



GigE Vision 2.0

Standard Update

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Faster

A faster clock: brute force approach

- 10-fold speed increase with 10GigE!

Combine multiple cables: Link Aggregation

- Speed increase proportional to number of cables

Regulate the flow: PAUSE handshake

- Momentarily stop transmission when destination is overwhelmed
- Helps reduce occurrence of packet retransmission



Reduce amount of data: Image Compression

- Support for JPEG, JPEG 2000 and H.264
- 10-fold data reduction possible with limited visible distortion

All-in transmission mode: one image in one packet

- Useful with jumbo packets
- Reduces overhead for small images
- Could be used for linescan cameras (one packet per line)



Multi-camera systems: operate from same time source

IEEE 1588 (Precision Time Protocol)

- Synchronize device internal clock to network master clock
- Precision up to 1 μ s possible
- Sources the GigE Vision 64-bit timestamp

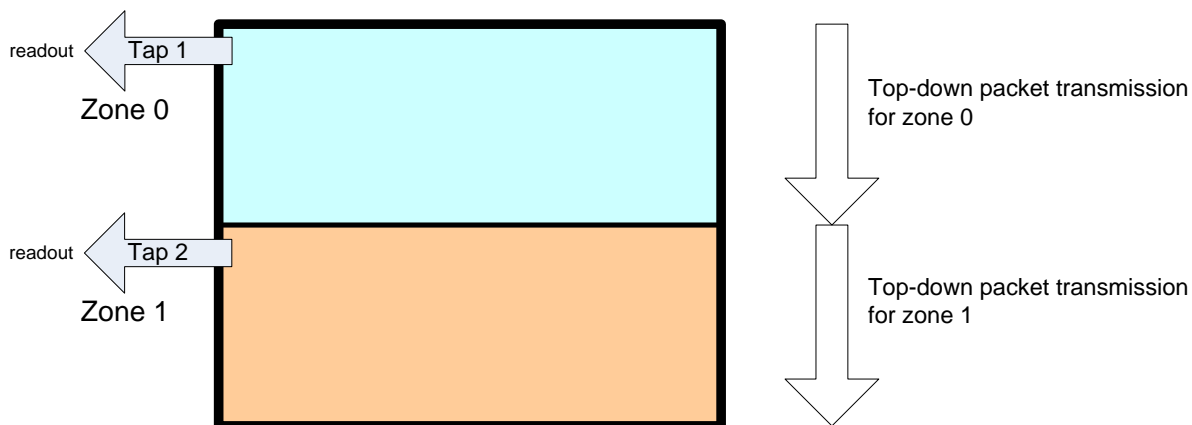
Scheduled actions

- Trigger image acquisition on all cameras at a precise time in the future
- Low jitter, but latency dictated by network delays



Support for **Multi-tap source**

- No need for raster-scan image reconstruction inside camera
- Divide image in horizontal bands
- Each band is raster-scan
- But bands can be transmitted out of order



Pixel Format Naming Convention 1.0

- Re-usability across Machine Vision camera standards
- Used by GigE Vision and CLHS
- Plan to be used by CoaXPress and USB3 Vision
- Separate document maintained by AIA

GigE Vision 2.0: More pixel formats

- Support for 1-bit, 2-bit and 4-bit monochrome pixel format
- YCbCr pixel format supporting ITU BT.601 and ITU BT.709



Validation Framework: Coverage aligned with GigE Vision 1.2

Wireshark Dissector: Decode GigE Vision packets

