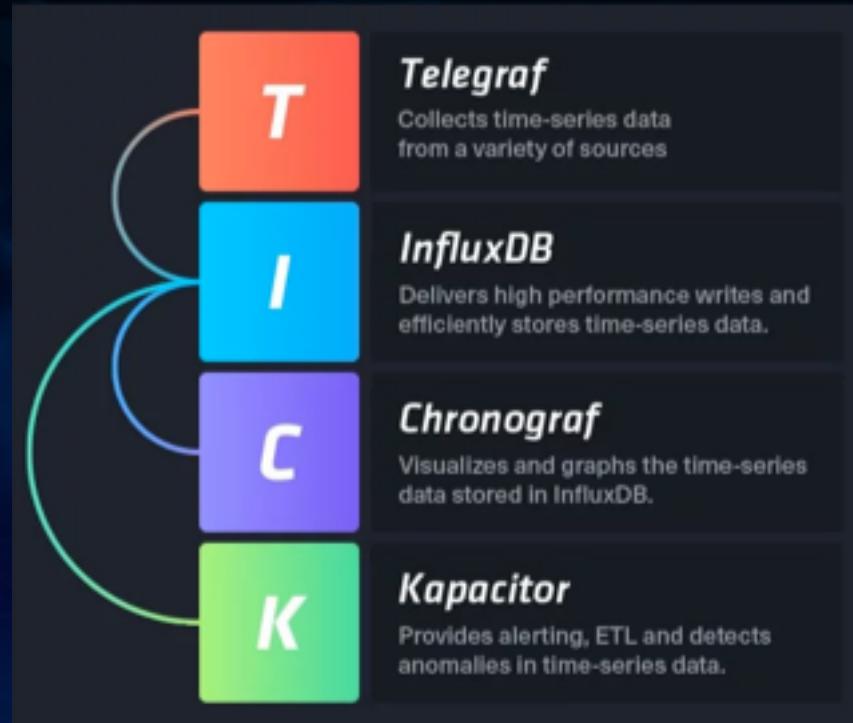




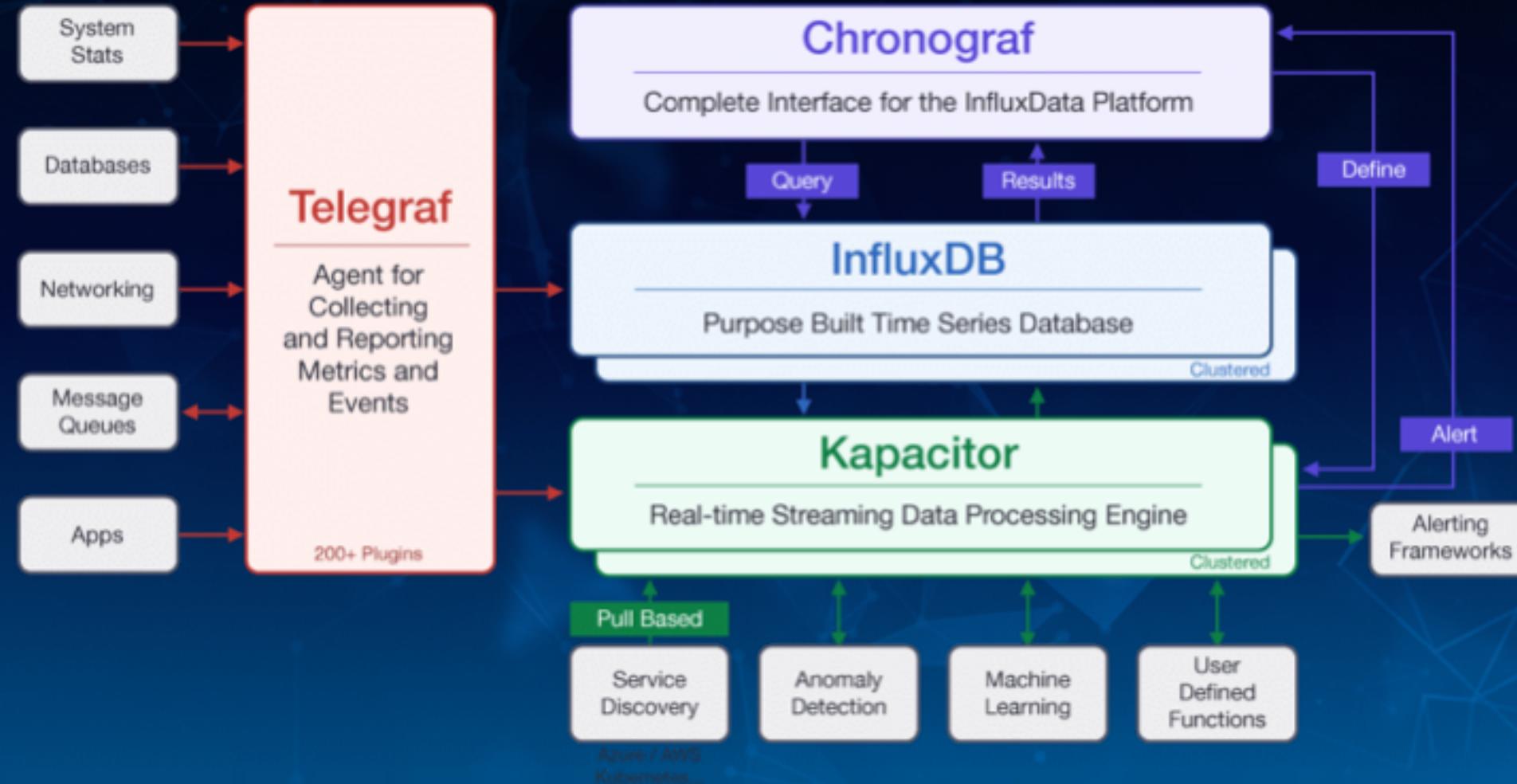
# SMART MANUFACTURING REVOLUTION: INDUSTRIAL EDGE INSIGHTS PLATFORM

# PLATFORM OVERVIEW

- Data Ingestion and Analytics Framework
- Containerized
- Modular
- General Purpose
- Scalable



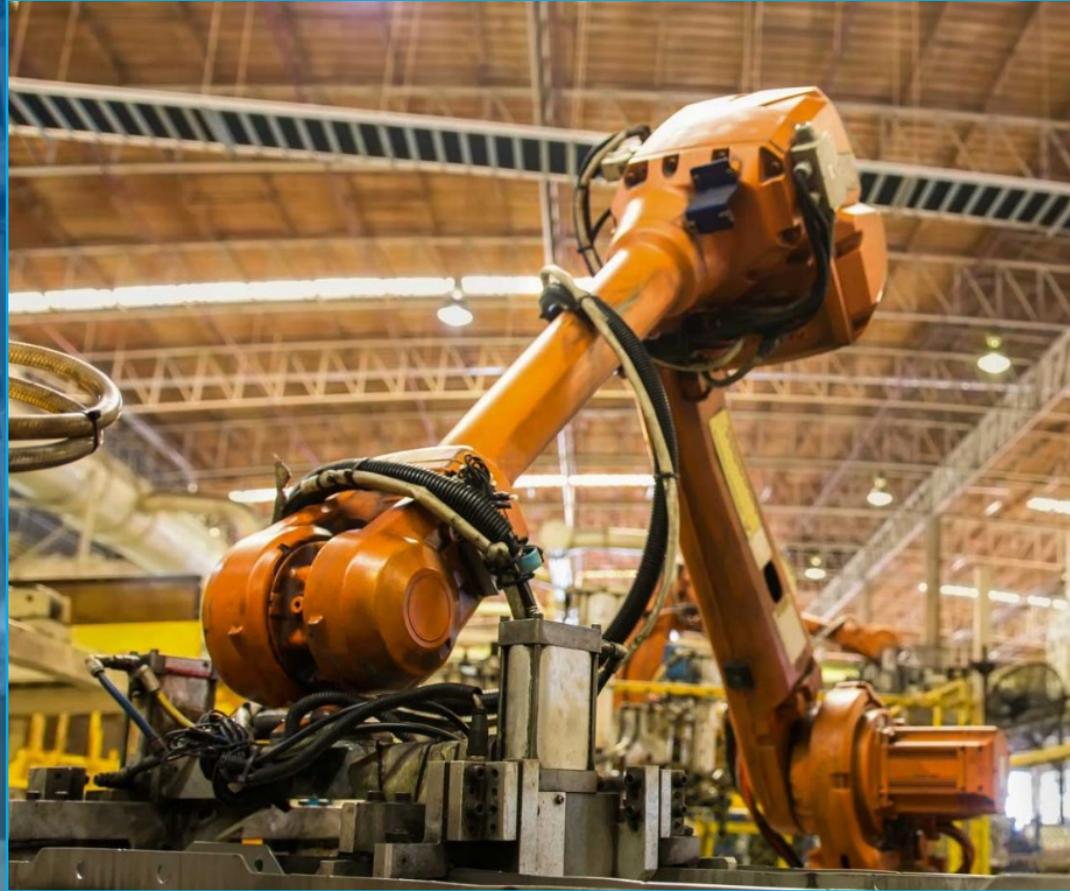
# TICK STACK





# USE CASES

# USE CASE 1: PRODUCT DEFECT DETECTION



## Customer RFP Objectives

- **Detect product quality issues immediately – at the machine!**
- **Reduce labor cost**
- **Increase machine productivity**
- **Eliminate production losses**
- **Reduce customer returns**

# USE CASE 2: PREDICTIVE MAINTENANCE



## Customer RFP Objectives

- **Identify tool issues immediately and trend over time**
- **Increase machine productivity**
- **Eliminate production losses due to unplanned downtime**
- **Reduce maintenance costs**

# USE CASE 3: MANUFACTURING PRODUCTIVITY



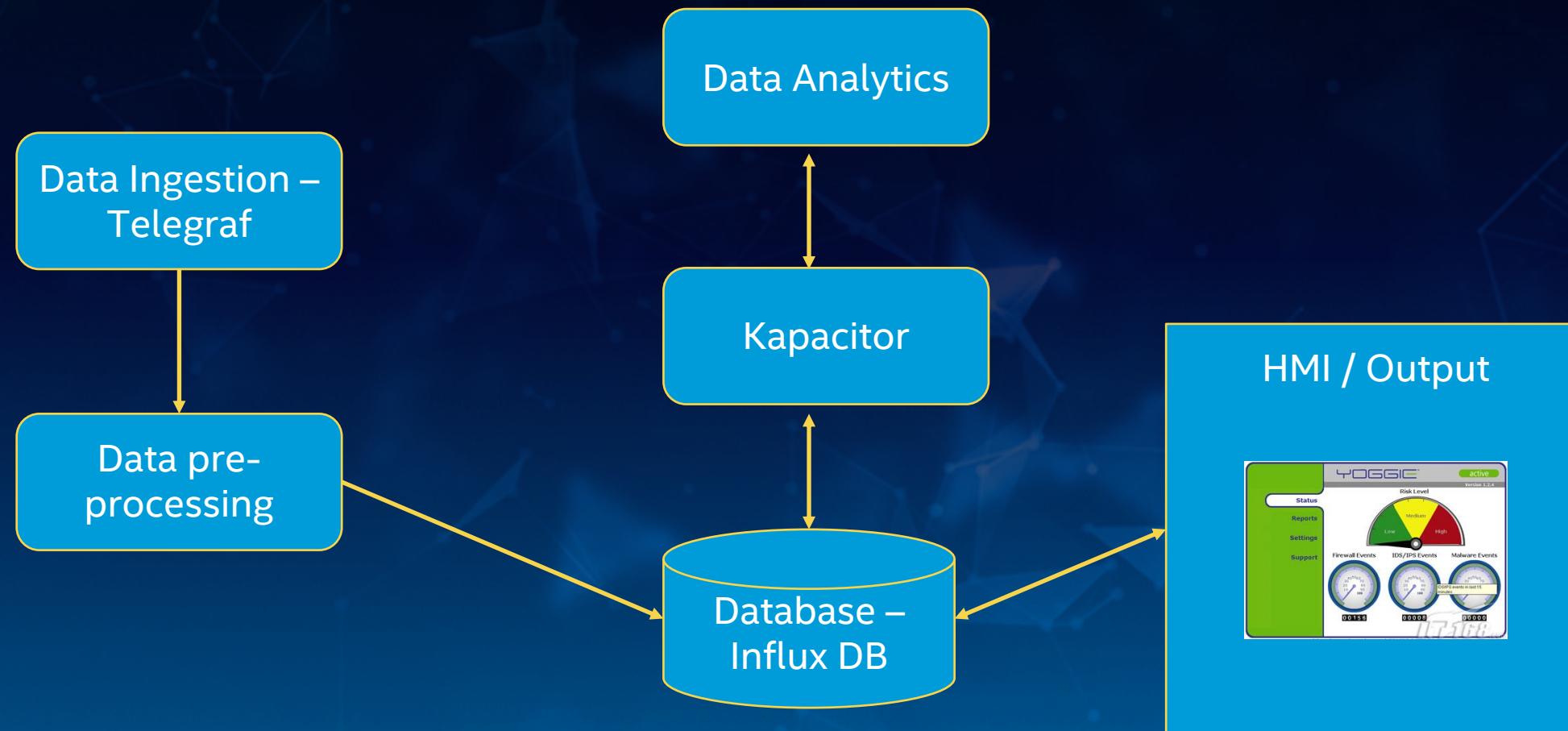
## Customer RFP Objectives

- **Monitor and improve factory production efficiency**
- **Increase factory productivity**
- **Monitor worker safety**
- **Monitor and identify production line constraints**



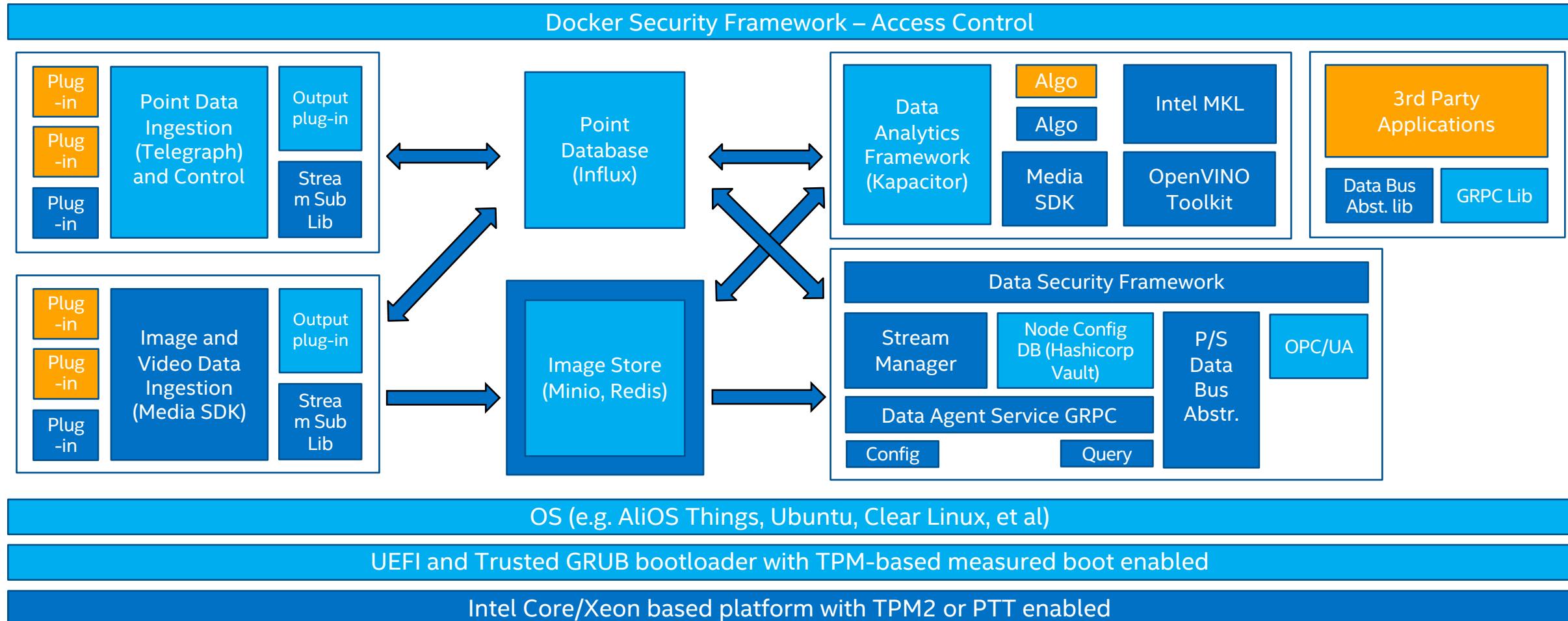
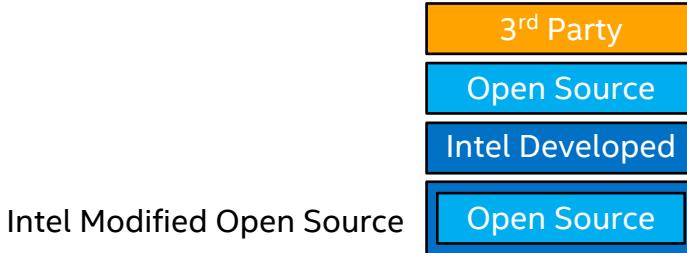
# ARCHITECTURE

# HIGH-LEVEL ARCHITECTURE



# INDUSTRIAL EDGE INSIGHTS SOFTWARE

## IPC/EDGE COMPUTE NODE SW STACK (V1.0)

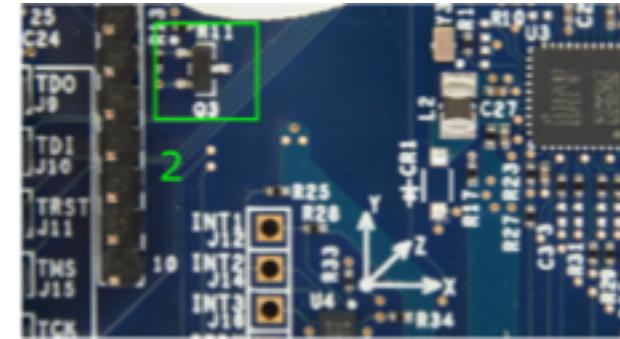
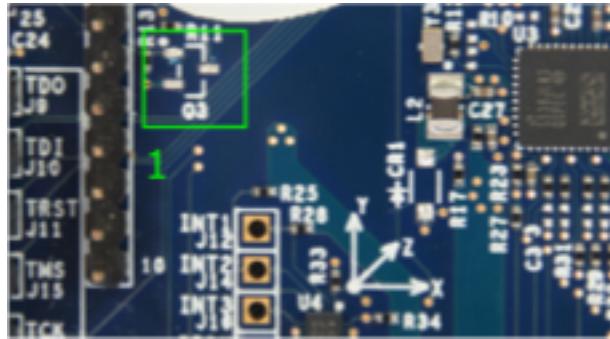




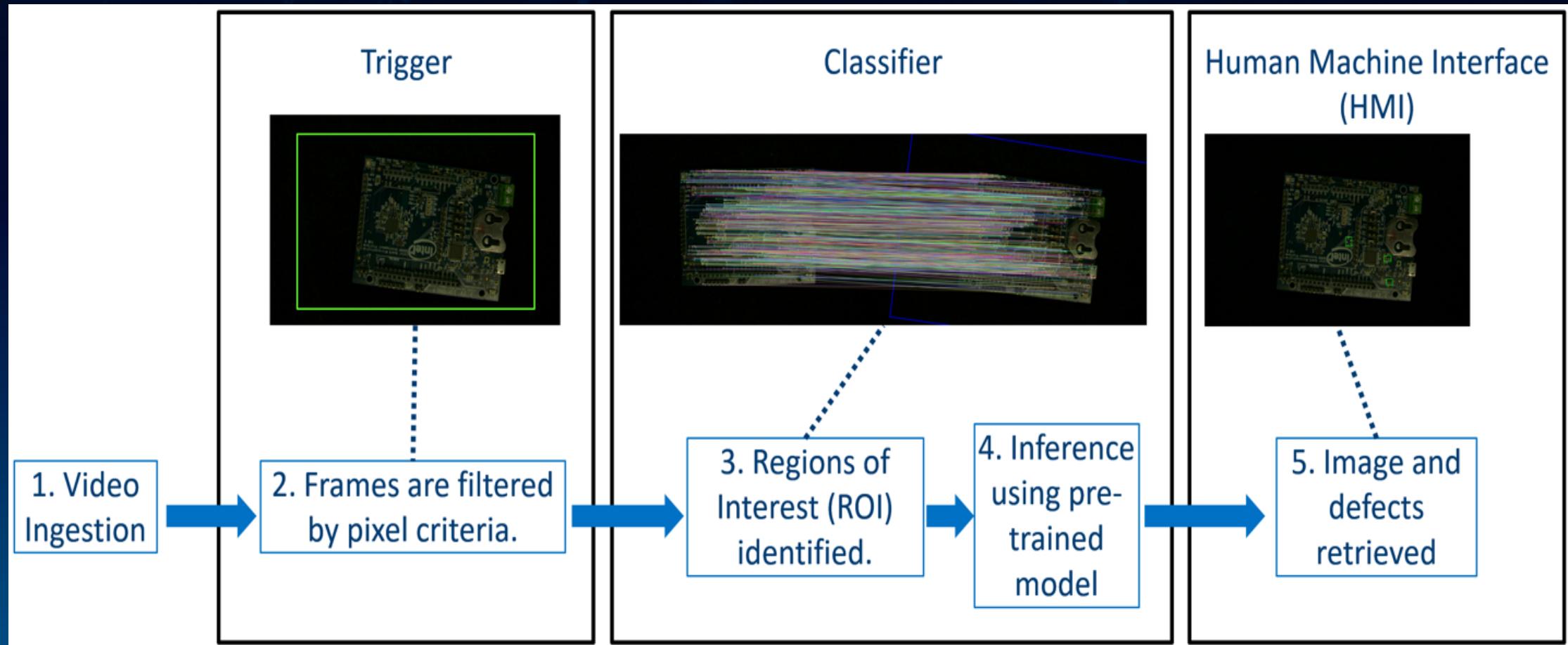
# EXAMPLE

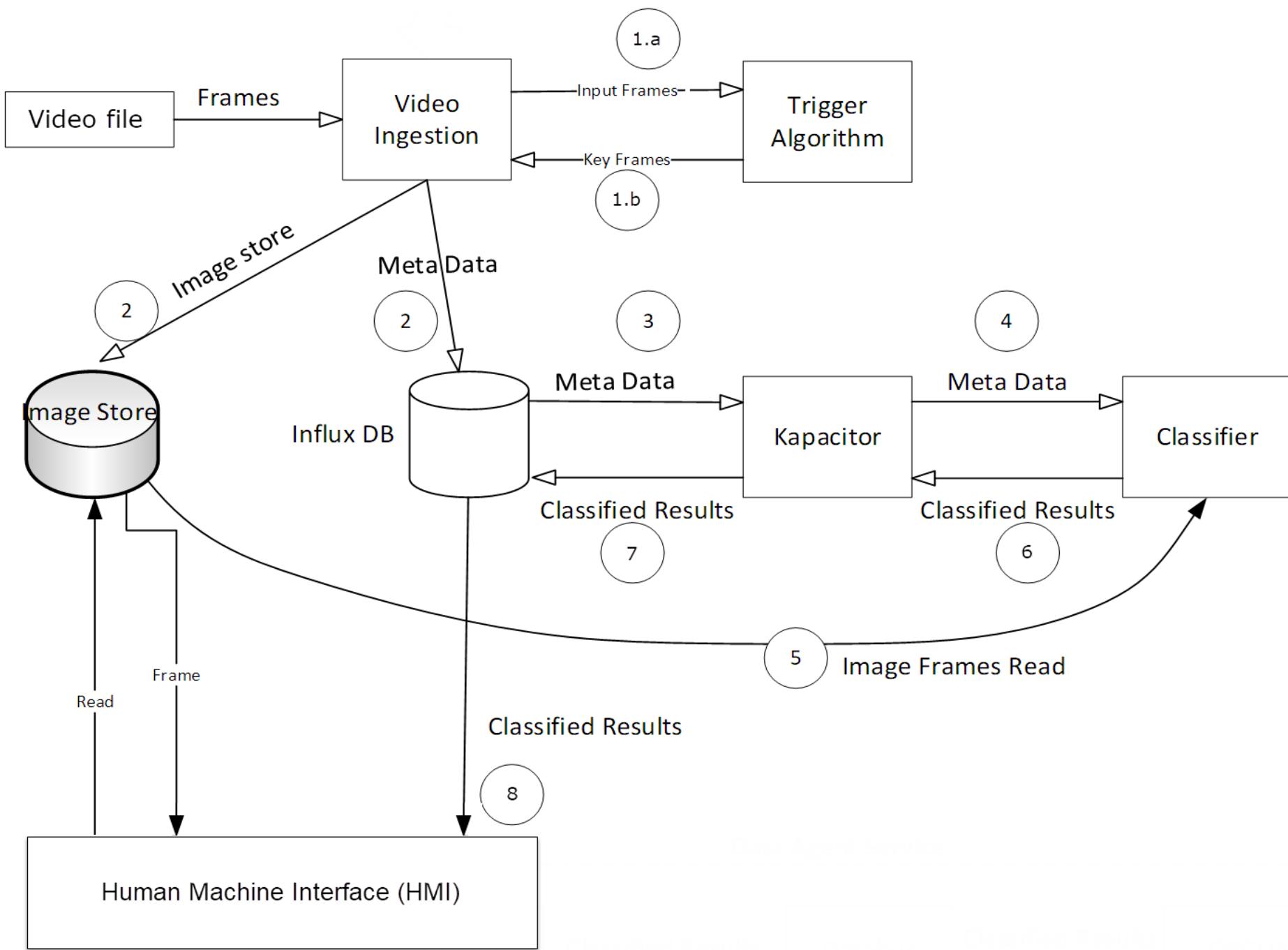
# FAULT DETECTION

- PCB Component Inspection
  - Computer Vision
  - Image DB
  - Meta-Data DB
  - HMI Output



# FAULT DETECTION WORKFLOW



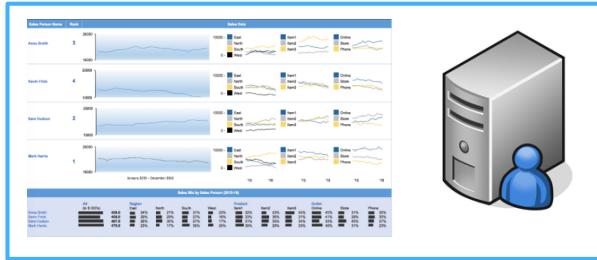




# VALUE PROP & CALL TO ACTION

# Intel HW deployment proposal

Local Dashboard/HMI



Basic Gateway (JWIPC)

3rd Party MES/WMS Agents  
NVR function  
Intel HAL/PAL/Data/Msg Bus



Factory Milling Machine

Scalable Edge Server (Inspur)

OPENVINO

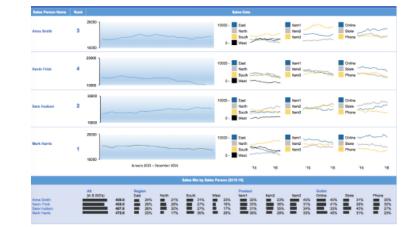
Cloud service

3rd Party MES/WMS Systems  
Intel HAL/PAL/Data/Msg Bus

Clear Linux



Cloud-Based Dashboard and App Store



Edge Compute Node (JWIPC)

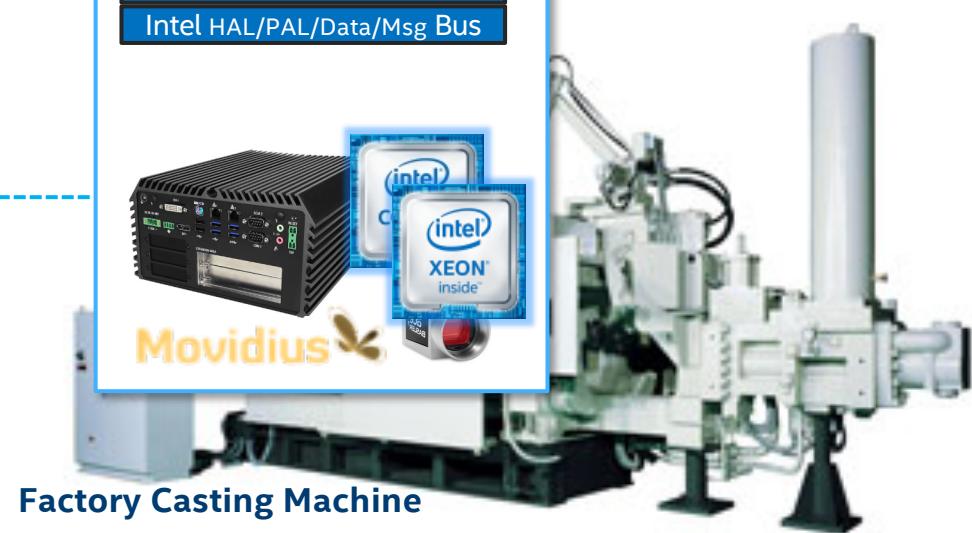
Intel Algorithms

OPENVINO

3rd Party MES/WMS Agents  
NVR function  
Intel HAL/PAL/Data/Msg Bus



Movidius

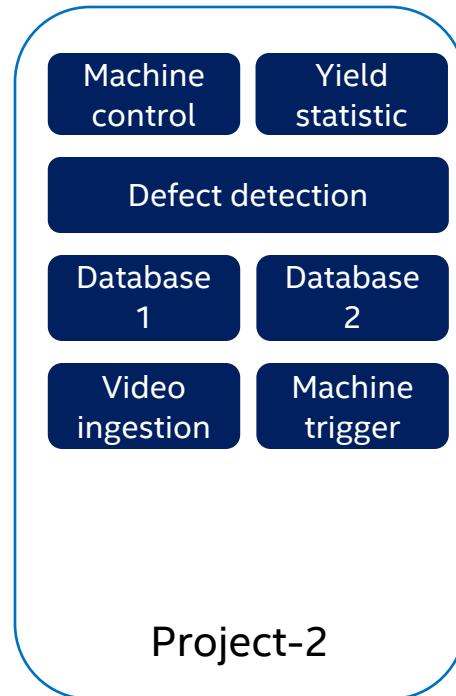
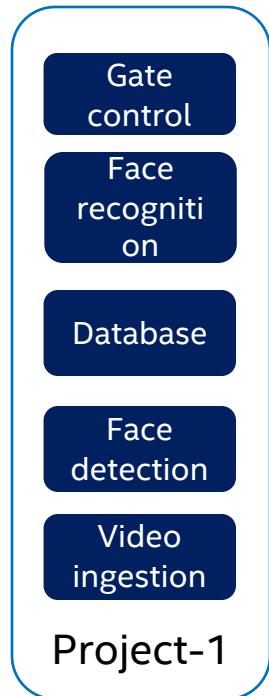


Factory Casting Machine

Notes: All HW is Commercially Available, Intel HAL/PAL/Data/Msg Bus is Open Source and Intel Owned POC Code, Machine Data Intercept Q3'18, LinkEdge Intercept Q3'18, Movidius Camera Intercept Q4'18

# Value Proposition – Industrial Edge Insight Platform

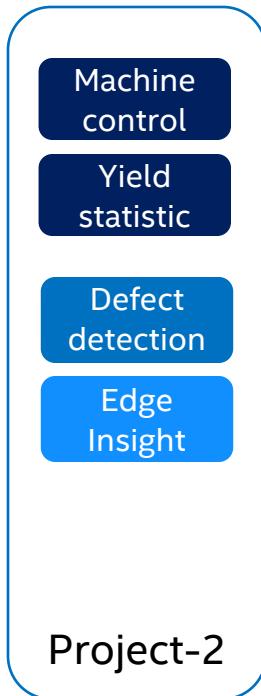
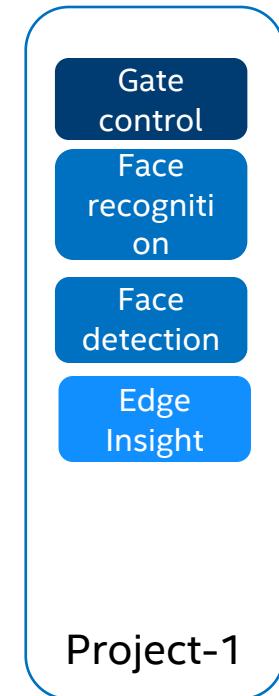
## Development flow before



### Cons:

- Architecture difficult to share & inherit
- Re-design the architecture for each project
- Research the 3<sup>rd</sup> party or open source code before they are adopted
- Develop the whole software stack
- Most of the software development work is used only once

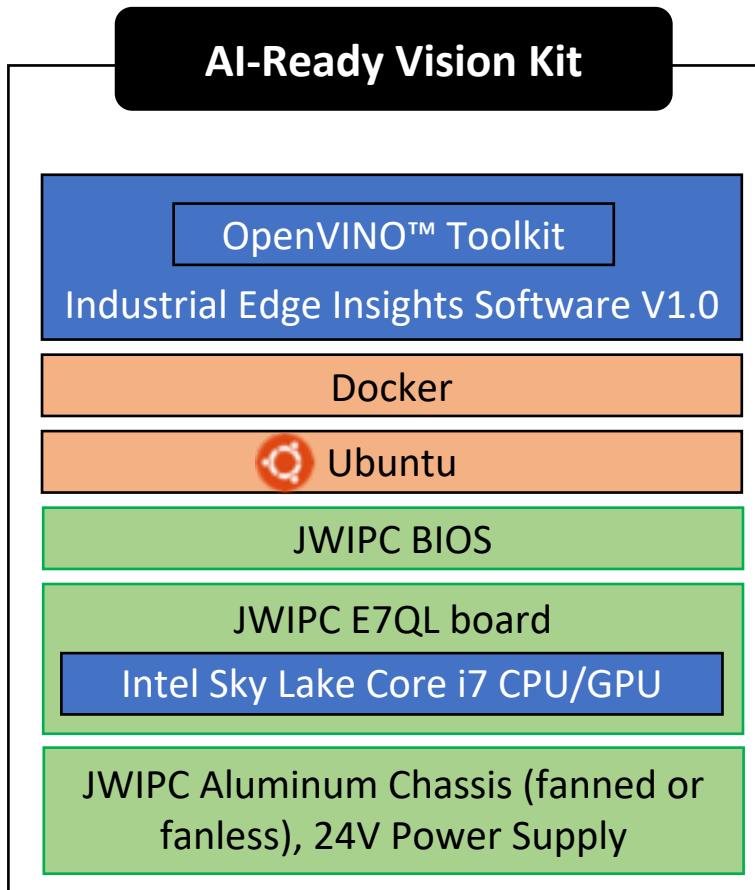
## Development flow based on Industrial Edge Insight



### Pros:

- Architecture shareable & inheritable
- Customer focus on application development
- Intel reference algorithm help save development workload and time

# JWIPC RRK: “AI-READY VISION KIT FOR SMART MANUFACTURING”



Ubuntu\* Linux, Embedded Linux\*, Wind River\* Linux\*, Yocto\* Project are not licensed copy rights by Intel and are owned by external 3<sup>rd</sup> party  
UEFI: Unified Extensible Firmware Interface

Price - \$1400USD

Product Overview Page: [jwipc.com<tbd>](http://jwipc.com/tbd)

Intel® Developer Zone for IoT: [Software.intel.com/<tbd>](http://Software.intel.com/<tbd>)

Where to buy: [jwipc.com<tbd>](http://jwipc.com/tbd)

JWIPC E7 Industrial Gateway Specifications	
<b>Processor</b>	
Processor family	Intel® Core i7
Codename	Sky Lake
Processor model	6700T
Processor frequency	2.8 GHz
Processor boost frequency	3.6 GHz
Processor cores	4
<b>Memory</b>	
Internal memory	16 GB + 256G SSD + 1T HDisk
eMMC	Not included
<b>Ports and Interfaces</b>	
USB	6
RS232	6
HDMI	No
SATA	Yes
Mini PCIe*	Yes
M.2	Yes
GPIO	8pins (4xDI,4xDO)
<b>Graphics</b>	
On-board graphics	Intel® HD Graphics 505, 18EU