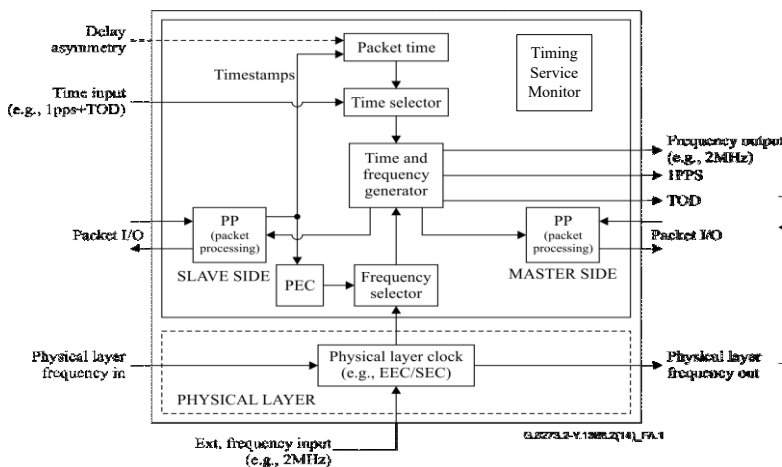
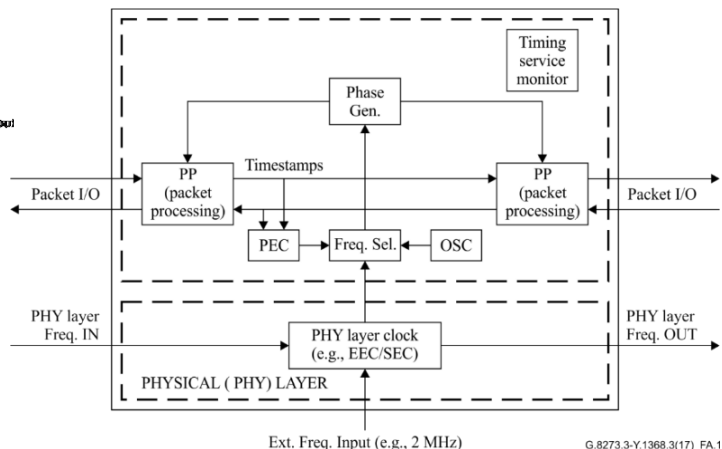


# G.8273.x Time Sync Clocks

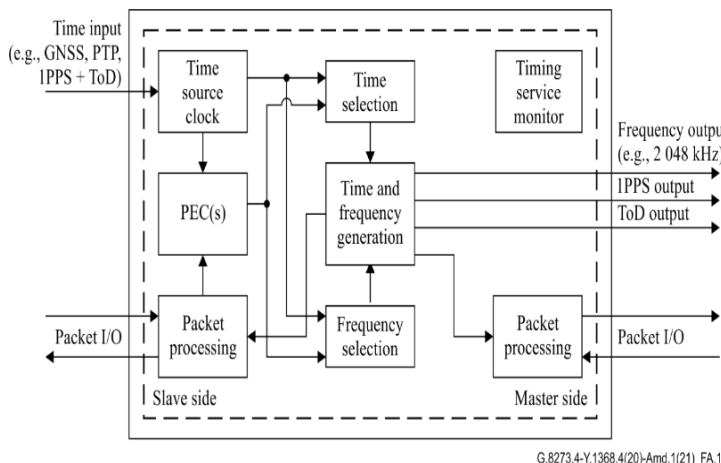
- G.8273.x defines requirements for phase and time clocks to be used by the Telecom profiles
- Some aspects of testing and measurement methods of phase and time clocks are also addressed



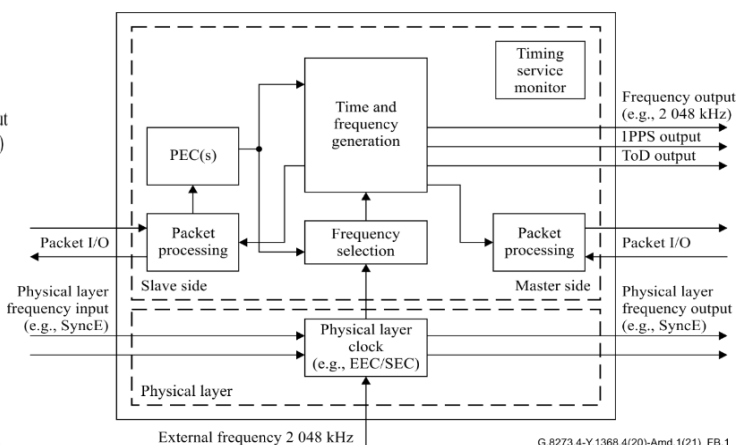
Telecom boundary clock (T-BC) and telecom slave clock (T-TSC) functional model



Telecom Transparent clock model



T-TSC-A and T-BC-A functional model



T-TSC-P and T-BC-P functional model

## 1. ITU-T G.8273 – Framework of phase and time clocks

Recommendation ITU-T G.8273 is a framework Recommendation for phase and time clocks for devices used in synchronizing network equipment that operate in the network architecture defined in Recommendations ITU-T G.8271, ITU-T G.8275 and the ITU-T G.8271.x series of Recommendations. It includes annexes with detailed testing and measurement methods of phase and time clocks.

## 2. ITU-T G.8273.2 – Timing characteristics of telecom boundary clocks and telecom time slave clocks for use with full timing support from the network

Recommendation ITU-T G.8273.2 specifies minimum requirements for time and phase for telecom boundary clocks and telecom time slave clocks used in synchronization network equipment that operates in the network architecture as defined in Recommendations ITU-T G.8271, ITU T G.8271.1, ITU-T G.8275 and ITU-T G.8275.1. It supports time and/or phase synchronization distribution for packet-based networks. It only applies to full timing support from the network. It defines 4 classes of T-BCs. For T-BC/T-TSC classes A and B, it focuses on

synchronized T-BCs/T-TSCs with frequency reference provided by the physical layer based on [ITU-T G.8262]. For T-BC/T-TSC class C, it focuses on synchronized T-BCs/T-TSCs with frequency reference provided by the physical layer based on [ITU-T G.8262.1].

## 3. ITU-T G.8273.3 – Timing characteristics of telecom transparent clocks for use with full timing support from the network

Recommendation ITU-T G.8273.3 defines the minimum requirements for time and phase for telecom transparent clocks (T-TCs). It defines 3 classes of T-TCs. For T-TC classes A and B, it focuses on synchronized T-TCs with frequency reference provided by the physical layer based on [ITU-T G.8262]. For T-TC class C, this version of the Recommendation focuses on synchronized T-TCs with frequency reference provided by the physical layer based on [ITU-T G.8262.1]. This Recommendation assumes operation within the framework specified in [ITU-T G.8273], and that the physical layer reference chain behaviors given in [ITU-T G.803] and [ITU-T G.8261] are followed. It is also assumed that the network limits given in [ITU-T G.8271.1] are met and that the profile given in [ITU-T

G.8275.1] is applied.

## 4. ITU-T G.8273.4 – Timing Characteristics of Telecom Boundary Clocks and Telecom Time Slave Clocks for Use with Partial Timing Support from the Network

Recommendation ITU-T G.8273.4 specifies minimum requirements for time and phase synchronization equipment used in assisted partial timing support (APTS) and partial timing support (PTS) architectures. The APTS and PTS architectures are specified in [ITU-T G.8271], [ITU-T G.8271.2] and [ITU T G.8275]. The applicable profile is established in [ITU T G.8275.2], which specifies unicast PTS/APTS time or phase synchronization distribution for packet-based networks. Synchronous equipment clocks (per [ITU-T G.8262]) are optional in this Recommendation, and they are not used for APTS. When used on the telecom time slave clock for partial timing support (T-TSC-P) or telecom boundary clock for partial timing support (T-BC-P), the synchronous equipment clock should meet the performance requirements specified in [ITU-T G.8262].

