Computer Vision Platform

Rail

Solving business critical challenges to provide
a safer and smarter travel experience

Atos

Key challenges

Ensuring passengers have a safe & smooth journey

React in real-time to incidents

Maintaining a safe, yet unobtrusive security protocol

Providing a irst- class frictionless experience to traveller's

Maintain security operations throughout the passengers journey

Proactively manage crowds and queues

Support and analyze multiple video streams simultaneously

Providing real time alerts on stocks and instore analytics

Overcome poor network and bandwidth saturation

Capabilities for solving these challenges

Atos Computer Vision Platform provides:

Real time video analytics to support business analysis

Understand passenger flow, behaviours and site usage to increase revenue. Detect demand trends to forecast purchases and detect hot areas.

Secure and frictionless travel journey

Reduced queues and bottlenecks through Automatic identity checkpoints based on facial recognition and passport scanning.
Detect abnormal behaviours using AI and Scenario based rules.

Enhanced security

Real time video surveillance to detect abnormal behavior and prevent threats.
Automatic alerts enabing staff to be retasked, such as to security gates when queue lengths are increasing. Dynamic reporting covering oeprational parameters. GDPR compliant solutions.

End to end offering from consulting to support & management services

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.

High inference & streaming capabilities at the edge

Atos Computer Vision Platform is powered by BullSequana Edge nano, BullSequana Edge or BullSequana SA20G servers.
All three servers are equipped with powerful Nvidia GPUs for real time computer vision analysis.

Ipsotek VISuite

Ipsotek is a pioneer in the field of artificial intelligence video analytics solutions for mission critical applications. Ipsotek's easily configurable solutions make video searchable, actionable and quantifiable, providing crucial operational insights resulting in reduced operator response times and the ability to define behaviors as they unfold in real-time in dynamic and complex environments. Use cases include crowd management, face recognition, intrusion detection, perimeter protection, number plate recognition, traffic management and COVID-19.

Ipsotek is an Atos company.

IPS◯TEK
an atos company

Crowd & queue management

Crowd management

DEMO

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Crowd management

Face recognition

Real-time traffic data, along with historical data series, can be used to recognize the formulation of queues. Staff can be alerted to react in time, avoid the forming of long queues, thus improving customer satisfaction and business efficiency.

Security lanes

Queue
Monitoring Lane
Bypass
Face Recognition
Abandoned
Objects

Landside Crowd Management

Social distancing monitoring Queue monitoring Abandoned object
Overcrowding detection Incident Response
Intrusion/Loitering near critical area
Crowd Movement Detection*

Atos Computer Vision Platform provides a range of solutions to automate elements of this task and turn CCTV footage into actionable real-time data, alerts, and reports to reduce costs, improve response time, and augment passenger experience.

Security

Intruder detection

Airport security

DEMO

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Face recognition

Managing Security Lanes, Entrances, and Pinch Points requires constant monitoring for any violation. Even with high staffing levels, incidents can easily be missed as shown by randomised penetration testing.

Atos Computer Vision Platform can provide an automated backup to this monitoring by detecting many types of crowd flow and security violations. It also generates valuable data about how passengers use the area and how staff are performing
in their role to reduce the time spent in security.

Face Recognition

Watchlist Alarms (High Threat)
Face Mask/No Mask Detection
Face Blurring
Forensic Search

Entrances and Pinch Points

People counting (Ingress/Egress)
Wrong way detection
Face Mask detection
Face Recognition
Forensic search

Perimeter Protection

Any person or vehicle approaching the perimeter triggers an immediate alarm to the control room with live GIS coordinates of the where the incident is happening.
Thermal/IR Perimeter
Protection GIS PTZ Tracking
Restricted Area Intrusion Detection
Virtual Perimeters

Once an individual has been identified, the person's image can be used for a site-wide search to find all areas that the person has accessed and to link each of these incidents together in a map view.

Rail tracks

A breach into unauthorised areas on the airfield or on rail tracks may interfere with some critical operations. Maintaining the flow of these operations ensures the protection of valuable assets and the interruption or delay of travels.

Atos Computer Vision Platform can cover critical areas within an airfield or train station and immediately detect any intrusion, whether it is a temporary CP line breach, environmental protest, or a hostile actor.
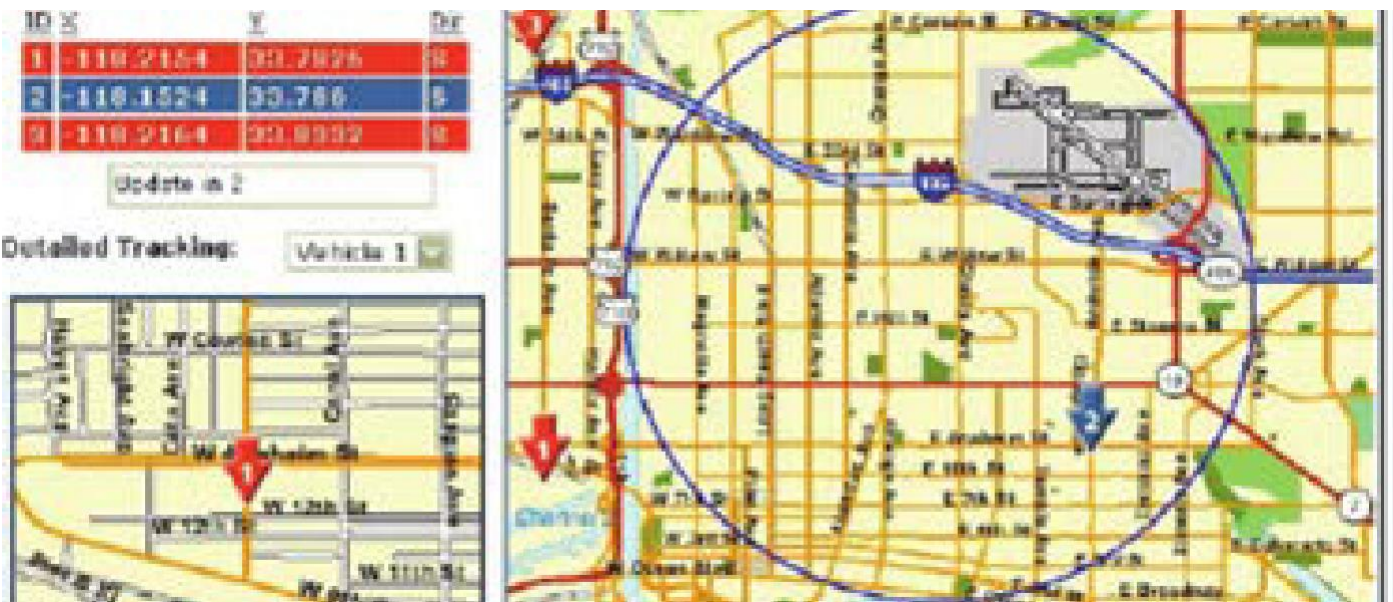
Intruder detection

Line crossing

Mask detection

DEMO

Intrusion detection

Person without PPE Detection

CP Line Violations

PTZ GIS Tracking*
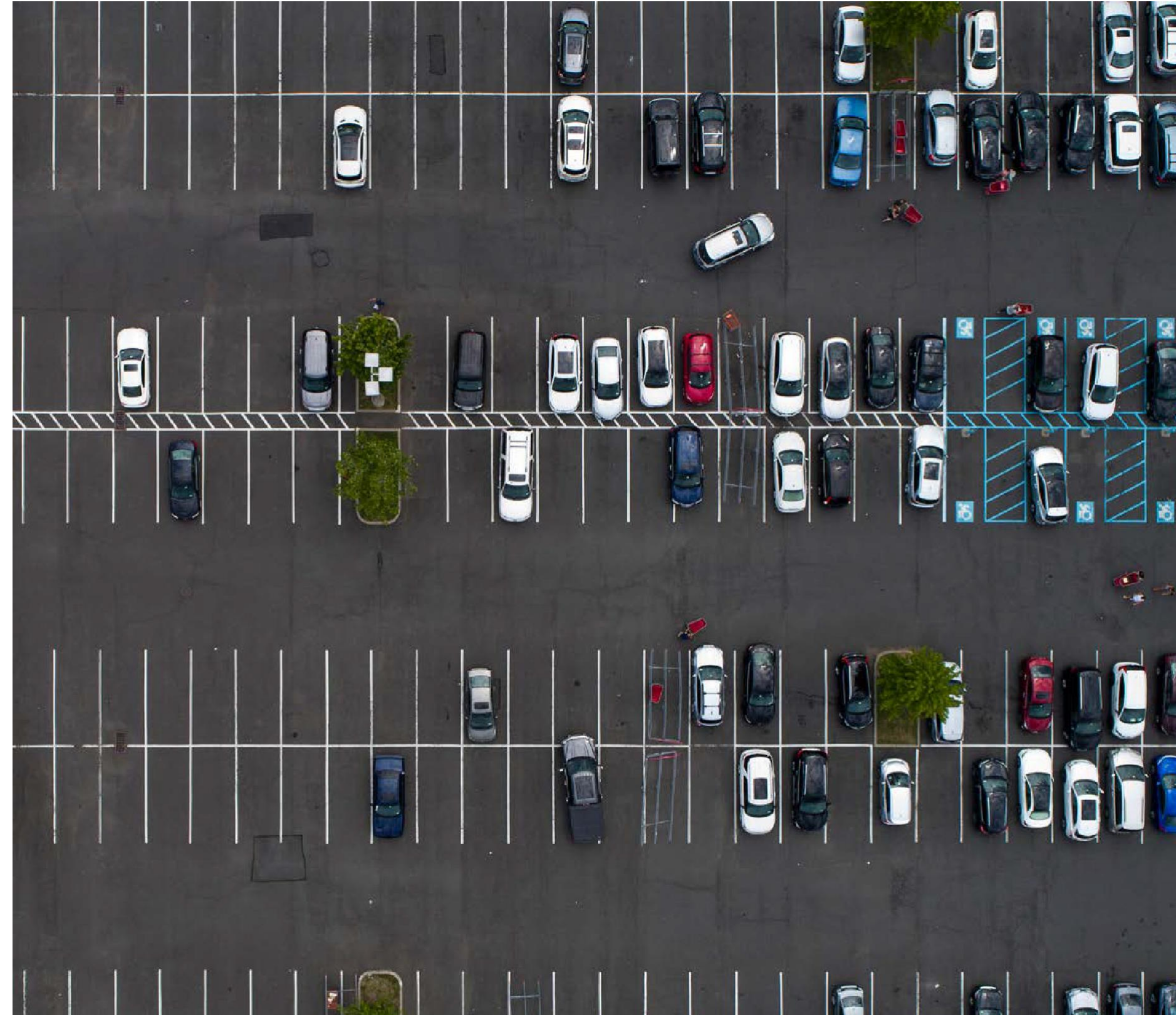
Parking management

Illegal parking

Loitering detection

DEMO

Traffic and road violations require accountability and evidence including video and captured license plates.

Atos Computer Vision Platform can identify the license plate of vehicles to monitor for fare evasion, report on the time in zone, or raise security alerts for restricted vehicles (or vehicles that do not match the license plate).

- Smoke Detection
- Wrong Way (Vehicle)
- Double Parking
- Car Park Occupancy
- Illegal Parking
- Stopped Vehicle
- Congestion
- Vehicle Type Counting
- Vehicle Travelling Wrong Way
- Vehicle Queue/Traffic
- Violation Heatmaps
- Automatic License Plate Recognition*

Reduce Congestion, Improving Passenger Experience

Prevent Lost Revenue from Fare Evasion

Road management

Smoke detection in tunnel

Illegal parking

Loitering detection
Vehicle illegal turn

DEMO

Roads are often the first experience that a passenger will have with an airport, and yet these areas are frequently heavily congested, cause significant delay, and contribute to the train station's carbon footprint. Frustrated or late passengers may respond by dropping off people in unauthorised areas or by violating trafic rules, causing further delays.

Atos computer vision platform helps monitor cameras in car parks, roads, tunnels, and bridges to alert operators of possible incidents early. By responding sooner and redirecting passengers, much of the congestion can be avoided, improving the journey and avoiding lost revenue.

Our pre-trained AI models detect:

- Illegal Parking
- Stopped Vehicle
- Congestion
- Vehicle Type Counting
- Vehicle Travelling Wrong Way
- Vehicle Queue/Traffic Violation
- Heatmaps
- Automatic License Plate Recognition

Reduce Congestion, Improving Passenger Experience

Prevent Lost Revenue from Fare Evasion

Level crossing

Level crossings cause some of the highest severity incidents, largest delays, and highest costs in any rail network. Appropriate mitigation measures are essential around all level crossings, especially those near cities and in rural areas.

Atos Computer Vision Platform can detect people, vehicles, and other objects that stop or deviate from the path on the level crossing, giving early (or secondary) warning to a possible incident.

Implementing Ipsotek at level crossings can save significant costs, reduce delays, and avoid incidents. The system can also be used to justify closing unused level crossings or for development route to find an alternative to a crossing.

- Monitor level crossing usage
- Automatic alarm if people are loitering or deviating from the path.

- Avoid incidents by detecting early or as a secondary verification system

- Generate reports of crossing usage by people, bicycles, cars, vans and other object types.

- Understand which crossings are higher risk, which crossings

- could be closed, and where other precautions are needed

Service areas

Vandalism to train carriages and theft of equipment is a major source of loss in the rail network but monitoring these areas requires too many operations staff to be economical

Atos Computer Vision Platform can monitor key areas, fencelines, and around trains to detect individuals entering high-risk areas automatically and immediately. This allows nearby security teams to respond or for the individual to be contacted
via an audio address.

The system does not require staff to be on site – cameras could be deployed across a very wide area with alarms sent back to a centralised monitoring room. Intruders raise an immediate alarm, control room staff can monitor the situation, and police or quick response security teams dispatched.

- Detect work crews on track areas and alert control room staff to confirm, reducing the risk of accidents from miscommunication

- Detect and monitor PPE usage across the rail network.

- Generate reports and alerts to ensure compliance.

Computer Vision Platform

The highly scalable end–to-end computer vision platform

Software

One
Platform

Hardware

Pre-trained
& customizable
AI models

One hardware & software platform providing pre-trained & customizable AI models enriched by Atos computer vision experts through a worlwide labs.

VISuite

VISuite empowers automation in CCTV applications through premium high end video analytics for live response and forensic investigations. It has been successfully deployed in mission critical solutions globally, across multiple verticals. VISuite is at the forefront of the Artificial Intelligence revolution backed by strong global patents.

Learn more ⌄

VISuite Forensics

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VISuite AI

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VISuite Protect

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VISuite FR

Learn more ⌄

VISuite Investigation

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VISuite LPR

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Full range of edge computing servers from edge datacenter/cloud to far edge

Atos Computer Vision Platform is based on compute intensive servers allowing cloud to edge computer vision models to process data in real time anywhere, whatever business constraints

BullSequana X451

High performance computer vision computing for training

Learn more >

BullSequana SA20G

AI inference & training inside the datacenter

Learn more >

BullSequana Edge

AI inference and training outside the datacenter

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BullSequana Edge nano

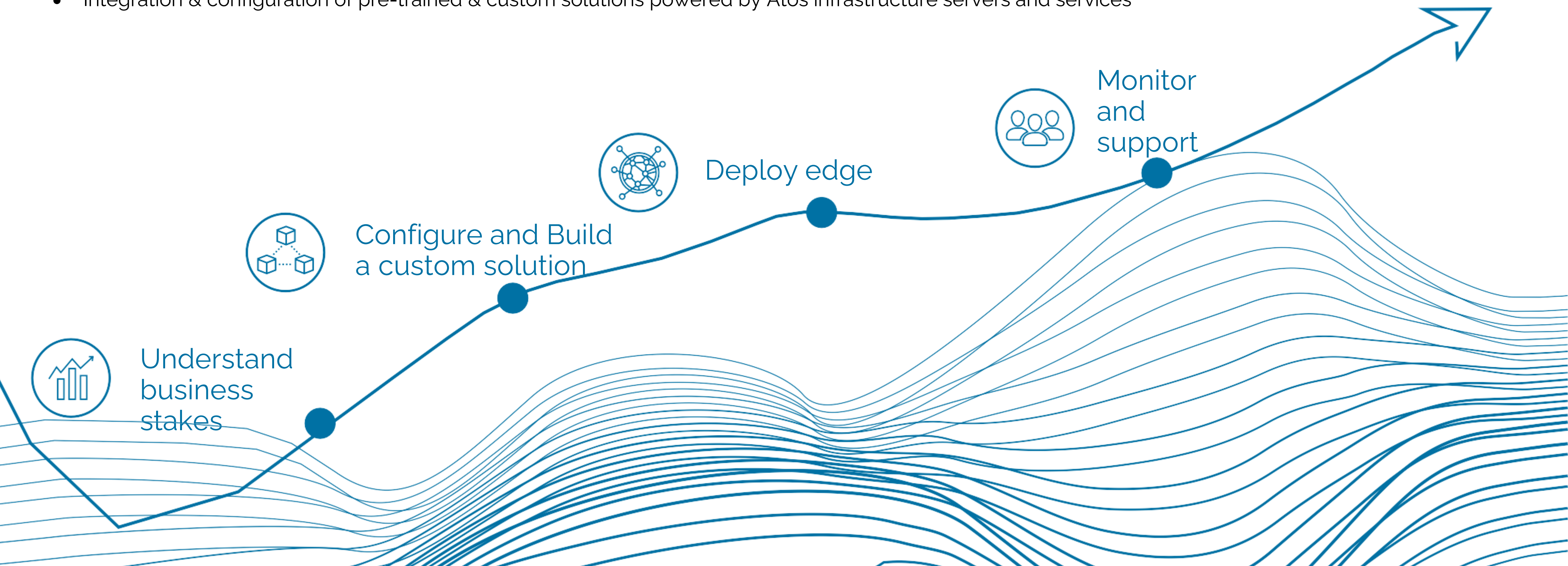

Plug & play analytics in a compact & ruggedized server

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Atos delivers an end-to-end computer vision approach

We take into account your existing infrastructure 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.

- Delivering custom service with our worldwide expert labs
- Delivery & managed service to provide the best model to the customer APEX/OPEXConsulting
- Integration & configuration of pre-trained & custom solutions powered by Atos infrastructure servers and services

Monitor and support

Deploy edge

Configure and Build a custom solution

Understand business stakes

Further information

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About Atos

Atos is a global leader in digital transformation with 105,000 employees and annual revenue of over € 11 billion. European number one in cybersecurity, cloud and high performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos operates under the brands Atos and Atos|Syntel. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The [purpose of Atos](#) is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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Let's start a discussion together