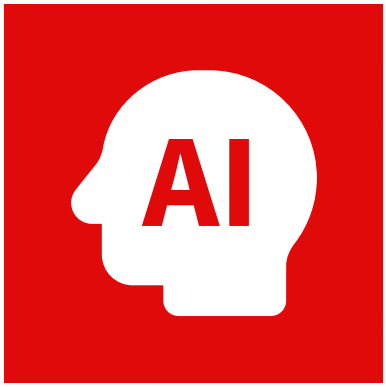
SEEBURGER

Solution Brief | Assisted Integration Design with AI

SEEBURGER Integration Assistant (SIA): Design-Time AI Assistance for Governed Integration Development



Executive summary

As businesses face the growing demands of digital transformation, the need for efficient and secure integration across diverse systems has never been more critical. The complexity of modern supply chains, partner ecosystems, and regulatory frameworks calls for seamless communication and data exchange, but many organizations still struggle with fragmented processes, manual interventions, and siloed data that slow down decision-making and increase operational risk.

The rise of AI is transforming how businesses approach integration, moving beyond traditional automation towards smarter, more conversational experiences. Industries such as manufacturing, retail, logistics, and financial services are increasingly adopting AI-powered tools to simplify their integration processes, enhance productivity, and gain actionable insights at scale. Innovative technologies like embedded conversational AI are emerging as a game-changer for reducing complexity and empowering users to make better decisions faster and more accurately.

In integration-heavy environments, the real challenge lies in combining advanced capabilities with the ability to manage complex integrations. This is where SEEBURGER Integrated AI (SIA) steps in. By providing conversational assistance directly within the integration design phase, SIA helps organizations improve consistency, accelerate onboarding, and scale integration development across teams with different expertise levels, all while ensuring governance within an enterprise-grade integration platform. With context-aware guidance, intelligent recommendations, and real-time answers, SIA helps organizations streamline operations, minimize errors, and unlock new levels of efficiency without compromising security or compliance.

The challenge: Integration development under pressure

Integration development is under increasing pressure. Enterprises must connect a growing number of applications, partners, and data sources while keeping integration landscapes stable, secure, and compliant. At the same time, integration scenarios are becoming more complex due to heterogeneous systems, evolving interfaces, and rapidly changing business requirements.

Specialized integration experts are often a limited resource. As a result, integration tasks are increasingly shared across teams, including technical users and domain specialists – so-called citizen integrators – who contribute without deep integration expertise. Both experienced integrators and citizen integrators face challenges such as understanding platform capabilities, applying best practices, and resolving design issues efficiently. Without the right support, this can result in delays, inconsistent implementations, and increased dependency on a small number of experts.

To address these challenges, modern integration teams need guidance that is:
- Available directly within the integration design environment
- Adapts to the user's current context and task
- Effective for both experienced integrators and citizen integrators
- Reinforcing platform standards and best practices

At the same time, organizations must retain full control over integration logic and architecture. Any AI assistance must operate within clearly defined boundaries to ensure governance, predictability, and transparency across all integration projects.

The solution: SEEBURGER Integration Assistant (SIA)

The SEEBURGER Integration Assistant (SIA) addresses these requirements by providing **AI-powered assistance** directly within the Integrator Workspace (IWS).

SIA supports users during integration design activities, such as modeling flows, configuring components, working with mappings, suggesting code, or interpreting validation errors. It delivers context-aware guidance based on the element currently in focus.

This approach **benefits both experienced integration specialists and citizen integrators**. Experts can work more efficiently by reducing manual lookups and repetitive clarification tasks, while less experienced users receive targeted explanations and guidance directly where they work.

SIA is designed as a supportive assistant, keeping all decisions and changes under the user's control.

How SIA supports integration development

The SEEBURGER Integration Assistant (SIA) supports integration development by providing targeted, context-aware assistance directly within the Integrator Workspace. Instead of relying on external documentation or trial-and-error approaches, users receive guidance aligned with the task they are currently performing.

Context-aware assistance in the Integrator Workspace

SIA continuously adapts its responses to the active element in the workspace, such as a flow step, mapping, connector configuration, or project components. This context awareness allows users to obtain relevant explanations without interrupting their workflow.

For less experienced users, this reduces uncertainty and accelerates learning. For experienced integrators, it eliminates the need to manually search for reference information, enabling faster and more focused work.

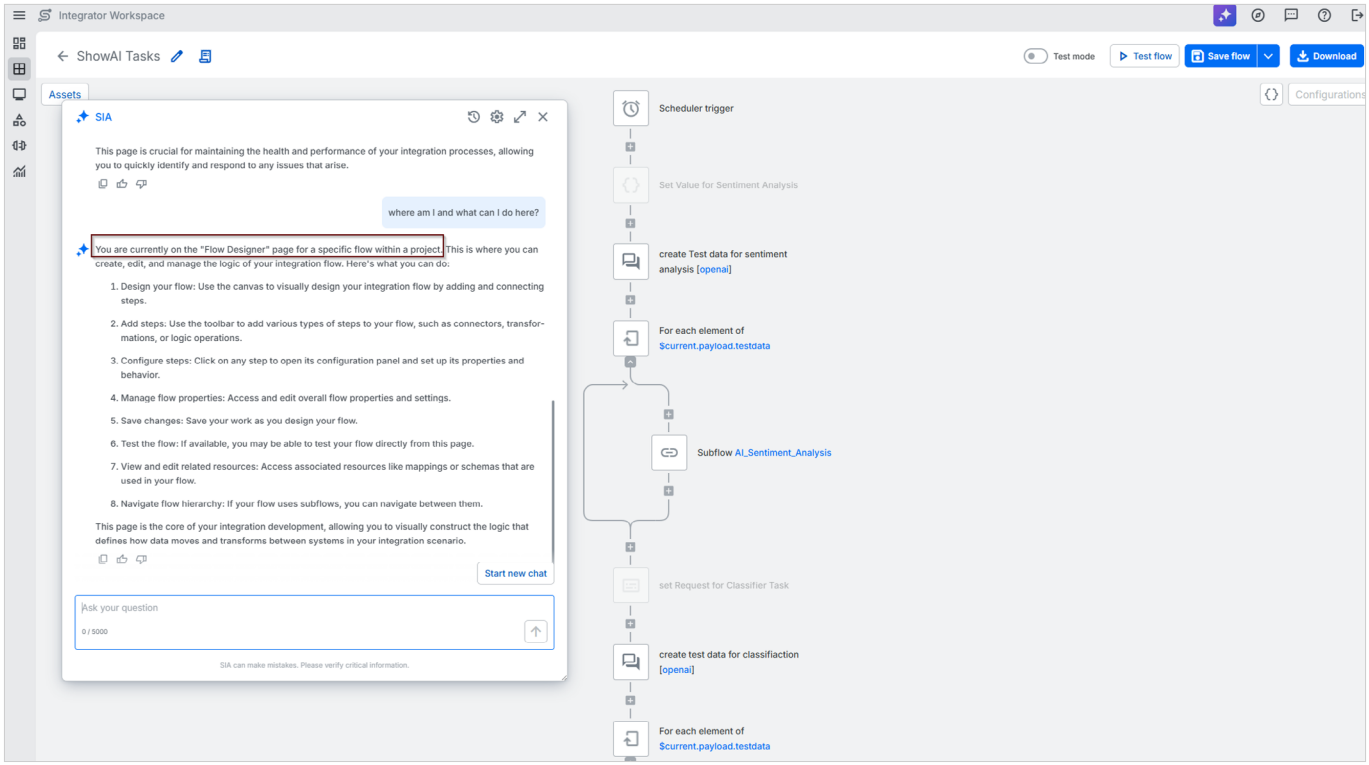


Figure 1: Context-aware assistance provided by the SEEBURGER Integration Assistant (SIA) within the Flow Designer, offering in-context guidance that supports both less experienced users and experienced integrators during integration design.

Documentation-aligned knowledge retrieval

SIA retrieves information exclusively from approved SEEBURGER documentation sources, including the BIS online help. All responses are aligned with official guidance and platform-specific terminology.

This ensures that recommendations are consistent with documented best practices and architectural standards. Integration teams benefit from a shared, authoritative knowledge base that supports consistent design decisions across projects.

Modeling, mapping, and configuration guidance

During flow modeling, mapping activities, or connector configuration, SIA explains available options, step behavior, and common usage patterns. It can also support work in code-based fields by providing examples or validation logic that fit the surrounding context.

This guidance helps users understand not only what to configure, but also why certain approaches are recommended, supporting better design decisions and more consistent implementations.

Coding assistance

SIA supports users with coding tasks by offering context-aware suggestions, including code examples and syntax guidance, directly within the integration environment.

This helps users avoid common errors and accelerates the coding process, enabling both experienced developers and citizen integrators to work more efficiently and accurately.

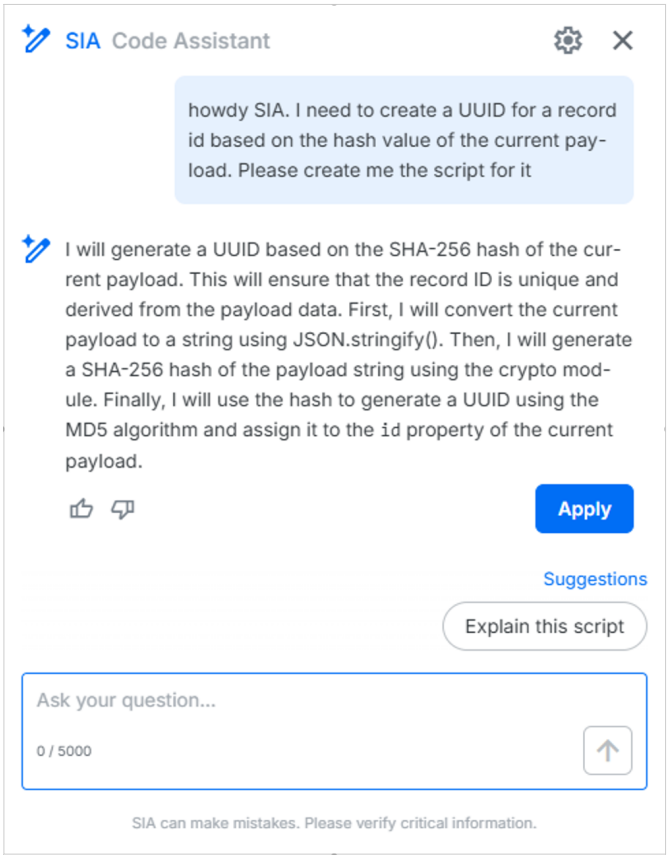


Figure 2: SIA supporting integration development by generating context-aware JavaScript code suggestions, which are applied only after explicit user confirmation.

Troubleshooting and explanation support

When validation errors or misconfigurations occur, SIA assists by explaining error messages, identifying likely causes, and pointing to relevant corrective steps or documentation sections.

This reduces time spent on manual investigation and helps users resolve issues more efficiently, regardless of their experience level.

Governance, control, and architectural clarity

AI support in integration development must be **predictable**, **transparent**, **and aligned with enterprise governance requirements**. The SEEBURGER Integration Assistant (SIA) is designed with these principles in mind.

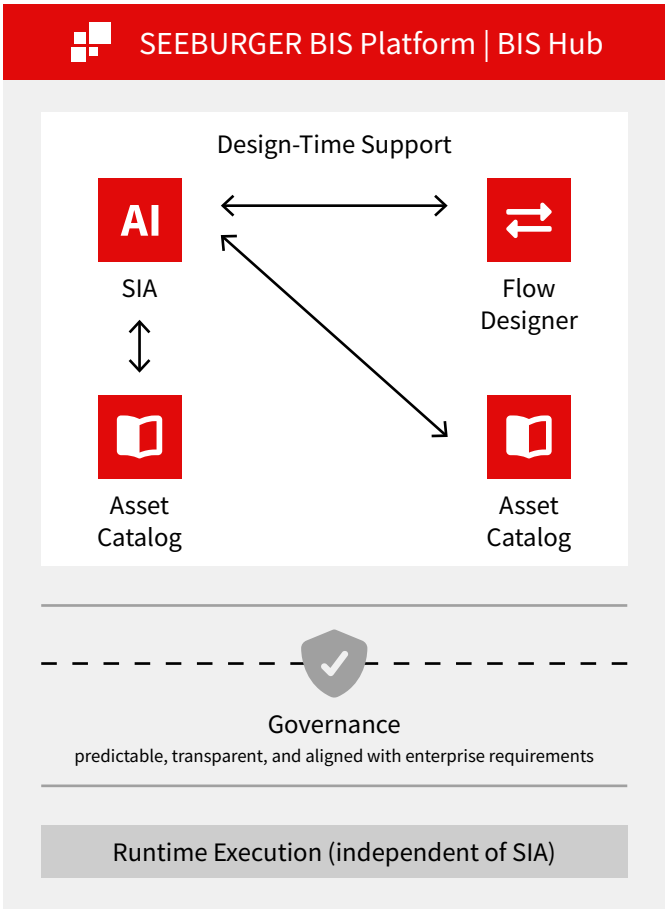


Figure 3: Architectural overview of the SEEBURGER Integration Assistant (SIA) within the BIS Platform, illustrating its role as a governed design-time assistant, clearly separated from runtime execution.

Design-time assistance only

SIA operates exclusively at design time. It supports users while modeling integration flows, configuring components, and resolving design-time questions within the Integrator Workspace. It does not access runtime data, operational logs, or deployed integration artifacts.

This clear separation ensures that AI assistance enhances the design process without influencing execution behavior.

Configurable automation with full user control

SIA supports both guided recommendations and the automated application of changes during design time. By default, SIA can automatically apply suggested adjustments to integration artifacts such as flows, mappings, or configuration fields.

This behavior is fully configurable. Organizations can define whether SIA operates in auto-apply mode or recommendation-only mode, depending on governance requirements, user roles, or project policies.

All changes initiated by SIA remain transparent and traceable within the Integrator Workspace. Users retain full visibility and control over integration logic, ensuring that automation accelerates development without compromising architectural oversight, compliance, or accountability.

Controlled model interaction and curated input sources

All interactions between SIA and the underlying language model are routed through a controlled API layer. This layer enforces strict constraints on prompts, context, and output formats.

SIA receives only the minimum contextual metadata required for the current task and uses carefully controlled knowledge inputs. This bounded and transparent interaction model supports predictable AI behavior and aligns with enterprise governance, compliance, and audit requirements.

Clear separation from runtime AI capabilities

SIA is deliberately separated from runtime AI and agentic execution capabilities within the SEEBURGER Business Integration Suite. Autonomous reasoning, tool invocation, and execution-time decisions are handled exclusively by dedicated runtime components.

This architectural clarity establishes SIA as a governed design assistant, not an autonomous execution engine, and provides a transparent foundation for enterprise-grade AI usage in integration projects.

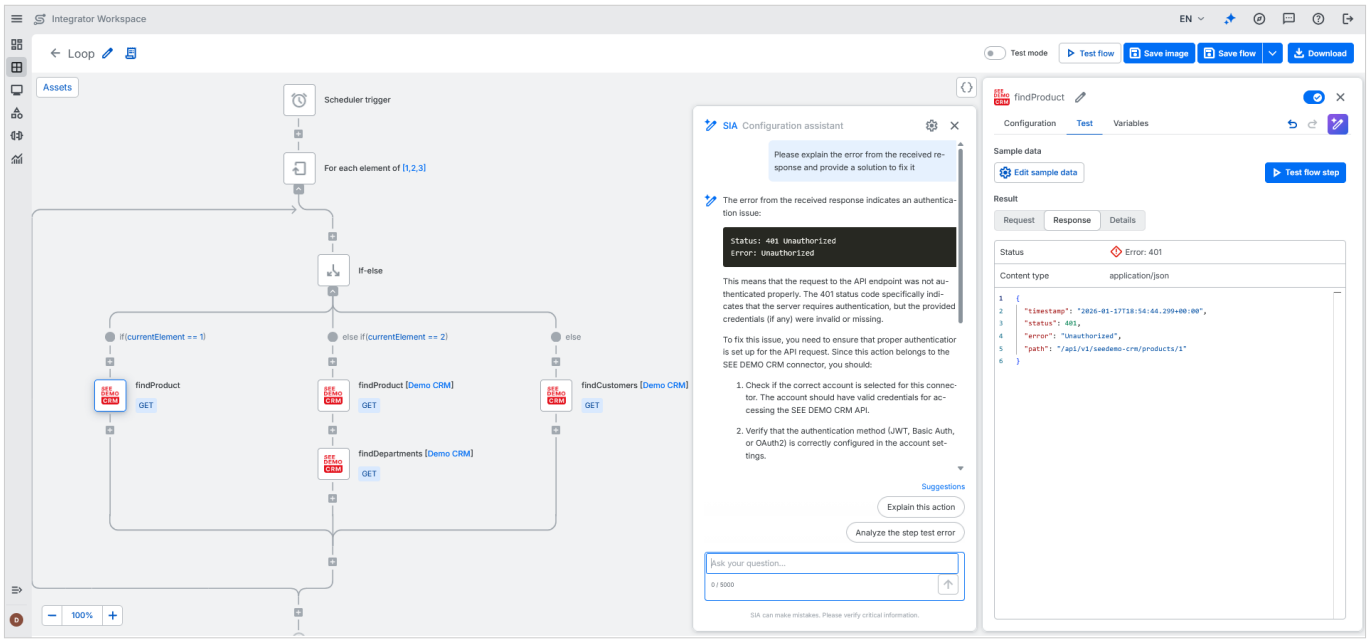


Figure 4: Context-aware configuration guidance provided by the SEEBURGER Integration Assistant (SIA), supporting users directly within the Flow Designer during complex integration design tasks.

Business value and outcomes

By embedding AI-powered assistance directly into the integration design environment, the SEEBURGER Integration Assistant (SIA) delivers measurable value across integration teams and projects.

Faster onboarding and broader participation

SIA lowers the entry barrier for integration development by providing guidance directly in context. New team members and citizen integrators can become productive more quickly, while experienced integrators spend less time on repetitive explanations and support tasks. This enables organizations to distribute integration tasks more effectively without compromising quality or control.

Improved consistency and quality of integration designs

Because SIA reinforces official platform guidance and best practices, integration designs follow a more consistent structure and configuration approach. Teams benefit from fewer deviations, more predictable implementations, and easier maintenance across integration projects.

Reduced effort for troubleshooting and knowledge transfer

By explaining validation errors, configuration options, and design issues in context, SIA reduces the time spent on manual troubleshooting and external documentation searches. At the same time, knowledge remains accessible within the workspace, supporting sustainable knowledge transfer and reducing dependency on individual experts.

Governed and scalable use of AI in integration projects

SIA enables organizations to introduce AI assistance into integration development in a controlled and transparent way. Curated input sources and full user control ensure that AI usage aligns with enterprise governance and compliance requirements. This creates a scalable foundation for AI-supported integration development without introducing operational risk.

Automated documentation support

SIA supports the generation of integration-related documentation directly from the design context. Based on the existing integration artifacts and configurations, SIA can assist in creating structured, understandable documentation that reflects the actual implementation.

This reduces manual documentation effort and helps ensure that technical documentation remains consistent, up to date, and aligned with the integration design. Teams benefit from improved knowledge sharing, easier handovers, and better long-term maintainability of integration projects.

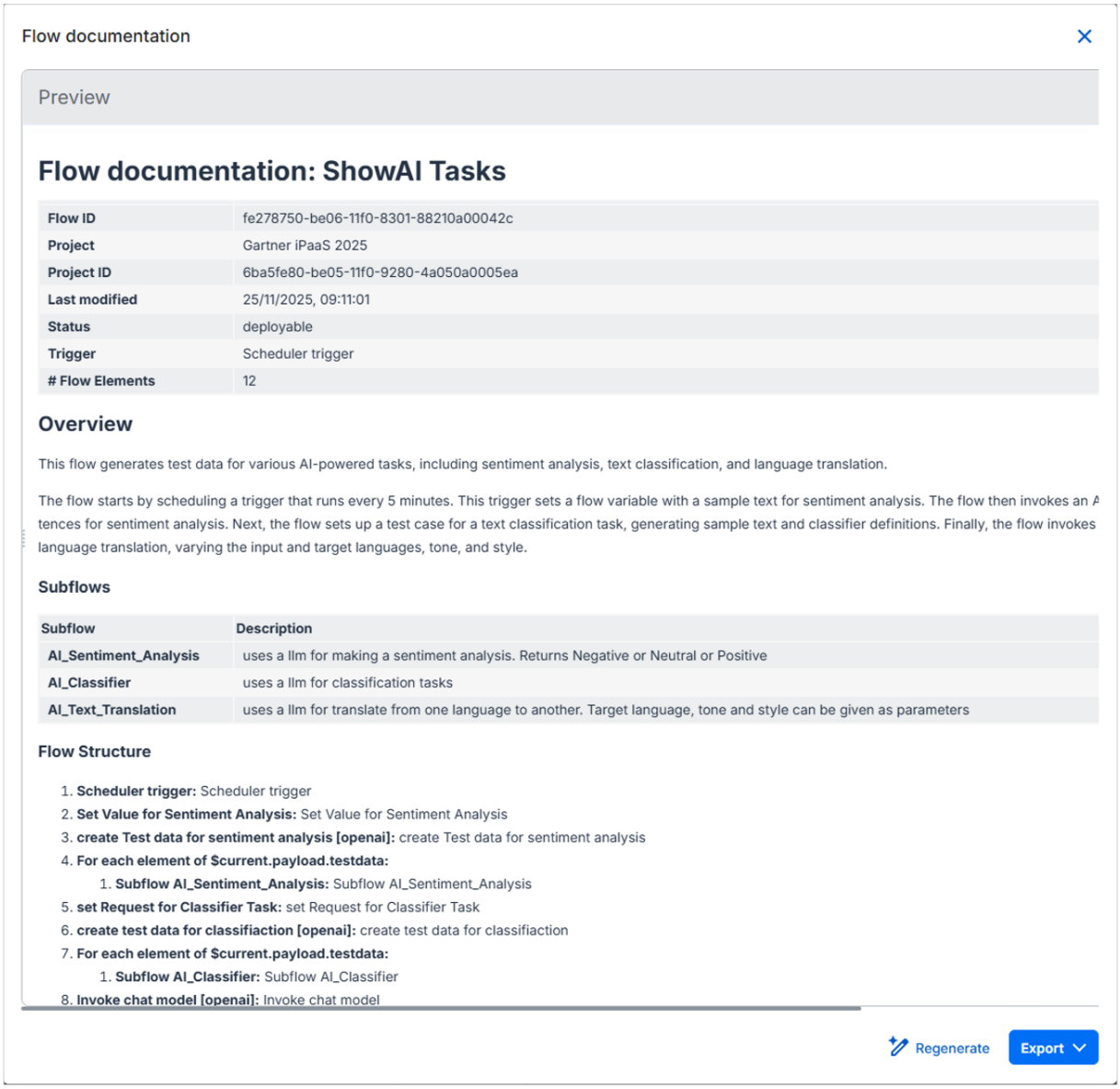


Figure 5: AI-assisted generation of structured flow documentation based on existing integration artifacts, providing a comprehensive and up-to-date view of the integration design.

Conclusion

The SEEBURGER Integration Assistant (SIA) transforms integration development by streamlining workflows, enhancing consistency, and empowering both experienced developers and citizen integrators. By providing context-aware assistance, SIA reduces the learning curve, accelerates onboarding, and ensures adherence to platform standards, all while maintaining full control over integration logic and architecture.

The real value of SIA lies in its ability to optimize integration processes across the organization – improving efficiency, reducing errors, and enabling teams to work more collaboratively. Organizations can scale their integration efforts more effectively, accelerating time-to-market while maintaining compliance and governance.

With SIA, companies not only simplify the integration lifecycle but also unlock new levels of agility, productivity, and innovation, positioning them for success in an increasingly complex digital ecosystem.

Interested in seeing how SIA can streamline your integration projects?

› Contact us

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