Control System for Lasers at HiLASE

EPICS Collaboration Meeting
ITER, 4. June 2019

jure.varlec@cosylab.com

Your TRUSTED Control System Partner

HiLASE Centre www.hilase.cz

COSYLAB

hilase

- Prague, Czech Republic
- Development of high-energy laser systems
- Services (Industry & Science)
- Products

HiLASE Centre

COSYLAB

- Diode-pumped Solid State Lasers

Developed in-house

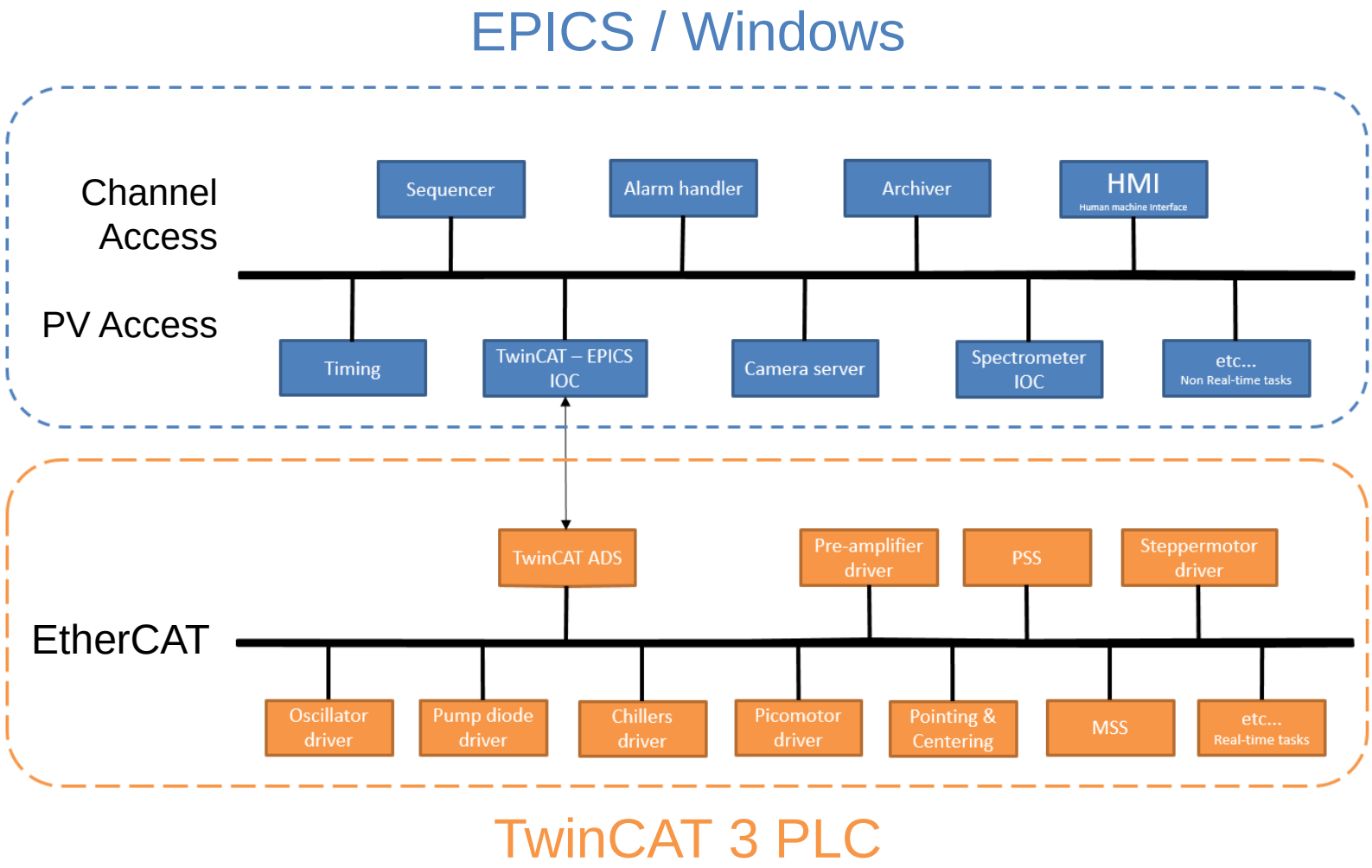
	Perla A	Perla B	Perla C	Perla D	Bivoj
Amplifier	Thin-disk	Thin-disk	Thin-disk	Thin-disk	Multislab
Pulse length	< 10 ps	1-2 ps	0.3-2 ps		2-10 ns
Rate	100 Hz	10 kHz	0.05-1 MHz	1-10 kHz	10 Hz

Focus of CS development

- Smaller devices are under development

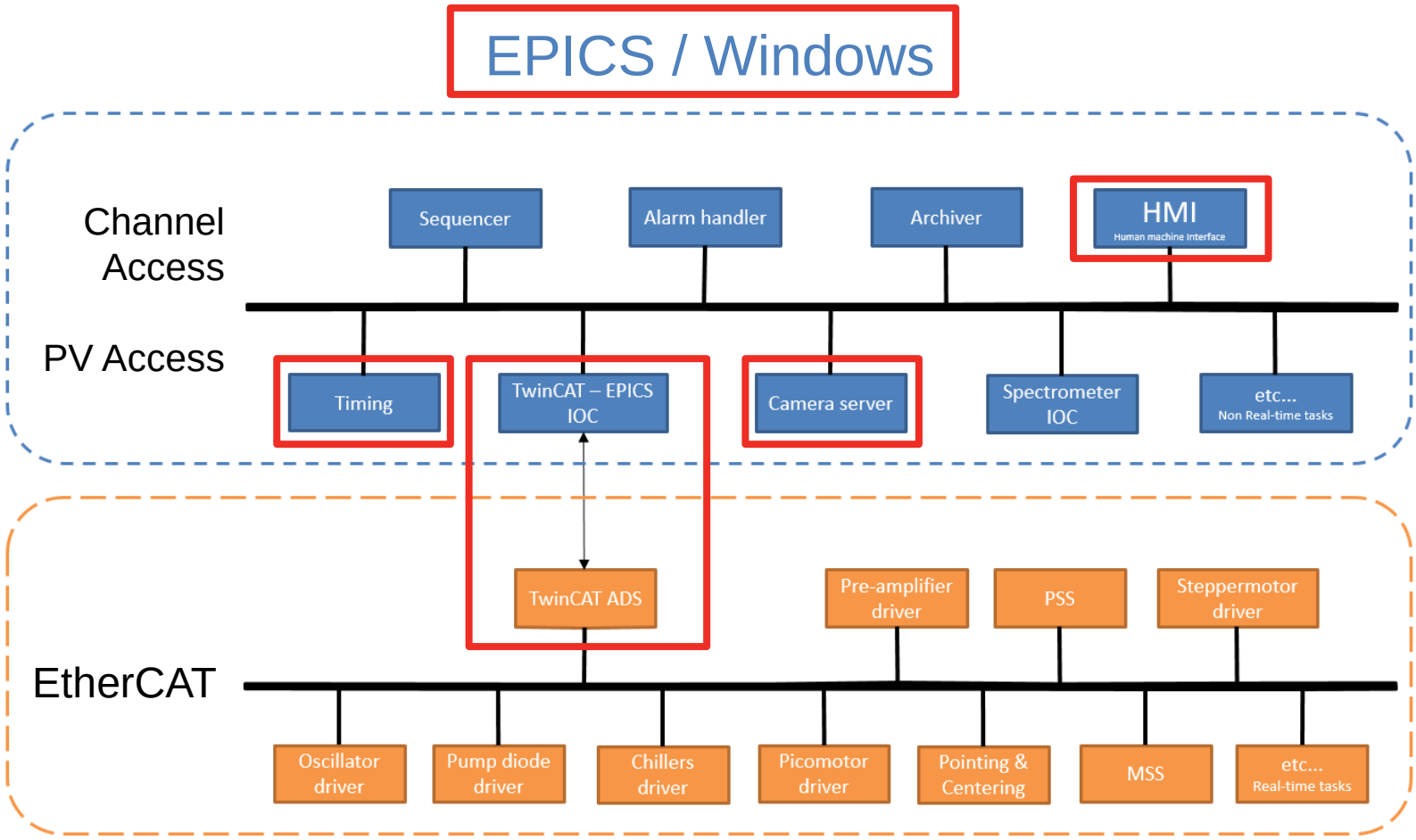
Control System Architecture

COSYLAB



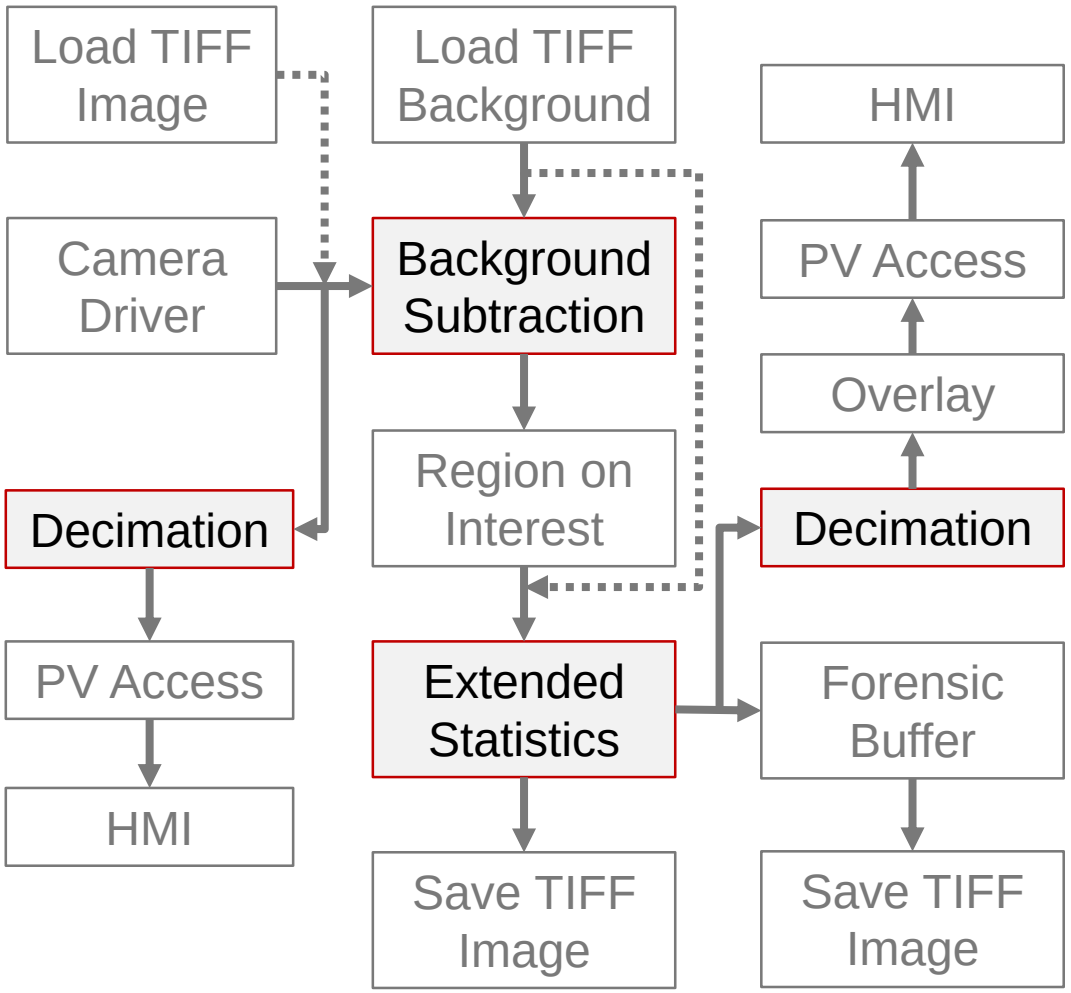
Current Status

COSYLAB



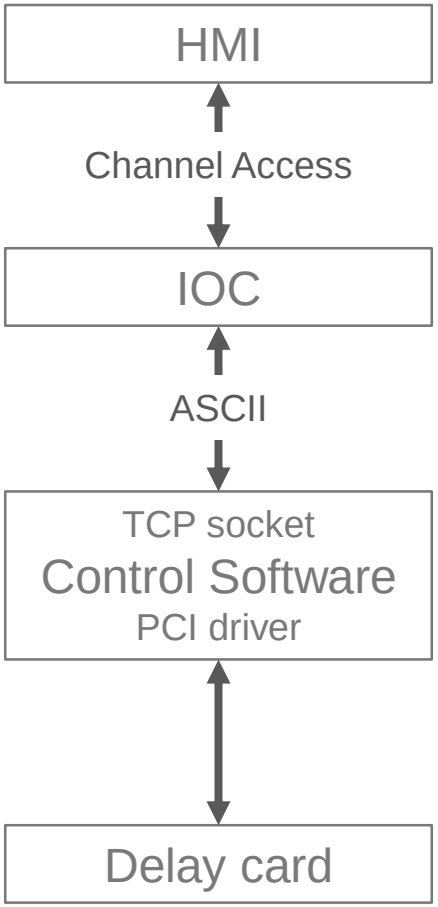
Imaging: Perla C Pipeline

- Allied Vision GigE cameras
- AreaDetector EPICS module
- Several custom plugins



Timing

- Laser source emits trigger pulses
- Delay generator PCI cards
  - Delays from 50 ns to 429 ns
  - Resolution of 25 ps
- Beckoff Industrial PC
  - Windows 10, hosts all IOCs
- Control Software: Windows app
- IOC with StreamDevice



Jakub Horáček, Martina Řeháková, Tomáš Mocek

Matic Pogačnik, Jernej Podlipnik, Robert Modic

https://ipac2019.vrws.de/papers/wepgw073.pdf

THANK YOU!

Jure Varlec
COSYLAB
www.cosylab.com