

Summary of Clock Attributes Considered in BMCA in 802.1AS

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Introduction

- This presentation provides a summary of the clock attributes considered in the best master clock algorithm in IEEE 802.1AS
 - This summary was requested in an AVB call in October, 2012, for use in consideration of information that would need to be transported via IS-IS, if IS-IS were to be used for best master selection (as one possible option) in AVB Gen 2

Attributes considered in Best Master Selection - 1

Clock Attribute	802.1AS clause/subclause where it is described
priority1	8.6.2.1
clockClass	8.6.2.2
clockAccuracy	8.6.2.3
offsetScaledLogVariance	8.6.2.4
priority2	8.6.2.5
clockIdentity	8.6.2.6

Attributes considered in Best Master Selection - 2

- The Announce message conveys the following attributes of the current grandmaster known to the sender of the message, either in the body or the PTP common header (these are used in the BMCA)
 - grandmasterPriority1
 - grandmasterClockQuality (includes clockClass, clockAccuracy, and offsetScaledLogVariance of grandmaster)
 - grandmasterPriority2
 - grandmasterIdentity

Attributes considered in Best Master Selection - 3

- The Announce message conveys the following additional attributes, used in the BMCA (conveyed in either the body or common PTP header)
 - stepsRemoved
 - sourcePortIdentity
- These attributes are used in the BMCA to form the synchronization spanning tree
 - They are used in breaking loops

Additional Attributes - 1

- These attributes are conveyed in the Announce message and used by each time-aware system, but not for best master selection
 - timeSource (information on source of time for current grandmaster)
 - currentUtcOffset (current number of leap seconds, i.e., current offset of UTC from TAI)

Additional Attributes - 2

- These attributes are flags; they are conveyed in the Announce message and used by each time-aware system, but not for best master selection
 - leap59 – notice of impending negative leap second (i.e., deletion of the 60th second; note that this has never happened)
 - Leap61 – notice of impending positive leap second (i.e., addition of a second after the 60th second)
 - currentUtcOffsetValid – indicates whether the attribute currentUtcOffset is valid

Additional Attributes - 3

- These attributes are flags; they are conveyed in the Announce message and used by each time-aware system, but not for best master selection
 - `ptpTimescale`
 - `timeTraceable`
 - `frequencyTraceable`