

Atos Autonomous Data Engineer: Smarter Data, Faster Decisions



Atos

Today, organizations are quickly leveraging artificial intelligence (AI) to deal with growing data volumes, legacy systems and the increasing demand for real-time insights. Yesterday's traditional approaches are extremely slow, expensive and difficult to scale and this makes the swift shift a business imperative.

In the midst of this adoption journey, the strategic and AI-first business leader needs to make faster, smarter decisions while freeing data engineering teams to focus on innovation, not manual efforts.

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Our ambition is to lead the transition to “services-as-software (SaS)” through agentic AI delivery models.

Our agentic AI solutions like the “Autonomous Data Engineer” augments the capabilities and velocity of data engineering teams, thereby enabling our customers to accelerate their data modernization and AI transformation efforts.

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Narendra Naidu

Global Head of Data & AI at Atos



Data engineering needs a new operating model. Here's why.

Data engineering teams are often restricted by manual, cumbersome, repetitive processes such as writing code, data preparation, debugging pipelines and relying heavily on expert intervention to manage operational issues. In turn, this makes support models difficult to scale.

The statistics are an alarming reflection of this:

- Data engineers spend ~50% of their time on manual coding and debugging, limiting focus on value creation.
- ~40% of data engineers' time is consumed by managing pipelines and workflows, reducing efficiency and agility.
- Manual data operations lead to slow issue resolution, recurring incidents and operational inefficiencies.
- High manual conversion effort for on-premise ETL to cloud modernization due to proprietary logic.
- BI teams waste critical hours manually coding SQL wireframes and dragging widgets to match business requests

As a result of these challenges, legacy systems and silos increase complexity and cost, while poor data quality erodes trust and limited scalability constrains growth. The need is clear: move from manual, reactive data engineering to intelligent, autonomous systems.



Atos: Accelerating intelligence across the data lifecycle

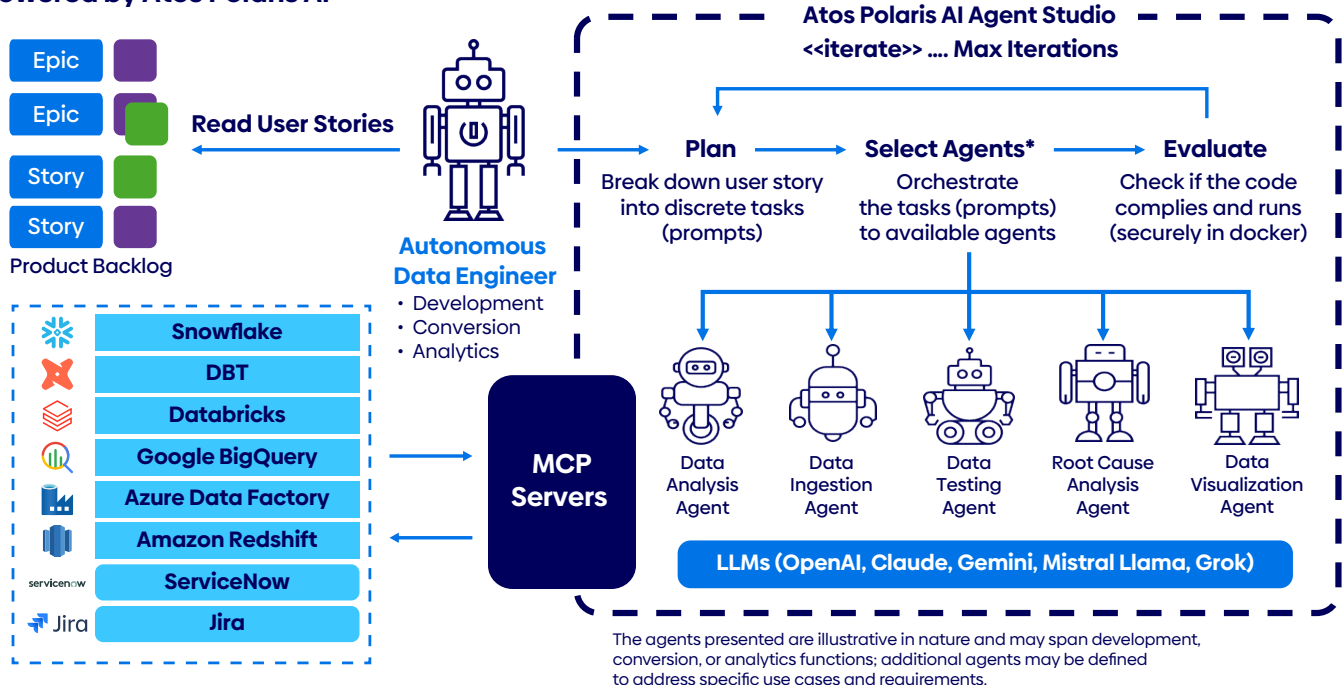
Atos's **Autonomous Data Engineer (ADE)** is an agentic AI solution, powered by the Atos Polaris AI Platform and designed to automate and orchestrate the end-to-end data engineering lifecycle by autonomously reasoning, planning and executing data engineering tasks. This enables a fundamental shift in the role of data engineers from building and maintaining pipelines to defining business intent, data architecture and strategic outcomes.

The ADE leverages AI-driven automation to transform data engineering, conversion and analytics — delivering higher speed, improved quality, reduced effort and governed outcomes.

The solution also aligns with Atos's Services-as-Software vision using AI-driven delivery models and agents.

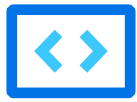
Autonomous Data Engineer

Powered by Atos Polaris AI



The agents presented are illustrative in nature and may span development, conversion, or analytics functions; additional agents may be defined to address specific use cases and requirements.





ADE for Development

Drives higher speed, quality and reliability across the full data engineering development life cycle

- Analysis of source data and metadata to design models and generate physical data structures
- Automated data ingestion, transformation and validation with built-in quality checks and insight generation for implementation and testing
- AI-driven automation to proactively detect, explain and self-heal data pipeline failures, ensuring reliable, continuously optimized operations with full traceability



ADE for Conversion

Automates the conversion of legacy ETL mappings into modern ELT code while reducing manual efforts and derisking migration

- Extraction of ETL mappings from source files
- Interpretation of mapping logic using natural language processing (NLP)
- Discovery of schemas and data structures
- Turns mappings into structured SQL models and ELT code



ADE for Analytics

Generates and operationalizes business insights through advanced data visualizations and AI driven analytics

- Interpretation of business intent from natural language prompts
- Selection of appropriate visuals and creation of interactive, professional BI-grade dashboards
- Enablement of real-time, self-service visibility
- Extraction of insights and answers to business questions from structured and unstructured data

The Atos Advantage



Agentic AI framework - Goal-driven agents that not only automate but also decide, act and learn



End-to-end data engineering, data operations and analytics lifecycle coverage



Deep integration with data and the AI ecosystem - Seamlessly integrates with enterprise data platforms, ETL tools, and analytics environments for end-to-end execution



Reusable intelligence with continuous learning - Leverages historical data, mappings and model outcomes to continuously improve accuracy and efficiency



Scalable across modern data platforms - Operates across data warehouses, lakehouses and cloud ecosystems to support diverse data engineering and AI workloads



Human-in-the-loop guardrails: Strategic transition from supervised support to autonomous operations through strict policy controls and safety triggers



A reiterated focus on Agentic AI, Digital Sovereignty and Cybersecurity



Tangible Business Benefits

Organizations adopting Atos's ADE solution realize measurable gains in efficiency, reliability, and business outcomes.

- Up to **60%** automated implementation and validation
- **40-50%** Faster Conversion of legacy ETL mappings
- **25 - 50%** faster insight generation (time-to-value)

Real-world Results: ADE in Action

Enhanced efficiency in design and development for a automotive and insurance services provider

Data silos and manual processes had increased complexity and costs while providing limited scalability. Lack of automation and inefficient development practices had led to poor data quality, rework and delayed insights for enterprise decision-making.

Atos modernized the Customer 360 platform on GCP to enhance customer lifecycle visibility and engagement. Further, ADE was leveraged across analysis, design and development to automate data analysis, modelling, and pipeline creation through autonomous agents.

Outcomes

- 40% automated development and validation
- 60% automated source data analysis and schema architecture design
- 30% reduction in overall efforts

Reduced efforts and accelerated insights for a global financial services provider

The customer was facing significant challenges due to manual, time-consuming data modelling and engineering processes. This was limiting agility and slowing the delivery of analytics critical for business decisions, client reporting and regulatory obligations.

Atos's ADE solution automated data modelling, ingestion and transformation to generate data models, ER diagrams and ETL code, and perform schema impact analysis by design.

Outcomes

- 50-70% faster data analysis and modelling cycles (from weeks to minutes)
- 30-40% quicker turnaround for impact analysis
- 25-30% higher ROI with scalable AI use cases



A faster, cost-effective and low-risk data modernization journey for an international financial services group

The customer's existing on-premise ETL environment was restricted by high infrastructure and licensing costs, limited scalability for modern workloads, and low agility to meet evolving business needs. This made migration essential ahead of the next renewal cycle.

Atos's Autonomous Data Engineer solution transformed the customer's data estate efficiently and at scale. By combining intelligent analysis with automated code conversion, Atos enabled a faster, cost-effective, and low-risk modernization to Azure.

Outcomes

- >60% improvement in delivery productivity
- Automated code intelligence for comprehensive conversion feasibility reports
- Automated conversion for better consistency, reduced manual effort and faster migration

Reimagine your data engineering, data operations and advanced analytics with Atos's Autonomous Data Engineer. Assess your current data engineering and analytics landscape, and find out how ADE can accelerate your data and AI initiatives with a Proof of Value (PoV) project.

[Connect with the Atos Data and AI team](#) to get started today.



About Atos Group

[Atos Group](#) is a global leader in digital transformation with c. 56,000 employees and annual revenue of c. €7.2 billion (at the go-forward perimeter), operating in 54 countries under two brands - Atos for services and Eviden for products and systems. European number one in cybersecurity and a leader in cloud, Atos Group is committed to a secure and decarbonized future and provides tailored AI-powered, end-to-end solutions for all industries. Atos Group is listed on Euronext Paris.

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Let's start a discussion together



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