

# Update on GigE Vision implementation in FPGA.



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**ARD ST3 2019**



**HELMHOLTZ**  
RESEARCH FOR GRAND CHALLENGES



- > **GigE Vision** = protocol to transmit camera video over Ethernet
- > implementation in **FPGA** → high-throughput, deterministic

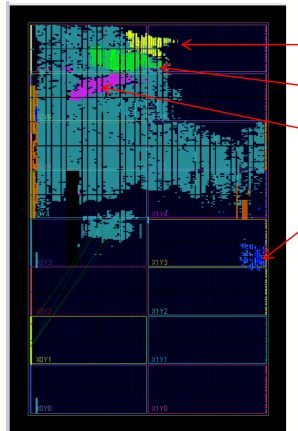
## Certification process

plugfest →

our implementation now certified



Come hear the stories from the plugfest!



## 10 GigE Vision

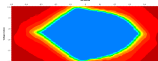


based on 10 Gigabit Ethernet →  
10 times higher throughput

Two cameras with 10GigE Vision interface:

	FLIR Oryx 10GigE <sup>4</sup>	JAI SW-4000T-10GE <sup>5</sup>
Frame rate [FPS]	162	97000
Resolution [px]	2448 x 2048	4096 x 1
Bit depth [bit]	12	10
Total throughput [Mbit]	9746*	9535**

Signal integrity on our platforms:



First tests successful, more work to do  
(wider datapath).

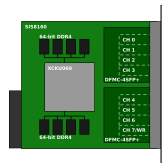
## New HW platform

Already supported:

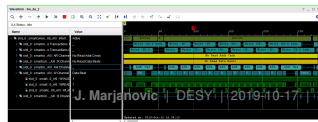
- > DAMC-TCK7 (Kintex 7)
- > Xilinx KCU105 eval kit (Kintex US)
- > NAMC-ZYNQ-FMC (Zynq 7000)

New:

- > **Struck SIS8160**



High memory throughput:



## 10 GigE Vision

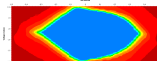


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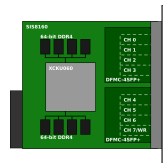
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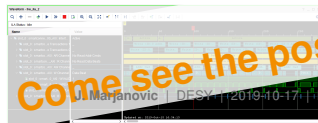
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High memory throughput:



**Come see the poster!**

