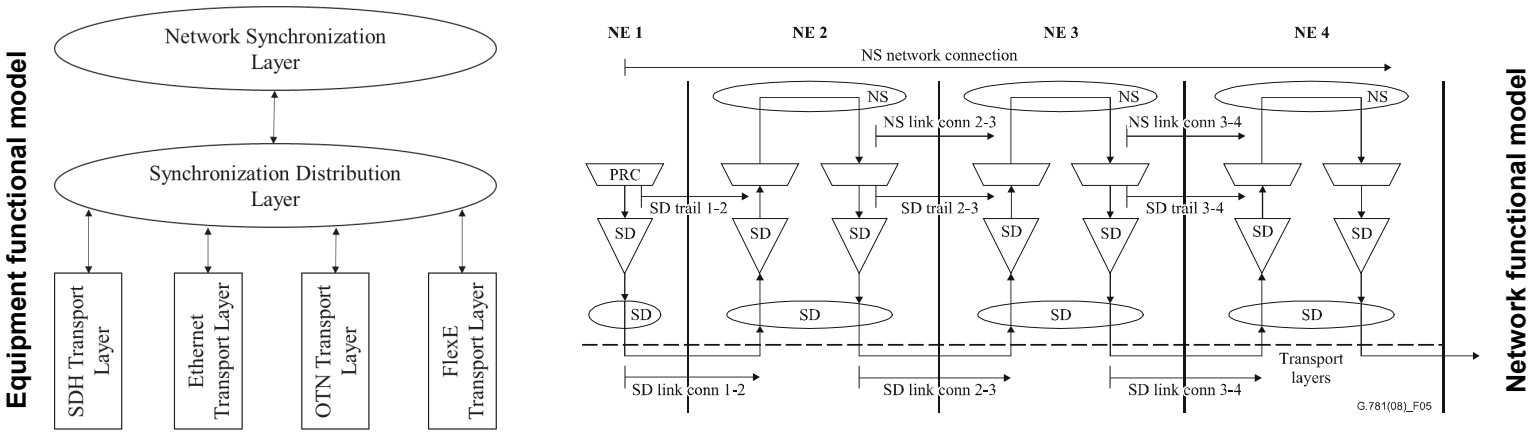
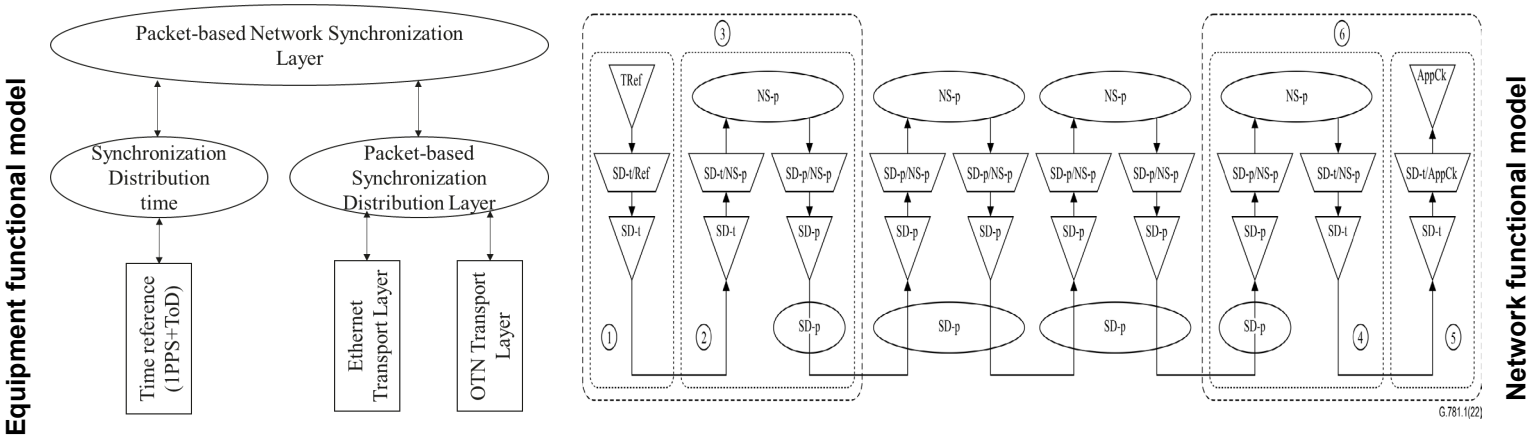
ITU-T Study Group 15

G.781,G.781.1 Sync Layer Functions

- Functional architecture model and corresponding atomic functions for the transport of frequency synchronization via the physical layer (Ethernet, optical transport network (OTN), FlexE (Flexible Ethernet) and synchronous digital hierarchy (SDH)).
- Functional architecture model and corresponding atomic functions for the transport of time and frequency synchronization via packet-based methods using the precision time protocol (PTP). PTP messages are specified over Ethernet and OTN transports.



Transport of frequency synchronization via the physical layer (G.781)



Transport of time and frequency synchronization via packet-based methods using PTP (G.781.1)

1. ITU-T G.781 – Synchronization layer functions for frequency synchronization based on the physical layer

This Recommendation specifies a functional architecture, atomic functions, and a set of rules by which the atomic functions are combined, in order to describe a network element's frequency synchronization functionality via the physical layer. The specifications are for Ethernet, OTN, FlexE and SDH network elements, and the transport of the synchronization. The Recommendation describes the various layers of the synchronization network, the synchronization interfaces, and the attributes and parameters for the synchronization functions. The layers include the network synchronization (NS) and synchronization distribution (SD) layers.

2. ITU-T G.781.1 - Synchronization layer functions for packet-based synchronization

This Recommendation specifies a functional architecture, atomic functions, and a set of rules by which the atomic functions are combined, in order to describe a network element's time and frequency synchronization functionality via packet-based methods using PTP. The functional architecture contains the following synchronization layers: the network synchronization packet (NS-p) layer, the synchronization distribution packet (SD-p) layer, and the SD-t for the synchronization distribution of time information (e.g., one pulse per second plus time of day [1 PPS+ToD]. The atomic functions specified in this Recommendation can be combined in accordance with the functional architecture model to describe the time and frequency synchronization transport functionality of network equipment.