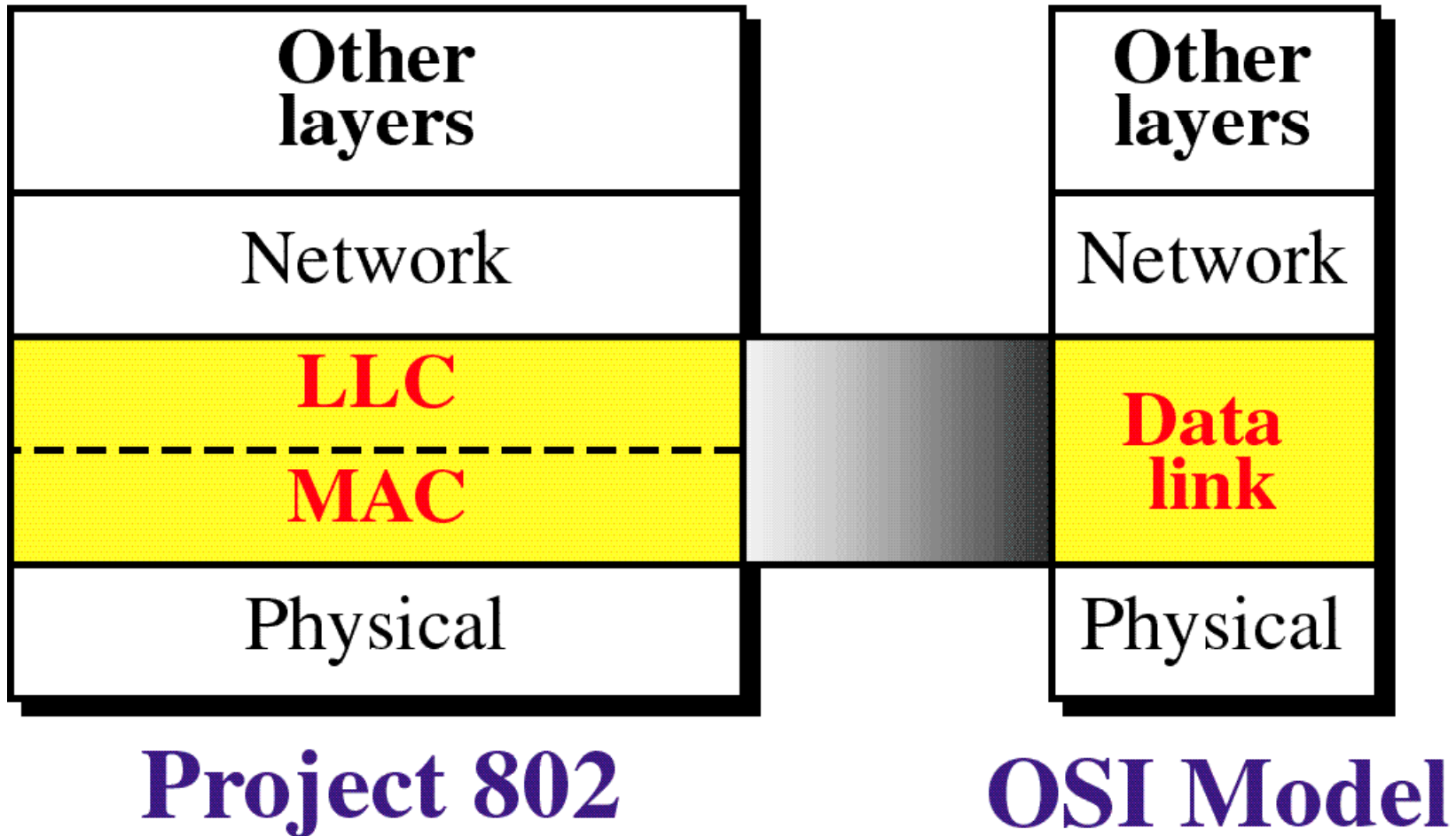


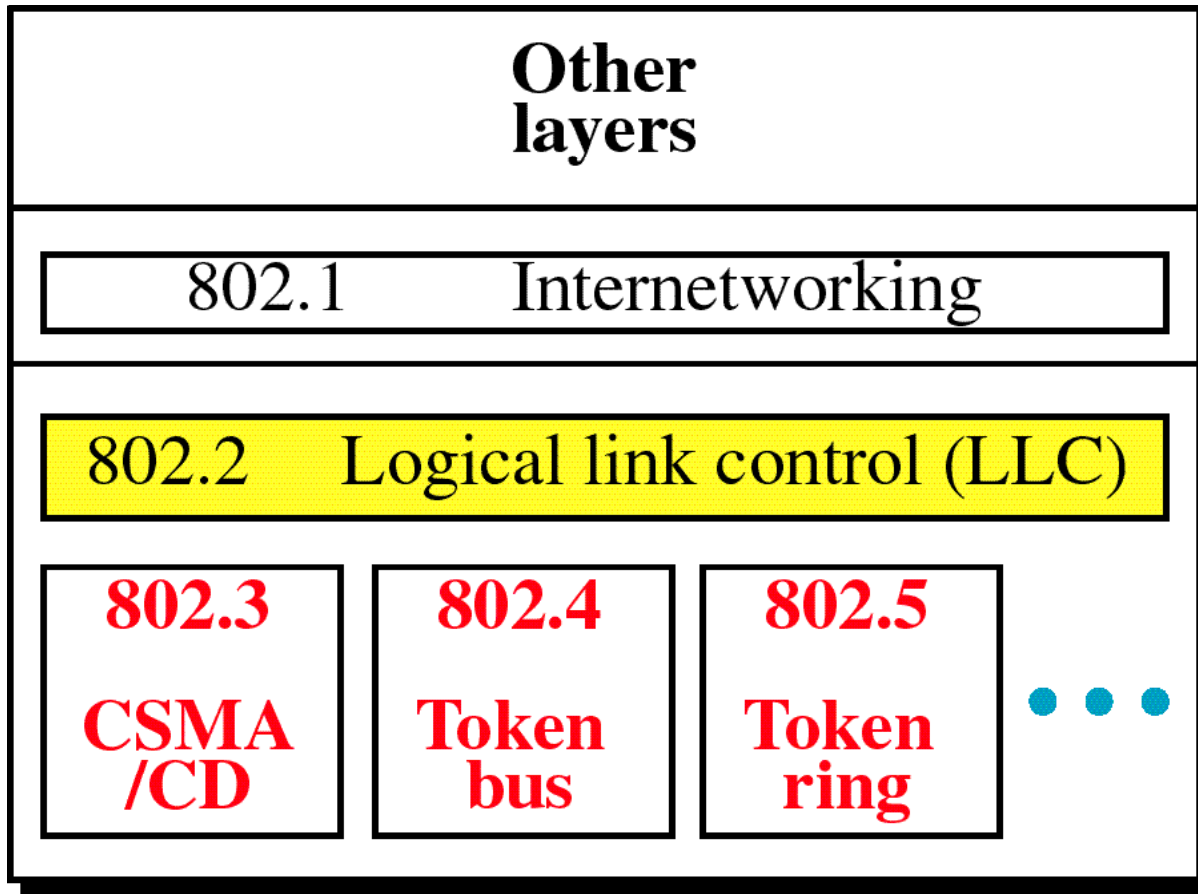
Local Area Networks

- **Project 802**
- **Ethernet**
- **Token Ring**
- **FDDI**

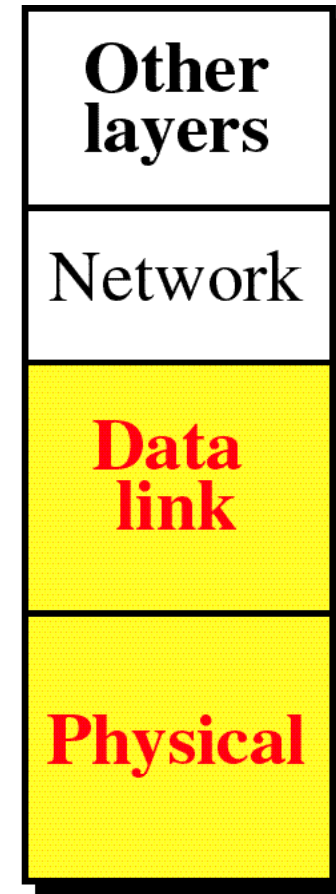
OSI Model and Project 802



Project 802

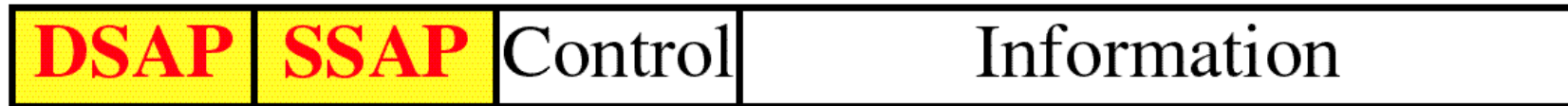


Project 802



OSI Model

PDU Format



DSAP: Destination service access point
SSAP: Source service access point

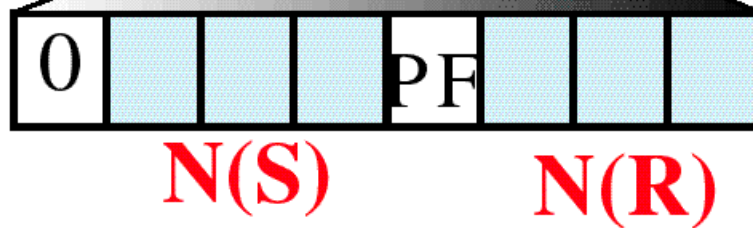
upper-level addressing



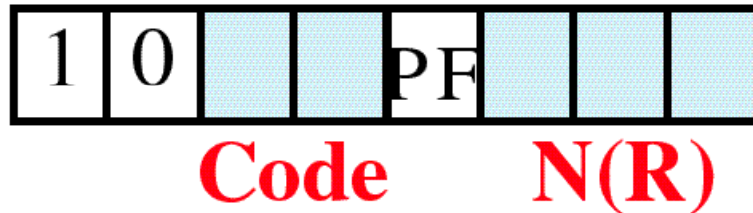
DSAP	SSAP
0 individual	0 command
1 group	1 response

Used by IEEE

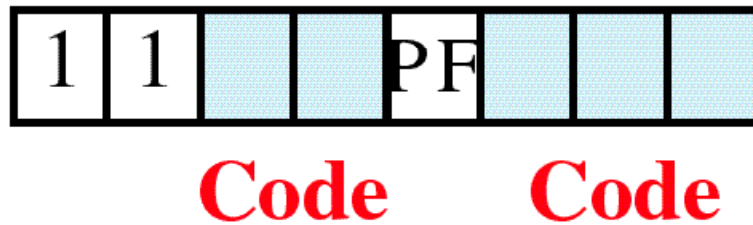
PDU Control Field



I-Frame



S-Frame



U-Frame

802.3

```
graph TD; 802.3[802.3] --> Baseband[Baseband Digital]; 802.3 --> Broadband[Broadband Analog]; Baseband --> 10Base5[10Base5]; Baseband --> 10Base2[10Base2]; Baseband --> 10BaseT[10Base-T]; Baseband --> 1Base5[1Base5]; Baseband --> 100BaseT[100Base-T]; Broadband --> 10Broad36[10Broad36];
```

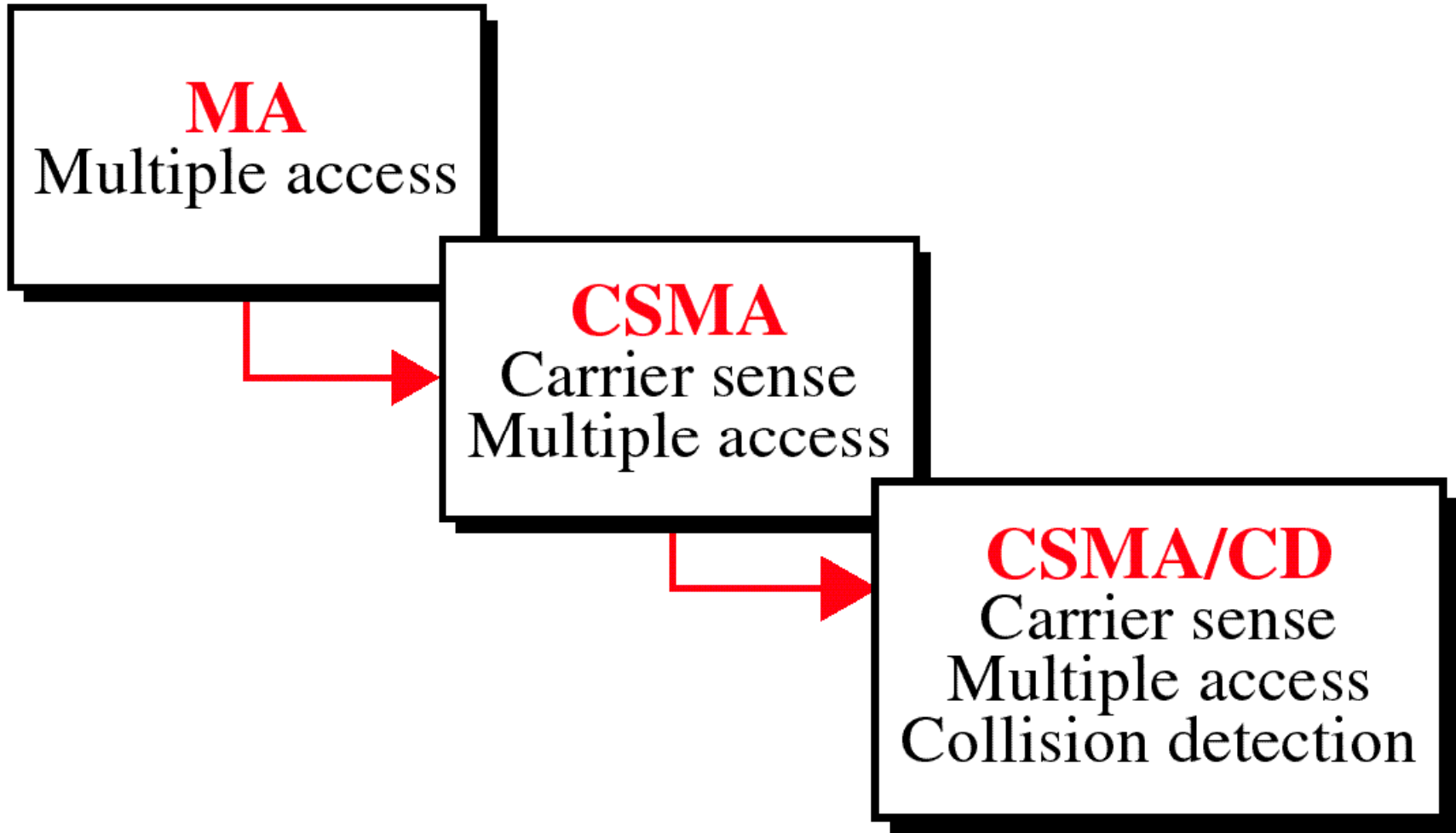
**Baseband
Digital**

**Broadband
Analog**

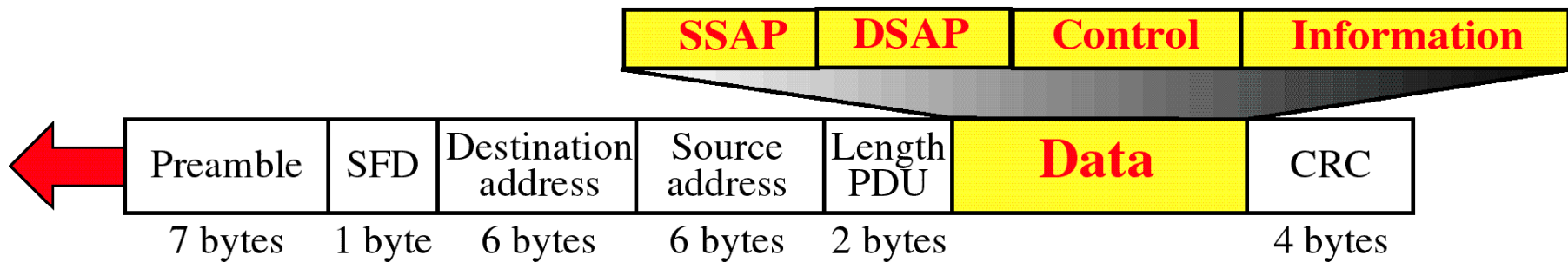
**10Base5 10Base2
10Base-T
1Base5 100Base-T**

10Broad36

Evolution of CSMA/CD



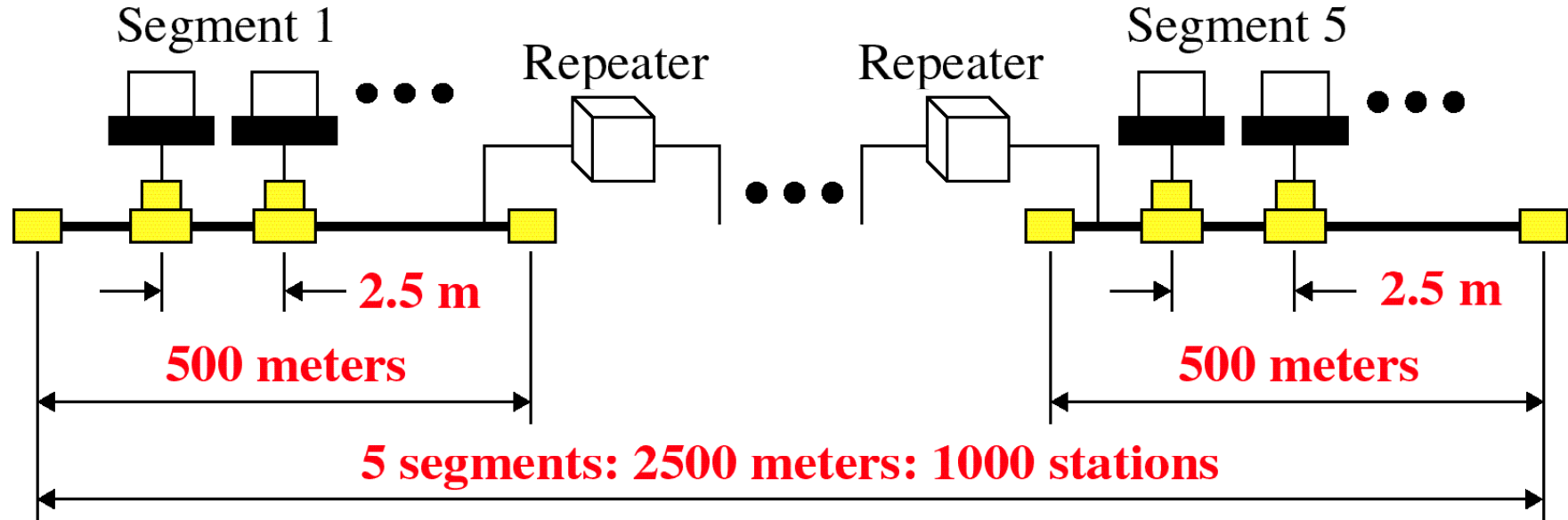
MAC Frame



Preamble
SFD

56 bits of alternating 1s and 0s.
Start field delimiter, flag (10101011)

Ethernet Segments



10Base5

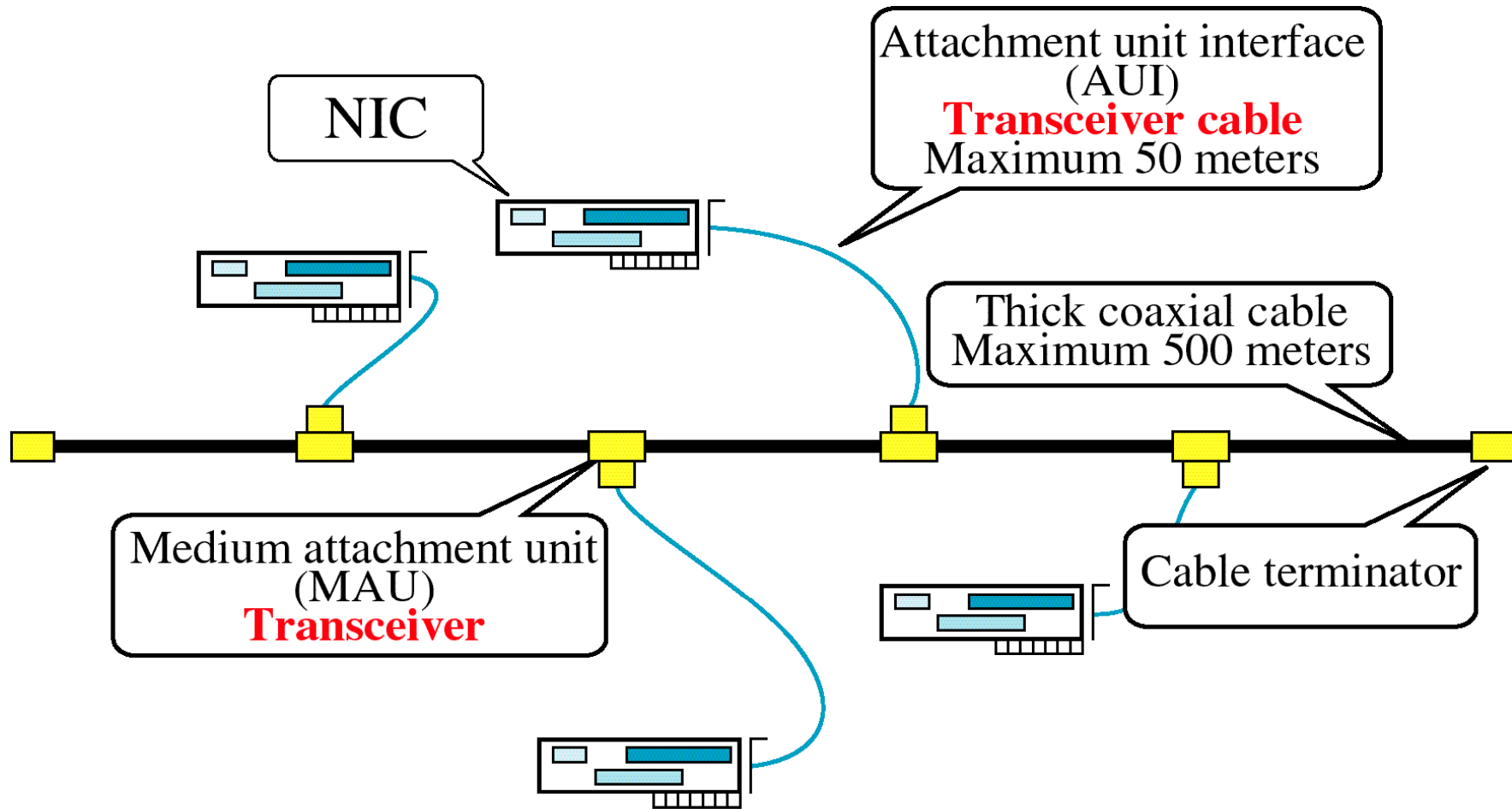
A diagram showing the breakdown of the network standard '10Base5'. The text '10Base5' is written in red inside a yellow rectangular box. Three lines extend from the box to three separate callout boxes below. The first callout box, on the left, contains the text '10 Mbps'. The second callout box, in the middle, contains the text 'Baseband'. The third callout box, on the right, contains the text '500 meters'. All callout boxes have a black border and rounded corners.

10 Mbps

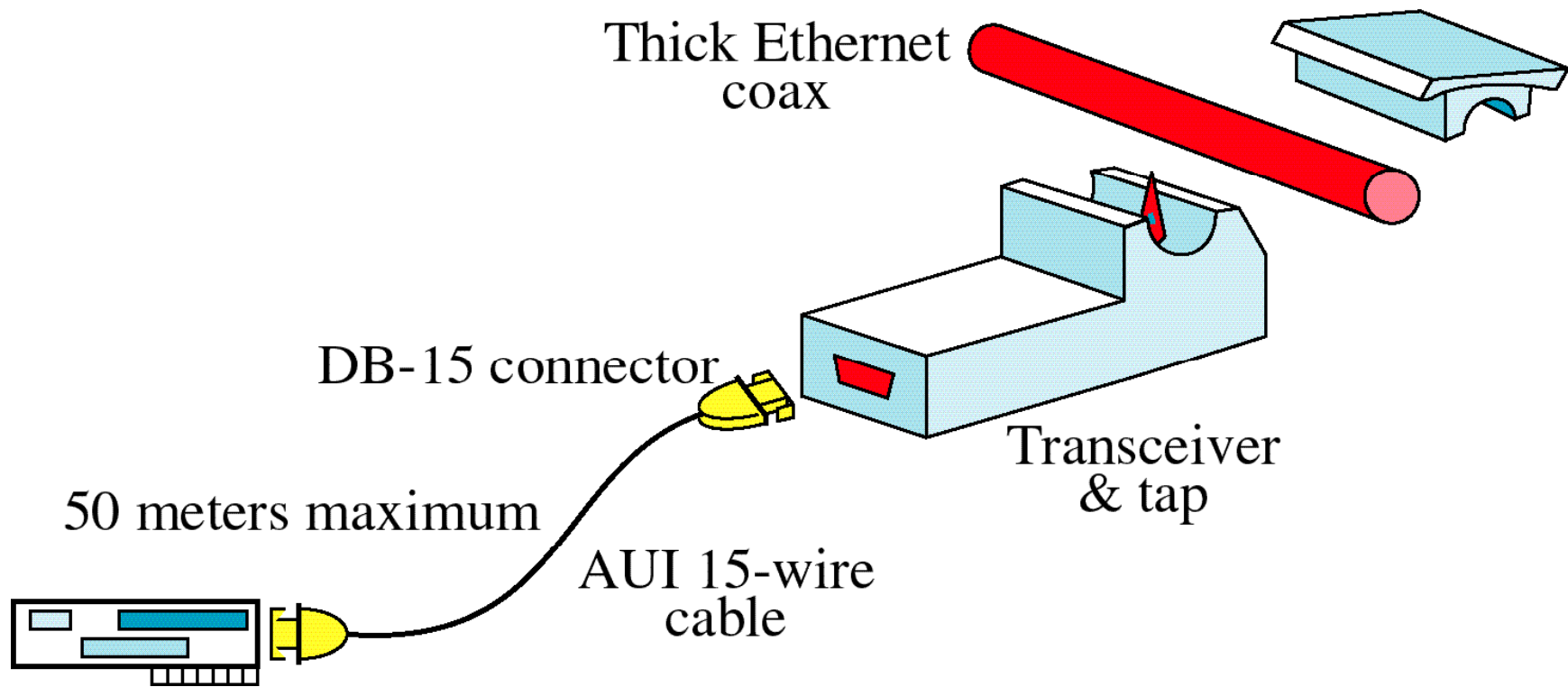
Baseband

500 meters

10BASE5



Transceiver



10Base2

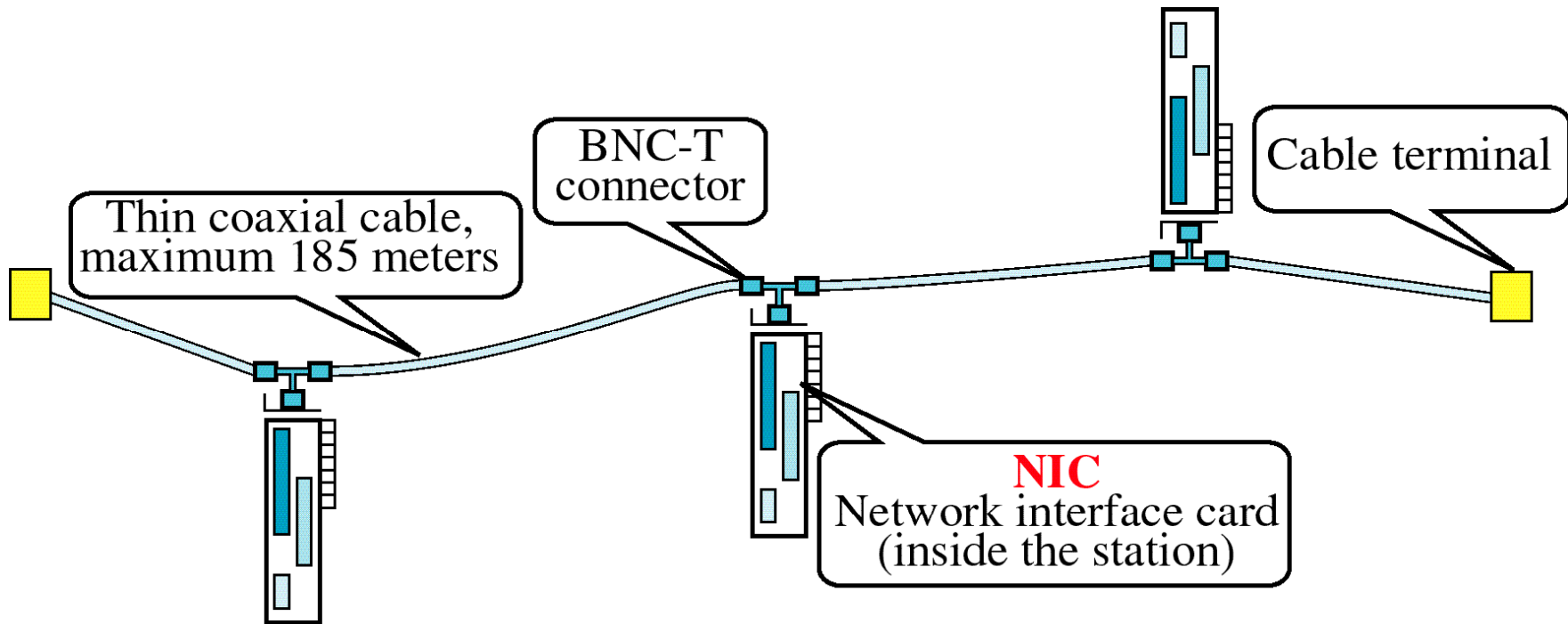
A diagram showing the components of the 10Base2 network standard. A central yellow box contains the text '10Base2' in red. Three callout boxes with black outlines and white backgrounds are positioned below the central box. The left callout box contains '10 Mbps', the middle callout box contains 'Baseband', and the right callout box contains '185 meters'. Lines connect the callout boxes to their respective parts of the '10Base2' text: the left box points to '10', the middle box points to 'Base', and the right box points to '2'.

10 Mbps

Baseband

185 meters

10BASE2



10Base-T

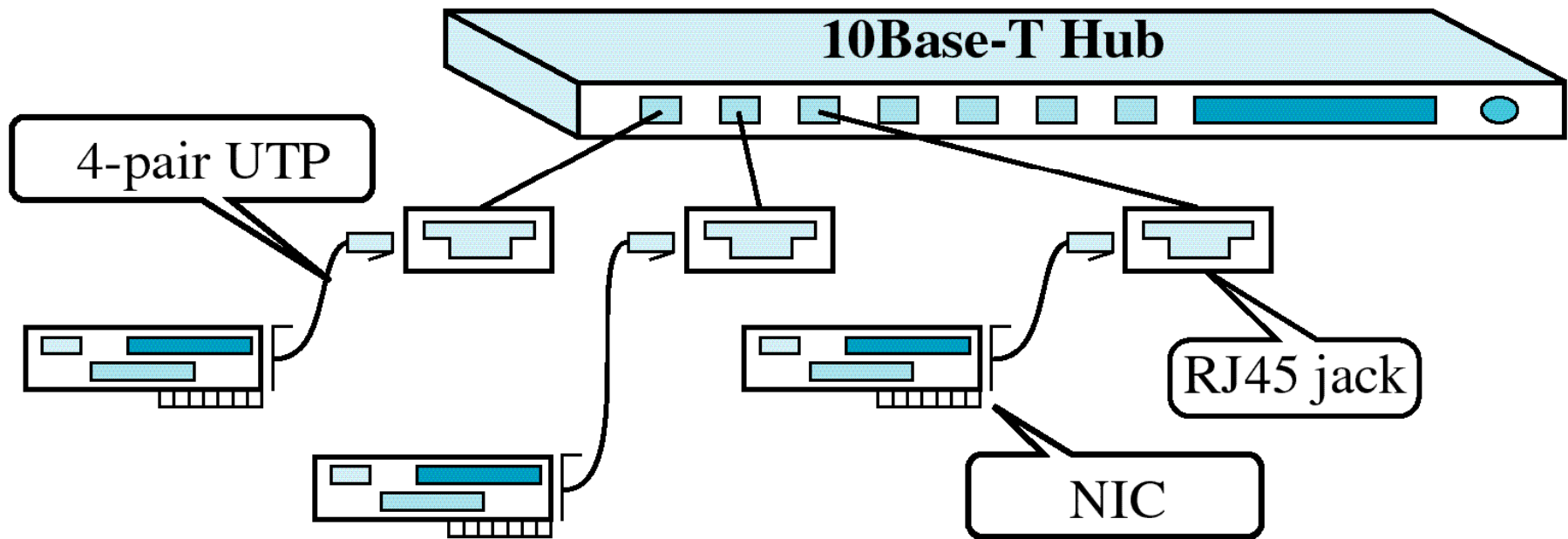
A central yellow rectangular box with a black border contains the text "10Base-T" in red. Three black lines extend from the bottom corners of the box to three separate white rounded rectangular boxes below. The left box contains "10 Mbps", the middle box contains "Baseband", and the right box contains "Twisted pair".

10 Mbps

Baseband

Twisted pair

10BASET



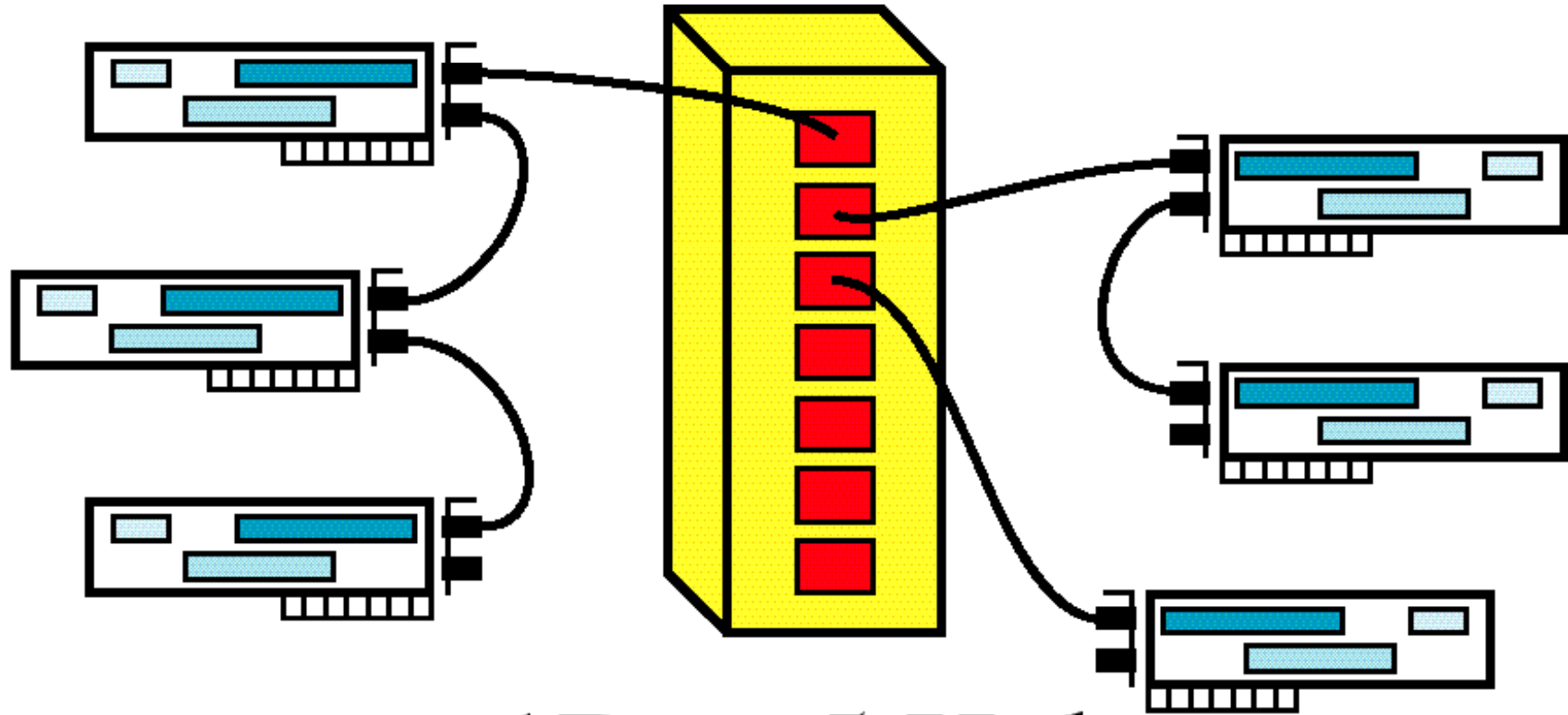
1Base5

1 Mbps

Baseband

500 meters

1BASE5



1Base5 Hub

Fast Ethernet

```
graph TD; FE[Fast Ethernet] --- B1[ ]; B1 --- 100Base-T4[100Base-T4]; B1 --- 100Base-X[100Base-X]; 100Base-X --- B2[ ]; B2 --- 100Base-TX[100Base-TX]; B2 --- 100Base-FX[100Base-FX];
```

100Base-T4

4 pairs of UTP

100Base-X

100Base-TX

2 pairs of UTP or STP

100Base-FX

2 optical fibers