List of Additional Parameters that Might be Transported from GM to Slaves

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IEEE 802.1 AVB TG
2007.06.25

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Introduction

❑ This presentation contains a list of parameters that might be transported from the GM to the slave stations

- The parameters of the IEEE 1588 time properties data set were used as a starting point

- P1588 Draft v2-D1, which is the version submitted for sponsor ballot, and is available at http://grouper.ieee.org/groups/1588/private/Standard/1588-V2-D1_06_08_07/1588-v2-D1.doc

- Except for the last parameter (indication if and when GM last experienced a phase discontinuity), this list is contained in Clause 14 of P802.1AS D0.8

- The last parameter was discussed subsequent to the preparation of D0.8

❑ This summary was requested in the June 18, 2007 AVB timing call

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❑current_utc_offset

- This is the value of TAI – UTC, in s, where TAI is the current TAI time and UTC is the current UTC time
  - The value of current_utc_offset as of the date of this presentation (25 June 2007) is 33 s

❑current_utc_offset_valid

- The value is TRUE if current_utc_offset is known to be correct
  - The value is FALSE otherwise

❑leap_59

- A TRUE value indicates that the last minute of the current UTC day will contain 59 seconds

❑leap_61

- A TRUE value indicates that the last minute of the current UTC day will contain 61 seconds

❑time_traceable

- TRUE if the timescale and the value of current_utc_offset are traceable to a primary standard (e.g., GPS); otherwise FALSE

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❑frequency_traceable

▪TRUE if the frequency that determines the timescale is traceable to a primary standard (e.g., GPS); otherwise FALSE

❑time_source

▪The value of the time source attribute of the grandmaster clock, as described in 8.6.2.6 of P802.1AS D0.8. As indicated there, this is an information-only attribute that indicates the source of time

•The attribute takes on the values given in the table on the next slide (this table is taken from P1588-v2-D1 with minor modifications (version submitted for sponsor ballot); note that Table 4 of P802.1AS D0.8 is missing the PTP entry and must be updated)

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Table 1: timeSource enumeration

Value (hex)	Time source	Description
0x10	ATOMIC_CLOCK	Any device, or device directly connected to such a device, that is based on atomic resonance for frequency and that has been calibrated against international standards for frequency and, if the PTP timescale is used, time
0x20	GPS	Any device synchronized to any of the satellite systems that distribute time and frequency tied to international standards
0x30	TERRESTRIAL_RADIO	Any device synchronized via any of the radio distribution systems that distribute time and frequency tied to international standards
0x40	PTP	Any device synchronized to a PTP based source of time external to the domain
0x50	NTP	Any device synchronized via NTP to servers that distribute time and frequency tied to international standards
0x60	HAND_SET	Used in all cases for any device whose time has been set by means of a human interface based on observation of an international standards source of time to within the claimed clock accuracy
0x90	OTHER	Other source of time and/or frequency not covered by other values
0xA0	INTERNAL_OSCILLATOR	Any device whose frequency is not based on atomic resonance nor calibrated against international standards for frequency, and whose time is based on a free-running oscillator with epoch determined in an arbitrary or unknown manner

All unused values are reserved.

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❑Indication if and when GM last experienced a phase discontinuity

- This was discussed in the June 18, 2007 AVB timing call

- Possible parameters are

  - Elapsed time since last discontinuity

  - Time of last discontinuity

- A phase discontinuity includes

  - Change in GM

  - Change in GM time that exceeds a threshold

    - Open question as to what the size of the threshold should be, and if its specification should be normative