Grand Master Element: Standard Industrial Automation Case with a common Oscillator

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The ClockTime-Transmitter (ClockMaster) just forwards the ClockSource Time. The ClockSource has a control loop whose goal is to bring the phase offset to zero.

The drift rate seen by the adjacent Slave element looking at the GM-Time information in the Sync messages is the superposition of the control limit of $\pm 3$ppm/s (at the control signal OCF) and the drift of the LocalClock Oscillator of $[-1.35 : 2.12]$ppm/s. Hence the overall drift can be greater than 5ppm/s!

**GM Time in Sync Message**

Sync Messages transmit:
1) Controlled time as the Master Time
2) LocalClock Time for the NRR calculation
3) $gmRR=OCF$ (the control signal in ppm/s), whose drift-rate is bounded as described above