INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.8275/Y.1369

Amendment 1

(01/2015)

SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Packet over Transport aspects – Synchronization, quality and availability targets

SERIES Y: GLOBAL INFORMATION INFRASTRUCTURE, INTERNET PROTOCOL ASPECTS AND NEXT-GENERATION NETWORKS

Internet protocol aspects – Transport

Architecture and requirements for packet-based time and phase distribution

Amendment 1

CAUTION !

PREPUBLISHED RECOMMENDATION

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Amendment 1 to Recommendation ITU-T G.8275/Y.1369 (2013)

Architecture and requirements for packet-based time and phase distribution: Amendment 1

Summary

Amendment 1 to Recommendation ITU-T G.8275/Y.1369 (2013) adds material on assisted partial timing support.

Amendment 1 to Recommendation ITU-T G.8275/Y.1369 (2013)

Architecture and requirements for packet-based time and phase distribution: Amendment 1

1 Scope

This amendment contains updated material to be added to ITU-T G.8275/Y.1369.

2 References

No new references are added.

3 Definitions

No new terms are defined.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

APTS Assisted Partial Timing Support

APTSC Assisted Partial Timing Support Clock

PTS Partial Timing Support

5 Conventions

None.

6 Clause 6 of the Recommendation

6.1 Update to referencing text on assisted partial timing support.

Replace the following text in clause 7.1:

"The architecture described in this Recommendation describes the case where all of the nodes in the transmission path will provide timing support by participating in the timing protocol. This is termed "full timing support to the protocol level" (see [ITU-T G.8260]).

The current version of this Recommendation describes an architecture for this case (full timing support to the protocol level), where all the intermediate nodes are T-BCs with physical layer frequency support. Transparent clocks are being studied and may be included in future versions of this Recommendation.

Other architectures where not all of the nodes need to provide timing support by participating in the timing protocol are for further study and may be included in future versions of this Recommendation. This is termed "partial timing support to the protocol level" (see [ITU-T G.8260]). These are for further study. Some initial considerations for this topic are documented in Appendix I."

With:

“The architecture described in this Recommendation describes two cases; the first case is where timing support is provided by all nodes in the network (e.g. T-BCs) with physical layer frequency support (“full timing support to the protocol level” (See [ITU-T G.8260]) and the second case is where intermediate nodes do not provide timing support, but timing support is provided by GNSS at the network edge, with PTP acting as a backup. This is termed assisted partial timing support (APTS). The node providing support at the edge of the network is called an assisted partial timing support clock (APTSC).

Other architectures where not all of the nodes need to provide timing support by participating in the timing protocol. This is termed "partial timing support to the protocol level" (PTS)(see [ITU-T G.8260]). Some additional considerations for this topic are documented in Appendix I.

The use of transparent clocks (TCs) are being studied and may be included in future versions of this Recommendation.”

6.2 Additional cases to be added covering APTS

Replace the following text in clause 7.2.1

“The use of T-GM to distribute phase/time between different cell sites is for further study.”

With:

“The use of T-GM to distribute phase/time between different cell sites is for further study.

Case E: APTSC at the cell sites with distributed PRTC+GM protection in aggregation sites

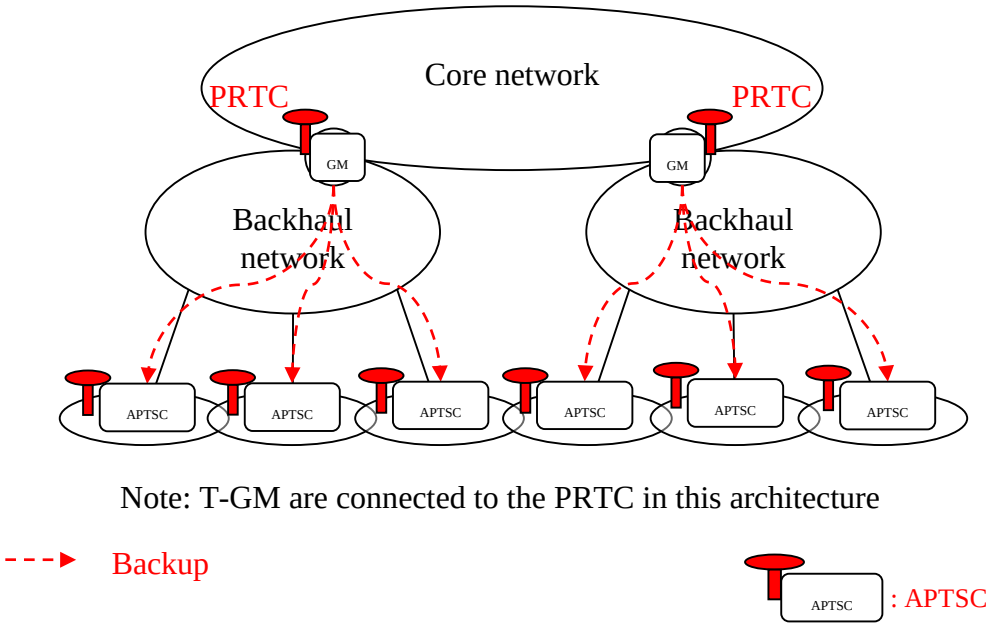

Figure 5b/G.8275 – APTS Architecture with PRTC functions distributed in aggregation sites

In this architecture, the APTSC function is located directly at the cell site; in addition PRTC+GM's are located at the aggregation sites and distribute PTP streams to the APTSC's. These PTP streams are used by the APTSC in case of PRTC/GNSS outage. This architecture implies deployment of a higher number of GNSS receivers than in the "centralized PRTC" architectures. But the PTP unaware or partially aware networks can be kept as short as possible in order to decrease the asymmetry and PDV introduced by the network.

Case F: APTSC at the cell sites with distributed PRTC protection at cell sites

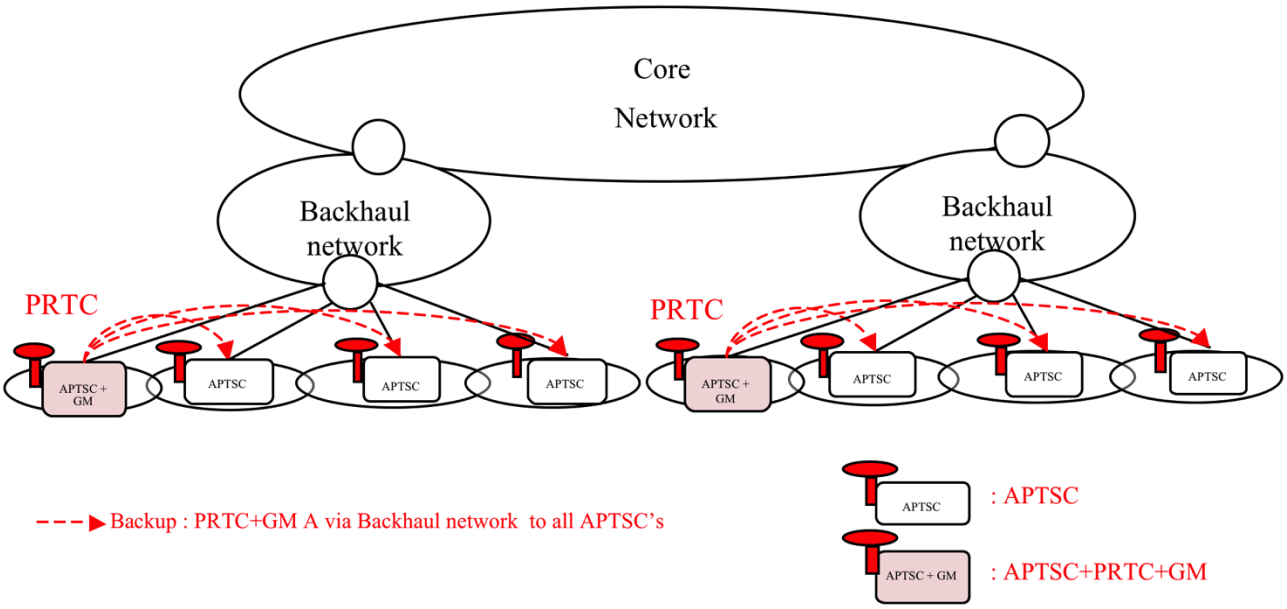

Figure 5c– APTS Architecture with PRTC+GM functions distributed at cell sites

In this architecture, the APTSC function is located directly at the cell site; in addition GM's are located at selected cell sites and distribute PTP streams to the adjacent APTSC's. These PTP streams are used by the APTSC in case of a PRTC/GNSS outage; this architecture implies deployment of a higher number of GNSS receivers than in the "centralized PRTC" architectures, but the PTP unaware or partially aware networks can be kept as short as possible in order to decrease the asymmetry and PDV introduced by the network. In addition the GNSS signal available to the APTSC in the cell site is used by the collocated GM.