Atos Edge AI & IoT

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Cloud Consultant – Cloud Enterprise Solutions – Italy
Atos at Glance

Global leader

- Secure and decarbonized digital
- Cloud and managed security services worldwide
- IoT Services & Solutions
- Identity governance and administration

Pioneer in

- **Edge server** technology
- Quantum technology with the Atos Quantum Learning

Best-in-class computing power

Supported by the talent and diversity of 107,000 employees in 71 countries we generate an annual revenue of €11 billion.

We offer our clients a range of market-leading digital solutions and products alongside consultancy services digital security and decarbonization offerings.
Atos Strategic Technology Vision aligned with Red Hat Strategy

Clients’ path to Digital Transformation

- More Business Data Insights
- More Trust
- More Immersive Experience

New Form of Compute
Mesh of Locations
More Partner & Sharing
Digital Spaces

Cloud Transformation
Sovereign & IoT Edge
Data Platform

3 Key Strategic Priorities
Decarbonization

IoT Offerings for every industry

Transforming data into business outcomes

Go-to-Market: Use Cases bundled into Smart X Themes

- **Remote inspection**
- **Smart Grid**
- **Smart Metering**
- **Water waste management**
- **Connected Vessels**
- **Autonomous stores**
- **Intelligent Supply Chain**

- **Video Surveillance**
- **Incident detection**
- **Crowd Control**
- **Smart Mobility solutions**
- **Smart building**
- **Smart Parking**
- **Connected Soldier**

- **Digital Process Twin Pharma**
- **Temperature monitoring & Compliance**
- **Virtual care & monitoring**
- **Digital Hospital**

- **Predictive maintenance aaS**
- **Smart Control Room**
- **Connected Vehicles**
- **Digital Shopfloor**
- **Remote Expert Support**

- **Remote Production**
- **Predictive Maintenance Entertainment infra**
- **5G/Edge/MEC**
- **Data Intelligence**
- **Digital Twin Networks**

- **Pay how you drive**
- **Smart Performance Finance**
- **Fraud prevention**
- **Smart Branch banking**
- **Customer Loyalty services Networks**
IoT is the key enabler for Digital Journey for Customers

We cover the end-to-end Value Chain for our customers’ IoT Use Cases

**IoT Value Chain**

**Things**
- Connected vehicle, Urban data platform (Fiware)

**Edge Computing**
- 3rd party: Worldline, MindSphere, Azure IoT, AWS IoT, Google IoT, Vision IoT, PTC, SwAG, Litmus
- Building customer-specific platforms
- Atos Analytics PaaS
- Atos Data Lake Engine
- 3rd party analytics platforms

**Data Insights as a service**

**Integration & Innovation**

**Security & Decarbonization – Products & Services**

**Operations & Industrialization**

**Smart-X business services**
AI and IoT analytics at the Edge

Atos is delivering end to end solutions – focused on outcome as a service

Smart Cities
- Video Protection,
- Violence detection,
- Traffic management

Factories
- Quality Inspection,
- Physical Security,
- Access Control,
- Predictive maintenance

Energy & Telco
- Augmented Technician,
- Perimeter Inspection

Retail
- Shelf Monitoring,
- Retail analytics

Healthcare
- Patient Monitoring

Transport
- Intelligent train station

Smart venues
- Contactless access control
- Crowd management

Services
- Strategy,
- Consulting,
- Integration,
- ML-Ops,
- Data Science,
- Managed Edge…

Software
- VISuite
  (from Atos Computer Vision Platform)

Platforms
- Atos Computer Vision Platform Predictive analytic solutions (Zdata, BDSS, Codex Smart Edge)

Edge and Fog Hardware
- BullSequana Edge nano,
- BullSequana Edge,
- BullSequana S40G,
- BullSequana X

Partner solutions
- oosto,
- visions,
- IRON-BR,
- SNFR

Ecosystems
- vmware,
- StackHPC,
- AWS,
- Azure,
- OpenShift

Technology Partners
- Red Hat
- Intel
- AMD
- NVIDIA
Atos Red Hat Partnership over 10 years

Average 30% Growth per year: Atos Contract value > €400M

Major Cloud Successes:
- Atos Managed OpenShift AMOS (since 2018)
- Built in Red Hat Open innovation Labs
- All Industry sectors across EMEA
- Strong Collaboration with Red Hat services

Red Hat - Premier Global System Integrator Partner

Global Innovation Award Winner

Dedicated Atos team for Bus Dev / Pre-Sales Architecture

Approximately 2000 certification and accreditations
Atos and Red Hat for Edge Computing

Average 30% Growth per year: Atos Contract value > €400M

Innovative Edge Infrastructure
A swarm of µEdge streaming data captured from any device to powerful Edge servers for analytics inference designed to run anywhere

Extensive 5G Capabilities
Private bubbles from a few meters to kilometers, with network slicing to service multiple core functionalities on an effective and scalable environment

Outcome-as-a-Service
Business outcomes are driving our efforts, from initial engagement, technology to consumption model, it only matters if the customer wins

Flexible Cloud Enabled Edge Platform
From Edge to Cloud, we build reusable components on seamless scalable cloud-based architecture

Codeless Secure Data Pipelines
Modern data pipelines are like a copy-paste, from anything to cloud. No need for hundreds of lines of code.

Cloud Native Build
Using containers from µEdge to Cloud allows a great flexibility and synergy between all components along the data chain

DevSecOps
Planning, designing and building modern secure CI/CD pipelines for app dev environments with regulatory support

Managed Services
World’s most comprehensive catalog of services based on Kubernetes to support build and management of modern applications
Single Node OpenShift

Platform consistency between datacenters and edge
AMOS Value Added Features

**Container Image Handling**
- static analysis of vulnerabilities
- advanced container registry
- image signing

**Application Migration Tooling**
- Atos Cloud Assessment (ACAT)
- Remediation Tools (CCAT)
- Migration from OCP 3.x to 4.x

**External Log-aggregation**
OpenShift generated artifacts can be stored on external Aggregator

**Self Service Portal**
Available for Project and User management

**Customer Identity**
Management integration
Integrate the existing customer’s directories with SSO
Sovereign & IoT/Edge

To get the real value of the local or sovereign data

FROM
Data-centers
Public cloud
IT OT

TO
Computing Continuum with interconnected ecosystem
Edge & Cloud distribution
Energy efficient local data processing (data gravity)
Low latency services (5G/IoT)
Sovereignty

Cybersecurity mesh, IAM, MDR
Private Network/5G
IT & OT convergence to IoT
Edge platform & intelligence
Predictive maintenance
Sovereign Cloud
Trusted Data Spaces
M2M Gateway on the Cloud

Enables device management for diverse range of IoT devices & use cases

- Handling of Upstream sensor data & Downstream Device Management
- Plug & Play Communication Layer to handle Indoor/Outdoor scenarios and Connectivity Protocols
The Atos UAV Solution - ARCA ingeniosa

A Scalable End 2 End Automated Service Delivery Platform

1. Drone Service Request
2. Capture details as per requirement using Drone Services
3. Log the details
4. Report Regulatory Details
5. Provide report to Customer
6. Billing based on pay as you use
Atos 5G Private MEC architecture

All-in-one easy to deploy architecture

<table>
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<tr>
<th>5G devices</th>
<th>Access network</th>
<th>5G Edge</th>
<th>Centralized cloud or datacenter</th>
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</thead>
<tbody>
<tr>
<td>High throughput, massive data volume</td>
<td>Mission critical, low latency applications Network Tenant: VNS</td>
<td>Atos CVP VISuite Predictive analytics</td>
<td>General purpose, latency tolerant application</td>
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Atos managed services: orchestration, management, deployment
Atos CyberSecurity services expertise
Smart Edge Services enabled by Atos and Red Hat

Focus on new value chains

Consulting
Product ownership, agility discipline, change management

Data Engineering
Architecture, ETL, analytics

Data Science
Feature extraction, model development

IaaS/PaaS
Core infrastructure, DevSecOps, CI/CD

Experience Design and Delivery
Journey mapping, visual design, app dev

Managed Services
Hybrid (on-prem and cloud) management model
Managed IoT Edge Services with Red Hat

Holistic and Vendor-agnostic services

- Full control of devices & gateways
- Solutions adaptable to business outcomes
- Performance, Scalability, Availability, Security & Compliance
- Support by Global Delivery Center
- Ecosystem of Vendors

Device Agnostic Support Any Edge Device

Trusted partners across the IoT value chain

Maximize the value of your IoT deployment

Integrated IoT Global Delivery Center for 24/7 support

Managed IoT Edge Services

Edge Hardware

Life cycle management

Edge Runtime & Applications

Data Science and Modeling at the Edge

OTA updates

Full stack Monitoring

Edge Security

Edge Connectivity

Choice of Service Packages & Levels

Global presence & Technical expertise

Solutions adaptable to business outcomes

Performance, Scalability, Availability, Security & Compliance

Support by Global Delivery Center
Priorities

Developer velocity
Deploy applications anywhere
Act with speed and agility and adapt to the needs of the business

Operational Agility
Minimize operational challenges
Provide new solutions for a variety of distributed application environment

Business innovation
Address new opportunities
Enhance innovation, increase productivity, and offer better products and services
Red Hat Edge

Red Hat Portfolio

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<th>Edge footprints</th>
<th>Event driven data / pipeline management</th>
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<tr>
<td>Red Hat Enterprise Linux</td>
<td>Red Hat Application Services</td>
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<tr>
<td>Remote worker nodes</td>
<td>Red Hat Data Services</td>
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<tr>
<td>Single node OpenShift</td>
<td></td>
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<tr>
<td>3-node high availability clusters</td>
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Management & Automation
- Red Hat Advanced Cluster Management for Kubernetes
- Red Hat Advanced Cluster Security for Kubernetes
- Red Hat Ansible Automation Platform
- Red Hat Smart Management

Common Platforms
- Red Hat Enterprise Linux
- Red Hat OpenShift
- Red Hat OpenShift Data Foundation
- Red Hat OpenStack Platform

Platforms
- Edge
- Bare metal
- Virtualization
- Private clouds
- Public clouds
Red Hat Edge

Common Patterns

- **Small footprint edge OS**
  - Memory-constrained edge servers/Internet of Things (IoT) Gateways
  - Today

- **Single-node edge servers**
  - Low bandwidth or disconnected sites
  - Today

- **Remote worker nodes**
  - Space-constrained environments
  - Today

- **3 node Clusters**
  - Small footprint with high availability
  - Today

Clusters management and application deployment

Kubernetes node control
C Control node
W Worker node

Far edge  Regional data center  Central data center
Atos IoT Capabilities at a glance

Atos addresses customer challenges with end-to-end IoT capabilities

Atos invested pre-integrated Ready-to-go IoT solutions with high profile brand-name customers

Atos delivers IoT@Scale and offers innovative right-of-use and outcome based commercial models

Atos has implemented more than 100 IoT use cases, enabling business outcomes in all our Industries

Unique expertise on carbon footprint management and decarbonization actions
Atos a trusted partner to help drive positive change

Our 107,000 business technologists across the globe outstanding response to our clients’ challenges

Focus on innovation and expertise in IoT and Edge technologies and services to deliver proven business outcomes @ scale

Industry expertise with strength in connected and secure services, supporting our clients to meet their digital transformation challenges

Atos is committed to a sustainable future, enabling our clients to achieve their decarbonization goals through our Green IoT solutions

Investing in Human Capital to enable acceleration in digital economy; creating an inclusive, diverse and ethical environment to futureproof employee experience
Thank you