Ethernet frame

We have already learned that encapsulated data defined by the Network Access layer is called an **Ethernet frame**. An Ethernet frame starts with a header, which contains the source and destination MAC addresses, among other data. The middle part of the frame is the actual data. The frame ends with a field called Frame Check Sequence (FCS).

The Ethernet frame structure is defined in the **IEEE 802.3** standard. Here is a graphical representation of an Ethernet frame and a description of each field in the frame:

Preamble	SFD	Destination MAC	Source MAC	Type	Data and Pad	FCS
7 Bytes	1 Byte	6 Bytes	6 Bytes	2 Bytes	46-1500 Bytes	4 Bytes

- **Preamble** – informs the receiving system that a frame is starting and enables synchronisation.
- **SFD (Start Frame Delimiter)** – signifies that the Destination MAC Address field begins with the next byte.
- **Destination MAC** – identifies the receiving system.
- **Source MAC** – identifies the sending system.
- **Type** – defines the type of protocol inside the frame, for example IPv4 or IPv6.
- **Data and Pad** – contains the payload data. Padding data is added to meet the minimum length requirement for this field (46 bytes).
- **FCS (Frame Check Sequence)** – contains a 32-bit Cyclic Redundancy Check (CRC) which allows detection of corrupted data