

Ingress and egress

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Issue

- The terms "ingress" and "egress" appear 36 and 42 times respectively in 802.3, and do not have definitions in section 1.4.
- The meanings we assign to these terms in most of these instances (PMA/AUI related) are “towards the MAC” and “towards the medium”, but this is not necessarily understood by all readers.
- These terms are used a few other places with apparently different meanings
 - Packet Tx/Rx event, a component of signal power, PSD mask, emission, or injection
- Clarity and consistency are desirable...

Instances of “ingress/egress” as directions

- In 83.3, and in the related 83A.3.4.6, 83A.3.5.7, 83D.3.2, 83D.3.4, subclauses of 45.2.1.2 and 45.2.1.6, 97.3.8.2.14, 109.2, 149.3.9.2.15

- Example from 83.3:

A physically instantiated service interface with the optional Energy Efficient Ethernet (EEE) capability with the deep sleep mode option (see 78.1.3.3.1) may enter a low power state to conserve energy during periods of low link utilization. The ability to support transition to a low power state in the **ingress direction** is indicated by register 1.1.9 (PMA Ingress AUI Stop Ability, PIASA) and in the **egress direction** by register 1.1.8 (PMA Egress AUI Stop Ability, PEASA). Transition to the low power state is enabled in the **ingress direction** by register 1.7.9 (PMA Ingress AUI Stop Enable, PIASE) and in the **egress direction** by register 1.7.8 (PMA Egress AUI Stop Enable, PEASE).

- These cases are all related to PMA AUI interface, and specifically to LPI.
- The directions should be interpreted as “towards the MAC” and “towards the medium” respectively.
 - Distinguished from “transmit/receive direction” of the electrical interface, which may be the opposite.
- Similar cases related to LPI:
 - PIASE and PEASE in 78.5.2, 81.4.2.1, 81.4.4
 - “egress data flow” in 22.7.3, 35.4.3, 46.4.3, 81.4.3 – can be understood as “data flow in the egress direction”.

To address these cases, it is proposed to define ingress/egress as directions.

Other usage of ingress/egress

- Related to packets (as event times)
 - 90.1: “The TSSI can be used to support protocols that require knowledge of packet **egress** and **ingress** time.” (4 instances)
 - 90.4.1.2: “The TimeSync Client can use the indication of the event corresponding to the **egress** and **ingress** of packets provided by the TSSI” (3 instances)
 - Note that the handling of packets is generally described using the verbs “transmit” and “receive”, consistent with TSSI primitive names TS_TX.indication and TS_RX.indication.
- Related to power
 - In 62.3.5.1.3 heading “**Egress** control”, and text: “To avoid potential harm to amateur radio service due to radiated emission from 10PASS-TS, it shall be possible to reduce the PSD of the transmit signal within the amateur radio bands. Specifications for **egress power control** are described in Annex 62A.”
 - 62A does not use this term anywhere, it uses “PSD mask” instead.
 - Also “**Egress** control” in the related PICS item 10PPMD-27 in 62.4.4.2.
- Other, seemingly technology-specific meaning, in clause 100
 - 100.3.5.1: “The CLT Upstream Demodulator shall operate with an average input signal level, including **ingress** and noise to the upstream demodulator, up to 31 dBmV.”
 - 100.3.7.2: “Unique FCC **egress** requirements exist for these bands separate from the general exclusion bands requirements”
 - Table 100A–2 (table note 3): “single dominant interferer and **ingress** point”

Suggested remedy

- Add definitions in 1.4 for ingress/egress:
 - 1.4.x Egress: the direction of data and signals from the MAC towards the media.
 - 1.4.y Ingress: the direction of data and signals from the media towards the MAC.
- Change “egress” and “egress power” to “PSD mask” 62.3.5.1.3 (both heading and body) and in 62.4.4.2 (PICS item 10PPMD-27).
- Change “egress” to “transmission” and “ingress” to “reception” in 90.1 and 90.4.1.2.

Other usage of ingress/egress

- Egress and ingress of packets (as events)

Proposed: Change to “transmission and reception”

- 90.1: “The TSSI can be used to support protocols that require knowledge of packet ~~egress and ingress~~ transmission and reception times.” (4 instances)
- 90.4.1.2: “The TimeSync Client can use the indication of the event corresponding to the ~~egress and ingress~~ transmission and reception of packets provided by the TSSI” (3 instances)
- Note that the handling of packets is generally described using the terms “transmit” and “receive”, and the TSSI primitives are TS_RX.indication and TS_TX.indication are consistent with that.

- Related to power

Proposed: Change to “PSD mask”

- In 62.3.5.1.3 heading “~~Egress control~~ PSD mask control”, and in the text: “To avoid potential harm to amateur radio service due to radiated emission from 10PASS-TS, it shall be possible to reduce the PSD of the transmit signal within the amateur radio bands. Specifications for ~~egress power control~~ PSD mask control are described in Annex 62A.”
 - 62A does not use this term anywhere, it uses “PSD mask” instead.
- Also “~~Egress control~~ PSD mask control” in the related PICS item 10PPMD-27 in 62.4.4.2.

- Other, seemingly technology-specific meaning, in clause 100

- 100.3.5.1: “The CLT Upstream Demodulator shall operate with an average input signal level, including ~~ingress~~ and noise to the upstream demodulator, up to 31 dBmV.”
- 100.3.7.2: “Unique FCC ~~egress~~ requirements exist for these bands separate from the general exclusion bands requirements”
emission?
- Table 100A–2 (table note 3): “single dominant interferer and ~~ingress~~ point”
Injection?

Delete?

No change proposed at this time