H.261 Bitstream Syntax

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1 Picture Layer

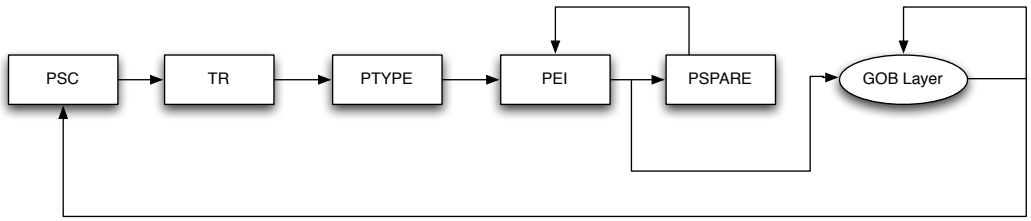


Figure 1: H.261 Bitstream syntax: Picture Layer

The H.261 bitstream syntax diagram for the Picture layer is shown in figure 1, and details are as follows:

- PSC: Picture Start Code – 20 bits
- TR: Temporal Reference – 5 bits
- PTYPE: Picture Type – 6 bits
- PEI: Picture Extra Insertion – 1 bit
- PSPARE: Picture Spare – 0/8/16/... bits

2 Group of Blocks (GOB) Layer

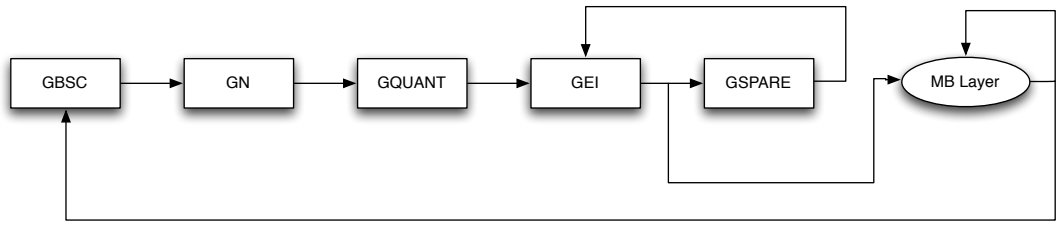


Figure 2: H.261 Bitstream syntax: GOB (Group of Blocks) Layer

The H.261 bitstream syntax diagram for the GOB (Group of Blocks) layer is shown in figure 2, and details are as follows:

- GBSC: GOB Start Code – 16 bits
- GN: Group Number – 5 bits
- GQUANT: Group Quantizer Info – 5 bits
- GEI: Group Extra Insertion – 1 bit
- GSPARE: Group Spare – 0/8/16/... bits

3 Macroblock (MB) Layer

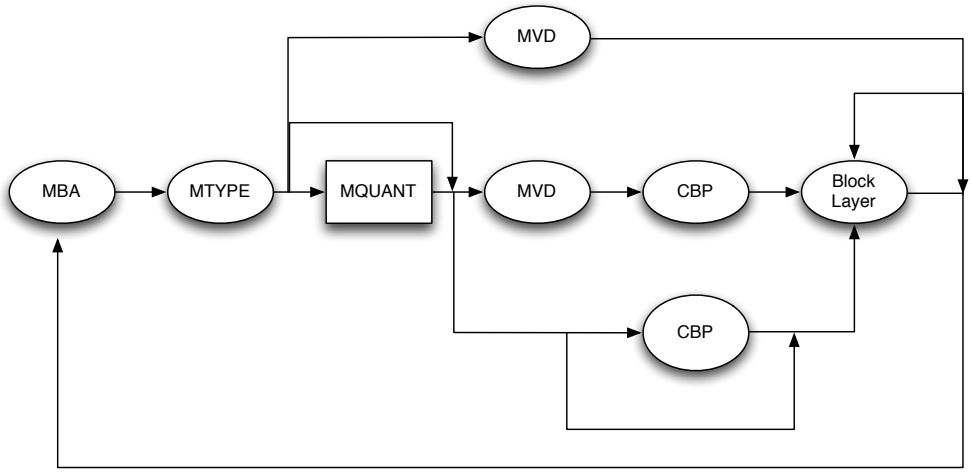


Figure 3: H.261 Bitstream syntax: MB (Macrolock) Layer

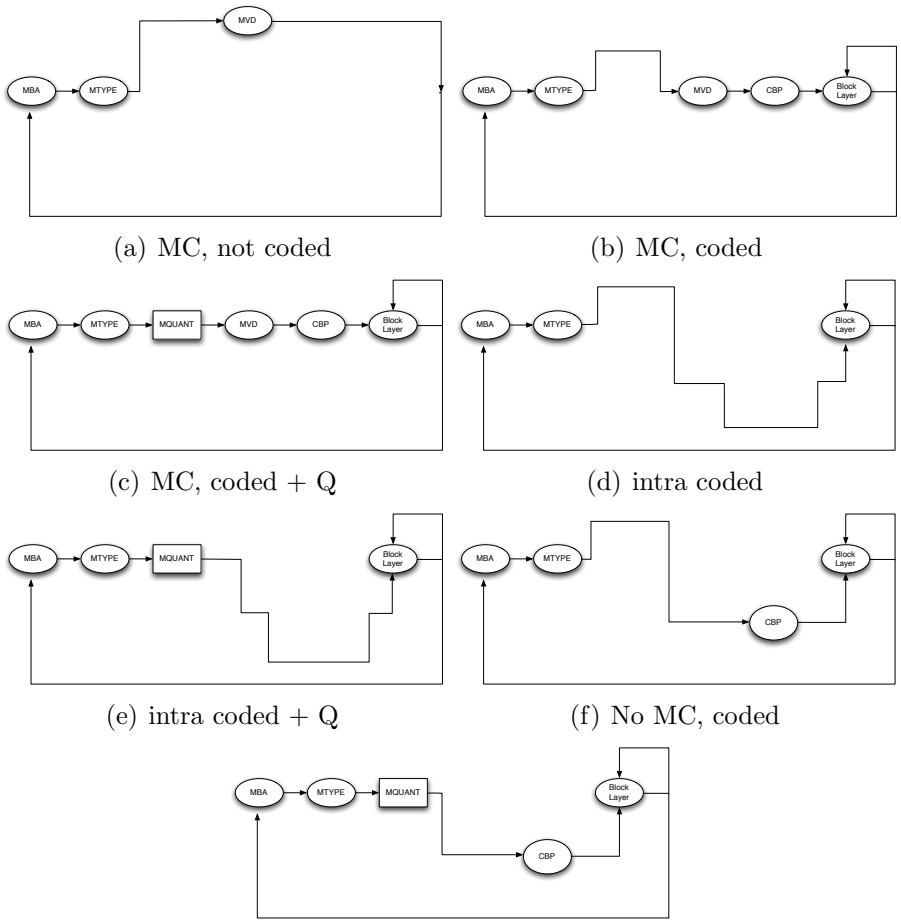
The H.261 bitstream syntax diagram for the MB (Macrolock) layer is shown in figure 3, and details are as follows:

- MBA: Macroblock address – **up to** 11 bits
- MTYPE: Macroblock type – **up to** 10 bits
- MQUANT: Macroblock Quantizer Info – 5 bits
- MVD: Motion Vector Data – **up to** 11 bits
- CBP: Coded Block Pattern – **up to** 9 bits

3.1 Different MB Types

The syntax diagram in figure 3 actually supports all seven[1] different coding modes possible for a macroblock (see section 9.4.1 in the EE554 notes). The variations of the bitstream syntax diagrams from figure 3 for the different types of macroblock possible are shown in figure 4.

[1]The eighth coding mode, corresponding to a skipped macroblock does not necessitate a diagram since no information (0 bits) is transmitted.



(a) MC, not coded

(b) MC, coded

(c) MC, coded + Q

(d) intra coded

(e) intra coded + Q

(f) No MC, coded

(g) No MC, coded + Q

Figure 4: Syntax diagrams (from figure 3) for the seven different coding modes possible for a MB

4 Block Layer

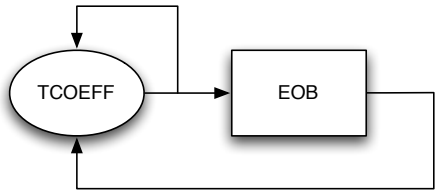


Figure 5: H.261 Bitstream syntax: Block Layer

The H.261 bitstream syntax diagram for the block layer is shown in figure 5, and details are as follows:

- TCOEFF: Transform Coefficients – **up to** 20 bits
- EOB: End of Block