

Business Use Case



Accelerating AI Readiness for a Legacy Aerospace Manufacturer

From Data Chaos to Clarity: Taming 40 Years of Aerospace Data with SCOTi® and SchemaSense

*A long-established aerospace manufacturer faced a critical bottleneck in its digital transformation journey: 40 years of fragmented, inconsistent data locked in legacy systems. Manually cleaning and documenting this data to enable AI-driven insights was deemed prohibitively expensive and time-consuming. By deploying **SchemaSense** on the **SCOTi® AI platform**, the company automated the data understanding process. This solution rapidly generated comprehensive data documentation, identified hidden data quality issues, and created a foundational layer of trust in their data. The result was a fully AI-ready data estate, enabling the team to quickly leverage **SCOTi Data Analyst** for advanced business*



www.smartr.ai



sales@smartr.ai



US: +1 408 384 8029
UK: +44 7950 292 546

smartR.AI is registered in Scotland

smartR.ai Ltd, c/o IDS + Co.
Thistle Court, Room 11
1-2 Thistle Street, Edinburgh EH2 1DD

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intelligence and uncover previously hidden value in their legacy datasets.

The Business Challenge: The Weight of Legacy Data

The client, a major aerospace manufacturer, possessed a valuable asset: 40 years of operational data encompassing manufacturing, sales, marketing, and engineering. However, this asset had become a liability. Decades of business changes, mergers, and technology shifts resulted in a complex web of data sources with inconsistent schemas, poor documentation, and unknown quality issues.

Key Problems:

- **AI Project Bottleneck:** Cleaning and understanding this data was the essential, yet overwhelming, first step for any proposed AI or advanced analytics project.
- **Operational Risk:** The company still supported and sold products from earlier eras, but a lack of reliable data understanding posed risks to maintenance, compliance, and customer support.
- **Inefficiency:** Data scientists and analysts spent up to 80% of their time simply finding, cleaning, and validating data instead of generating insights.

The Solution: Automated Data Intelligence with SCOTi and SchemaSense

The company implemented SchemaSense, an AI-powered data profiling and documentation tool, running on the SCOTi AI platform. Instead of manual inspection, they used AI to understand their data at scale. The solution worked in a powerful, iterative cycle:

- **Automated Discovery & Profiling:** SCOTi analyzed the actual data and its metadata from all available sources, automatically generating a detailed description of each dataset and every individual field.
- **Anomaly Detection:** SCOTi intelligently flagged potential data quality issues, such as non-varying fields (which might be deprecated) or values inconsistent with existing documentation, directing human attention to the highest-risk areas.
- **Confidence-Based Prioritization:** A unique confidence score was assigned to each AI-generated field description. This allowed the data stewardship team to quickly sort and focus their efforts on low-confidence fields where the AI was uncertain, dramatically improving their efficiency.
- **Human-in-the-Loop Refinement:** The data owners reviewed the report, corrected the low-confidence descriptions, and provided missing context. SchemaSense was then rerun, incorporating this human feedback to produce even more accurate and comprehensive documentation with each iteration.

The Implementation and Value Delivered

With a trusted data foundation established by SchemaSense, the company unlocked the next level of value with SCOTi Data Analyst.

- **Advanced Insight Generation:** The team could now ask complex, natural language questions about their 40-year historical data to uncover trends and correlations.



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- **Discovery of Hidden Value:** As a final validation step, the team used SCOTi Data Analyst to build a quality assurance set. This process led to a significant discovery: undocumented encodings within certain data fields that held additional, valuable information. This newfound knowledge was fed back into SCOTi, creating a complete and authoritative "single source of truth" for their data sources.

Key Benefits & Measurable Outcomes

- **Accelerated Time-to-Insight:** Reduced the data preparation phase for AI projects from months to weeks.
- **Improved Data Quality & Trust:** Systematically identified and rectified legacy data issues, building confidence in data-driven decisions.
- **Increased Operational Efficiency:** Freed highly-skilled data personnel from tedious profiling tasks to focus on high-value analytical work.
- **Unlocked Hidden Assets:** Discovered and documented valuable data relationships and encodings that were previously unknown.

Conclusion

For organizations sitting on decades of legacy data, the path to AI-driven innovation is often blocked by the monumental task of data understanding. This use case demonstrates that with **SCOTi and SchemaSense**, companies can turn this bottleneck into a strategic advantage. By leveraging AI to document and validate data, they can rapidly build a trusted foundation, accelerate their AI initiatives, and extract maximum value from their most enduring asset: their data.

*SCOTi is the first **Autopilot for Aerospace PLM**—turning your team's hard-won experience into a scalable competitive edge. Stop guessing. Start winning. Let's discuss how SCOTi can transform your data.*

About smartR AI

We believe that data and AI play a key part in a sustainable world. Our mission is to facilitate and empower organizations to extract real value from their data in an ethical, responsible, and sustainable manner using cutting edge AI technology. We provide solutions that are risk-free, controllable and financially viable for any small or medium-sized enterprise, especially those who are innovators and challengers wishing to shape the future.

We like to think of ourselves as the human face of generative AI, in a world where today's technology is causing confusion. We've developed proprietary model building blocks to accelerate the development of your project. So, every company can now build its own private AI smarter.

smartR AI augments organizations with AI expertise, driving enterprise-wide implementation, and streamlining workflows. We specialize in safe private AI models that manage risk, while providing high reward. They are specifically trained for clients, enhancing and optimizing



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productivity, revealing previously unseen insights from their vast data pools. smartR AI improves lives intelligently by empowering workforces with actionable insights.



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