

## : EtherCAT at SICK

Corey McAtee (Safety Systems Product Manager)

Founded in 1946 - **more than 60 years of sensing technology**

About **5,000 employees** around the world

Present in **88 countries**:

**Widest product and technology range** in the sensor industry

**Innovation leader** in sensing technology

**SICK** - one of the leading manufacturers of sensors and sensor solutions for industrial applications worldwide



# Wide product range + experience + expertise = efficient solutions for you



Industrial Sensors



Encoder

EtherCAT<sup>®</sup>  
Technology Group



Identification solutions



Opto-electronic protective devices



Measuring and detection solutions



Safety switches



Fluid sensors

EtherCAT<sup>®</sup>  
Technology Group



Safe control solutions



System solutions



Registration sensors



Analysis and gas flow measurement



Distance sensors



Motor feedback-systems



Automation light grids



Vision



Software



The first product on EtherCAT was our Flexi Soft Safety Controller

Customer was looking for

- One network for all automation components
- High diagnostic availability
- Ease of use

To meet the customer demands we allow the Flexi Soft controller

- To be configured over the EtherCAT network using EOE functionality removing the need for special cables or software
- To share all diagnostic messages VIA either cyclic or service channel on EtherCAT
- To quickly connect up to there EtherCAT I/O and Motion network to achieve the all-in-one approach

Currently we have a project where CanOpen was traditionally preferred network

## With CANOPEN

- 64 node Limit
- Cable lengths based on topology
- BUS Speed based on topology and cable length
- Redundancy required hardware changes

With EtherCAT they were able to remove all issues and reduce development time.

- 65,535 nodes
- 100 Meter cable lengths with standard 100baseT up to 25 Km with Fiber
- Bus speeds in  $\mu$ s
- Implement Redundancy from Master not Slave
- Hot connect – Allowed customer to configure system as they expanded

Open source master EtherLab® was used with Linux

- Choices for Master were abundant

Using the EtherCAT Evaluation Kit

- Quick and easy prototyping

Used I/O onboard of ASIC (32 configurable I/O points on ASIC)

- No microprocessor or programming of slave device required
- Just configure IO via XML file

ASIC Documentation

- Documentation contains everything down to Bill of Materials allowing us to quickly quote our slave device costs.

All of this functionality and ease of use allowed our development team to bid the project with a quick development time and keep overall costs down.

: Thank you for your attention.

