

• PLATFORM, CAPABILITIES & USE CASES

Decision capability for effective action.

Platform, capabilities and illustrative use cases for business, government, public safety and defense.

HUMAN-LED

TRACEABLE

REVERSIBLE

SOVEREIGN

• EXECUTIVE PERSPECTIVE

From fragmented signals to responsible action.

“The value of AI is not prediction alone. It is the quality of the next decision.”

NyxAI connects operational data, domain knowledge and simulation in a sovereign system. Options are compared before resources are committed, uncertainty remains visible and outcomes feed the next decision cycle in a controlled way.

Decision-oriented

From situational context to a reasoned course of action.

Domain-specific

Objectives, rules and risks belong in the model.

Human-led

Authority, approval and escalation remain explicit.

Sovereign

Data, models and operating logic under your control.

• WHERE DECISION INTELLIGENCE FITS

The most valuable use cases have a clear decision profile.

01 · RECURRING

The decision occurs repeatedly.

It is not a one-off strategy project, but part of an operational cycle.

02 · RESOURCE-CONSTRAINED

Multiple scarce resources compete.

Time, people, material, budget, capacity or attention must be allocated.

03 · RULE-BOUND

Constraints are binding.

Safety, law, quality, contracts, rules of engagement or service levels constrain the options.

04 · MEASURABLE

Impact can be observed.

Outcomes, cost, risk, availability or response time can be traced.

A good starting point: one valuable decision with clear ownership, available signals and a measurable outcome. Not every analysis needs an autonomous process.

• NYXAI CAPABILITIES

Four capabilities. One end-to-end decision cycle.

01

Decision Intelligence

Connect heterogeneous signals with domain models and compare courses of action.

- Multi-source context
- Explainable recommendations
- Explicit uncertainty

02

Scenario Simulation

Explore alternatives, risks and second-order effects before committing.

- What-if analysis
- Adversarial conditions
- Risk trade-offs

03

Closed-loop Intelligence

Connect decisions to outcomes and learn in a controlled way.

- Outcome monitoring
- Controlled improvement
- Guardrailed feedback

04

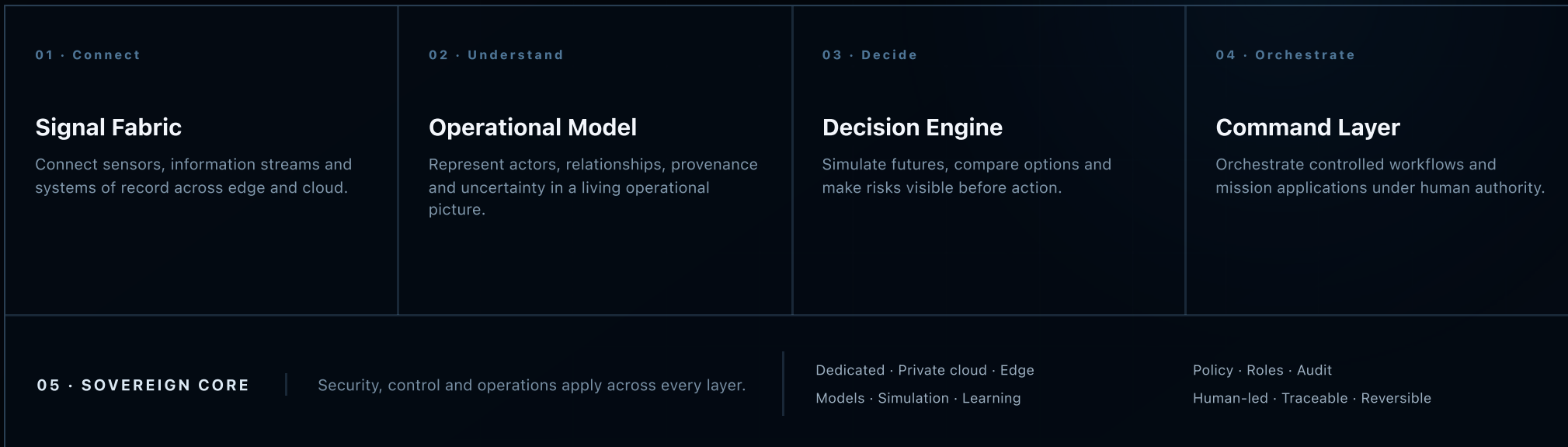
Sovereign Deployment

Keep data, models and operating logic under your control.

- Dedicated infrastructure
- Private cloud or edge
- Modular integration

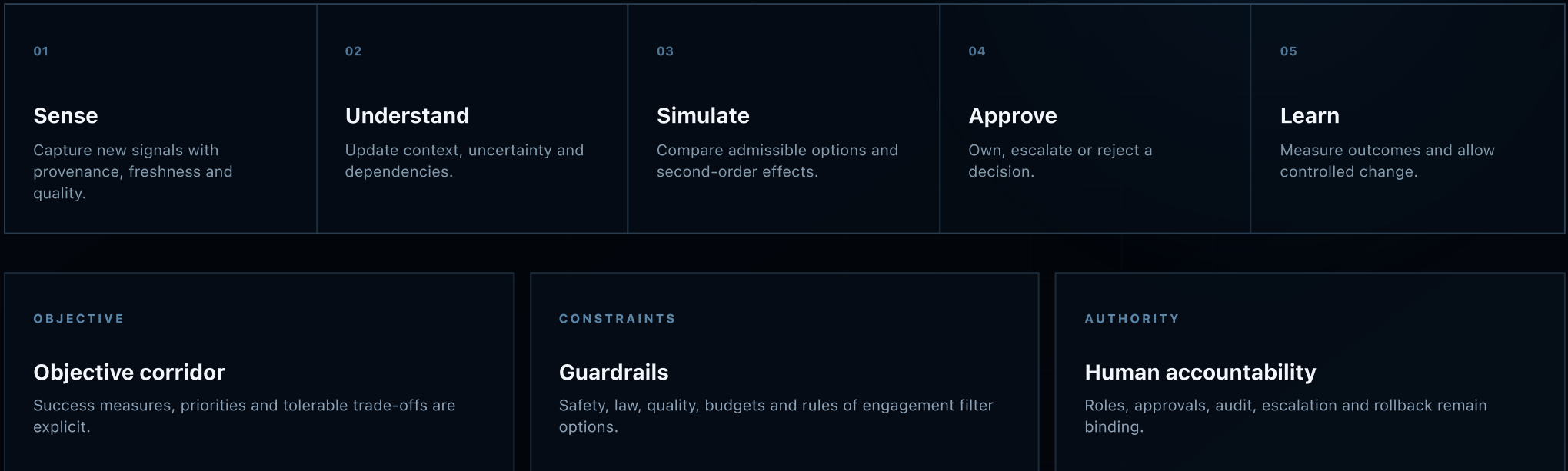
• NYXAI PLATFORM

The shortest path from signal to decision.



• CONTROLLED OPTIMIZATION

Optimization becomes dependable when control is part of the architecture.



• DEPLOYMENT & INTEGRATION

Data, models and operating logic under your control.

Dedicated	Isolated operation on dedicated infrastructure for sensitive and mission-critical contexts.
Private Cloud	Controlled scale with clear network, identity and data zones.
Edge	Decision support close to operations when connectivity is limited.
Hybrid	Domain-specific distribution of data, models, simulation and applications.

Integration principles

- Modular adapters instead of forced data migration
- Roles, policies and audit across all layers
- Provenance and uncertainty as system data
- Design for offline, degraded and recovery modes
- Connect existing domain systems to workflows
- Measurable outcomes instead of model metrics alone

• USE-CASE LANDSCAPE

One platform. Domain-specific objectives and boundaries.

BUSINESS

Operations & Resilience

- Production and capacity
- Supply chain and procurement
- Energy and utilities
- Logistics and transport
- Telecommunications
- Finance and service

GOVERNMENT

Public Value & Coordination

- Crisis coordination and situational picture
- Civil protection and disaster response
- Critical infrastructure
- Procurement and allocation
- Administrative casework
- Municipal field service

PUBLIC SAFETY

Accountable Response

- Control-room support
- Response coordination
- Major incidents and reserve
- Investigative workflow
- Personnel and equipment
- After-action learning

DEFENSE

Decision Advantage

- Situational Awareness
- Course-of-action comparison
- Readiness and maintenance
- Contested Logistics
- Protection and recovery
- Training and simulation

Claim boundary: The cases listed are illustrative use-case patterns. They do not represent specific clients, contracts or completed implementations.

• BUSINESS · INDUSTRY & SUPPLY CHAIN

Absorb disruption, protect service levels and margin.

01

Production planning

Re-sequence orders, lines, changeovers, people and material as conditions change.

02

Maintenance

Plan failure risk, spare parts, specialists and production windows together.

03

Inventory allocation

Allocate scarce inventory by demand, margin, contract and service level.

04

Beschaffung

Compare sources, lead times, quality, price and risk before committing.

ILLUSTRATIVES CASE PATTERN A

Machine failure plus material shortage

Alternative sequences and line allocations are simulated. Safety, quality and delivery commitments constrain the solution space.

Target outcome: less downtime, more reliable commitments, explainable replanning.

ILLUSTRATIVES CASE PATTERN B

Delay in a critical component

Reallocation, alternate sourcing, expediting or resequencing are compared with downstream cost and risk.

Target outcome: contain shortages, avoid expedite cost and increase resilience.

• BUSINESS · FURTHER INDUSTRIES

Operational decisions improve across industries.

01 · Energy

Load, storage and maintenance

Coordinate demand, generation, grid constraints, maintenance and field service in one decision picture.

02 · Logistics

Fleet, route and time window

Dynamically adapt dispatch to vehicle, driver, hub and customer conditions during disruption.

03 · Telecom

Outage, capacity and restoration

Prioritize network events by impact and assign technicians, spares and maintenance windows.

04 · Finance

Cases, liquidity and review

Prioritize review and fraud cases, payment flows or claims workflows within defined rules.

RETAIL & SERVICES

Demand, workforce and service levels

Optimize inventory, workforce, promotions and service cases for impact without crossing fairness, contractual or quality boundaries.

HEALTHCARE OPERATIONS

Capacity, scheduling and supply

Coordinate non-clinical resources, labs, beds, equipment or cold-chain operations. Medical decisions remain with qualified professionals.

• GOVERNMENT

Public-sector capacity to act under resource constraints.

01

Crisis coordination

Connect reports, responsibilities, resources, uncertainty and expected second-order effects in one operational picture.

02

Civil protection and disaster response

Coordinate teams, accommodation, supplies and specialist resources by need and reachability.

03

Critical infrastructure

Make dependencies, priorities and recovery options visible during outages.

04

Administration & procurement

Prioritize cases, reviews, field services and needs transparently by rules and impact.

ILLUSTRATIVES CASE PATTERN

Multiple infrastructure disruptions

Which services must be stabilized first? Dependencies, vulnerable groups, available teams and recovery time are considered together.

Target outcome: coordinated priorities and transparently reasoned resource allocation.

GOVERNANCE

Public value remains multidimensional

Efficiency is only one objective. Legality, equal treatment, traceability, resilience and political accountability remain binding constraints.

• POLICE & PUBLIC SAFETY

Decision support without automated authority.

01

Control-room support

Combine situation, urgency, availability, qualification, travel and protection requirements.

02

Response coordination

Generate proposals for teams, reserve, handovers and specialist assets under human leadership.

03

Major incidents

Compare sectors, time windows, routing and redundancy in controlled scenarios.

04

Investigative workflow

Organize deadlines, evidence dependencies and expertise; do not assess guilt or suspicion.

Outside the target scope: automated suspect assessment, profiling, autonomous interventions or independent legal judgement. **Required:** legal basis, purpose limitation, proportionality, human operational command, access control, audit, bias testing and an effective challenge path.

ILLUSTRATIVES CASE PATTERN

Dynamic control-room picture

Multiple incidents compete for limited teams. The system proposes an explainable allocation, flags uncertainty and escalates conflicts to operational command.

LEARNING LOOP

After-action review

Decisions and outcomes are reviewed by case to improve procedures, training and resource planning in a controlled way.

• DEFENSE

Decision advantage when time, uncertainty and impact matter.

01

Situational Awareness

Connect fragmented signals with provenance, freshness, contradiction and uncertainty into a dependable operational picture.

02

Course-of-Action Analysis

Compare alternative courses of action, resource requirements, risks and second-order effects before committing.

03

Readiness

Plan personnel, materiel, maintenance, qualifications and time windows as a coupled availability problem.

04

Contested Logistics

Combine inventories, priorities, routes, alternatives and uncertainty for resilient sustainment.

WEITERE USE-CASE LANDSCAPE

Protection, Recovery, Training

Prioritize critical dependencies and recovery options, and test scenarios, countermeasures and second-order effects in controlled environments.

CONTROL BOUNDARY

Human-led and rule-bound

Rules of engagement, approvals, classification, roles, provenance, uncertainty and audit are part of the system. This portfolio describes non-tactical decision support.

• ILLUSTRATIVE CASE PATTERNS

Three domains. The same controlled decision logic.

01

INDUSTRY

Production disruption

Machine failure and material scarcity require a new sequence.

DECISION

Sequence, line, inventory, workforce

CONSTRAINTS

Safety, quality, contracts, commitments

OUTCOME

Contain downtime and delivery impact

02

GOVERNMENT / PUBLIC SAFETY

Multiple-incident situation

Multiple incidents compete for teams, specialist assets and attention.

DECISION

Priority, allocation, reserve, escalation

CONSTRAINTS

Law, proportionality, protection, fairness

OUTCOME

Increase coordination and responsiveness

03

DEFENSE READINESS

Changed availability

Maintenance, personnel and materiel change the readiness plan.

DECISION

Sequence, allocation, reserve

CONSTRAINTS

Approval, rules of engagement, safety, classification

OUTCOME

Detect constraints earlier and plan readiness

All three scenarios are illustrative reference patterns. They are not customer references and do not represent completed implementations.

• SERVICE CATALOGUE

From the critical decision to the operational system.

01 Decision Discovery Identify decisions, objectives, roles, signals and outcomes.	02 Domain Modeling Model entities, dependencies, rules, provenance and uncertainty.	03 Scenario & Simulation Explore options, trade-offs, disruption and second-order effects.	04 Decision Engine Evaluate admissible options and generate explainable recommendations.
05 Command Experience Design approvals, escalations and accountable workflows.	06 Integration Connect sensors, data sources, domain systems and operational applications.	07 Sovereign Deployment Operate securely across dedicated, private cloud, edge or hybrid environments.	08 Evaluation & Learning Measure outcomes, detect drift and control improvements.
Discover Decision profile, scope, risks and value drivers.	Prove Reproducible proof of decision with a baseline and guardrails.	Operationalize Integration, roles, security, UX and operating model.	Improve Outcome monitoring, audit and a controlled learning cycle.

• COMPANY PROFILE

Secure AI systems for mission-critical environments.

NyxAI GmbH

NyxAI develops sovereign decision-intelligence systems for organizations whose decisions have real consequences under time pressure, uncertainty and binding rules. The focus is the path from fragmented signals to explainable courses of action and controlled operational improvement.

FOCUS

Decision Intelligence

LOCATION

Ingolstadt · Germany

DEPLOYMENT

Dedicated · Private cloud · Edge

PRINCIPLES

Human-led · Traceable · Reversible

Starting point: Which recurring decision is critical, data-rich and still too slow for your organization today?
nyxai.com



Technology proof point: DeepSquare

DeepSquare brings NyxAI decision technology into a demanding adversarial decision space. Large possibility spaces become decisions under time pressure, with fully visible outcomes. Chess is not the metaphor. It is the test field.

