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G.996.2

Amendment 6
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SERIES G: TRANSMISSION SYSTEMS AND MEDIA,
DIGITAL SYSTEMS AND NETWORKS

Digital sections and digital line system – Metallic access
networks

Single-ended line testing for digital subscriber lines
(DSL)

Amendment 6

CAUTION !

PREPUBLISHED RECOMMENDATION

This prepublication is an unedited version of a recently approved Recommendation. It will be replaced by the published version after editing. Therefore, there will be differences between this prepublication and the published version.

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Amendment 6 to Recommendation ITU-T G.996.2 (2009)

Single-ended line testing for digital subscriber lines (DSL) – Amendment 6

Summary

Amendment 6 to Recommendation ITU-T G.996.2 (2009) updates Annexes A, E, and F, defining the following new functionalities:

- 1) SELT-PMD management
- 2) MELT-PMD management
- 3) Report of negative capacitance values
- 4) Pair identification tone with timeout
- 5) Report of reliability indicator for measurements
- 6) Report of time stamp
- 7) Parallelism and polarity of far-end signature detection
- 8) CPE identification capacitive.

Amendment 6 to Recommendation ITU-T G.996.2 (2009)

Single-ended line testing for digital subscriber lines (DSL) – Amendment 6

1. Revise the text of clause A.3 “Test management and communications” as follows:

A.3 Test management and communications

~~Test management and communications are for further study.~~

The CO-side SELT PMD is managed using the parameters defined in this clause. The NT-side SELT PMD management is for further study.

A.3.1 CO SELT PMD control

This parameter configures the CO SELT PMD for a particular measurement.

The parameter is of type enumeration, with the following valid values:

- disable: the CO SELT PMD is not configured for a measurement;
- enable: the CO SELT PMD is configured for a measurement.

The CO SELT PMD is by default “disable”. When “disable”, the line is in normal operation (e.g., in the L0 state if the line is configured with AdminStatus=up). When “enable”, the AN/DPU ME shall force the line into the L3 state if necessary.

A.3.2 CO SELT PMD request

While the CO SELT PMD is “enable”, this parameter is used to trigger the start of a particular measurement (either UER or QLN) or to trigger the abortion of a measurement.

The parameter is of type enumeration, with the following valid values:

- none: a measurement is not triggered.
- uer-measurement: triggers the CO SELT PMD to start an Uncalibrated Echo Response (UER) measurement.
- qln-measurement: triggers the CO SELT PMD to start a Quiet Line Noise (QLN) measurement.
- abort: triggers the CO SELT PMD to abort any currently ongoing measurement.

A measurement is triggered when the value is configured from “none” to either “uer-measurement” or “qln-measurement”. After completion of the current measurement, transition to “none” is required before a new measurement can be triggered. Transition from any measurement to “abort” shall stop the measurement. Transitions from “uer-measurement” to “qln-measurement” and vice versa are invalid. One or more measurements may be triggered while the CO SELT PMD is configured “enable”, possibly with different CO SELT PMD configuration parameters. If the triggered measurement cannot be executed, then the AN/DPU ME rejects this request and the CO SELT PMD status remains “inactive”.

A.3.3 CO SELT PMD status

This parameter reports the status of the measurement.

The parameter is of type enumeration, with the following valid values:

- inactive: the CO SELT PMD is inactive;
- uer-ongoing: the CO SELT PMD has a UER measurement ongoing;
- qln-ongoing: the CO SELT PMD has a QLN measurement ongoing;

Upon the CO SELT PMD request triggering a UER measurement, the CO SELT PMD status shall become “uer-ongoing” if the measurement is executed.

Upon the CO SELT PMD request triggering a QLN measurement, the CO SELT PMD status shall become “qln-ongoing” if the measurement is executed.

Upon abortion, failure or successful completion of the UER or QLN measurement, the SELT PMD status shall become “inactive” and the AN/DPU ME shall send a notification to the NMS.

A.3.4 CO SELT UER results status

This parameter reports the status of the CO SELT PMD UER measurement results.

The parameter is of type enumeration, with the following valid values:

- no-measurement-results-available: no UER measurement results are available when no UER measurement has been performed yet or after UER measurement the results have been deleted;
- measurement-failed-results-invalid: UER measurement results are invalid after the most recent UER measurement failed;
- measurement-succeeded-results-valid: UER measurement results are valid after the most recent UER measurement succeeded.

A.3.5 CO SELT QLN results status

This parameter reports the status of the CO SELT PMD QLN measurement results.

The parameter is of type enumeration, with the following valid values:

- no-measurement-results-available: no QLN measurement results are available when no QLN measurement has been performed yet or after QLN measurement the results have been deleted;
- measurement-failed-results-invalid: QLN measurement results are invalid after the most recent QLN measurement failed;
- measurement-succeeded-results-valid: QLN measurement results are valid after the most recent QLN measurement succeeded.

2. Revise the text of clause E.1.1.2 “Measurement of the 3-element capacitance with a controlled metallic voltage” as follows:

E.1.1.2 Measurement of the 3-element capacitance with a controlled metallic voltage

This parameter defines a measurement, or a series of measurements, to measure the capacitance of the cable plus line equipment, if present, from an equivalent AC network located between tip, ring, and GND as shown in Figure E.2.

If the consideration of internal components during the measurement process leads to negative values, these negative capacitance values shall be reported.

NOTE – The reporting of negative capacitance values may be used to detect hardware defects.

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