

Interpretation Number: 1-07/98
Topic: Format of the OUI in PHY Identifier register
Relevant Clauses: 22.2.4.3.1
Classification: Unambiguous

Interpretation Request

I am trying to understand clause 22.2.4.3.1 of IEEE Std 802.3u-1995. The clause explains how the OUI (Organizationally Unique Identifier) maps to MII (Media Independent Interface) Management Registers 2 and 3. Although we have an IEEE assigned OUI of XX-XX-XX, I cannot figure out how to store our OUI in these Registers.

My confusion is based on the following:

1. It is unclear to me whether the OUI provided has a format of bits 1 to 24 or as bits 24 to 1.
2. Also, the specification refers to IEEE Std 802-1990. However, is the specification implying that we should store the data in the registers as it will be used to form our Universal Address?

Interpretation for IEEE std 802.3u-1995

Standard 802-1990, as referenced by std 802.3u-1995 subclause 22.2.4.3.1, clearly states in the last paragraph of subclause 5.2 that ‘The bit significance of the Organizationally Unique Identifier is defined in Fig 5-2.’ That figure is reproduced below.

**Fig 5-2
Bit Significance**

| | | | | | | | | |
|---------|-----|---|---|---|---|---|---|-----|
| | LSB | | | | | | | MSB |
| Octet 0 | a | b | c | d | e | f | g | h |
| Octet 1 | i | j | k | l | m | n | o | p |
| Octet 2 | q | r | s | t | u | v | w | x |

Of particular reference should be the bit designations, ‘a’ through ‘x’, provided in Std 802-1990 Figure 5-2. These bit designations also clearly appear in std 802.3u-1995 Figure 22-12 of subclause 22.2.4.3.1 which is also reproduced below.

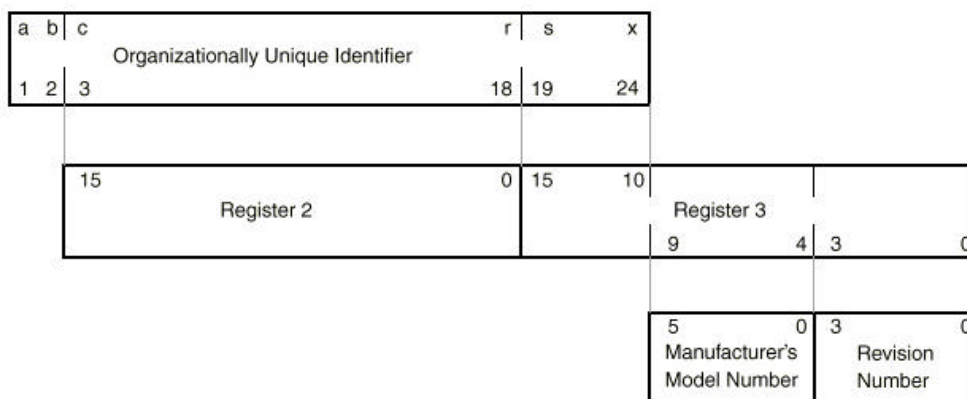
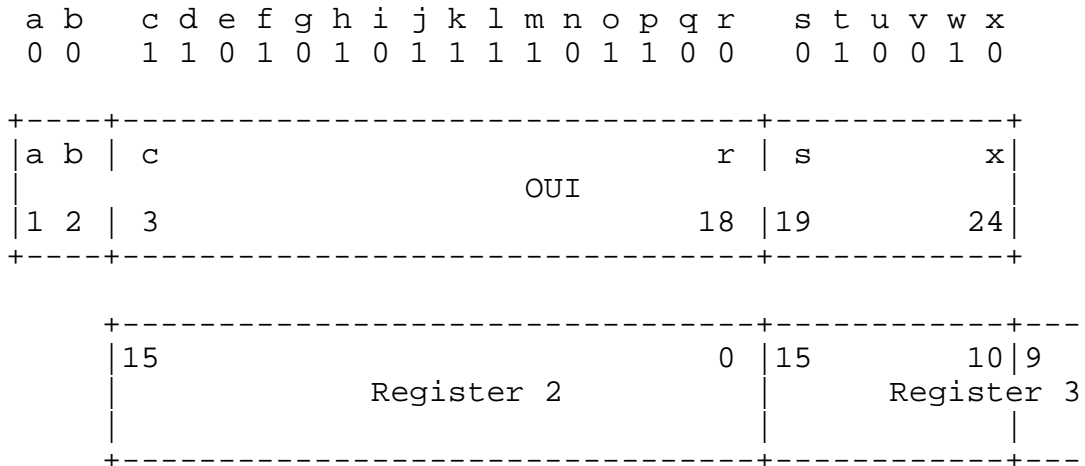


Figure 22-12—Format of PHY Identifier

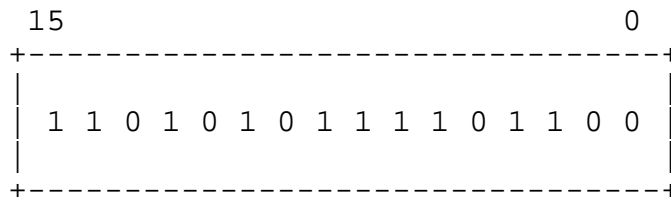
As an example consider the OUI AC-DE-48. Taking this OUI and arranging it as specified by 802-1990 figure 5-2 yields:-

| | LSB | | | | | | | | MSB |
|---------|-----|---|---|---|---|---|---|---|-----|
| Octet 0 | a | b | c | d | e | f | g | h | |
| AC | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | |
| Octet 1 | i | j | k | l | m | n | o | p | |
| DE | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | |
| Octet 2 | q | r | s | t | u | v | w | x | |
| 48 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |

Mapping this bit assignment into Registers 2 and 3 as specified in 802.3u-1995 Figure 22-12 yields:-



Register 2 contents:-



Register 3 contents:-

