ARTIFICIAL INTELLIGENCE

From Copilots to Autonomous Multi-Agent Systems with SAP Joule



Build, extend, and orchestrate Joule Agents that plan, reason, and execute end-to-end business outcomes

Mandeepak Grover | BTP CSM, Senior Advisor | SAP

Ricky Sharma | BTP Senior Solution Advisor | SAP

About the Speakers



Mandeepak Grover

Business AI Platform, Senior Advisor CSM | SAP

SAP

- 20 years in SAP Stack
- Area of expertise — Business AI Platform



Ricky Sharma

Business AI Platform, Sr Solution Advisor | SAP

SAP

- 18 years in SAP Stack
- Area of expertise — Business AI Platform

Session Agenda

01	3 min	Introduction & Speaker Bio	Session framing, audience calibration, what we will and will not cover today
02	12 min	The Evolution of SAP Joule	Architecture overview, copilot vs. agent vs. multi-agent, what changed in 2025–2026
03	15 min	Pre-Delivered SAP Agents Deep Dive	Accounts Receivable Assistant· Planning Assistant· Case Management Assistant
04	10 min	Extending with Joule Studio	Agent builder, Joule Skills library, MCP server integration patterns and security
05	5 min	Multi-Agent Orchestration	Cross-functional scenario, governance framework, Crawl/Walk/Run adoption roadmap
Q&A	2 min	Questions & Open Discussion	Bring your challenges — the community learns best from peer experience

Session Learning Objectives

01

Understand the Joule Agent Architecture

Learn how Joule Agents are designed — goals, Skills, Skills, tools, and guardrails — and how they differ from chatbots and traditional RPA.

02

Explore Pre-Delivered SAP Agents

Deep dive into the Accounts Receivable Assistant, Planning Assistant and Case Management Assistant and the business outcomes each delivers out of the box.

03

Build Custom Agents with Joule Studio

Navigate the no-code agent builder inside SAP Build, Build, configure Joule Skills, and connect non-SAP SAP systems via MCP servers.

04

Orchestrate Multi-Agent Business Outcomes Outcomes

Design a cross-functional agent workflow that plans, plans, delegates, and closes business loops autonomously with human-in-the-loop checkpoints. checkpoints.

PART 01

The Evolution of SAP Joule

From single-step AI assistant to collaborative multi-agent enterprise intelligence



Public

The Evolution of Joule

Three generations of AI capability in the enterprise

Phase 1 · 2023–2024	Phase 2 · 2025	Phase 3 · 2025–2026
Copilot	**Agent**	**Multi-Agent**
• Conversational Q&A • Guided UI navigation • Single-step task assist • Contextual help	• Multi-step planning • Tool & Skill execution • Exception handling • Pre-delivered agents GA	• Agent-to-agent delegation • Cross-functional orchestration • Autonomous end-to-end flows • Human-in-the-loop governance
Generally Available	Generally Available	Expanding Now

Joule - A new way to engage with and execute end-to-end business processes.

What is Joule Work?

Joule Work is a new stand-alone dynamic workspace where people can execute business-wide workflows across SAP and non-SAP systems.

What are Joule Assistants?

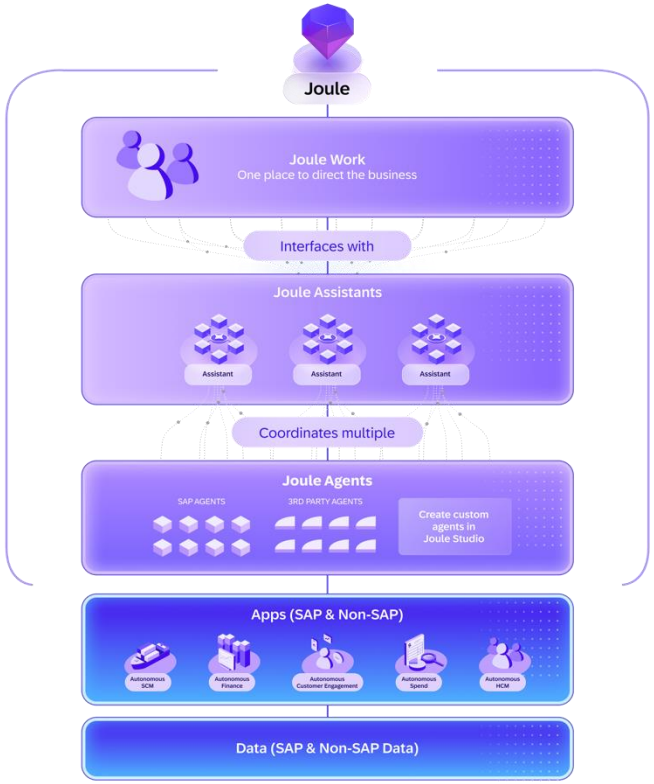
Assistants use deep role and process context to coordinate Joule Agents and autonomously execute complex workflows across the business, like smart teammates.

What are Joule Agents?

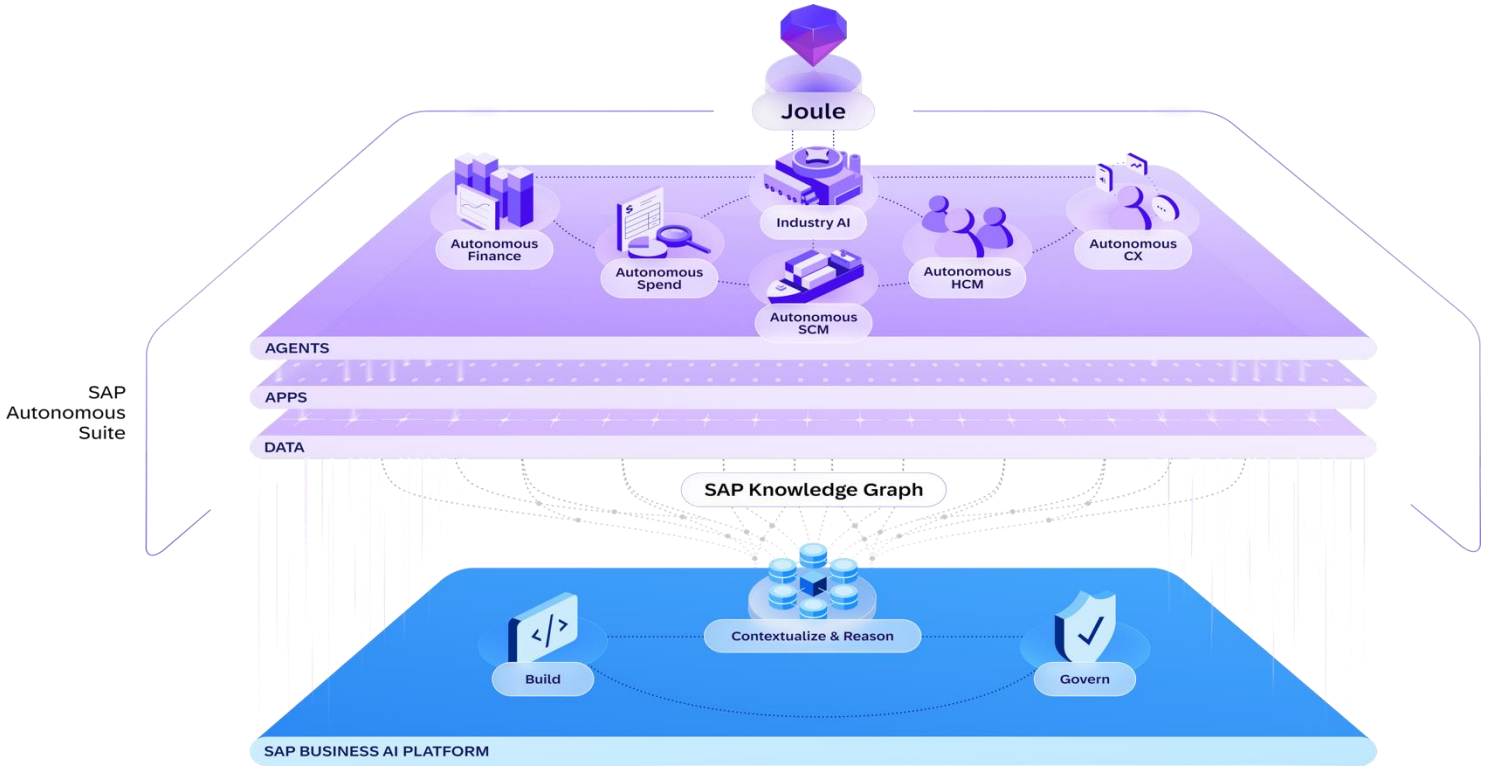
Joule Agents are purpose-built AI agents with deep business process expertise, accessible through Joule Assistants, that automate well-defined, multi-step enterprise workflows so you can get more done.

What is Joule Studio?

Joule Studio is the AI development solution for customers to build AI Agents, apps, and workflows on an SAP-managed runtime.



Agentic value across the enterprise



Joule Assistants and Joule Agents work within and across every business domain to deliver unparalleled impact.

Autonomous Domains: 55 Assistants and 245 Agents

Autonomous Finance

11 Assistants | **52** Agents

- Accounts Payable Assistant
- Accounts Receivable Assistant
- Billing Assistant
- Cash and Treasury Assistant
- Expense Management Assistant
- Financial Closing Assistant
- Financial Planning Assistant
- Governance Assistant
- Recurring Receivables Assistant
- Sales Operations Assistant
- Tax and Compliance Assistant

Autonomous Supply Chain

6 Assistants | **51** Agents

- Asset and Service Assistant
- Business Network Assistant
- Logistics Assistant
- Manufacturing Assistant
- Product Design Assistant
- Supply Chain Planning Assistant

Autonomous Spend

12 Assistants | **55** Agents

- Category Management Assistant
- Expense Management Assistant
- Invoicing Assistant
- Procurement Contract Assistant
- Receiving Assistant
- Requisition Assistant
- Services Procurement Assistant
- Sourcing Assistant
- Supplier Management Assistant
- Travel Assistant
- Buying Assistant
- Business Network Assistant

Autonomous HCM

14 Assistants | **45*** Agents

- Career and Talent Development Assistant
- Compensation Assistant
- Core HR Assistant
- HR System Assistant
- Learning Assistant
- Onboarding Assistant
- Payroll Assistant
- Performance & Goals Assistant
- Recruiting Assistant
- Skills Assistant
- Time Assistant
- HR Service Assistant
- HR Knowledge Assistant
- People Intelligence Assistant

*HCM has 45 unique agents

Autonomous CX

12 Assistants | **42*** Agents

- Recurring Receivables Assistant
- Campaign Assistant
- Case Management Assistant
- Deal Qualification Assistant
- Order Management Assistant
- Sales Assistant
- Self-Service Assistant
- Service Management Assistant
- Merchandising Assistant
- Shopping Assistant
- Content Assistant
- Deal Closing Assistant

*CX has 42 unique agents

Denotes assistant in multiple domains



Joule Assistants for Autonomous Finance

Autonomous Finance – 11 Assistants & 52 Agents



Autonomous Finance – Accounts Receivable Assistant

Planned Q3 2026 | Learn more

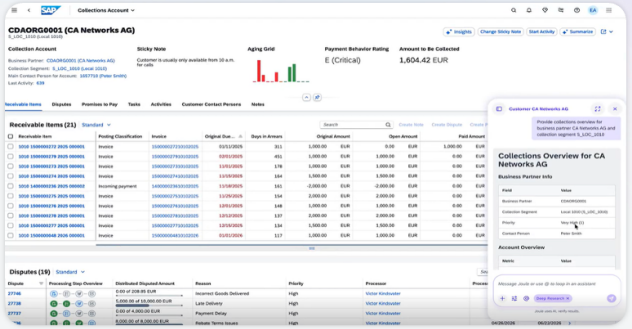
Autonomous Finance

Accounts Receivable Assistant

Prepare collection calls, automate dispute resolution, and provide a 360-degree customer view—helping finance teams drive revenue conversion and cash flow.

The Accounts Receivable Assistant helps teams accelerate cash collection, resolve disputes efficiently, and manage credit risk proactively. It improves operational efficiency and accelerates cash realization by reducing manual activities, minimizing delays, and ensuring consistent, accurate, and compliant financial execution.

- Focus collectors on critical accounts with next-best-action recommendations
- Prepare personalized communications and automate collections outreach
- Create dispute cases from customer communications and identify root causes



From today:

- Manual dispute classification & routing
- Generic, low-impact collection outreach
- Fragmented customer data and visibility

To: Autonomous

- Automated dispute routing and communications
- Personalized, tone-optimized collections at scale
- Unified 360° customer view with risk insights

35% Increase in AR FTE productivity

25% Reduction in Controllable DSO

15% Reduction in uncollectable write-offs

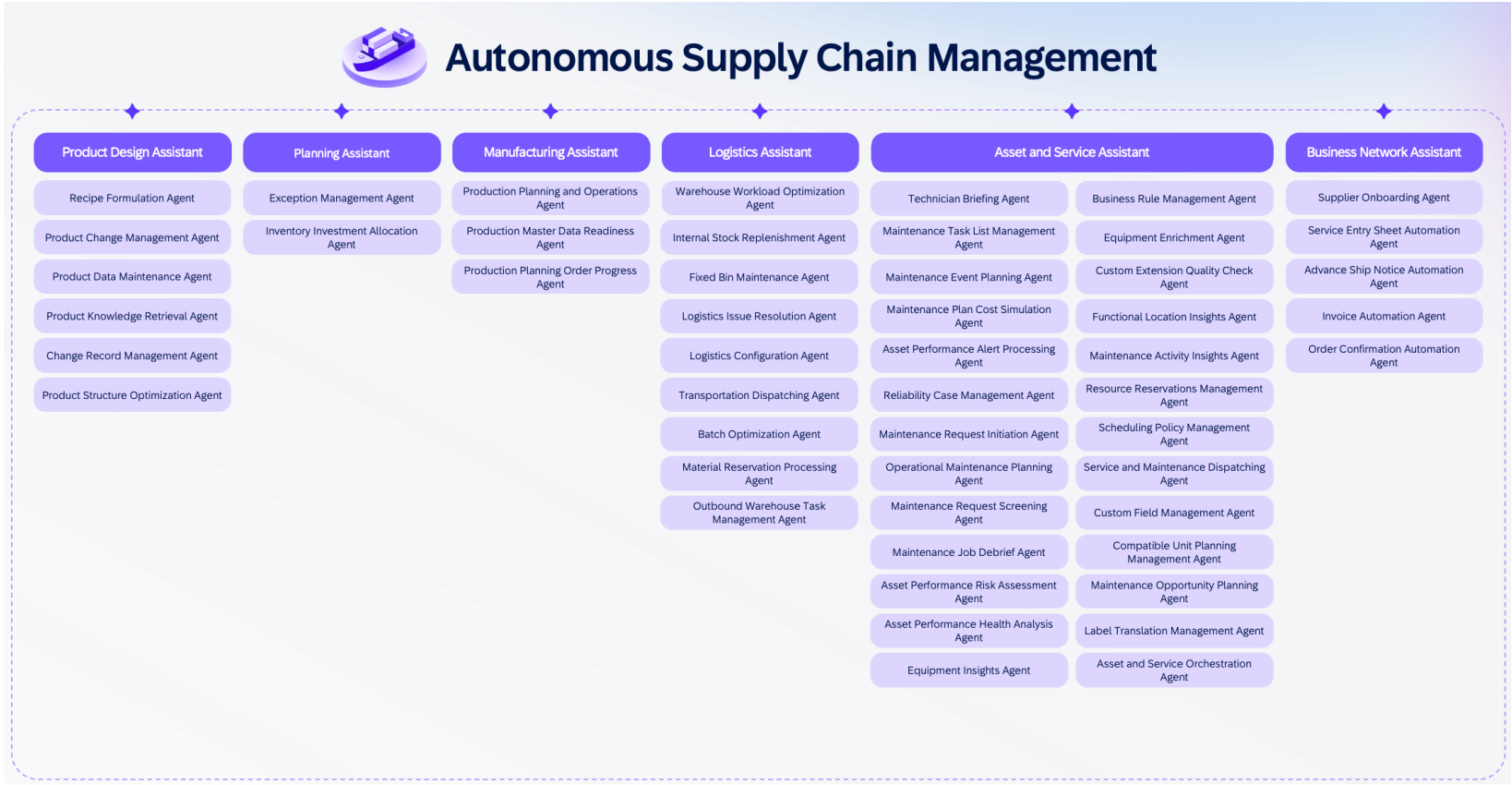
Joule Agents applying SAP Finance expertise — extensible with custom agents you create

- Dispute Creation Agent
- Dispute Resolution Agent
- Collection Account Preparation Agent
- Receivable Account Analysis Agent
- Collections Email Outreach Agent
- Dunning Insights Agent



Joule Assistants for Autonomous Supply Chain

Autonomous Supply Chain – 6 Assistants & 51 Agents



Autonomous Supply Chain – Planning Assistant

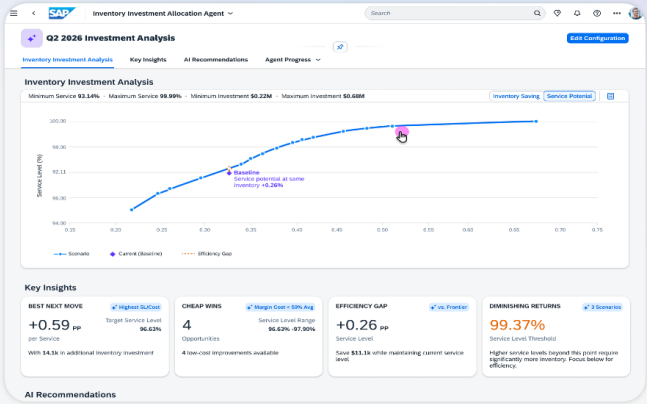
Planned Q3 2026 | Learn more

Autonomous Supply Chain Management

Planning Assistant

Turn supply-chain alerts into decisions — sense, simulate, and resolve plan exceptions in one workspace.

The Planning Assistant introduces AI agents into day-to-day planning workflows: exception management, demand fulfillment, inventory assessment, and capacity analysis. It helps planners detect issues earlier, understand constraints, and respond consistently to change with one-click scenario simulation, root-cause analysis, and actionable recommendations.



- **Convert supply chain alerts into one-click resolutions with root-cause analysis and mitigation options**
- **Surface structural capacity issues and shortages early with data-driven what-if scenarios**
- **Approve new inventory targets with clear drivers and constraint-aware recommendations**

From today:

Reactive alert chasing & manual triage
Static plans blind to capacity gaps
Spreadsheet-based inventory target setting

To: Autonomous

One-click exception resolution with root cause
Continuous capacity & shortage detection
Constraint-aware inventory recommendations

40% Reduction in Excess & Obsolete inventory

22% Reduction in loss due to stockouts

22% Reduction in forecast cycle time

Powered by an agentic team.
Joule Agents applying SAP planning expertise — extensible with custom agents you create

Inventory Investment Allocation Agent

Exception Management Agent



Joule Assistants for Autonomous Customer Engagement

Autonomous CX and Industry AI - 12 Assistants & 42 Agents



© SAP SE

Autonomous CX and Industry AI – Case Management Assistant

Planned Q3 2026 | Learn more

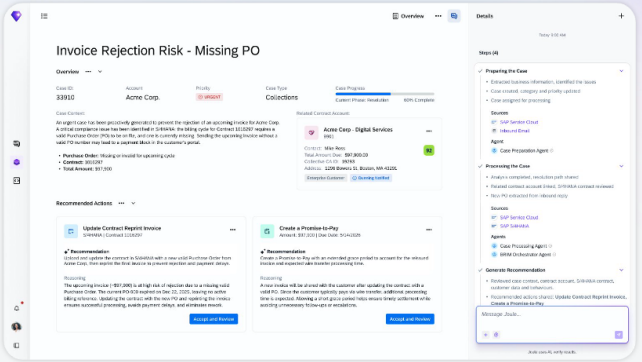
Autonomous CX

Case Management Assistant

Automate case and service order flows with context extraction, knowledge retrieval, and next best action guidance.

The Case Management Assistant transforms how service teams handle cases by automating end-to-end case and service order workflows. It coordinates autonomous AI agents to process cases and service orders and provide service teams with real-time insights and recommendations that enable them to triage, manage, and resolve cases faster, increasing operational efficiency and improving customer experiences.

- **Extract entities for standard and custom fields automatically**
- **Summarize cases at relevant phases of the lifecycle**
- **Surface contextual knowledge and similar cases to accelerate resolution**



From: Manual

- Significant time before actual resolution can start
- Inaccurate / incomplete information capture reopens cases
- No insights on most efficient way to resolve

To: Autonomous

- Entity extraction for standard and custom fields
- Summarization at relevant phases during case lifecycle
- Contextual knowledge & similar-case retrieval

35% Reduction in diagnosis effort

50% Reduction in misrouting

20% Reduction in resolution time

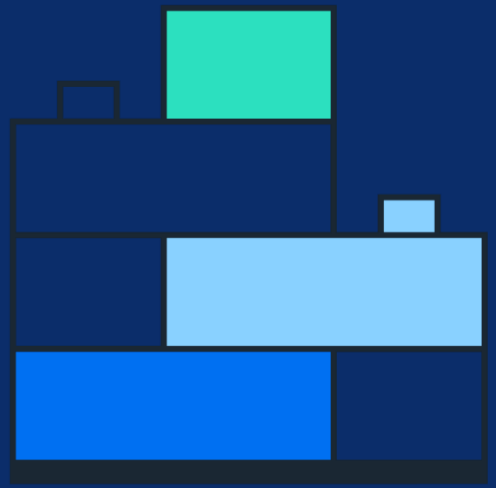
Joule Agents applying SAP customer experience expertise — extensible with custom agents you create

- Case Preparation Agent
- Case Processing Agent
- Knowledge Content Creation Agent
- Knowledge Content Retrieval Agent
- Case Action Recommendation Agent

PART 03

Extending with Joule Studio

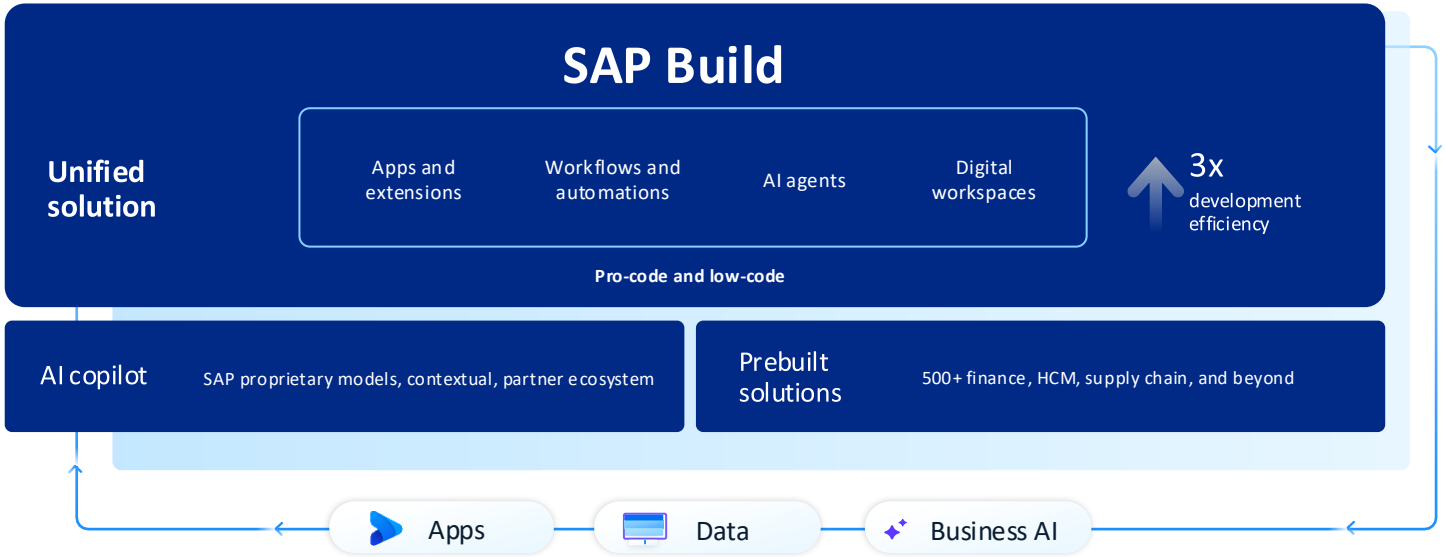
Build your own agents — no code required
Custom logic · Non-SAP integrations · Reusable Skills



Public

A simpler, fast, and trusted way to personalize SAP

Build where your business lives, in the context of your applications, data, and AI



Start quickly

with tools for every role ready from day one

Faster delivery

with AI and prebuilt solutions

Fully integrated

with SAP Business Suite and clean core by design

Acknowledging existing challenges



Agents built using standalone tools **do not understand SAP ecosystem**



Agents are limited in their ability to work across heterogenous landscapes

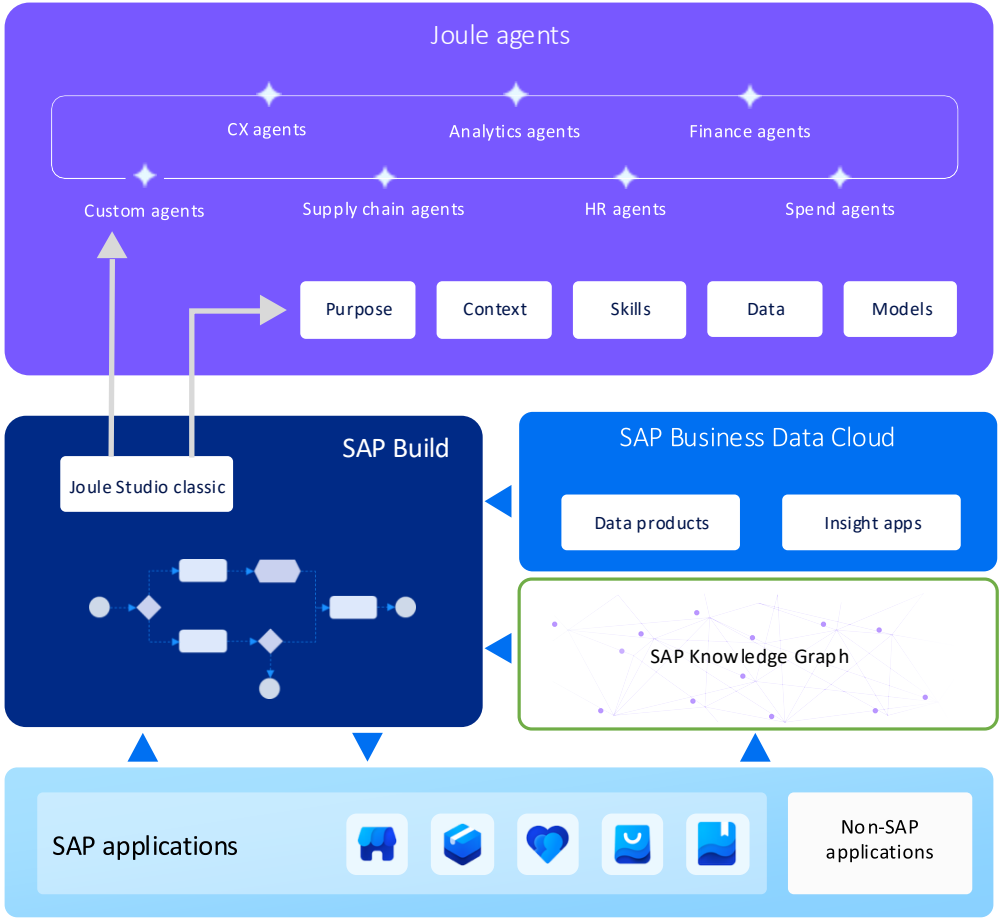


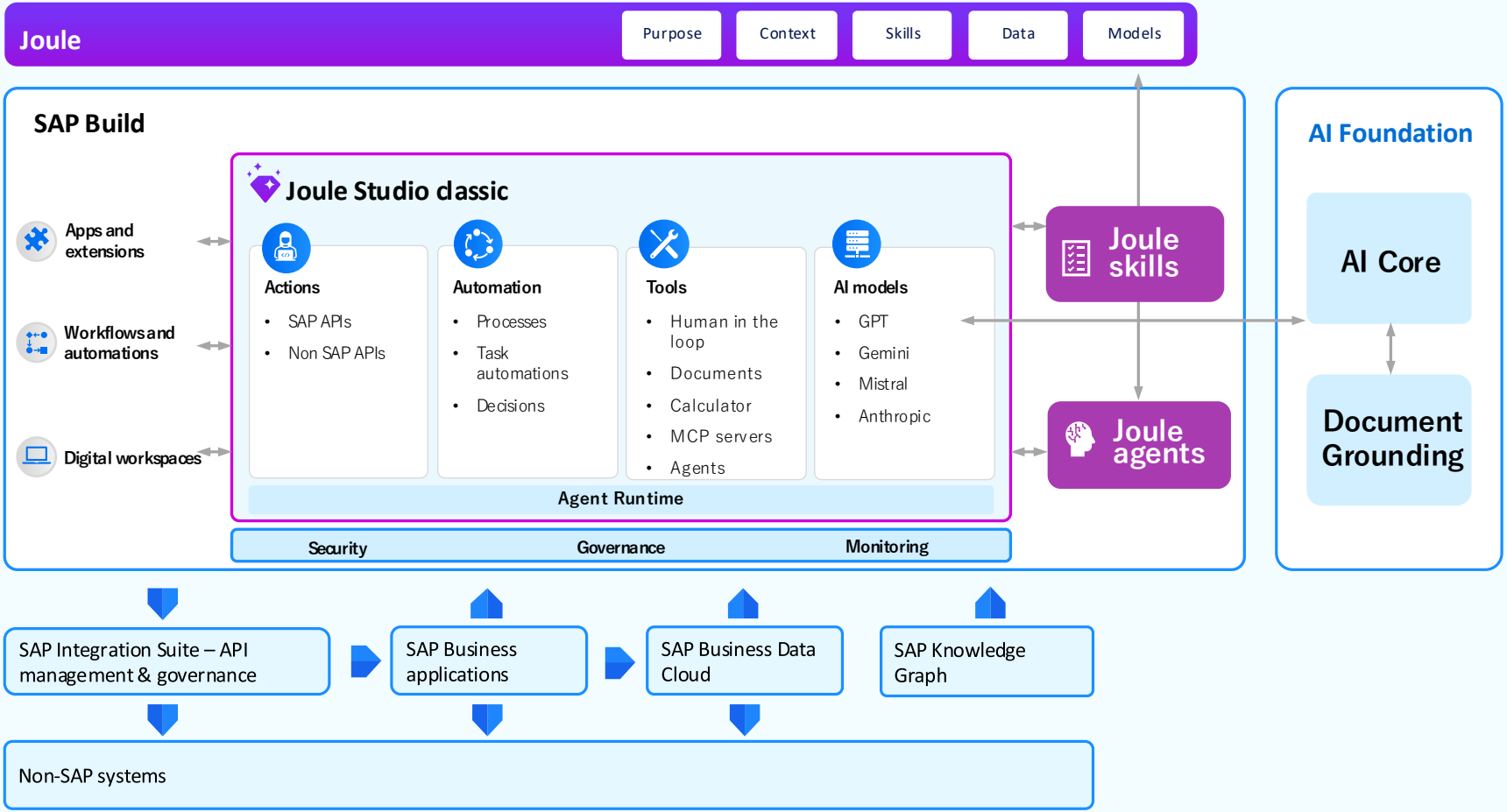
Agents do not adhere to your security, compliance, and responsible AI needs

Joule Studio classic

Build Joule agents and skills for specific business needs with drag and drop simplicity.

These capabilities extend Joule copilot and enhance efficiency.




Joule
Purpose
Context
Skills
Data
Models
SAP Build
Joule Studio classic
Apps and extensions
Workflows and automations
Digital workspaces
Actions
SAP APIs
Non SAP APIs
Automation
Processes
Task automations
Decisions
Tools
Human in the loop
Documents
Calculator
MCP servers
Agents
AI models
GPT
Gemini
Mistral
Anthropic
Agent Runtime
Security
Governance
Monitoring
Joule skills
Joule agents
AI Foundation
AI Core
Document Grounding
SAP Integration Suite – API management & governance
SAP Business applications
SAP Business Data Cloud
SAP Knowledge Graph
Non-SAP systems

Joule Studio classic



Joule agents

Build your own Joule agents



Joule skills

Extend Joule with custom Joule skills

What are **AI agents**?

Attributes

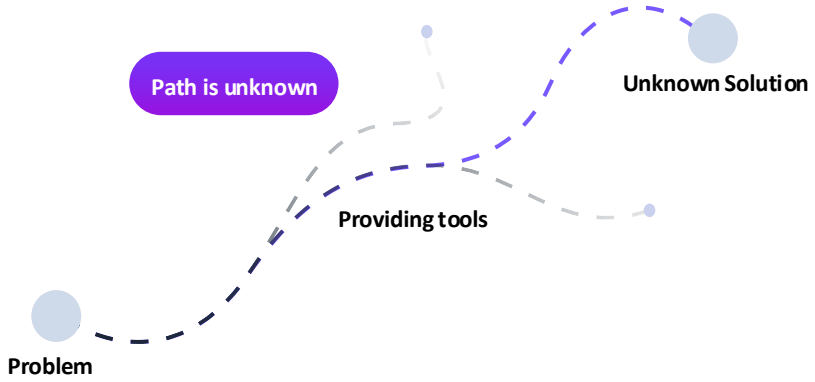
- Planning
- Reasoning
- Autonomy
- Agent-agent communication

LLMs | Tools

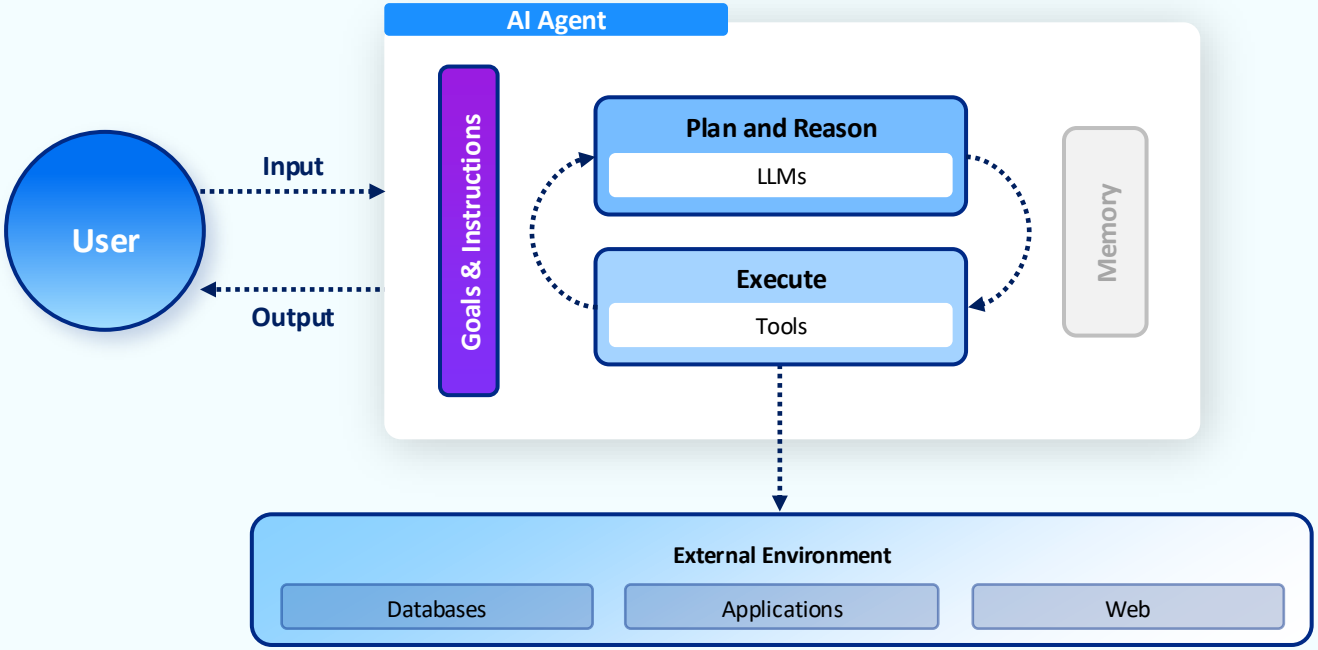
Examples

- Optimize shipment logistics
- Manage talent acquisition
- Negotiate procurement deals

AI agents can execute complex business scenarios by iteratively reasoning and interacting with their environment to achieve a goal.



How does an AI Agent works?



What are **Joule skills**?

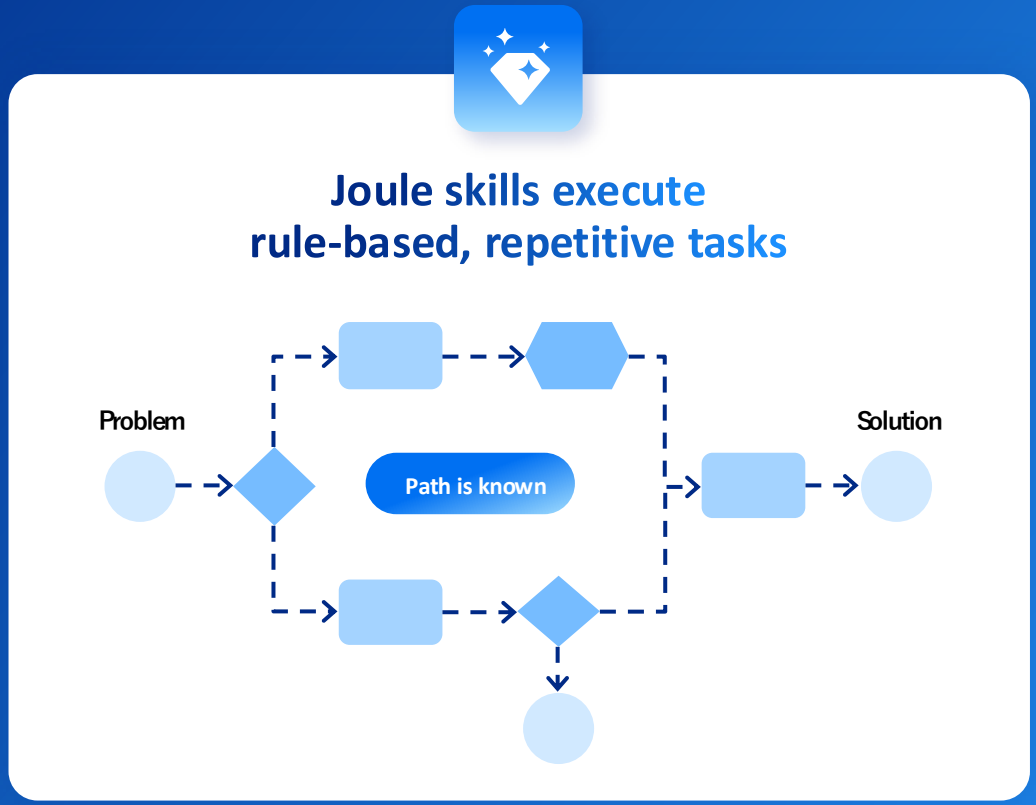
Attributes

- Orchestrated through Joule
- Intent & context-based triggers
- Pre-defined execution flow

APIs | Automations

Examples

- Retrieve supply chain risks
- Get weather conditions
- Raise transport request for a shipment
- Create a service now ticket



What makes Joule Studio **different**?



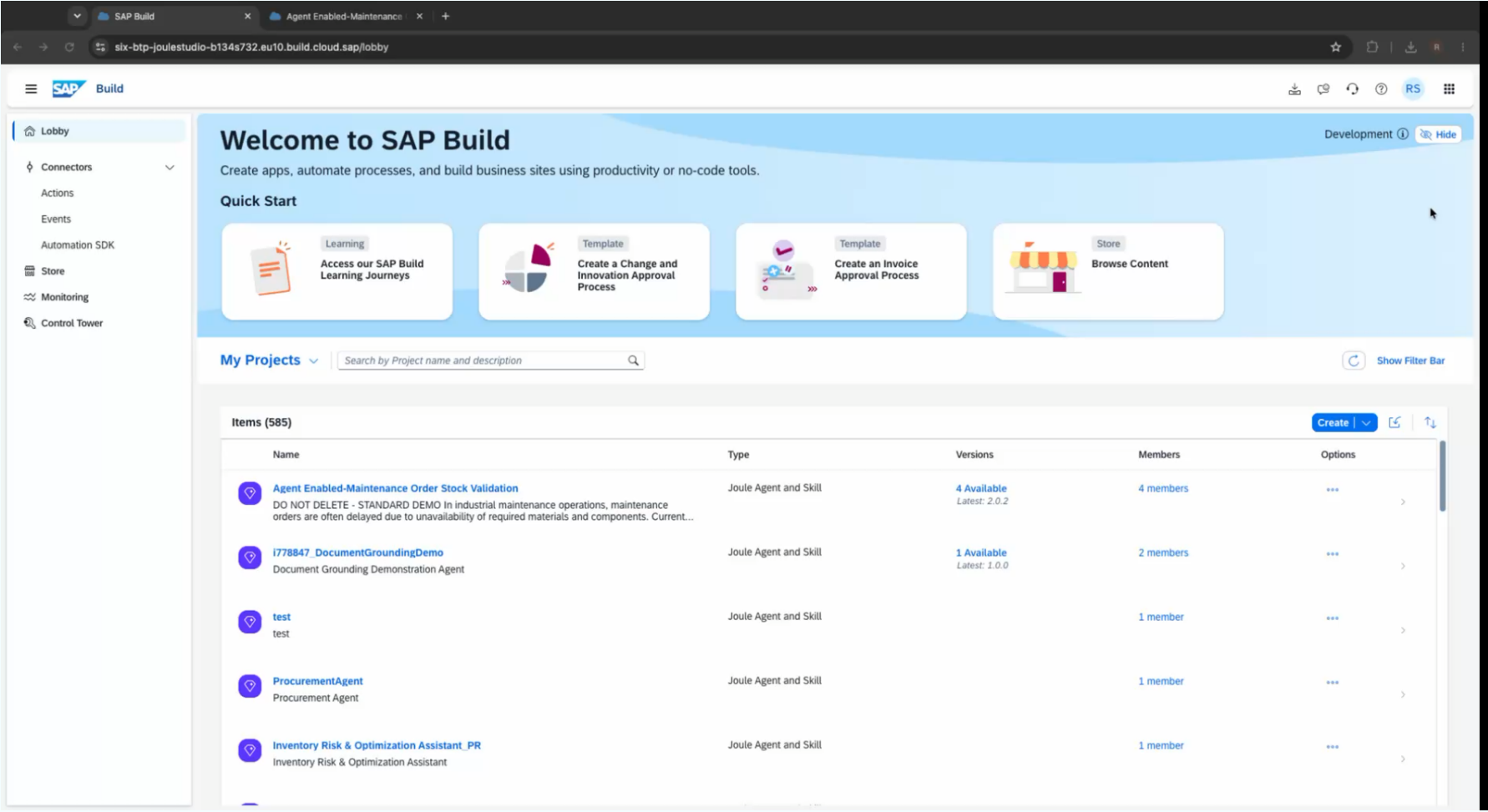
Deep grounding in business processes



An open and extensible framework

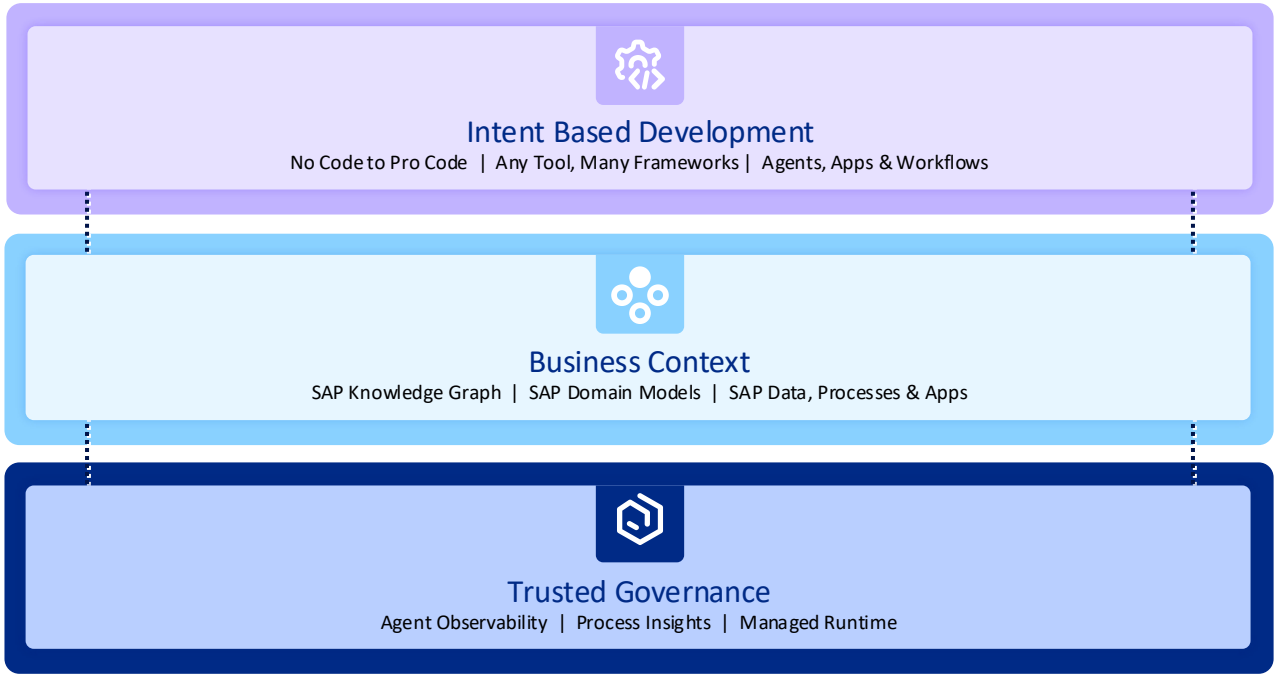


Built-in security and compliance


SAP Build
Agent Enabled-Maintenance
six-btp-joulestudio-b134s732.eu10.build.cloud.sap/lobby
Build
RS
Lobby
Connectors
Actions
Events
Automation SDK
Store
Monitoring
Control Tower
Welcome to SAP Build
Create apps, automate processes, and build business sites using productivity or no-code tools.
Development
Hide
Quick Start
Learning
Access our SAP Build Learning Journeys
Template
Create a Change and Innovation Approval Process
Template
Create an Invoice Approval Process
Store
Browse Content
My Projects
Search by Project name and description
Show Filter Bar
Items (585)
Create
Name
Type
Versions
Members
Options
Agent Enabled-Maintenance Order Stock Validation
DO NOT DELETE - STANDARD DEMO In industrial maintenance operations, maintenance orders are often delayed due to unavailability of required materials and components. Current...
Joule Agent and Skill
4 Available
Latest: 2.0.2
4 members
i778847_DocumentGroundingDemo
Document Grounding Demonstration Agent
Joule Agent and Skill
1 Available
Latest: 1.0.0
2 members
test
test
Joule Agent and Skill
1 member
ProcurementAgent
Procurement Agent
Joule Agent and Skill
1 member
Inventory Risk & Optimization Assistant_PR
Inventory Risk & Optimization Assistant
Joule Agent and Skill
1 member

Joule Studio

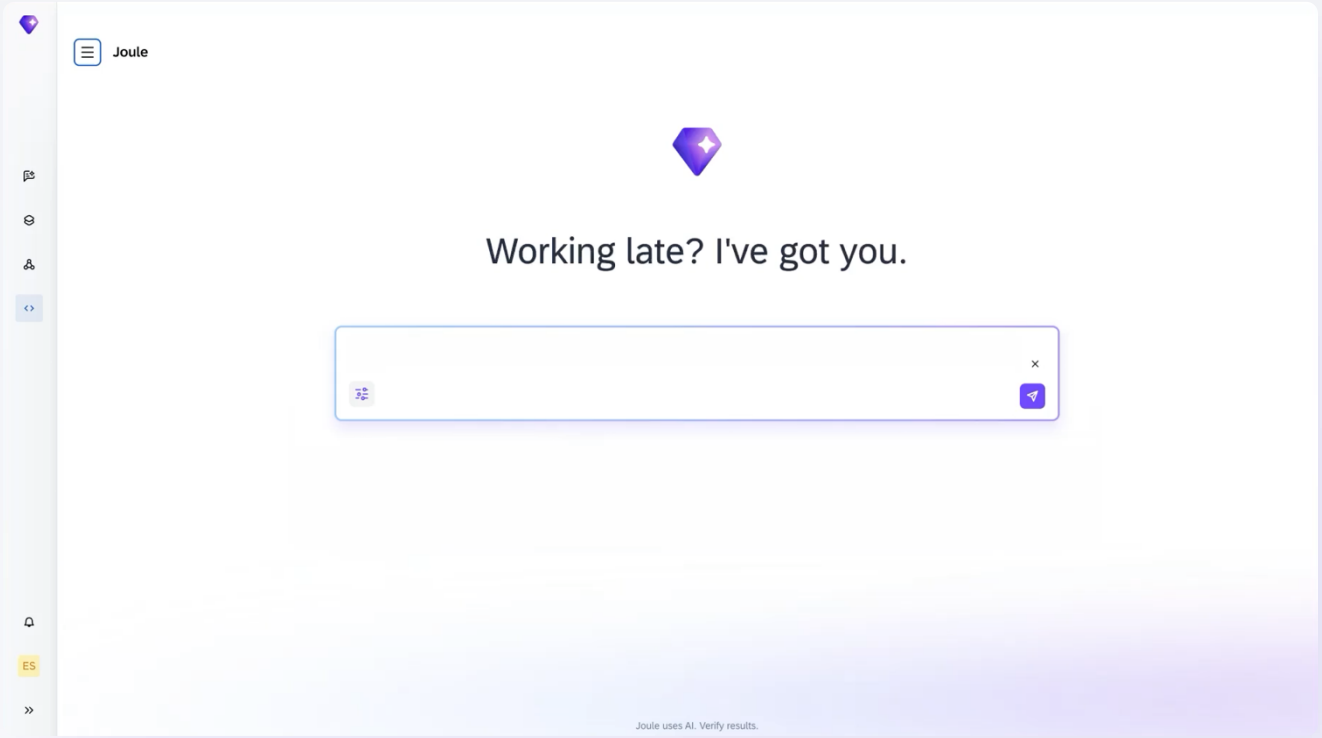
Build Trusted Custom Agentic Solutions



Public

Build agents by simply stating your intent

Generate, test, and deploy agents with AI



Governance Framework & Adoption Roadmap

Build responsibly — scale sustainably — measure everything

Governance

Agent Review Board
Approve agent scope, Skills, and authority before production deployment

Authorization Mapping
Every Skill maps to SAP authorization objects — zero-trust by default default

Audit & Compliance
All agent actions logged: timestamp, user context, reasoning trace trace

Threshold Policies
Define autonomous action limits vs. mandatory human approval approval thresholds

Observability SLOs
Set success rate, handoff rate, and latency targets for each agent

Adoption Roadmap

CRAWL Months 1–3	• Activate 1–2 pre-delivered agents in one Line one Line of Business • Build 3–5 Joule Skills for top repetitive actions • Establish governance baseline (Review Board + auth mapping)
WALK Months 4–6	• Add custom Skills and 1–2 MCP integrations integrations • Introduce human-in-the-loop approvals for key decisions • Publish KPIs — build internal momentum and trust
RUN Month 7+	• Orchestrate agents across 2+ Lines of Business • Self-service Skill catalog for business teams • Define an agent-first process design standard

Key Takeaways

01

Start with pre-delivered agents

SAP pre-built agents deliver immediate value — no custom build required. Activate, measure, and build confidence before extending.

02

Joule Studio is your extensibility platform

Use Joule Studio inside SAP Build to design agents tailored to your unique processes. Build a reusable Skill library now — it compounds in value as you add more agents.

03

Govern before you scale

Establish an Agent Review Board, align Skills to SAP authorization objects, and define threshold policies. Trustworthy Trustworthy agents require intentional governance — not bolted-on afterthought.

Thank you — questions welcome