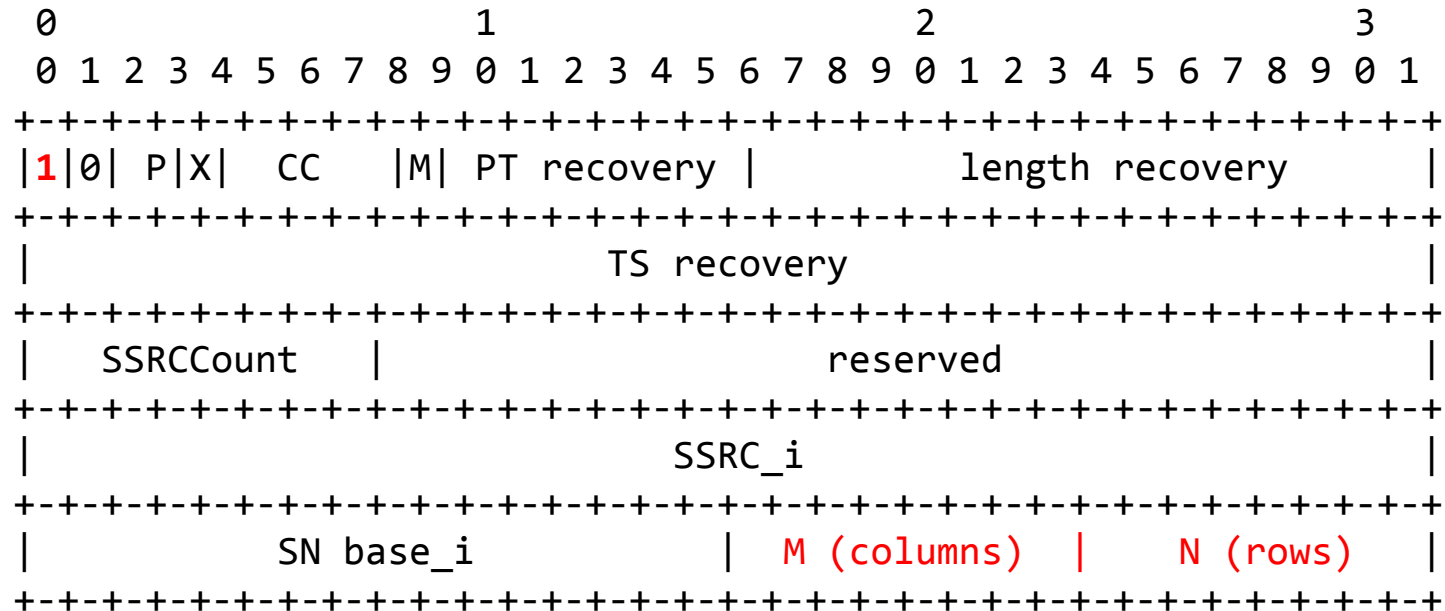
- MSK is for the whole block
- Instead it should be for each SSRC

Proposal (extensible masks)

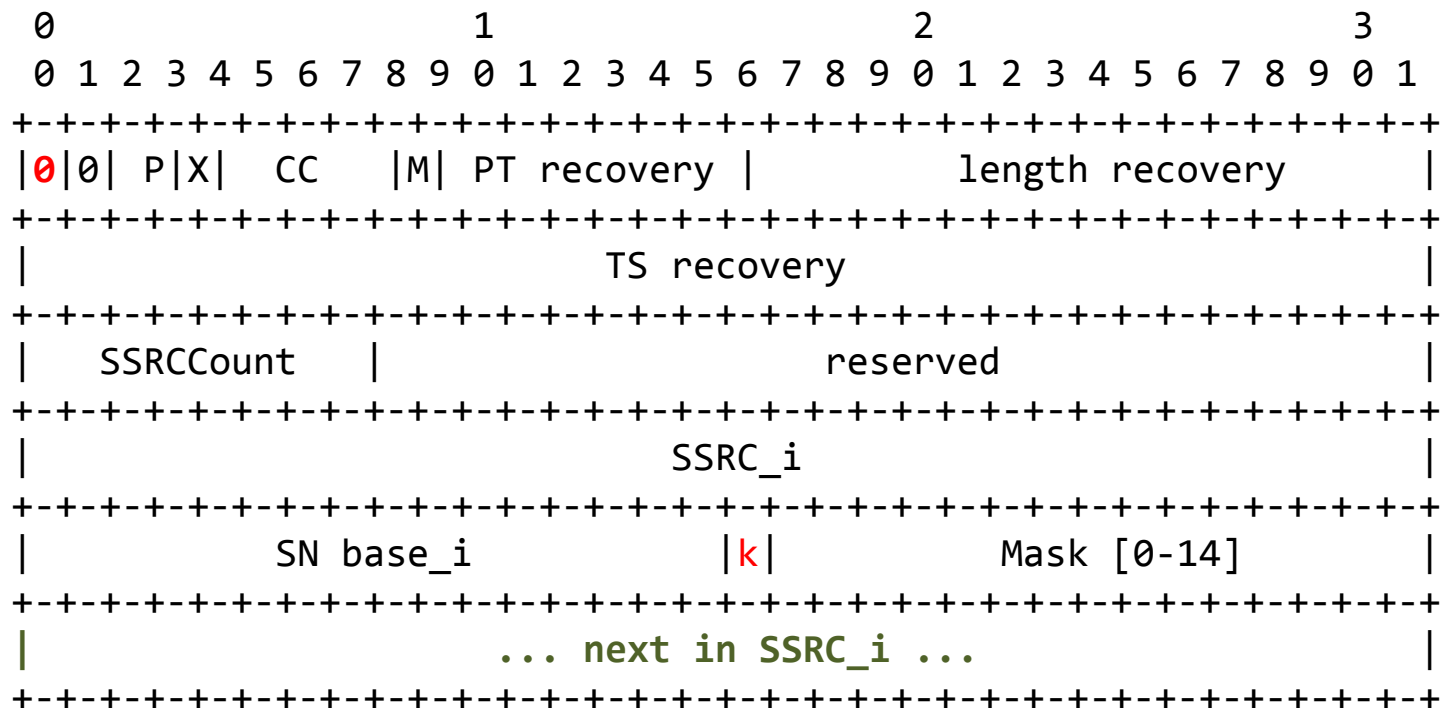


Fixed bit
 0: use mask
 1: 8-bit M and N

Fixed pattern or no mask



Masks 15-bits case

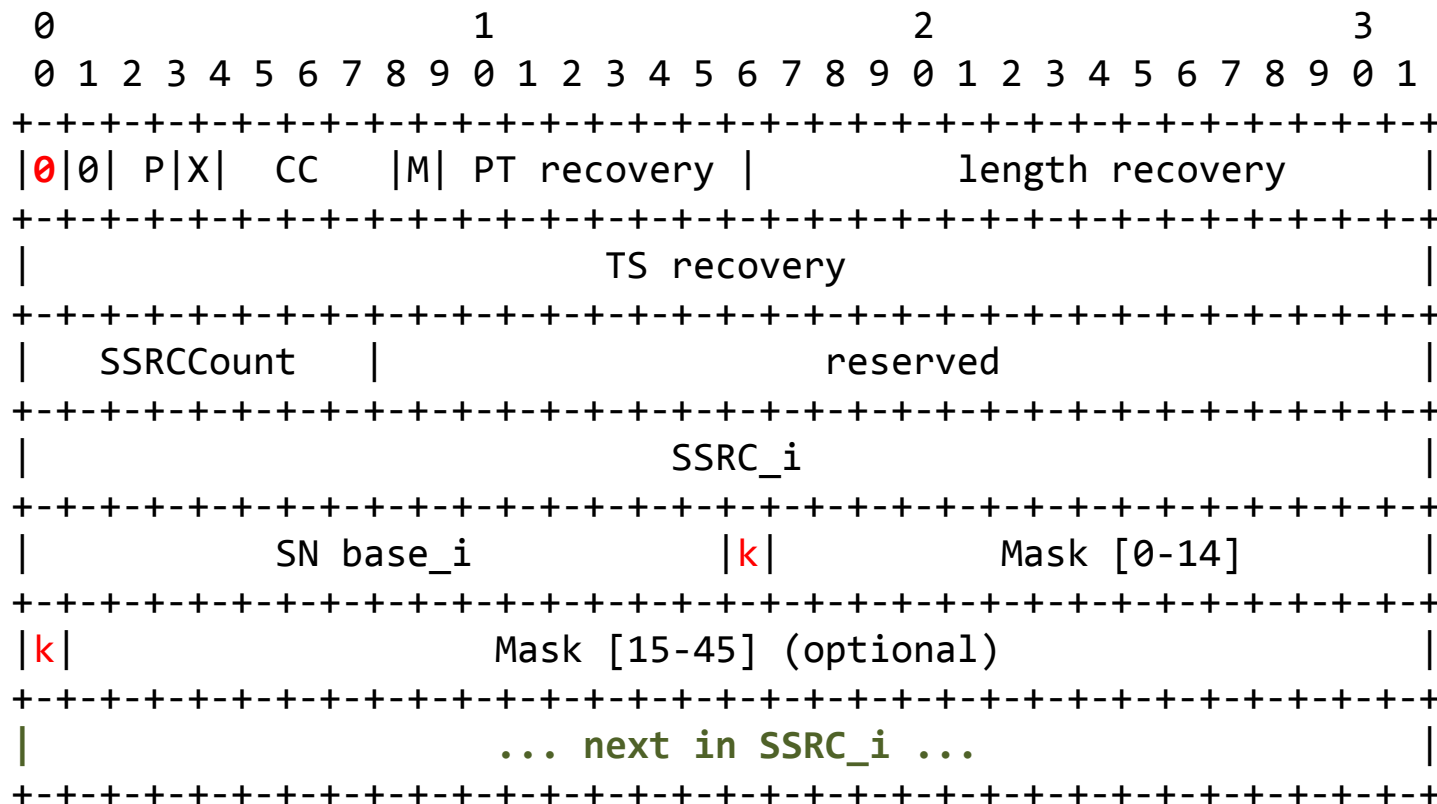


k denotes the mask extension bits.

- the first 16-1 bits,

Generally, $2^v - 1$,
Where $v=[4,7]$

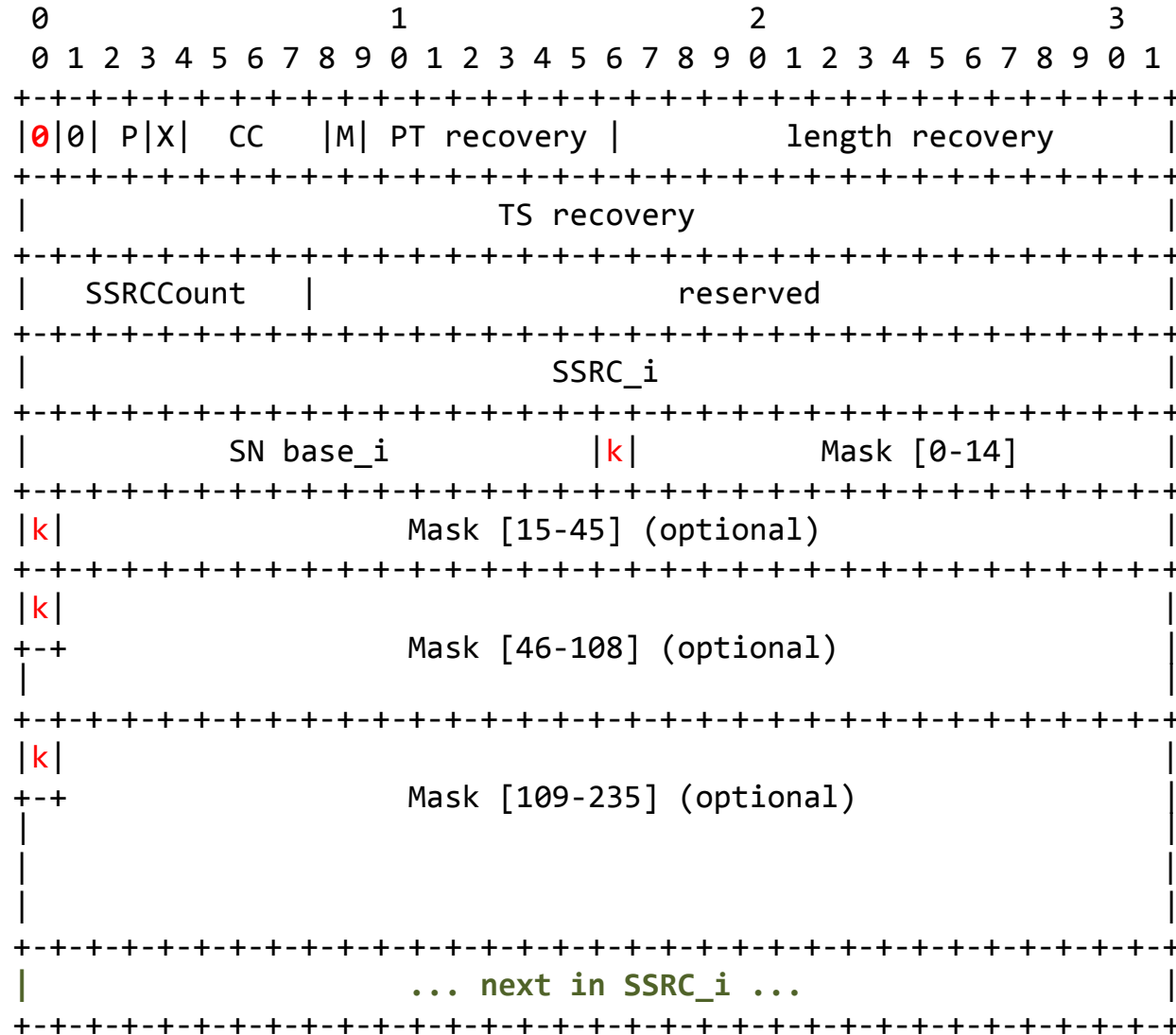
Masks 46-bits case



- k denotes the mask extension bits.
- the first 16-1 bits,
 - the next 32-1,

Generally, $2^v - 1$,
Where $v=[4,7]$

Masks 236-bits case



- k denotes the mask extension bits.
- the first 16-1 bits,
 - the next 32-1,
 - the next 64-1,
 - the final 128-1.

Generally, $2^v - 1$,
Where $v=[4,7]$

Wait for column FEC or not

- If $M > 0$, $N = 0$, is Row FEC, and no column FEC will follow
Hence, FEC = SN, SN+1, SN+2, ... , SN+(M-1), SN+M.
- If $M > 0$, $N = 1$, is Row FEC, and column FEC will follow.
Hence, FEC = SN, SN+1, SN+2, ... , SN+(M-1), SN+M.
and more to come
- If $M > 0$, $N > 1$, indicates column FEC of every M packet
in a group of N packets starting at SN base.
Hence, FEC = SN+(Mx0), SN+(Mx1), ... , SN+(MxN).

Next Steps

- Pending updates to the Recovery sections
 - Recovering the RTP header
 - Recovering the RTP payload