

- Physical layer is divided into two parts: 1 Physical medium-dependent (PMD) sublayer and 2 Transmission convergence (TC) sublayer

PMD

- The PMD sublayer provides two key functions:
- It synchronizes transmission and reception by sending and receiving a continuous flow of bits with associated timing information
- It handles the bit timing
- It specifies the physical medium used, including connector types and cables
- Examples of physical medium standards for ATM include Synchronous Digital Hierarchy(SDH)/Synchronous Optical Network (SONET)

TC

- The TC sublayer has four functions: cell delineation, header error control (HEC) sequence generation and verification, cell-rate decoupling, and transmission frame adaptation
- The cell delineation function maintains ATM cell boundaries, allowing devices to locate cells within a stream of bits
- HEC sequence generation and verification generates and checks the header error control code to ensure valid data
- Transmission frame adaptation packages ATM cells into frames acceptable to the particular physical layer implementation
- Cell-rate decoupling maintains synchronization and inserts or suppresses idle (unassigned) ATM cells to adapt the rate of valid ATM cells to the payload capacity of the transmission system

2. ATM layer

- ATM layer is a mixture of the data link and network layers of the OSI reference model
- ATM layer is not split into sublayers
- ATM layer deals with cells generation and cell transport
- It defines the layout of a cell and tells what the header fields mean
- It deals with establishment and release of virtual circuits
- It also deals with congestion control
- ATM layer is responsible for the simultaneous sharing of virtual circuits over a physical link (cell multiplexing) and passing cells through the ATM network (cell relay). To do this, it uses the VPI and VCI information in the header of each ATM cell