



# 60802 Sync Applications

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PUBLIC

# 60802 Addressable Market

- The 60802 industrial profile is currently being targeted to be scalable to accommodate equipment that goes between ambient air temperature and controlled spaces in a Siberian winter, to very controlled clean room conditions in a microchip fabrication facility.
- The initial stated goals of 60802 are to address 80%+ of the industrial market, the “majority use cases”
- It is not always reasonable to expect one specification to meet all market conditions and requirements

# History

- Rockwell Automation has been shipping products based on IEEE1588 time synchronization for 12+ years.
  - 1 sec sync interval, end-to-end path delay model
  - Simple digital frequency compensated clock and software filters
  - Low cost crystal oscillators (XO, not TCXO or OCXO)
  - Sync accuracy better than +/-1 usec over at least 64 hops

# Meeting Time Sync Goals in 60802

- Axiom: Time should be interoperable among all devices grouped together in 60802 networks
  - This does not mean one specification for time across all 60802 devices
  - There are multiple ways to hit this goal
    - Accommodate 80%+ of use cases and leave others unaddressed for release 1
    - Define separate but interoperable specifications for ccA and ccB
    - Define a solution that will hit the majority of the market and also an “Extended Operating Range” solution

# Proposal

- To be inclusive of use cases presented to 60802, develop multiple time profiles for 60802

- Based on end application, not based on conformance class as defined today

- Proposal:

## Base Profile

- 1us time error over 64 hops
- 1s sync interval (125ms may be acceptable)
- 1s pdelay interval (125ms may be acceptable)
- XO Oscillator
- Accelerated intervals at startup

## Extended Temperature Profile

- 1us time error over 64 hops
- 125ms sync interval
- 31.25ms pdelay interval
- <3ppm TCXO/OCXO Oscillator



**Rockwell  
Automation**

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Thank you!

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