

# Helion – Highlights

**Intellectual Property (IP)**

**Engineering**

**Support by Knowledge**

# Helion – the Company

- **The Intellectual Property (IP) Company**  
Software, Hardware Modules, IONOS IP, Vesta
- **The Engineering Company**  
Project Handling, Customer Projects, Own Projects
- **The Knowledge Company**  
Skills, Staff, Partners, Workforce



# Helion – the Intellectual Property (IP) Company II

## Software

IONOS IP for raw image processing and camera designs

- Know How of more than 40 man years work

IONOS IP data base more than 100 IP cores

- quantity of signed evaluation licenses >120
- used as standard IP library for Lattice video solutions
- used by Cypress as industrial camera reference design
- supporting of all major FPGA brands

Algorithm for HDR image processing

- composing of multiple exposure images (patented)
- flexible tone mapper, HDR10, HDR10+, HLG ready

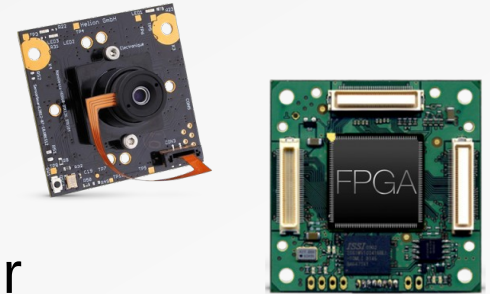


# Helion – the Intellectual Property (IP) Company III

## Hardware

### Vesta

- flexible and universal development platform
- consists of 20 boards with software abstraction layer



### Cube

- high performance camera development kit
- scalable stack of processing boards



### Reference Designs with Helion IP included

- Lattice HDR-60 (2011)
- BAE HWK1910A (2015)
- Arrow DecaBoard Vesta (2016)
- Lattice ECP5 EVDK Kit (2017)
- Cypress Industrial Camera Kit (2018)



# Helion – the Engineering Company

## Project Handling

Integrated project management system to track all projects  
(from sales via project kick-off to final delivery)

More than 350 projects handled so far

- 266 customer projects and 84 projects for own research

10-20 development projects per year

Range of project sizes

- from workshop (8 hours) to full development (>8000 hours)

Projects types

- Automotive, Industrial, Medical, Security, Surveillance

Typical camera project size

- 600 ... 1500 hours



# Helion – the Knowledge Company I

## Skills of Development team

- Tool assisted project management
- PCB designs (analog, digital)
- FPGA designs (Altera/Intel, Lattice, Xilinx, Microsemi)
- DSP designs (i.MX6, PowerPC, Blackfin, Davinci, nVidia)
- Workshops and expert seminars (for FPGAs and image sensors)
- Image processing (linear and HDR)
- Linear HDR image processing for automotive requirements
- Low latency ISP designs (Image signal processing for image sensors)
- High speed interface designs
- Sensor expertise (CCD, CMOS, 2D, 3D and ToF)
- Training of FAEs for sensor/FPGA/distributors

# Helion – the Knowledge Company II

## **Staff members**

- 2 Administration and Sales
- 10 Technical (Bachelor, Master, PhD)
- 2 Students (Bachelor → Master)

## **Long term external partners**

- PCB designs
- High Speed Interfaces
- DSP designs
- Specific IP (image compression, feature detection)
- Sales and Marketing
- Optical design
- Test equipment and lab
- Research Institutes
- Universities with applied science, engineering and photography

# Helion – the Knowledge Company III

## **In-house workforce for custom developments**

- More than 8000 hours per year

## **Sensor companies with direct contact to engineering group**

- BAE Systems (Fairchild Imaging)
- CMOSIS
- Espros
- Melexis
- OmniVision (OVT)
- OnSemi/Aptina
- Sony
- ST

## **Automotive designs with**

- Aptina
- BAE Systems (Fairchild Imaging)
- OmniVision (OVT)
- Sony



# Thank you!

## How to find us

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