

The FEC mechanism is mandatory for 10G-EPON, and similarly to 1G-EPON - defined to enhance the EPON link budget. The mandatory FEC mechanism increases the available link budget by improving the link BER from  $2 \times 10^{-3}$  to  $10^{-12}$  (the target BER at the MAC), effectively increasing the target network diameter and/or split ratio. The target use of the increased power budget remains at the sole discretion of the network architects and is out of the scope of IEEE Std 802.3. The mandatory FEC used in 10G-EPON is stream-based, meaning that 32 parity symbols are inserted into the bit stream at regular intervals (every 223 information symbols). Details of the FEC encoding process in 10G-EPON are described in IEEE Std 802.3, 76.3.2.4, including the structure of the resulting frame and the resulting bit ordering shown in Figure 76-12.