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Introduction

This contribution provides a status of the standardization work in the ITU-T Q4/15 on extended upstream for ADSL systems. This is provided for information only.

Discussion

Annex A defines ADSL operation over POTS with the upstream occupying bandwidth up to 138 kHz (32 tones). Annex B defines ADSL operation over ISDN, so the upstream channel uses the bandwidth from 120 to 276 kHz (also 32 tones). Both Annex A and Annex B are 32 tone based upstream channel systems.

Annex I defines an all digital mode (i.e. no POTS) of operation where the upstream channel may use the bandwidth between 0 and 4 kHz for upstream channel transmission given that the analog voice channel is not in use. Similarly, Annex J defines an all-digital-mode of operation where the upstream channel occupies the bandwidth normally used for ISDN transmission; this configuration has improved spectral compatibility with ADSL operation over ISDN Basic Rate (Annex B). Since the upstream channel definition of Annex J is based on 64 tones, Annex J is the first case of extended upstream channel operation.

Annex M defines extended upstream channel operation based on 64 tones for operation over analog voice; the definition of the extended upstream channel PSDs is largely based on the family of PSDs defined in Annex J. At the April 2004 SG15 meeting Annex M for G.992.3 and G.992.5 was approved with a Note of Concern added about the potential degradation on ADSL downstream channel when ADSL systems with extended upstream are deployed in the same cable with Annex A based systems.

G.992.3 Annex C, and the working text for the future G.992.5 Annex C do not define any extended upstream operation. In Q4/15 there is a goal agreed to define extended upstream operation based on 64 tones. It is not decided what kind of shaped or non-shaped PSDs will be included in a future standard.