

# IEC 61850 PIS-10 Software Stack

## GOOSE Message Performance

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## Information Sheet

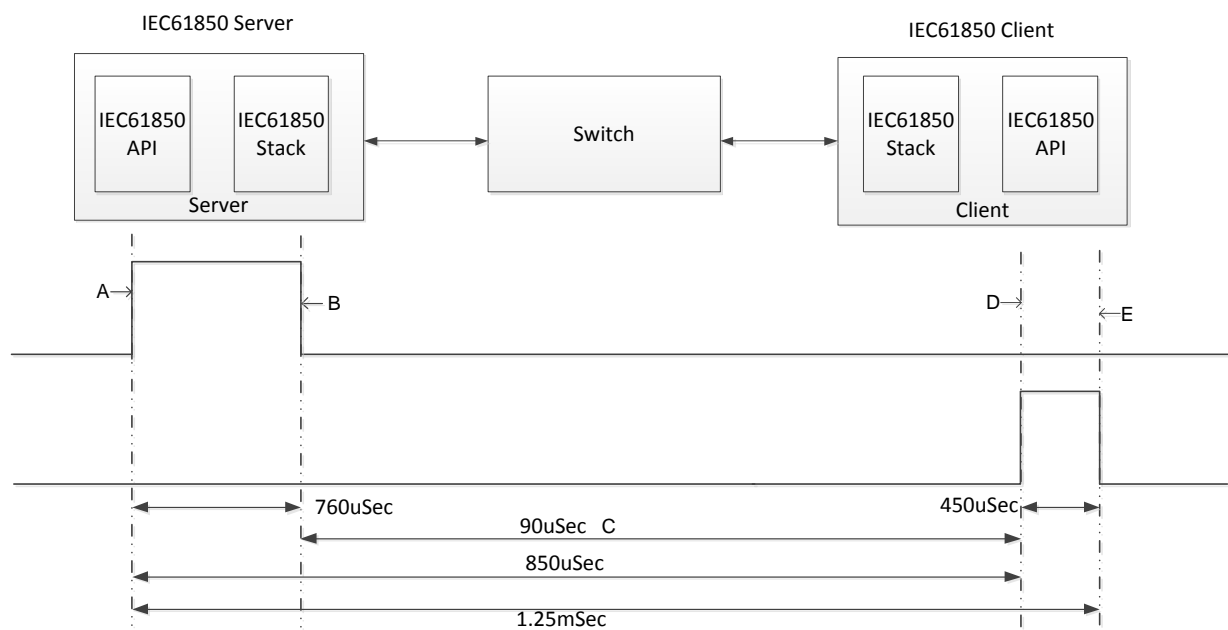
### Introduction

The PIS-10 IEC 61850 software library allows the applications programmer to transmitter GOOSE messages quickly.

### Benchmark Setup

- 1) 2 DK61 boards one running as a Server and the other running as a Client.
- 2) Solder wires on the leds on these boards.
- 3) Connect one channel of the oscilloscope to one DK61 board and second channel to other DK61 board.
- 4) Copy Server CID and Client SSD file on the boards.
- 5) Run the application and measure the time between when the LED's are turned on, on each board.

Note: Development environment is Paradigm C++ V7.00.047, Deployment environment is Becks Chip-RTOS V1.50, Clib V2.22



On Server side, time is measured right from when API decides to send a GOOSE message

On Client side, time is measured right from when a valid Goose message is processed

- A: GOOSE timer expires and sends a message(keep alive) or event updated by user application
- B: GOOSE Message has been pushed onto the Ethernet network by the stack
- C: Network time depends on network design and configuration. This test was done with one Ethernet switch(10/100)
- D: Server stack processing times + network time + client has validated incoming GOOSE message
- E: Client stack has finished processing incoming GOOSE message and generates call-back to user application

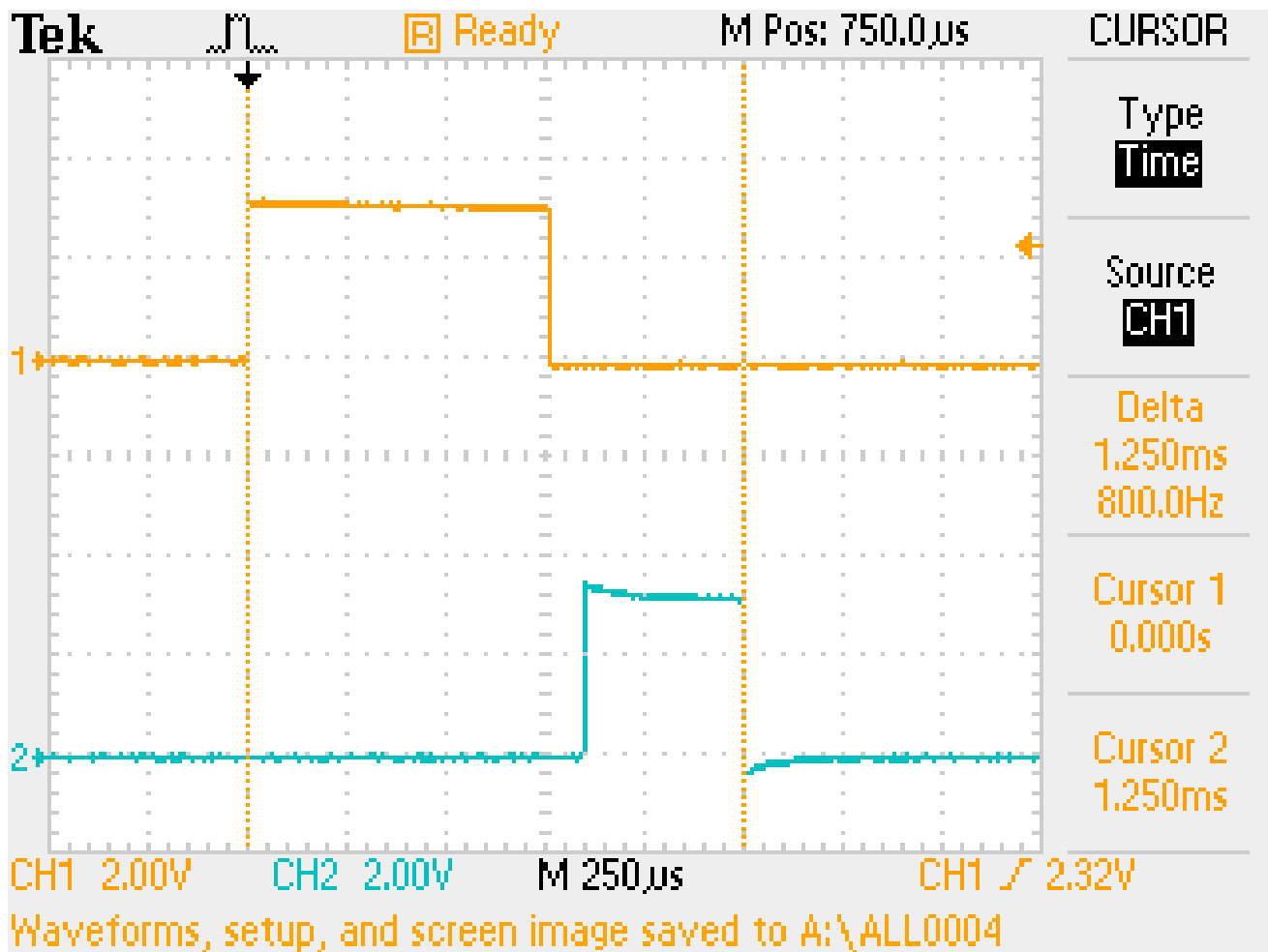
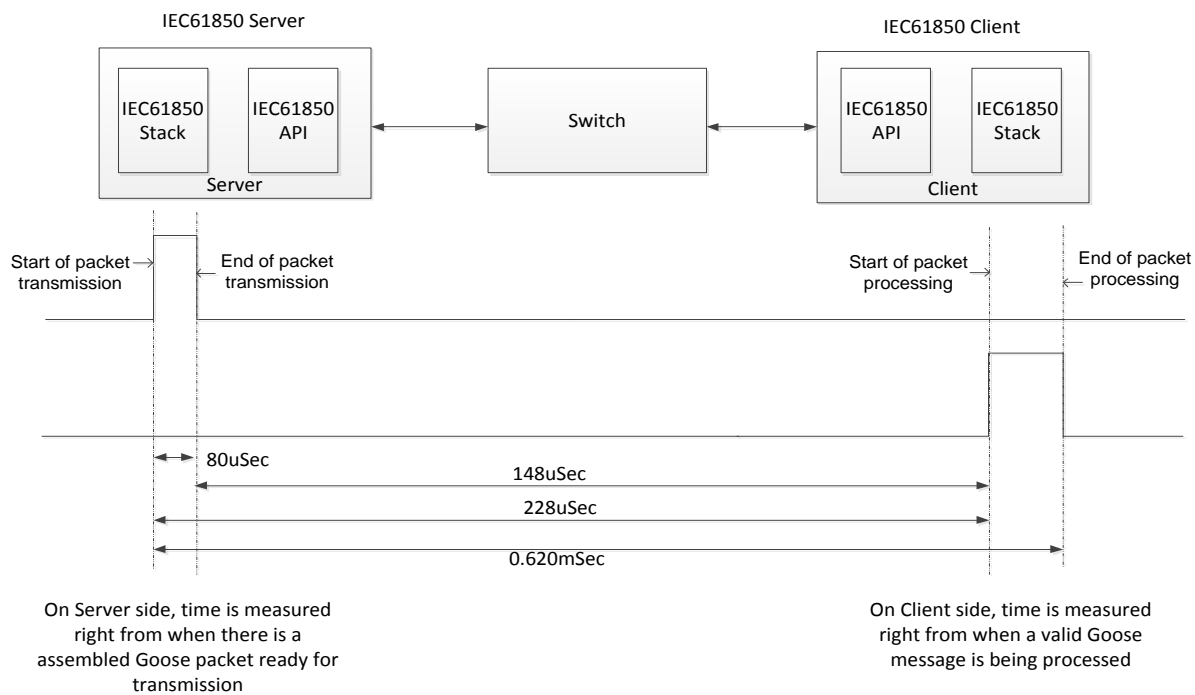


Figure 1: Timing measured on oscilloscope