



Tron42

Semantically Autonomous AI Solutions

# Agenda

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*“Our AI enables real-time transparency of real-world, cross-system processes and relationships — semantically driven, autonomous, precise, and complete. A true game changer for digital transformation, legacy modernization, compliance analysis, process mining, supply chain optimization, and predictive maintenance. We deliver value-based business models tailored to measurable outcomes.”*

Patrick Haug

CEO & Founder Tron42

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|      |    |           |
|------|----|-----------|
| Page | 3  | Tron42    |
| Page | 7  | APMI      |
| Page | 12 | DeepNex42 |
| Page | 15 | DeCarb42  |
| Page | 24 | Contact   |

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## Mission



... We develop sustainable, semantically autonomous AI solutions that dive deep into complex systems, truly understand them, and help organizations make better decisions.

We combine precise data intelligence with clear, actionable recommendations — enabling measurable value creation. We understand systems before we improve them.

This is the core of our technology — and the foundation of how we operate.

# Tron42

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## Unsere DNA

t Tron42, we believe that true improvement is only possible through deep understanding.

Much like Kevin Flynn in TRON, our technology enters digital worlds, understands their logic, and reveals patterns invisible to the human eye.

And inspired by Douglas Adams' iconic "42," our name reflects a simple truth: insight always starts with the right questions.

Disclaimer:

„Tron“ TRON is a trademark of The Walt Disney Company. This reference is used solely for illustrative purposes and is not affiliated with or endorsed by any official content..

„42“ The reference to 42 is derived from the works of Douglas Adams and is used solely as a cultural allusion.

## Full Data Sovereignty

**Data sovereignty and information security are a central success factor for our customers and a key accelerator for project delivery.**

All data processing takes place exclusively within infrastructure controlled by the customer — ensuring full sovereignty and control at all times.

The Open Telekom Cloud provides the ideal framework for this approach:

- ISO 27001 (Information Security)
- ISO 27017 / ISO 27018 (Cloud Security & Data Protection)
- ISO 22301 (Business Continuity)
- C5 (BSI Cloud Security)
- Trusted Cloud / GDPR compliance
- Data centers located exclusively in Germany

As a result, APMI operates entirely within the German legal and compliance zone - without exposure to the US CLOUD Act, without third-country data transfers, and without vendor lock-in risks.



## Produkt-Suite

- **APMI Process Discovery:**  
Hebt klassisches Process Mining – inklusive Reverse Process Mining – auf ein neues Level (zero tagging)
- **DeepNex42 Predictive Maintenance:**  
Semantically autonomous pattern recognition in pre-failure data, together with deep analysis of sensor signals and contextual dependencies, enables next-generation predictive maintenance.
- **DeCarb42 Logistics Chain Optimization:**  
O<sub>2</sub> calculation, optimization, and efficiency improvement in transport chains — addressing the growing requirements around Scope 3, CSRD, EUDR, and related regulations.

# APMI

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**„Artificial Process Mining Intelligence“  
= Semantic, Autonomous Process Discovery**

Provides automated, system-spanning identification, analysis, and documentation of actual operational processes, ensuring data sovereignty and eliminating the need for manual process modeling.

Alternative process:  
“Automated Process  
Discovery”

vs.

Manual Inputs

# APMI

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## Challenges

80%

... Many transformation projects fail due to a lack of understanding and documentation of real-world processes.

While many organizations have a clear vision of their future systems and platforms, they lack a fact-based understanding of how their processes actually run today.

Static process models fail to reflect operational reality, and interface processes are fragmented, proprietary, or shaped by legacy constraints.

This causes migration, automation, and digitalization initiatives to stall at an early stage.

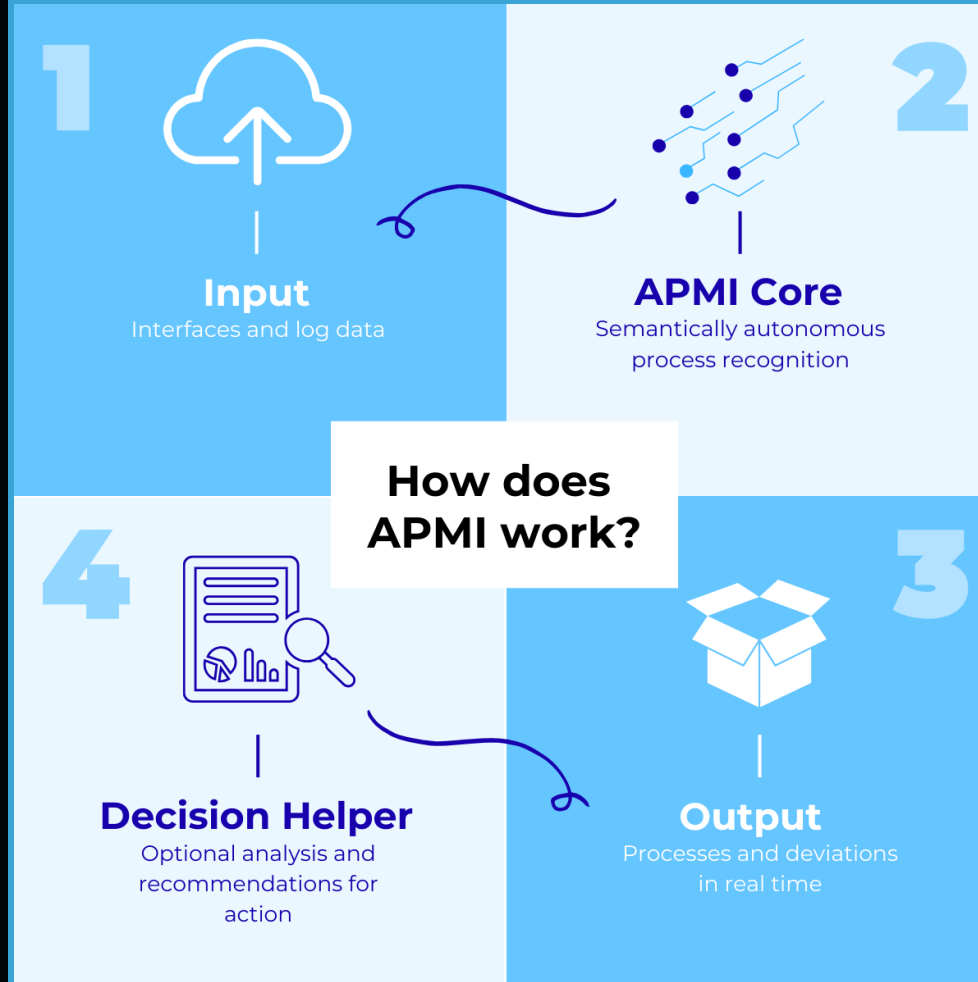
APMI autonomously and semantically reconstructs real processes across systems — rapidly and without manual modeling.

# APMI

No modeling. No preparation required. Works with log data, table changes, interface events, files, and documents.

Optionally, APMI analyzes the identified processes and delivers actionable recommendations and reports, including heatmaps, bottleneck analyses, and ABC analyses.

Automatically reveals risks, inefficiencies, and improvement opportunities.



APMI ingests raw data from all relevant systems with zero modeling and zero preparation.

Semantic AI autonomously discovers processes across systems, creating a fact-based view of real operations — without tagging or manual analysis.

APMI provides real-time, end-to-end BPMN process models, including all variants and deviations - enriched by semantic data cubes across qualitative and quantitative dimensions.

The result is a deep, multidimensional understanding of operations, immediately applicable to transformation, migration, and optimization.

APMI

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Game Changer

80%

Faster

Actionable

50%

More Efficient

... Up to 80% of project timelines and 50% of costs are spent on identifying, reconstructing, and making existing processes measurable

heoretical process models often deviate significantly from operational reality. Interface processes are fragmented, proprietary, or shaped by legacy evolution, making them difficult to reliably transfer to new systems.

As a result, migration, automation, and digital transformation initiatives stall before they truly begin - not because of technological decisions, but due to a lack of transparency.

APMI delivers an autonomous, semantic reconstruction of these real-world processes - across systems, fast, and without any modeling effort (zero tagging).

This creates, for the first time, a complete and reliable view of the actual process landscape, forming the foundation for any successful transformation or optimization.

# APMI

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Your gateway to true process clarity



## **The fastest path to process clarity.**

Start with APMI and lay the foundation for successful migrations, transformations, and automation — without risk, without upfront effort, and without process modeling.

## **Value instead of effort.**

Our pricing model is based on actual insight gained: every discovered process, subprocess, or process step contributes directly to your project progress — and forms the basis of our compensation. You pay for results, not for licenses.

# DeepNex42

**“Deep Nexus Pattern Recognition”  
= Semantic, Autonomous Pattern Recognition for  
Predictive Maintenance**

Pattern recognition in pre-failure data -  
combined with deep analysis of sensor data and  
contextual information.

Deep, semantic, and  
autonomous pattern  
recognition

vs.

Manual Analysis  
&  
Interpretation

# DeepNex42

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Classical

Predictive Maintenance ...

1. detects symptoms
  - **We understand root causes**
2. **Evaluates signals**
  - **We interpret and describe meaning and context**

Our semantic, autonomous predictive maintenance platform understands multidimensional sensor data across mechanical, thermal, electrical, chemical, and contextual domains - without rules or manual tagging.

It detects causal patterns across sensors, systems, and processes, revealing early indicators of failure rather than isolated outliers.

Through continuous learning from maintenance, ERP, and failure histories, the platform builds a semantic memory that understands true failure causality.

# DeepNex42 | the game changer in the predictive maintenance arena

| Aspect               | Classical Predictive Maintenance                                                             | Semantic Autonomous Predictive Maintenance                                                                         |
|----------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Data Understanding   | Statistical or signal-based: systems detect patterns or threshold violations in sensor data. | Semantic: <b>understands the meaning of events, relations, and process contexts.</b>                               |
| Tagging / Training   | Requires manual labeling, expert knowledge, and models per machine/process.                  | <b>Zero Tagging:</b> autonomously detects patterns and causalities from data and subsequent failures.              |
| Analysis Method      | Time-series analysis, threshold logic, supervised ML models.                                 | <b>Causal event graphs</b> and semantic pattern fusion – detects interactions across sensor and system boundaries. |
| System Integration   | Limited to sensor data, often isolated systems or subsystems.                                | <b>Cross-system:</b> links ERP, MES, CMMS, sensor data, environmental parameters, and failures.                    |
| Result Quality       | Delivers alerts or probabilities of failures.                                                | Provides <b>context-related causal chains</b> , explaining why a failure occurs.                                   |
| Degree of Autonomy   | Reactive or semi-automated, requires model maintenance.                                      | <b>Self-learning</b> , improving through feedback from actual maintenance cases.                                   |
| Explainability (XAI) | Often 'Black Box' ML, barely interpretable.                                                  | <b>Explainable through semantic structures</b> , traceable cause-effect chains.                                    |
| Scalability          | Each model must be trained individually.                                                     | A <b>generic semantic model</b> that works across domains.                                                         |



DeCarb42



# Scope 3 Transport Chains. Smarter






*“If any of these six challenges sound familiar, let’s talk.”*

-  **Scope-3 Transparency in Transport Chains**
-  **CO<sub>2</sub> Efficiency Over Reporting**
-  **Data-Driven Decarbonization**
-  **CSRD Without the Excel Nightmare**
-  **Smart Logistics Intelligence**
-  **Cost & Carbon Optimization**



-  Transparency in Transport Chains
-  CO<sub>2</sub> Efficiency Over Reporting
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-  CSRD Without the Excel Nightmare
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# Transparency in Transport Chains

Most of your emissions and costs come from the transport ecosystem - where visibility ends.

- Emissions originate across suppliers, transport, material flows
- Data is scattered, incomplete, and inconsistent
- DeCarb42 unifies all sources into one transparent overview
- Automatically detects missing Scope-3 data
- Enables precise CO<sub>2</sub> accounting and targeted action planning





- 🔗 Transparency in Transport Chains
- 🌍 CO<sub>2</sub> Efficiency Over Reporting
- ⚙️ Data-Driven Decarbonization

- 🧠 CSRD Without the Excel Nightmare
- 📄 Smart Logistics Intelligence
- 💰 Cost & Carbon Optimization



# CO<sub>2</sub> Efficiency Over Reporting

Sustainability isn't about reporting  
- it's about efficiency

- Real-time CO<sub>2</sub> data, not outdated reports
- Identify inefficiencies automatically
- Prioritize impact over data collection
- Act - don't just report





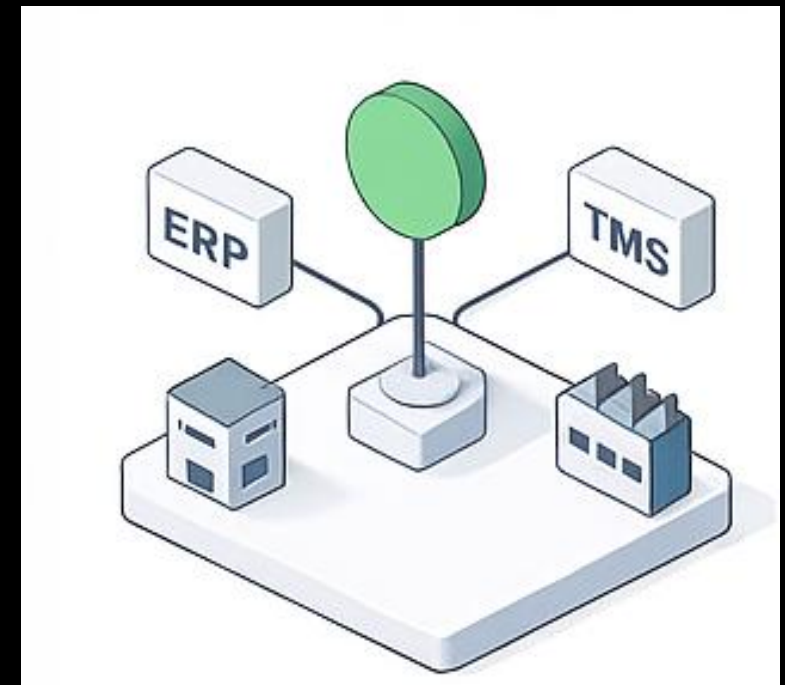
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# ⚙️ Data-Driven DeCarbonization

Your systems don't talk to each other  
- DeCarb42 connects them.

- Automated, audit-proof ESG data flows (Zero Tagging)
- Eliminate manual Excel work
- Full transparency and traceability of all calculations
- Save time, cost, and frustration in reporting





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# CSRD Without the Excel Nightmare

ESG and CSRD reporting works

- even without manual spreadsheets..

- Automated, audit-proof ESG data flows (Zero Tagging)
- No manual Excel edits or copy-paste errors
- Automatically corrects implausible or duplicate data
- Complete transparency and traceability in every calculation
- Saves time, cost, and reporting effort
- Reliable, auditable, and future-ready





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# Smart Logistics Intelligence

Suppliers, emissions, and costs in one system  
- transparent and manageable.

- CO<sub>2</sub>, cost, and supplier performance — instantly visible
- Real-time supplier benchmarking
- ESG risks automatically detected and highlighted
- AI proactively recommends optimization actions





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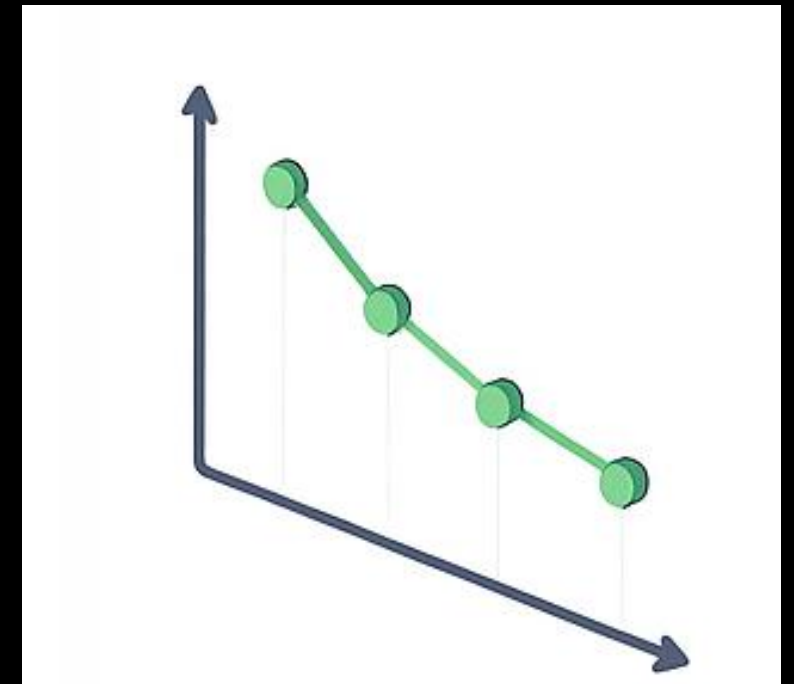
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# Cost & Carbon Optimization











Every ton of CO<sub>2</sub>  
- you avoid also reduces your costs.

- AI pinpoints measures with the highest cost and CO<sub>2</sub> impact
- Real-time simulation of ROI and emission reduction
- Smart prioritization by efficiency and sustainability
- DeCarb42 quantifies both financial and ecological
- Benefits in real time













# Key Features

## Foundation

- Combine core data 
- Cleanse and validate datasets 
- Optimize data consistency 
- Validate and correct relationships 
- Extend data fields 
- Transport detection and process per ID 
- Volumes & service mapping 
- Prioritized transports & pattern recognition 
- Data cube – Power BI ready 
- CO<sub>2</sub> & GLEC framework calculations 

## Enhancement

- ECO-Trans IT 
- Maps 
- Rail hubs 
- Sea freight 
- Air freight (including ground transport) 
- Multimodal transport & bundling 
- Route optimization 
- Re-routing & transit time adjustments 
- ABC & bottleneck analysis, heatmaps 
- Reference: Measures to reduce CO<sub>2</sub> 

 Data Usability

 Data Enrichment & Enhancement

 Decision Helper

# Tron42

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your entry point to real  
clarity and efficiency

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