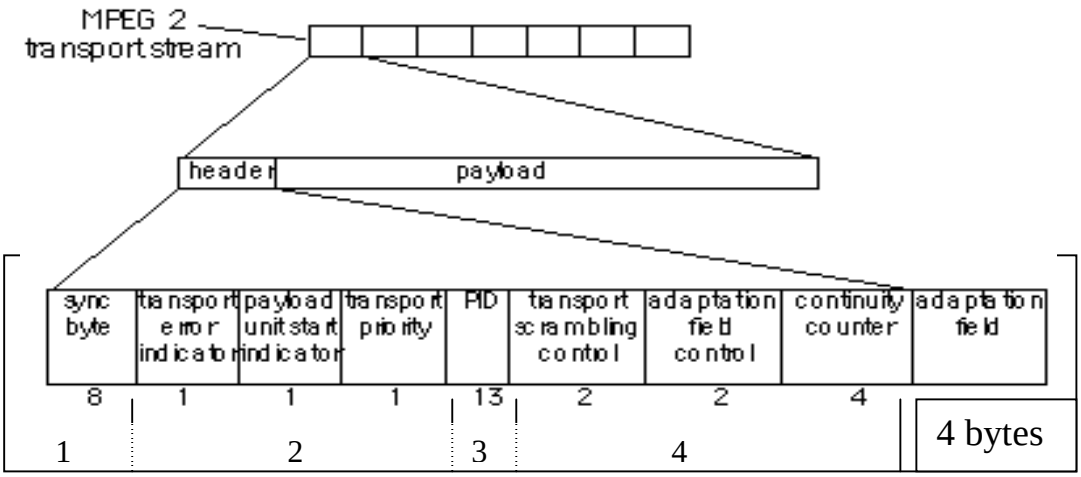
MPEG-2 TS - Format of a Transport Stream Packet

Each MPEG-2 TS packet carries 184 B of payload data prefixed by a 4 B (32 bit) header.



The header has the following fields:

- The header starts with a well-known *Synchronisation Byte (8 bits)*. This has the bit pattern 0x47 (0100 0111).
- A set of three flag bits are used to indicate how the payload should be processed.
    1. The first flag indicates a transport error.
    2. The second flag indicates the start of a payload (payload_unit_start_indicator)
    3. The third flag indicates transport priority bit.
- The flags are followed by a 13 bit *Packet Identifier (PID).* This is used to uniquely identify the stream to which the packet belongs (e.g. PES packets corresponding to an ES) generated by the multiplexer. The PID allows the receiver to differentiate the stream to which each received packet belongs. Some PID values are predefined and are used to indicate various streams of control information. A packet with an unknown PID, or one with a PID which is not required by the receiver, is silently discarded. The particular PID value of 0x1FFF is reserved to indicate that the packet is a null packet (and is to be ignored by the receiver).
- The two scrambling control bits are used by conditional access procedures to encrypted the payload of some TS packets.
- Two adaption field control bits which may take four values:
    1. 01 – no adaptation field, payload only
    2. 10 – adaptation field only, no payload
    3. 11 – adaptation field followed by payload
    4. 00 - RESERVED for future use
- Finally there is a half byte *Continuity Counter* (4 bits)

If adaption field is 11: first byte after header is length of adaption field(following bytes). If unit start indicator is set (2nd byte 0x40) -> another 9 bytes info after header. If the last of these bytes is not 00, the byte tells about number of another additional bytes.
http://erg.abdn.ac.uk/research/future-net/digital-video/mpeg2-trans.html