



Distributed Sovereign AI Infrastructure Nodes Technology

DSAIN PROJECT OVERVIEW

Securing Germany's Digital Future
Through Distributed Sovereign
AI Infrastructure



DIGITALE SOVERÄNITÄT

Unabhängige und sichere
AI-Infrastruktur für
Deutschland.



VERTEILT & RESILIENT

Ein Netzwerk souveräner
Infrastrukturknoten für
höchste Ausfallsicherheit.



FÜR ÖFFENTLICHE UND PRIVATE PARTNER

Gemeinsam mit Kommunen,
Forschung und Industrie für
eine starke Zukunft.



NACHHALTIG & EFFIZIENT

Energieeffiziente Infrastruktur
mit Fokus auf Nachhaltigkeit
und Wärmenutzung.



GEMEINSAM GESTALTEN

Reverse co-hosting als
Modell für Teilhabe und
digitale Teilhabe.



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DSAIN baut das Rückgrat für Deutschlands
souveräne KI-Zukunft – ein sicheres, verteiltes
und nachhaltiges Infrastruktur-Ökosystem für
Generationen.

DSAINTE PROJECT OVERVIEW

Distributed Sovereign AI Infrastructure Nodes Technology

Concept Development Document

Version 1.0

Executive Summary

DSAINTE (Distributed Sovereign AI Infrastructure Nodes Technology) is a concept development initiative focused on creating a distributed sovereign AI infrastructure ecosystem in Germany and, ultimately, across Europe.

The project combines environmentally friendly AI infrastructure nodes, community participation through Reverse Co-Hosting, and a Community Compute Federation model that enables municipalities, enterprises, research institutions and citizens to contribute to and benefit from sovereign AI infrastructure.

DSAINTE aims to strengthen digital sovereignty, infrastructure resilience, regional innovation and broad participation in the future AI economy.

Vision

To establish Germany's leading sovereign AI infrastructure ecosystem by connecting professional infrastructure operators, research institutions, enterprises, municipalities and citizens through a distributed network of AI infrastructure nodes.

The long-term objective is to create a resilient and scalable European AI infrastructure platform capable of supporting research, innovation, public sector services and industrial AI workloads.

Core Ecosystem

1. Core Infrastructure Network

The DSAINTE Core Infrastructure Network consists of environmentally friendly Tier III AI-optimized infrastructure nodes strategically located in medium-sized German municipalities.

Characteristics:

- 2 MW to 6 MW capacity per node
- Target PUE ≤ 1.20
- Direct-to-chip liquid cooling
- High-availability infrastructure
- Secure sovereign operations
- Future-ready expansion capabilities

Core Nodes provide low-latency AI services and act as orchestration hubs for the broader ecosystem.

2. Community Compute Federation

The Community Compute Federation enables citizens, SMEs, startups and organizations to contribute computing resources to Germany's future sovereign AI infrastructure.

Inspired by the anthill principle, thousands of smaller contributors combine to form a powerful distributed computing resource.

Potential workloads include:

- AI video generation
- Scientific computing
- Digital twin simulations
- Biochemical simulations
- Model inference
- Research workloads

Participants receive compensation based on measured contributions.

3. Research & Innovation Network

Universities, research institutions and innovation centers can connect to the DSAINT ecosystem to access sovereign infrastructure and participate in collaborative AI initiatives.

The objective is to accelerate:

- Scientific research
- Open innovation
- AI model development
- Digital sovereignty initiatives
- European technological leadership

4. Enterprise & Municipal Integration

DSAINTE is designed to support cooperation with:

- Municipalities
- Public sector organizations
- Industrial enterprises
- Utilities
- Healthcare institutions
- Research facilities

The ecosystem promotes regional development and local value creation while supporting national AI capabilities.

Security & Compliance

DSAINTE follows a security-first approach based on established German and European best practices.

Planned security framework:

- BSI IT-Grundschutz
- Dedicated secure networks
- Encrypted standard formats and protocols
- Strict access control and identity management
- GDPR compliance
- Compliance with applicable German and European legislation

Security is integrated into both physical and digital infrastructure design.

Sustainability

Environmental responsibility is a core project principle.

Key objectives include:

- Target PUE ≤ 1.20
- Direct-to-chip liquid cooling
- Heat recovery integration

- Municipal energy cooperation
- Long-term energy efficiency optimization
- Sustainable infrastructure deployment

DSAINTE aims to demonstrate that sovereign AI infrastructure can be both powerful and environmentally responsible.

Demonstrator Node 01

Bedburg-Hau, Germany

The first DSAINTE node serves as a demonstrator and blueprint for future deployment.

Key characteristics:

- Initial capacity: 2 MW
- Expansion capacity: 6 MW
- Tier III design
- Direct-to-chip liquid cooling
- Secure operations
- Modular expansion capability

Demonstrator Node 01 is intended to validate technical, operational and ecosystem concepts before broader network expansion.

Roadmap

2027

Demonstrator Node 01

Launch of the first DSAINTE sovereign AI infrastructure node in Bedburg-Hau.

2028

Citizen Node Program

Introduction of Citizen AI Nodes and initial Community Compute Federation pilots.

2030

Core Network Expansion

Deployment of additional Core Infrastructure Nodes across Germany.

2032

National Ecosystem

Integration of municipalities, enterprises, universities and research institutions into a coordinated national ecosystem.

2034

12 Core Nodes

Completion of the planned German Core Infrastructure Network.

2036

European Expansion

Expansion into a broader European sovereign AI infrastructure ecosystem.

Long-Term Objective

DSAINTE seeks to create a distributed sovereign AI infrastructure ecosystem that combines professional infrastructure, scientific research, industrial innovation and citizen participation.

The project aims to contribute to Germany's digital sovereignty while promoting sustainability, resilience and inclusive participation in the future AI economy.

Contact

DSAINTE

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Official Slogan:

“Reverse co-hosting is the future of Germany's independent AI – a future in which everyone can participate.”

Concept Development Document – not an offer of securities or investment solicitation.