

Evolution of the Standards for Packet Network Synchronization

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The evolution of telecom networks away from the traditional circuit switched structures towards the evolving next generation network with packet switching has changed the model from one of a carefully planned and engineered network towards one in which there is a greater expectation of automatic, self-configured operation a plug and play model. This expectation now also extends to the distribution of synchronization information ? frequency, time and phase ? over the network. This new expectation widens the scope of interest in network synchronization beyond specialists to the wider audience of telecommunications engineers in general. A new series of standards has recently been developed to address the issue of synchronization transport over packet networks, coming out of both the ITU (G-82xx series) and IEEE (IEEE 1588). A recent article by Ferrant and Ruffini summarizes the work done by ITU-T Q13/15 in developing these standards. Through the process of describing the roadmap of this family of standards, the article walks the reader through the various issues that arise in this new manner of sync transport. Specific technical issues, both theoretical as well as practical aspects brought up by industry, are mentioned in the context of various documents, giving the reader the option of following up on specific issues based on their specific interests. In particular, future work addressing time and phase transport, relevant for wireless networks as well as many emerging applications, is also described. Readers interested in further information on this topic may continue on to more detailed articles in the same issue.

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