Solving critical production & safety challenges to drive unexpected growth

Manufacturers & AI

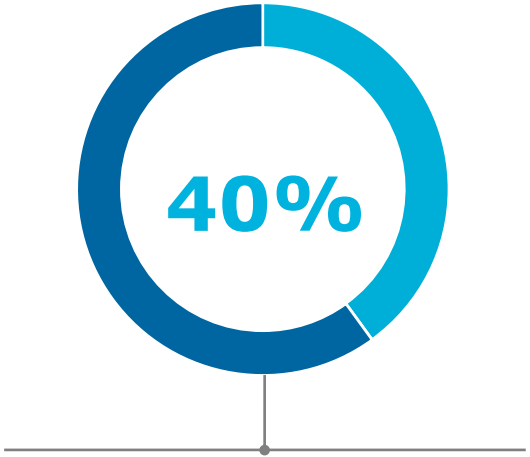
Combining human experience, insight, and AI techniques, manufacturers are discovering new ways to differentiate themselves while driving down costs, protecting employees and increasing margins.

Over the last 5 years, manufacturers drove massive data collection, major progress were made on the production line, however drivers of productivity (quality, time, automation, etc.) is still scarce.

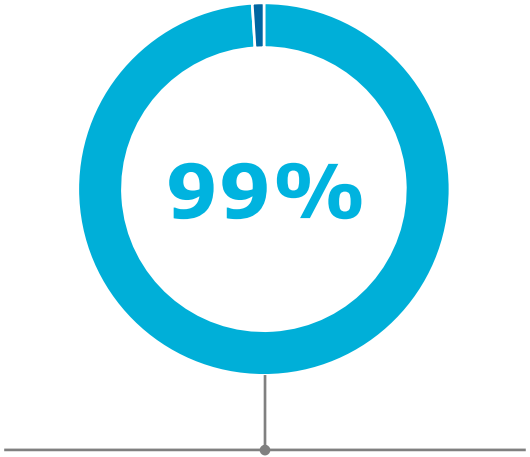
95% of collected data is still waiting for appropriate treatment to generate valuable AI-originated insights. According to analysts, less than 30% of industrials actually have an AI development plan for their factory, despite over 85% of them believing they need to implement AI on their production processes.

> **Most IoT data are not used currently [...] The data that are used today are mostly for anomaly detection and control, not optimization and prediction, which provide the greatest value.**
>
> McKinsey

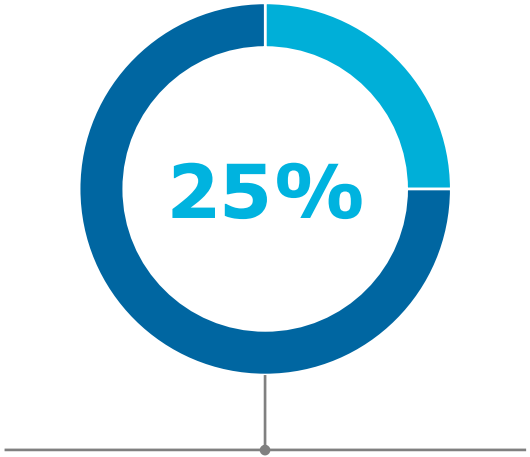
3 Key figures in the manufacturing industry



By 2035, AI-powered technologies could increase labor productivity by up to 40% in manufacturing. (Accenture and Frontier Economics)



By 2022, 99% of video/ image content captured for enterprise purposes will be analyzed by machines rather than humans. (Deloitte)



of CEOs of large companies consider artificial intelligence as a key technology

Investing in **AI Recognition** can help achieve these goals

How can Atos and SafR help?

Worker safety

Challenges

There are about 100 deaths per month on the job in 2019 in the USA, which has a direct impact on the company's reputation, attractiveness, but moreover on employee's safety feeling & productivity. It's a high priority for manufacturers to ensure safety at all stages. The key is to ensure compliance with safety standards to prevent workplace accidents

Objectives

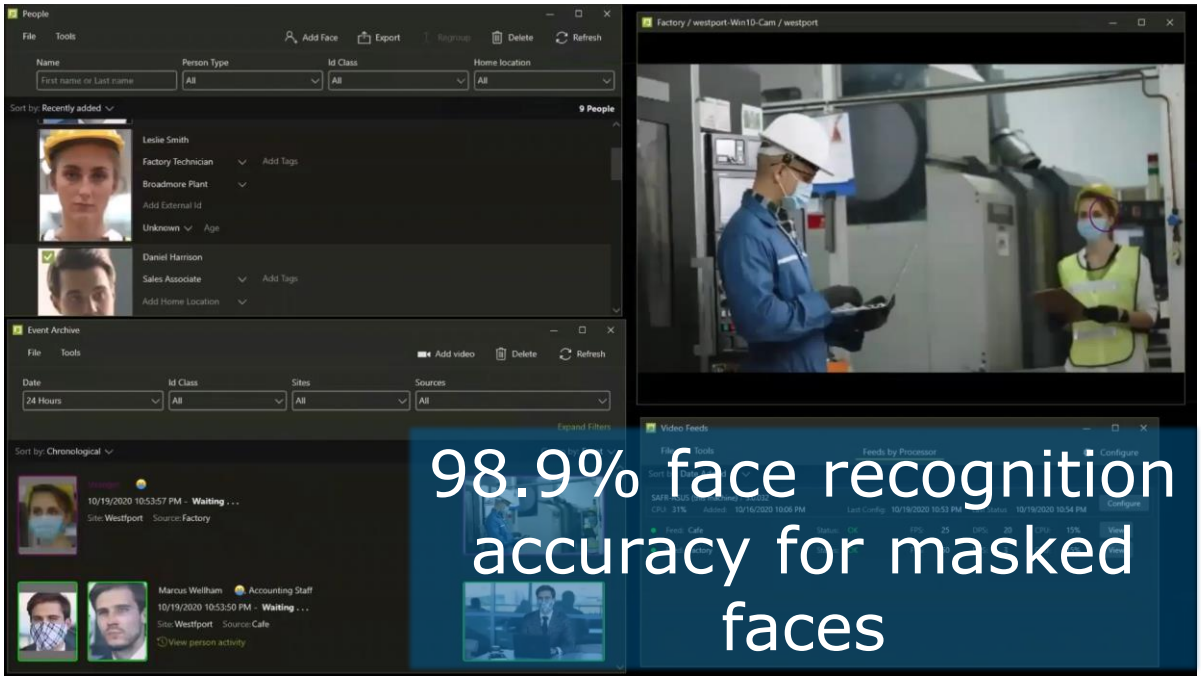
- Improve compliancy to safety standards
- Foster employees to respect security measures
- Decrease Monthly Health and Safety Prevention Costs

Solutions

A set of cameras is connected to BullSequana Edge servers, in case of a detection of a worker is not wearing his/her personal protective equipment (PPE) like ear plugs, helmet, gloves.. the server analyzes this information in real time and triggers an alert to production site managers. It can also detect:

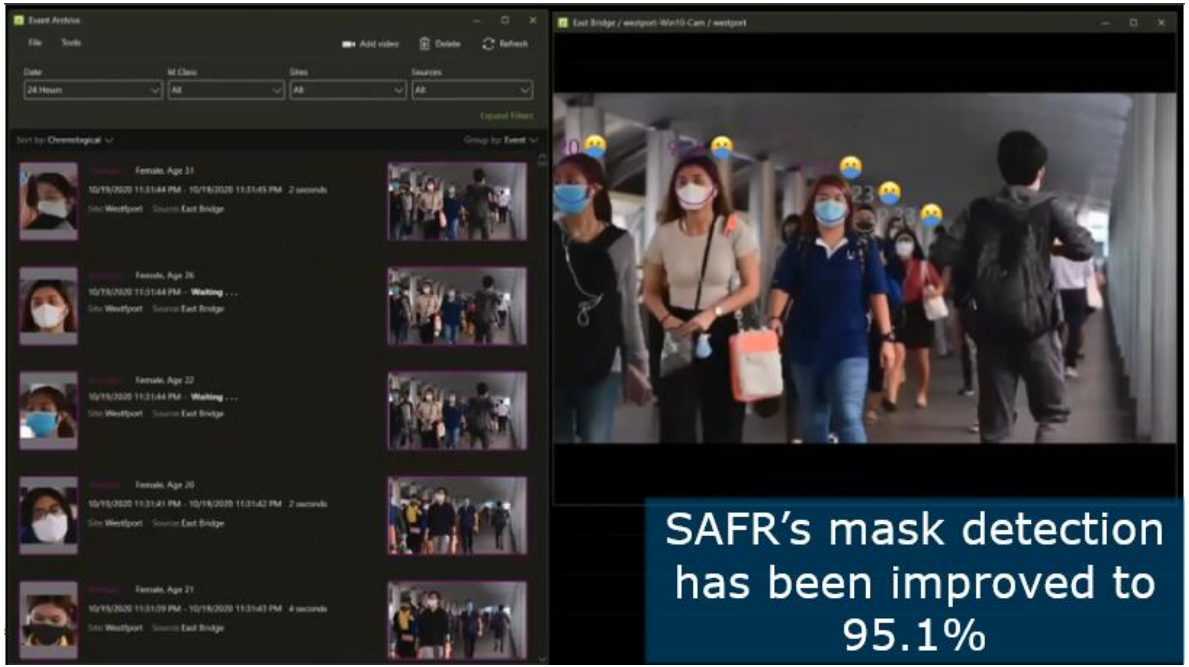
- If workers are in a hazardous and life-threatening situation
- Environmental risks or hazards at the right time
- Real-time abnormal situation (People on the ground..)
- Dangerous driving situations with forklifts, trucks…

Improved Face Recognition for Masked Faces



Contact us to get access to the demo

Mask Detection Improvements



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Manufacturing & Logistics

Challenges

- In US there are 100.000 forklift accidents every year
- 85 deaths every year caused by forklifts
- About 35k serious / 62k non-serious injuries every year
- Accidents are results of distracted or unauthorized operators

Objectives

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Solutions

A set of cameras is connected to BullSequana Edge servers, in case of a detection of a worker is not wearing his/her personal protective equipment (PPE) like ear plugs, helmet, gloves.. SafR AI algorithms analyzes this information in real time thanks to BullSequana Edge high inference capabilities. The system triggers an alert to production site managers. It can also detect:

- If workers are in a hazardous and life-threatening situation
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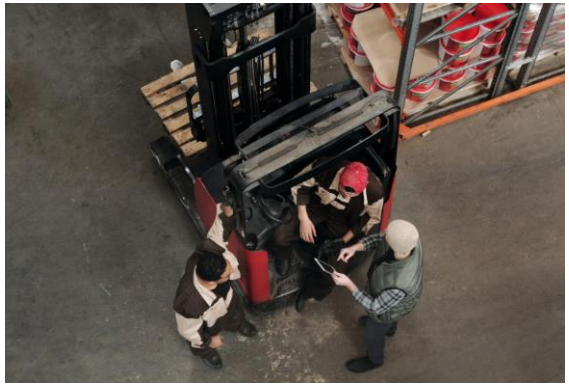
Use cases

Forklift Driver Authentication



- Solution to provide touchless, secure credentialing of employees to access forklift
- Based on Face Recognition
- Offers an increased safety

Truck Driver Authentication

- Solution to provide touchless, secure credentialing of employees
- Based on face Recognition
- Offers an increased Security

Employee Authentication

- Solution to provide fast & easy time & attendance check up
- Based on face Recognition
- Increased Efficiency

Use cases

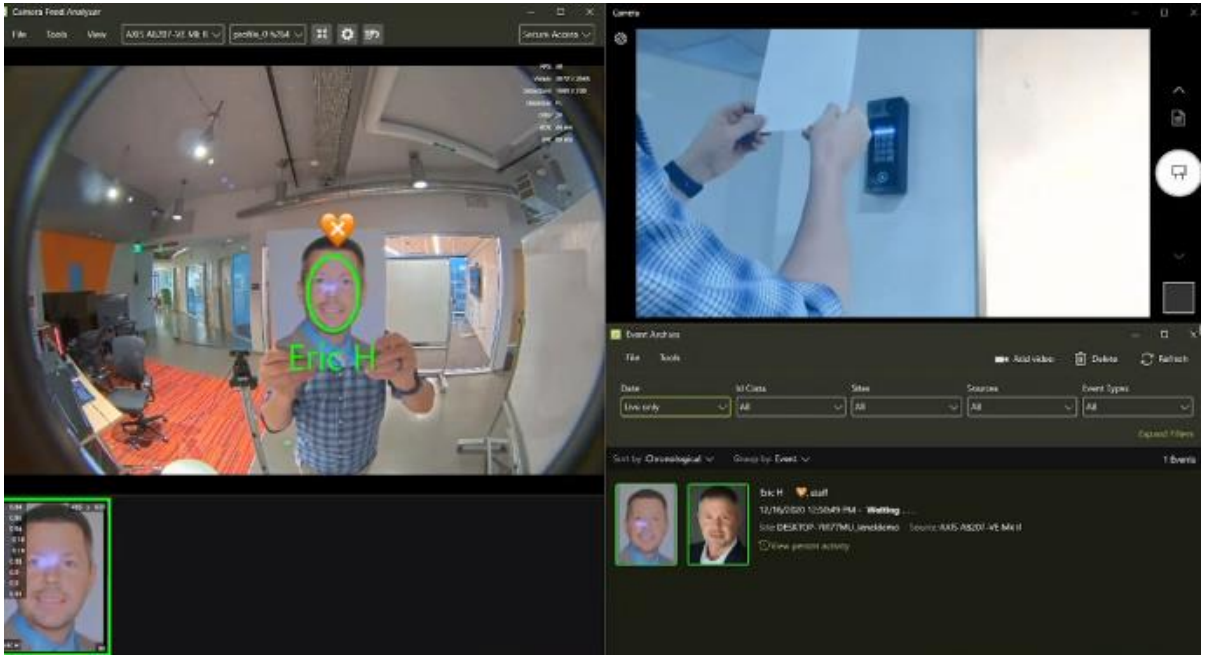
Face-based Touchless Access Control & Authorization

Challenge: physical authentication methods can be lost, misused, or stolen

Solution: deploy SAFR to enable secure and frictionless entry. Boost security and enhance user experience with contactless, fast, and auditable face-based authentication and real-time alerts of unauthorized entry attempts

- **Liveness detection & real-time spoofing alerts**
- **Easily integrated with existing access control platforms**
- **Improved visibility into tailgating attempts**
- **98.85% accurate recognition for masked faces**
- **Support for ID verification to prevent unauthorized use of ID cards**

Passive Liveness Detection



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The SAFR advantage

SAFR is the best facial recognition system for live video surveillance

Tested by **National Institute of Standard and Technology (NIST)** and **Department of Homeland Security (DHS)**, SAFR's speed, accuracy, and low-bias have been proven in independent testing, a myriad of commercial deployments, and with first two successful Small Business Innovation Center (SBIR) contracts from the **United States Air Force (USAF)**

Accurate
99.87% LFW recognition accuracy, 98.85% for masked faces

Fast
<100 ms recognition speeds

Secure
Built for privacy with AES-256 encryption and offline deployment options

Unbiased
Least biased, globally available recognition algorithm

US Company
Headquartered in Seattle, with a global network of sales and support

The Atos advantage

High inference and streaming capabilities

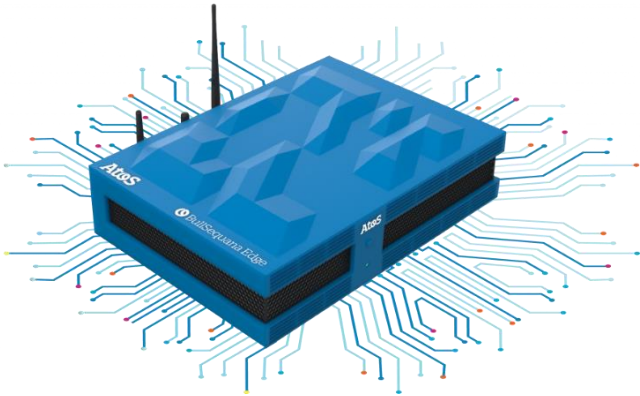
Video analysis in real-time thanks to powerful AI inference. The server is equipped of 2 Nvidia Tesla 4 GPUs and a powerful 16 core Intel® Xeon® D processor for fast analysis.

Key features

It features extended temperature from 0° to 48°, shocks and vibration, while keeping its performance. No dependence on cloud and datacenter availability and connectivity, ensures that apps are not disrupted in case of limited or intermittent network connectivity from undergrounds to offshore platforms. BullSequana Edge can communicate via radio, 4G, LTE or Wi-Fi and can thus be be fully independent from wired networks.

End to end offering from consulting to support and management services

This end-to-end service enables, maintains Edge devices and provides secure access locally on both human and machine-interface level. Atos makes sure that functionality and secure connectivity are up-to-date by automatic monitoring of edge devices and identifying unusual events in real time.



BullSequana Edge server

Server class CPU optimized for the Edge 16 very powerful CPU cores / 32 threads
Optimized for real time video streaming

Install anywhere

- Does not need a Datacenter
- Can operate in airports, shop/factory floors, …ETSI EN 300 019 class 3.2 specs slightly relaxed +5°

+45°C

Edge optimized security

- Intrusion detection
- Secure Firmware update
- Secure boot TPM 2.0 FIPS 140-2

Flexible Radio and NIC networking options

- Cabling independent
- Up to 2 Radios 4G, Wifi, Lora
  1 to 10 Gbps built-in, extensible to 100Gbps

Discover the video of the world's highest performing Edge Computing server. **Link**

Outstanding AI acceleration capabilities

- Up to 2 Nvidia
- T4 GPUs Up to
  2 FPGAs
  Powerful AI model inference for Video analytics

BullSequana Edge is multi platform certified

Microsoft Azure IoT

VMware

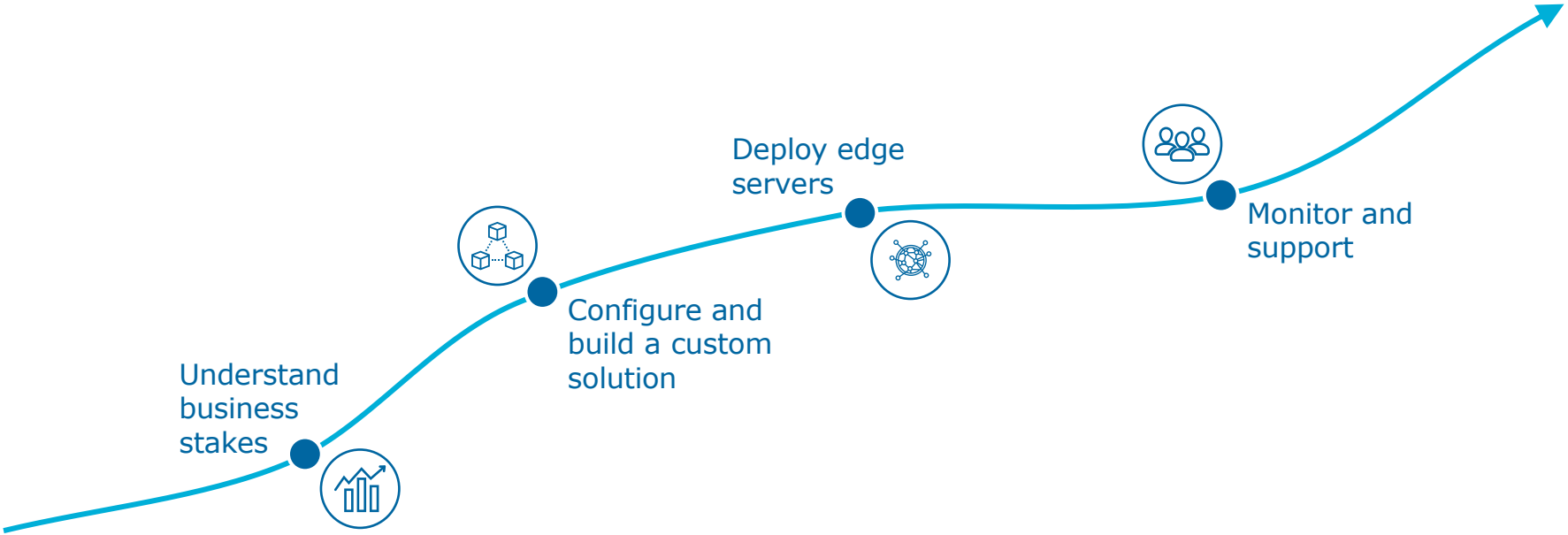
Nvidia NGC

RHEL

Atos delivers end-to-end edge computing approach

We take into account your existing and your priorities, to go from idea to realization.

The Atos approach combines business and technology expertise and accelerates the passage from idea to implementation.



Thank you

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