DREAM

Where humans surprise machines

October 2025


Human Unpredictability: Jazz and the Los Angeles Lakers

DREAM

THE GAME

THE GAME ON TOP OF THE GAME

THE DREAM TEAM

APPENDICES

- I- Turning Distinctive Human Capabilities into Augmenters
- II- Surprise Calculus
- III- IDEAS

There is a game called basketball.
Then, there is a game on top of the game called NBA

*By **António Câmara**, **Edmundo Nobre** and **Haydn Rigby** with the help of Chat GPT, Claude and Gemini.*

THE GAME

Helping Humanity Overcome AI’s Negative Impacts

71% fear AI will take their jobs. Beyond employment, it’s about losing purpose and dignity.

Are humans still valuable in the AI age?

Invest in what makes 3.7 billion workers irreplaceable. This fear drives change—and a massive market opportunity.

The Crisis

2.2B people will need reskilling by 2030.
41% of employers expect to cut jobs due to automation.

The real crisis isn't job loss — it's the erosion of human capability and confidence.
We're competing on machine terms — speed, precision, scale — where humans fall short.

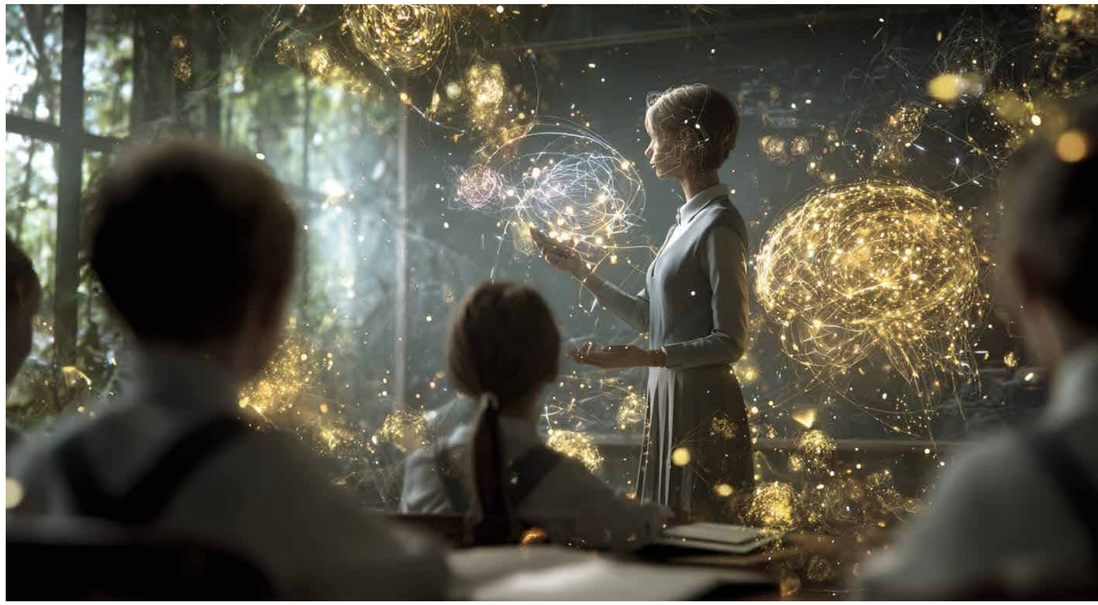
Creativity and critical thinking are atrophying as reliance on AI grows.

The Paradox of Inferior Training

Accepting “Less Than” AI: Society normalizes humans as slower versions of machines.

Training Humans as Inferior Machines: Education optimizes for machine-like efficiency.

Need for a New Framework: Shift from competing with AI to collaborating with it.
Amplifying Human Intelligence at Global Scale.



The Solution

Amplifying Human Intelligence at Global Scale
A Reflective Intelligence platform for all ages and industries.

Creative Confidence Engine:
Ignites imagination, problem-solving, and fearless exploration.

Ethical Reasoning Lab:
Strengthens moral judgment and responsible choices.

Emotional Resilience Studio:
Cultivates self-awareness, composure, and inner strength.

Y Dream: Where Humans Reflect, Machines Learn

AI masters prediction. Y Dream gives it meaning.

Artificial intelligence automates and optimizes — but lacks creativity, conscience, imagination, and surprise. Y Dream builds Reflective Intelligence: technology that amplifies human potential instead of replacing it.

The next trillion-dollar wave: from Artificial to Reflective Intelligence.

Humans and Machines

HUMAN DIMENSION	MACHINE COUNTERPART	DISTINCTION
Conscience	Optimization	Moral reasoning, empathy
Soul	Algorithms	Emotional depth, meaning-making
Dexterity	Automation	Embodied precision & improvisation
Body Intelligence	Sensors	Non-verbal awareness, movement learning
Multimodality	Multimodal AI	True sensory integration, continuous creativity
Surprise	Prediction	Generative risk-taking, miracles

Humans and Machines

AI optimizes for the probable; Y Dream empowers the possible

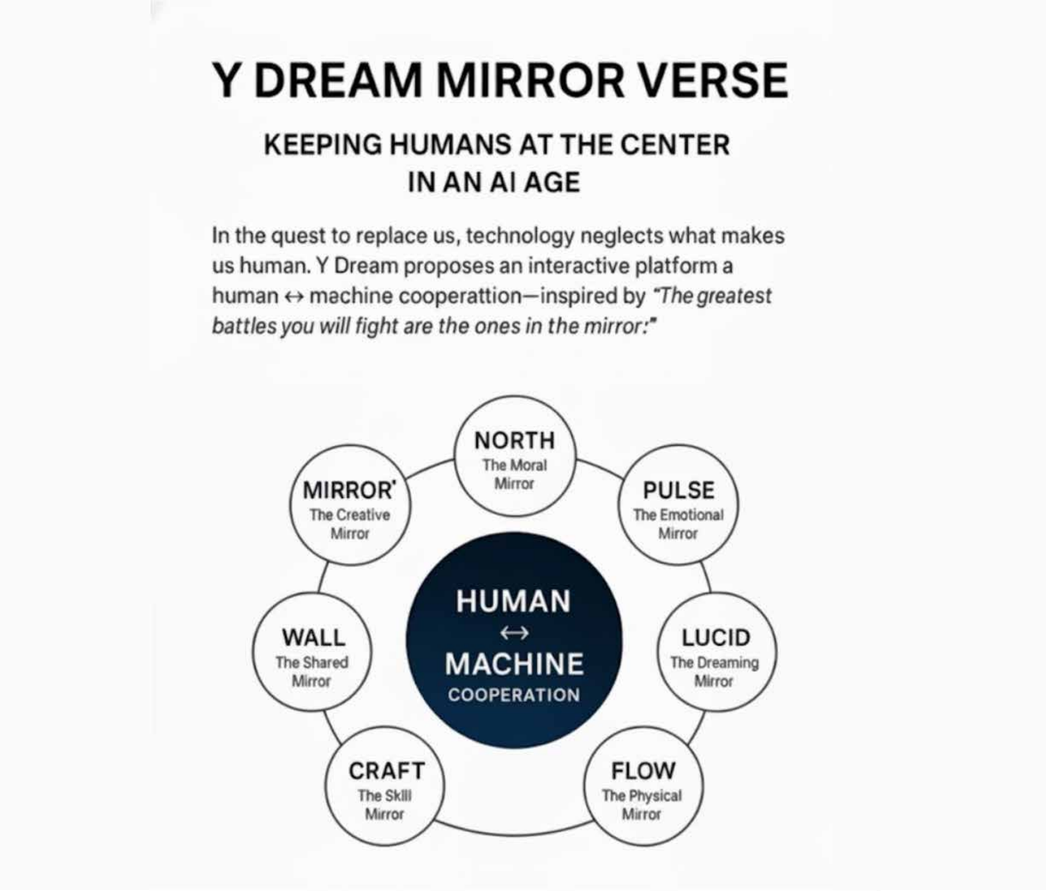
Machines seek optimality	→	humans seek meaning.
Machines converge	→	humans diverge.
Machines replicate	→	humans reflect.

Y Dream: What do We Do

Y Dream is building the **operating system for human and machine interaction**

We merge AI, AR, VR, Robotics and human creativity into a continuous “MirrorVerse”.

The MirrorVerse is a digital-physical architecture that enables the orchestration of those technologies and legacy science around seven domains of human capability — each embodied in a distinct application called a Mirror.



Y Dream MirrorVerse

MIRROR	HUMAN CAPABILITY	FUNCTION
Mirror² (Surprise)	Creativity	Generates unexpected connections and ideas
North	Conscience	Guides moral reasoning and alignment
Pulse	Soul	Measures and strengthens emotional coherence
Lucid	Dreaming	Translates imagination into digital prototypes
Flow	Body Intelligence	Synchronizes physical movement and cognition
Craft	Dexterity	Enhances manual and creative craftsmanship
Wall	Shared Perspectives	Enables collective insight and empathy

Each Mirror functions as a stand-alone app, yet all are interconnected through shared data, symbolic logic, and multimodal interfaces. **See Appendix II**

Y Dream MirrorVerse

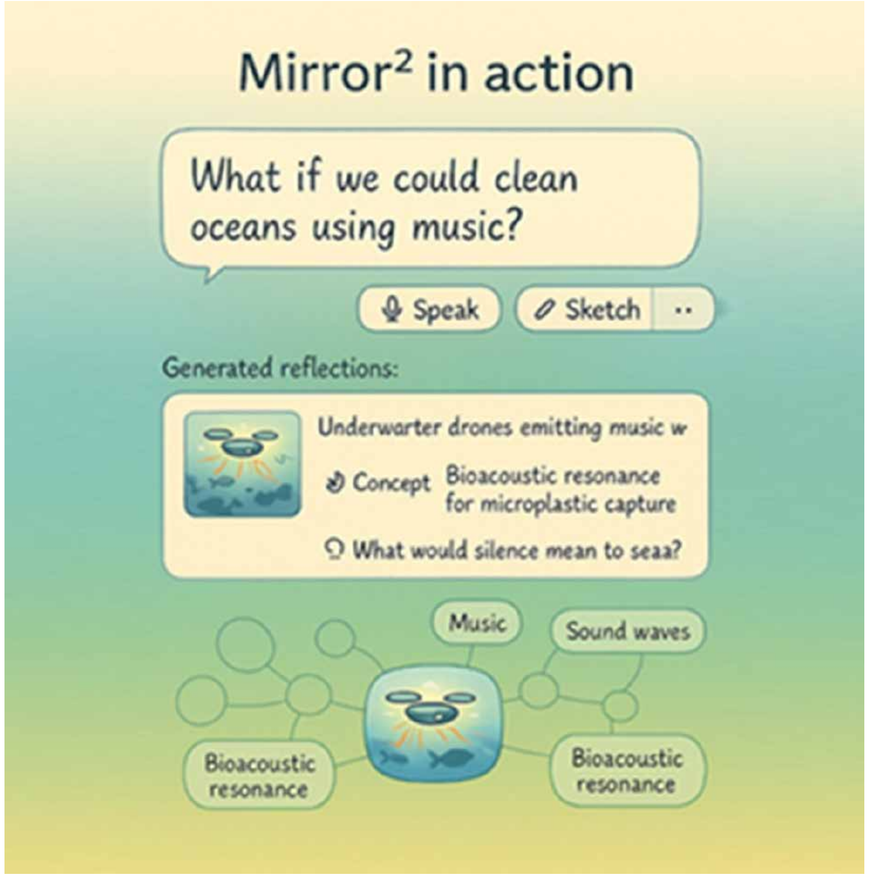
Orchestration of Technologies
Each Mirror merges multiple technological layers:

- **AI** for pattern recognition, creativity enhancement, and ethical reasoning.
- **AR/VR** for immersive visualization and simulation.
- **Robotics and Sensors** for embodied feedback and material intelligence.
- **Legacy Science** for grounding new discoveries in validated knowledge.

AI Predicts. Y Dream Surprises

Y Dream builds Mirrors — interactive, multimodal environments where humans collaborate with machines to explore, simulate, and solve problems in surprising ways.
Unlike AI systems that aim to replace human reasoning with statistical probability, Y Dream empowers people to reflect, improvise, and surprise — harnessing their own multimodal intelligence across imagery, words, and numbers.

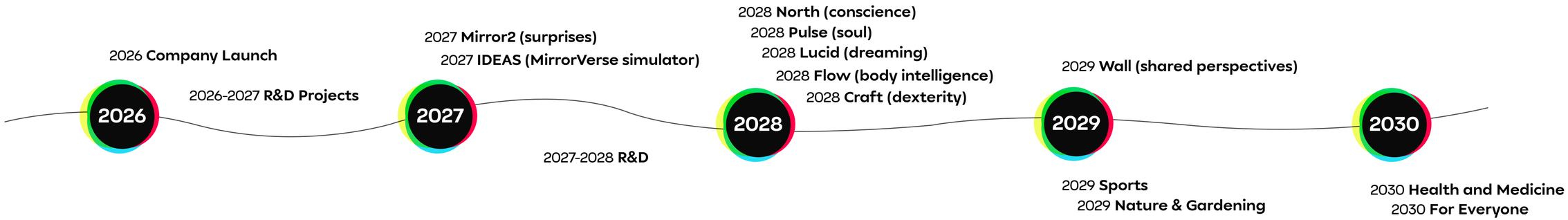
In short:
AI predicts. Y Dream surprises.



The Game Plan

AI masters prediction. Y Dream gives it meaning.

DEVELOP THE MIRRORVERSE APPS



DEVELOP THE MIRRORVERSE CATALOGS

Where do we come from

Pioneers and world leaders combining AI, AR, VR and Robotics. The team developed a programming platform enabling orchestration and rapid development of all proposed products using those technologies.
See **The YDreams Collection** and a sample of illustrative precursor products and projects from Y Dream's core team at your right

2000+ projects and 20+products in 40 countries for 50+ Fortune 500 companies.

200+ peer reviewed publications and 50+ patents associated with Y Dream core team.

25+ major US and EU awards.

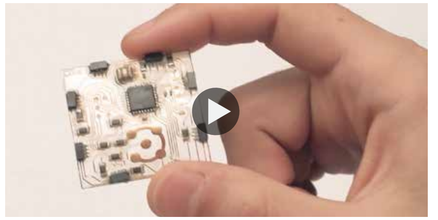
200+ major media references in US and Europe.

Doha Dish Media

YDreams' Augmented Reality experience with depth-sensing camera

Lego/Intel Agent based modelling

Swarm robotics



Printoo, printed electronics kit

Printoo's indoor drone

Mirror² as the Surprise Accelerator

The first Mirror, Mirror² (The Creative Mirror), is not a content generator but a surprise accelerator*.
When confronting a complex landscape (ecological, physical, or conceptual), the user sees:

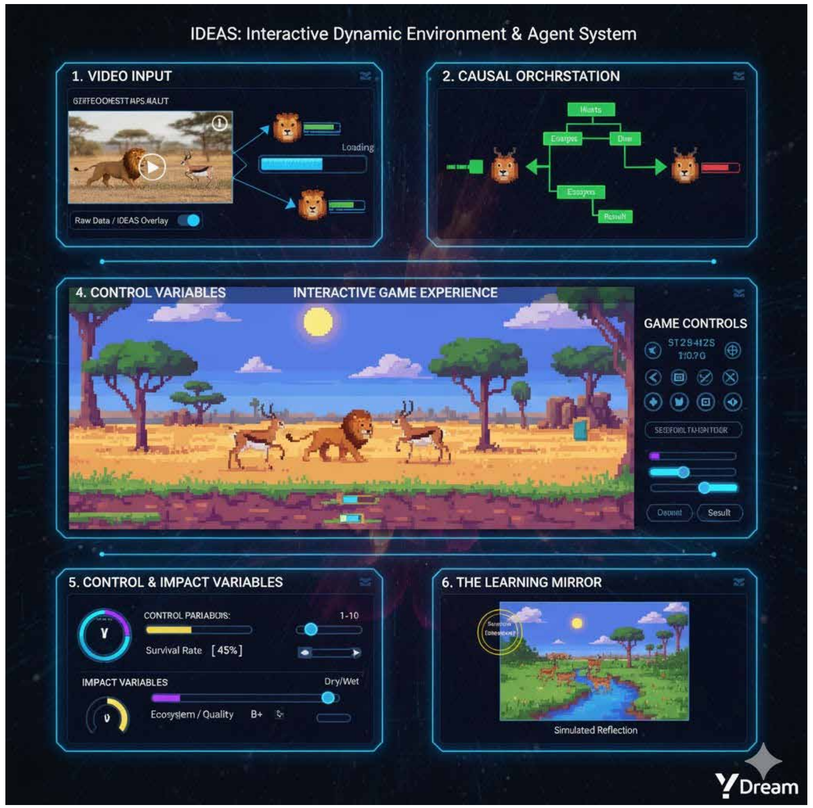
- Data blobs (real-world inputs, models, and objectives).
- Inspirational blobs (references, analogies, and anomalies).
- A surprise index, measuring deviation from expected solutions*
- This system doesn't tell users what to think; it creates interactive worlds where they can test, remix, and simulate their intuitions. "The mirror doesn't answer — it provokes."

*See Appendix II for an introduction to Surprise Calculus

IDEAS as the MirrorVerse Simulator

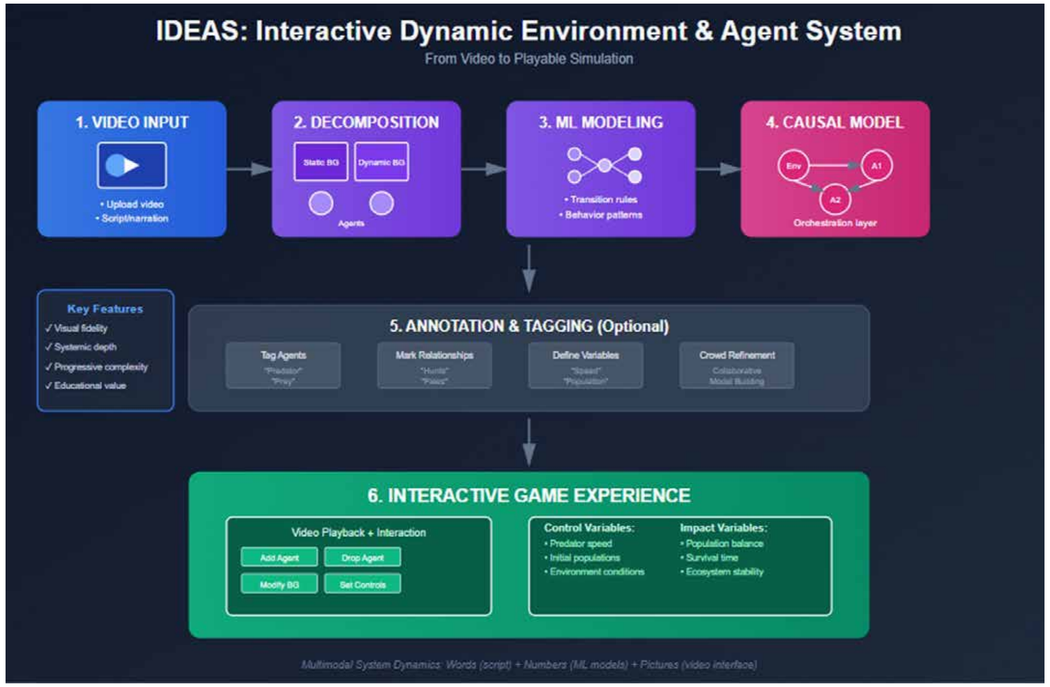
Humans have used their memory and analytical representations to simulate impacts of their choices.

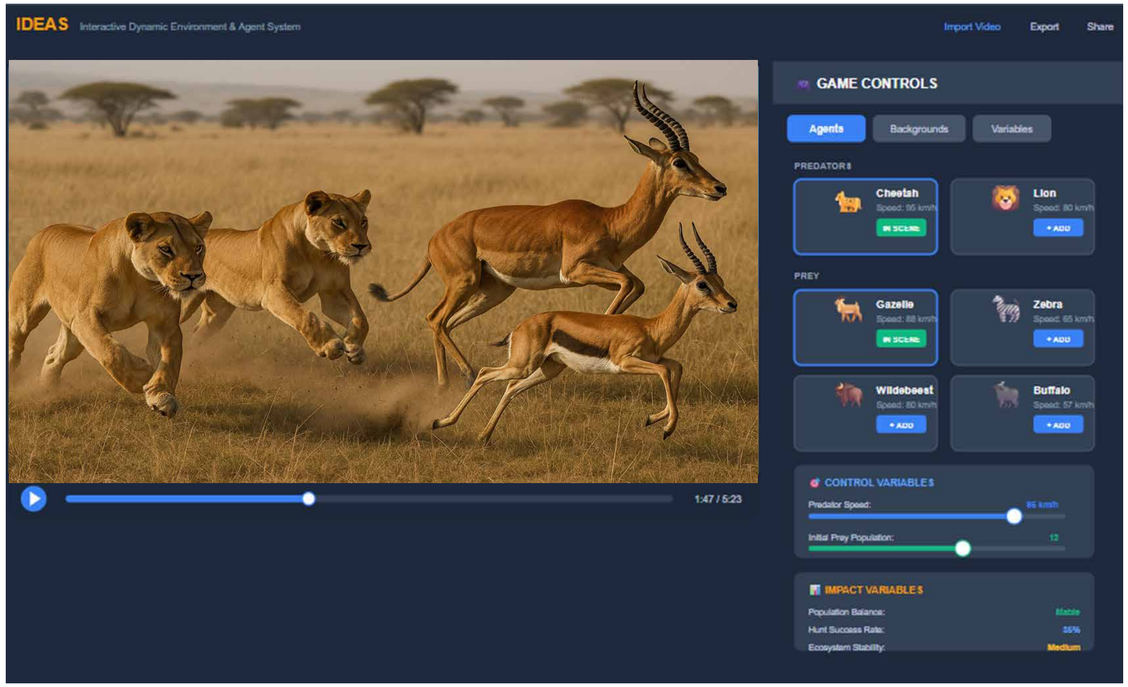
IDEAS (Interactive Dynamic Environment and Agent System) is a patent pending system* that from plain text or video enables the development of playable simulations of Mirror2 and in the future of the other Mirrors’ outputs



*See Appendix III for an introduction to IDEAS

IDEAS as the MirrorVerse Simulator



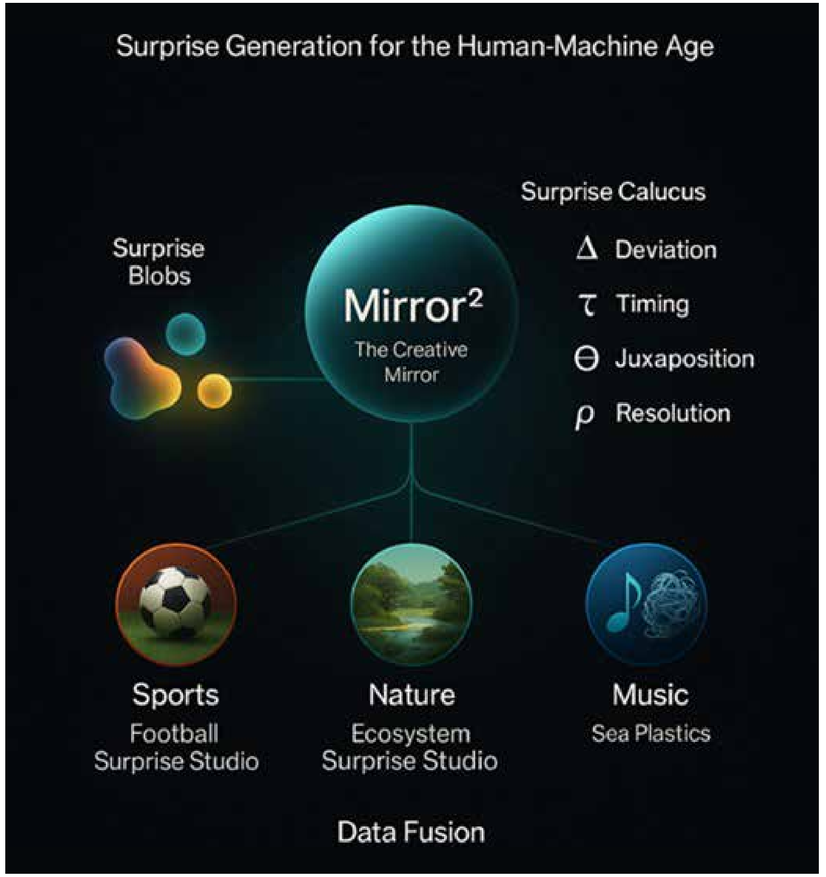


Any video becomes a simulation; any simulation becomes a game; any game becomes a learning mirror

Mirror² Applications

Mirror² transforms domains into games of discovery:

- It helps generate surprising alternative solutions
- With IDEAS they became playable
- With AR/VR they can be tested in situ or remotely
- Sports, Nature and Health will be the initial domains of application



Mirror² UX Inspirations

Playing in an AR world

It will be fun

FlyAR

It will have the MIRROR look and feel

YScope

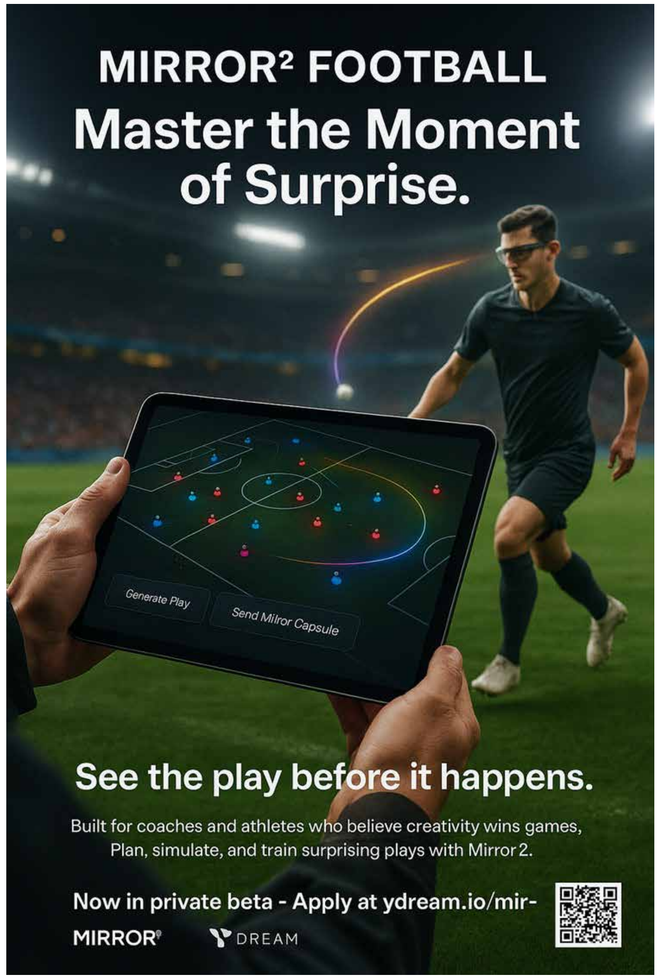
It will support real time critical decisions

Mirror² for Sports

Real-time positional intelligence for coaches & athletes.

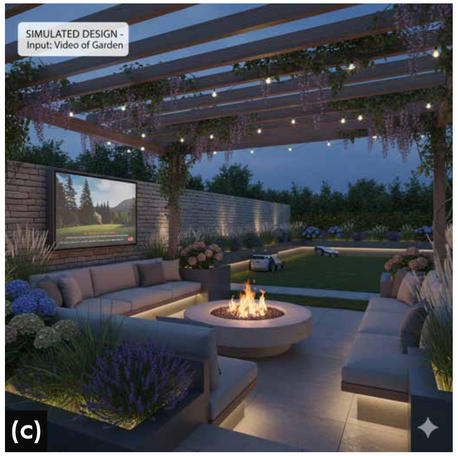
Football → **Basketball** → **Tennis pilots**

Combines analytics, simulation, and playful strategy generation.

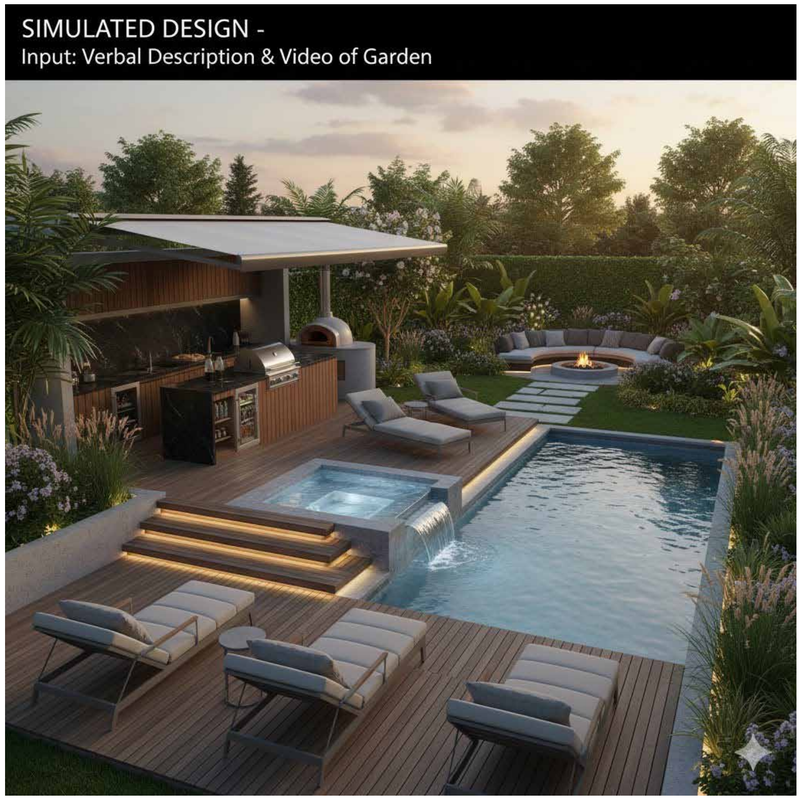


Mirror² for Nature

Surprising garden designs are generated with the help of Mirror² blobs **(a)**
Users simulate the alternative garden designs using IDEAS based on verbal descriptions **(b)** and/or videos **(c)**. They can also visualize them using VR remotely and AR in situ.
Amazing garden designs are generated, simulated and tested using Mirror²



Mirror² Gardens



Mirror² for Health and Medicine

Therapeutic simulations

Emotional and physiological mirrors

Clinical trials and well-being applications

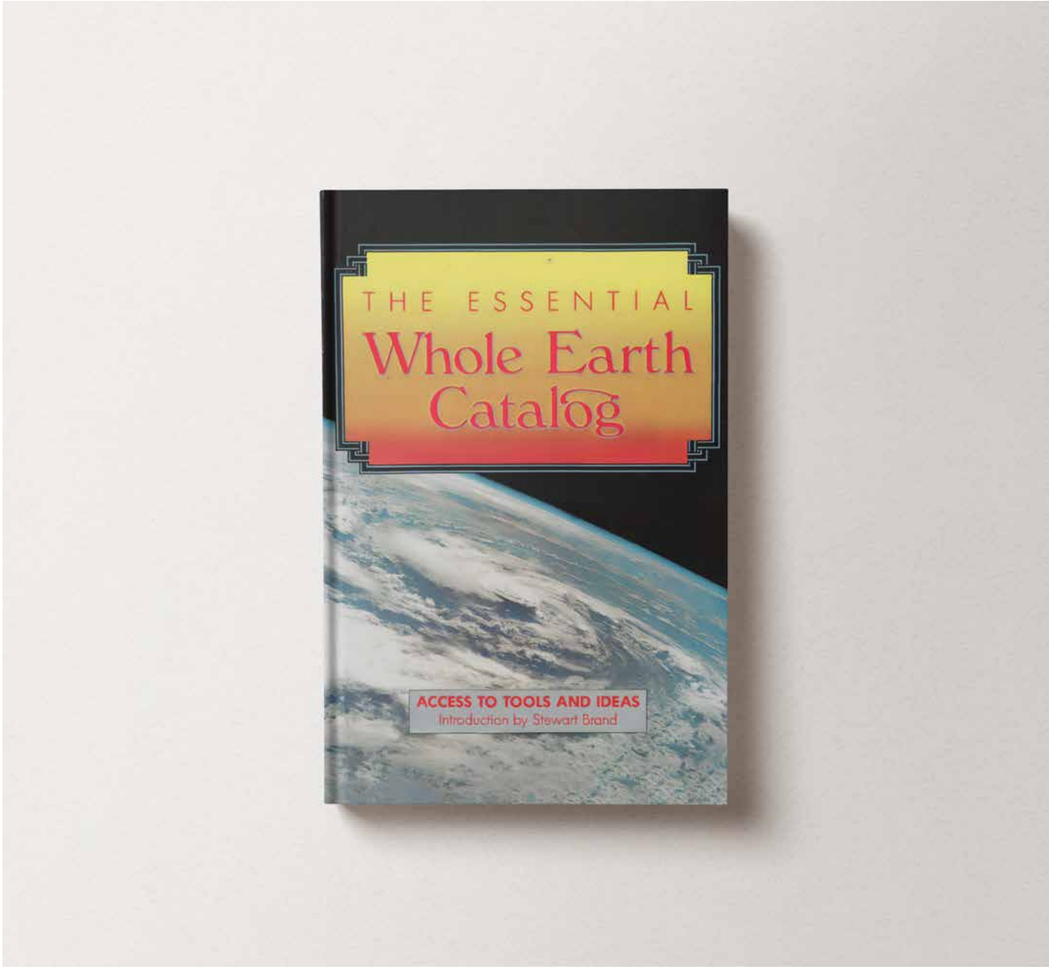
Surgeries

MirrorVerse Catalogs

The Whole Earth Catalog re-imagined for Humans in the AI Age

Four catalogs: Sports, Nature & Gardens, Health and Medicine, Citizens.

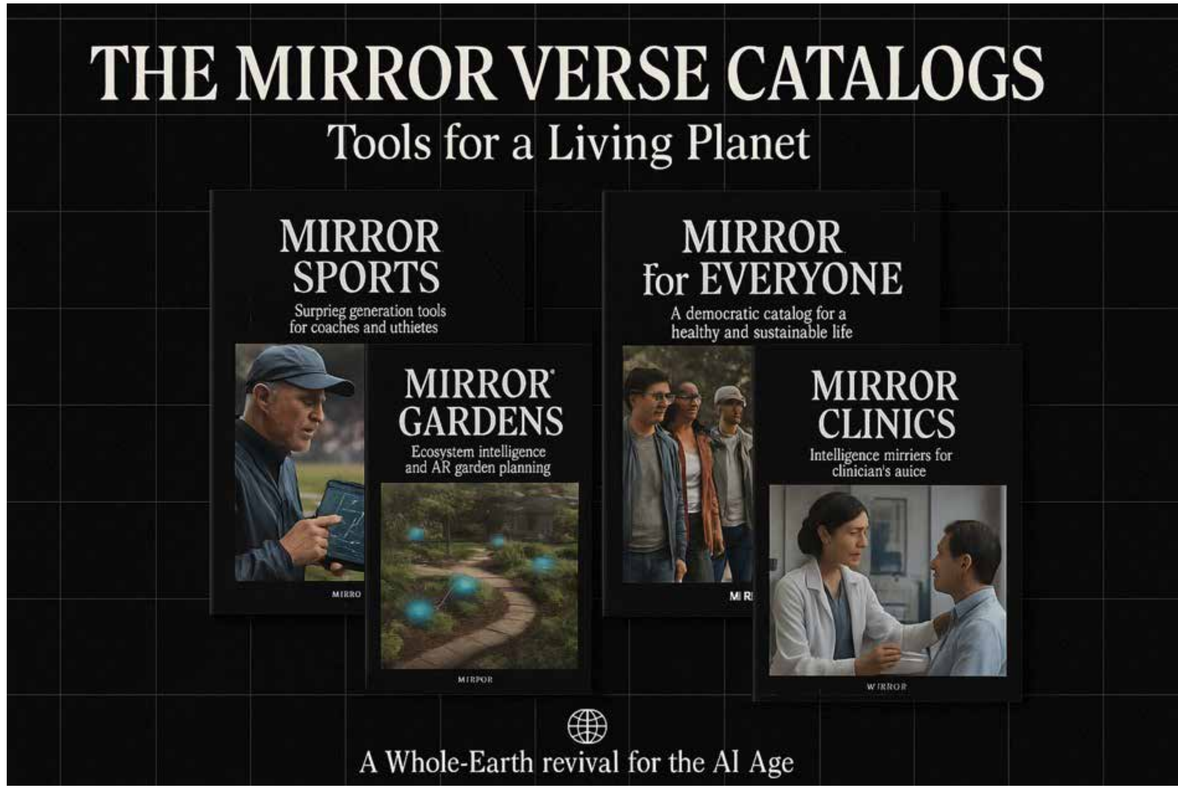
Each catalog = ever-updated marketplace of MirrorVerse tools (hardware, software, content), their global applications B2B and B2C and smart contracts to facilitate their deployment and rewarding of the creators and Y Dream.



MirrorVerse Catalogs

Under the hood:

- Shared AI engine + data ethics model
- Multimodal ML (text, image, sensor)
- Sovereign Knowledge Bases (local control)
- MirrorVerse for co-creation and surprise



Mirror Sports Catalog

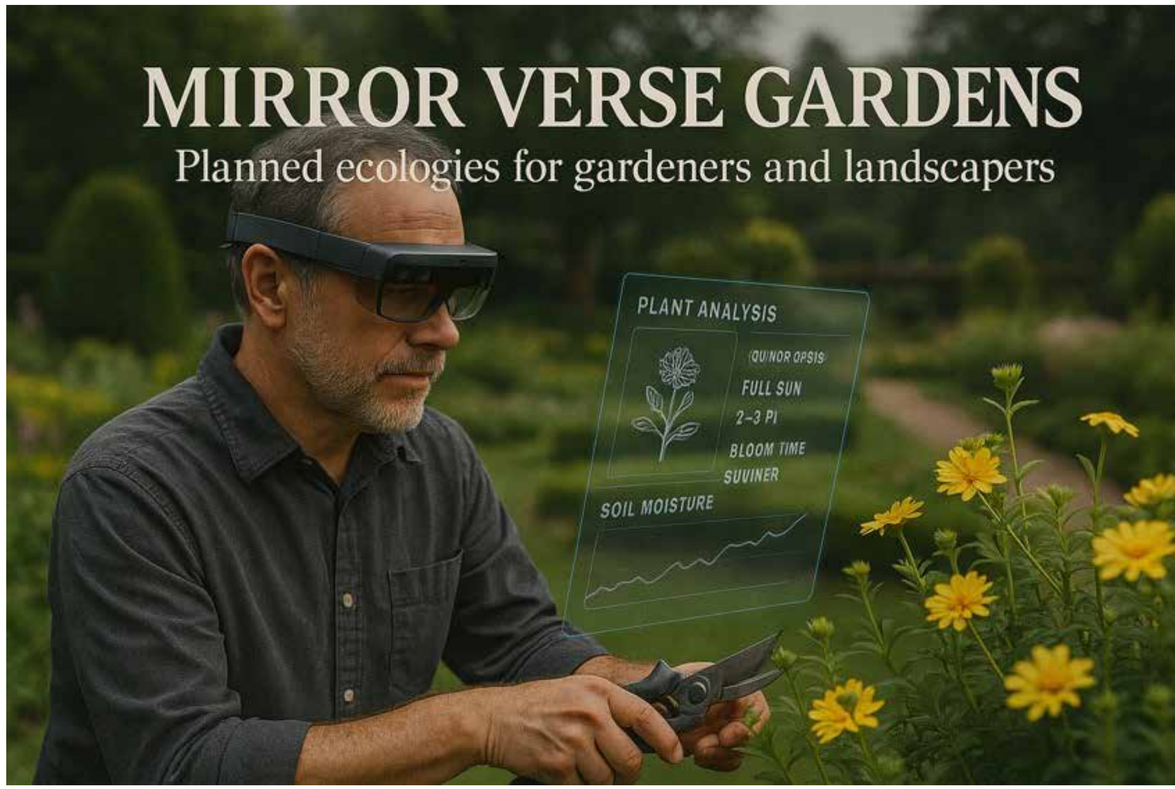
For coaches and athletes

- Surprise Generator (Mirror²)
- AI Play Designer (Lucid + Flow)
- Energy Synchrony Tracker (Flow)
- Moral Play Review (North)

Mirror Nature Catalog

MirrorVerse Gardens to support sustainable design indicating plant, furniture, robot and device selection, as a first product

Bridge to Internet of Nature Agents and Robots as they come into the market, creating a full Mirror Nature Catalog



Mirror Health & Medicine Catalog

MirrorVerse Clinics

- Pulse: Emotional Mirror (biometric → emotion)
- North: Ethical Advisor (decision scenarios)
- Flow: Biofeedback Assistant
- Lucid: Recovery Simulation
- Craft: to Assist Surgeries

Y Dream Mirrors Catalog *(for Everyone)*

Well-Being & Health (meditation, sensors)

Food & Nature (local sourcing, soil sensors)

Mobility & Energy (clean transport, microgrids)

Mutual Aid & Learning (Wall Mirror network)


DREAM CATALOG OF MIRRORS

R PRACTITIONERS AND RESEARCHERS IN CREATIVITY, ETHICS, EMOTION, AND COLLECTIVE INTELLI

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SECTION II.

NORTH–THEAORAL MIRROR

→ Conscience & ethical alignment

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SECTION V.

LUCID–THE DREAM MIRROR

→ Dreaming & imaginative simula tton-quardn

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LUCIO–THE DREM MIRROR

→ Direaning & imaginative simulation

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2.3 For Practitioners

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SECTION VI.

CRAFT–THE SKILL MIRROR

→ Devierity & embodied creat-sice a mutual aid

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SECTION VII.

WALL–THE SHARED MI

→ Collective perspectives & mutual aid

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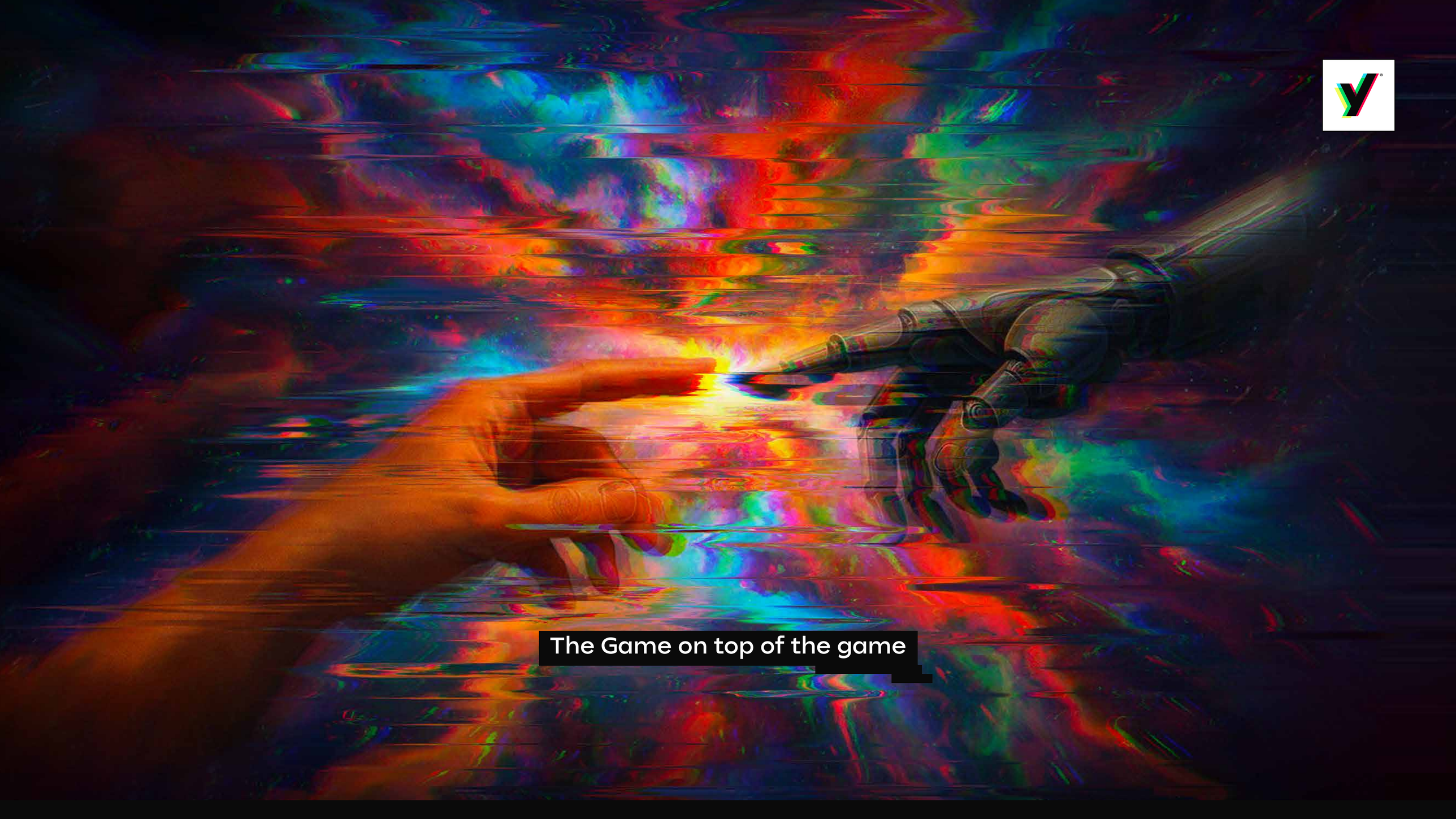
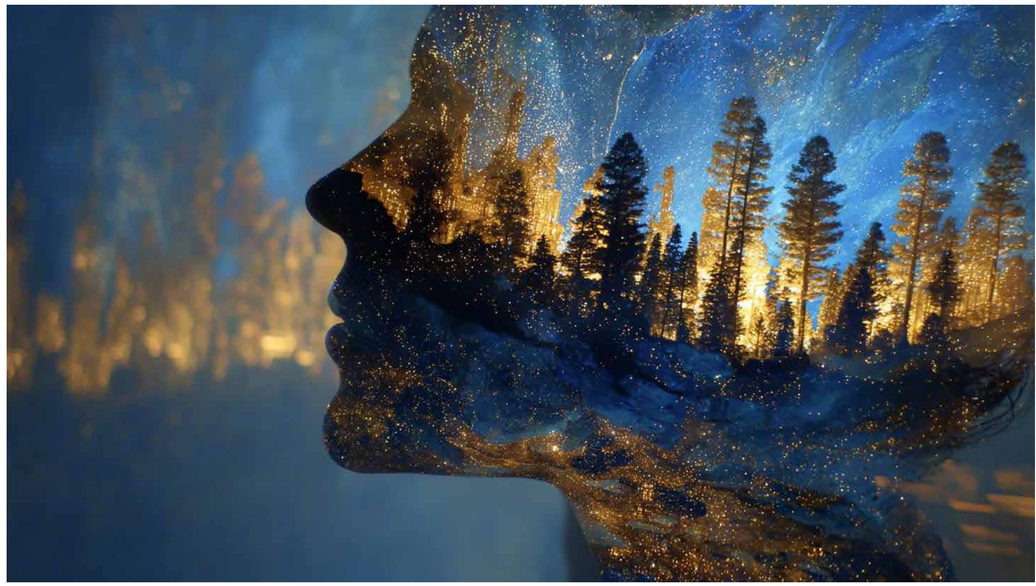

The Game on top of the game

Strategic Overview

Vision:

Build the first Human-Intelligence ecosystem — a suite of MirrorVerse Apps and Mirror Catalogs that amplify human creativity, conscience, soul, body intelligence, dexterity and shared perspectives through Reflective Intelligence.



Strategic Overview

Vision:

Develop Y Dream as a “movement” based on:

- Building a “tribe” around a culture translated in developments (mirrors and catalogs) that enable humanity to remain in control in the AI age through Reflective Intelligence

- A distinctive “movement building” communication strategy anchored on “genuine”, “ provocative” and “spectacular” media highlighting the company’s vision and developments

Plume

Greatness starts with a goal

Flying TUGA

Core Products (Phased Launches)

YEAR	PRODUCT/FOCUS	DESCRIPTION
2026	Mirror² (The Creative Mirror)	“Surprise Accelerator” — core IP for human–machine co-creation. Used in sports, gardens, and therapeutic applications.
2027	IDEAS Engine	Converts video/text into simulations and games — the backbone of the MirrorVerse simulator.
2028	North / Pulse / Lucid / Flow / Craft	Full Mirror suite enabling moral reasoning, emotional reflection, dreaming, body intelligence, and dexterity.
2029	Wall Mirror + Mirror Catalogs (Sports, Nature)	Collaborative “Shared Perspective” tools and domain-specific B2B catalogs.
2030	Mirror Catalogs (Health & Medicine, Everyone)	Whole-Earth-style catalog for the AI Age.

Go to Market Strategy

PHASE 1 — Validation (2026–2027)

Target markets: elite sports teams and leagues, regenerative agriculture projects, landscape architecture, hospitals/clinics.

Revenue model: B2B pilots, R&D projects and software licensing.

Actions:

- Deploy Mirror² Football Studio, AR Garden Intelligence, and AR Health prototypes.
- Publish early results and white papers to build credibility.
- Secure strategic R&D partnerships- MIT, NOVA, Cornell, NHS UK, Sporting CP.
- Acquire key clients and partners via YDreams Factory: major sports leagues and teams in Europe, US and India; major Nature companies, state institutions and associations in Portugal and UK, FAO; and major clinics and hospitals in Portugal

Go to Market Strategy

PHASE 2 — Platformization (2027–2028)

IDEAS Engine launch → Simulation marketplace for content creators.

Integrate Mirrors into a shared Reflective Intelligence Platform.

Monetization: subscriptions (€50–€500 / month), enterprise licensing, API access.

Marketing: co-branding with universities and sports clubs, use of student/professional creators for virality

Go to Market Strategy

PHASE 3 — Scale-Up (2028–2030)

Consumer Mirror Companion App (B2C)
Wellness, creativity, and learning tools.

Mirror Catalogs (Sports & Nature) → hybrid content + hardware marketplaces.

Distribution: app stores, OEM bundling (AR glasses, smart mirrors, robots).

Go to Market Strategy

PHASE 4 — Global Expansion (2030–2031)

Health & Medicine + Everyone Catalogs.

Licensing of the MirrorVerse OS to corporations, education networks, and creative industries.

Revenue model: royalty-based ecosystem licensing and data-sovereign franchise model.

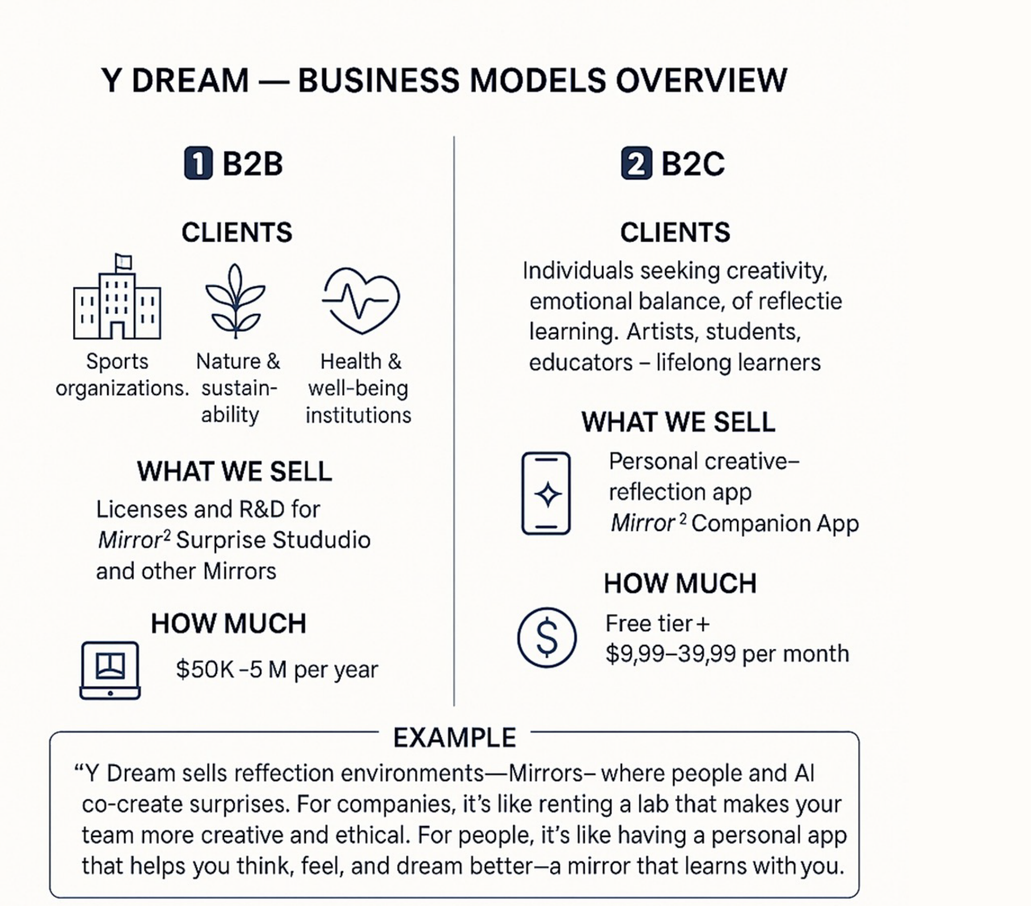
Revenue Streams

B2B Licensing (2026-2028):
Sports Analytics (clubs, federations)
Eco-planning / urban restoration / therapeutic labs

B2C Subscriptions (2028-ON):
Mirror App Suite (€9.99–€29.99 / mo)
Premium IDEAS Marketplace revenue share (30%)

Catalog Marketplaces (2029-ON):
Hardware (AR devices, robots, sensors)
Content (AR modules, simulations, designs)

Ecosystem Licensing (2030-ON):
MirrorVerse OS white-label licensing
Sovereign Knowledge Base franchises

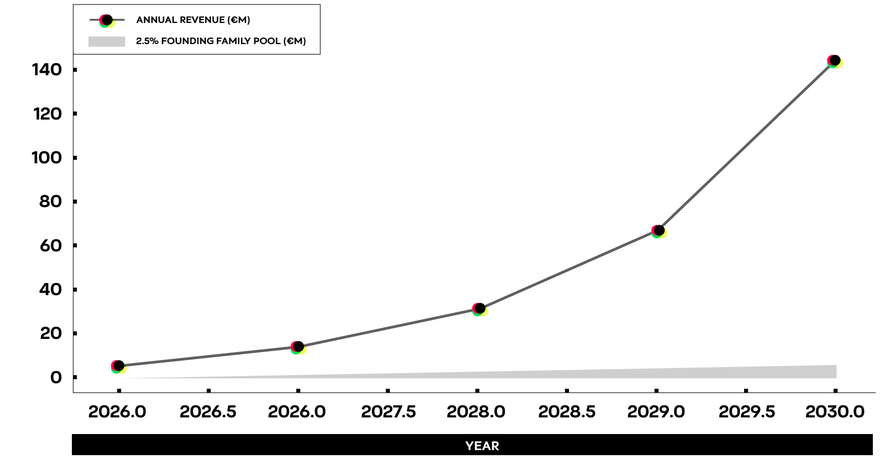


The Forecast (Illustrative Only)

At this stage, we are presenting only one of our primary revenue streams — the B2C subscription platform.

This model offers simple monthly subscriptions for individuals who wish to access Reflective Intelligence tools and community experiences that strengthen their creativity, adaptability, and sense of purpose in the AI age.

YEAR	SUBSCRIBERS	AVERAGE MONTHLY FEE (€)	ANNUAL REVENUE (€)
2026	25,000	10.00	3,000,000
2027	100,000	10.50	12,600,000
2028	250,000	11.00	33,000,000
2029	500,000	11.50	69,000,000
2030	1,000,000	12.00	144,000,000



The Dream Team

Management

Executive Team
António Câmara, Edmundo Nobre, Haydn Rigby

Senior Consultants
Alice Cardoso, Cristina Gouveia, John Filipe, Natasha Stark, Theo Fernandes

Advisors
João Lagos, Henk Scholten, Ken Pimentel, Ross Plummer, Sameer Mutha, Tony Fernandes

Research & Development

YDreamers
Filipe Coelho, Francisco Ribeiro, Nuno Cardoso, Tiago Carita

Neuro-Sciences, AI, AR/VR
Groups headed by Ana Paiva, Joaquim Jorge and Zachary Meinem

Sports
Group headed by Duarte Araujo

Nature
Ana Pinheiro Privette, António Brito, Julia Seixas

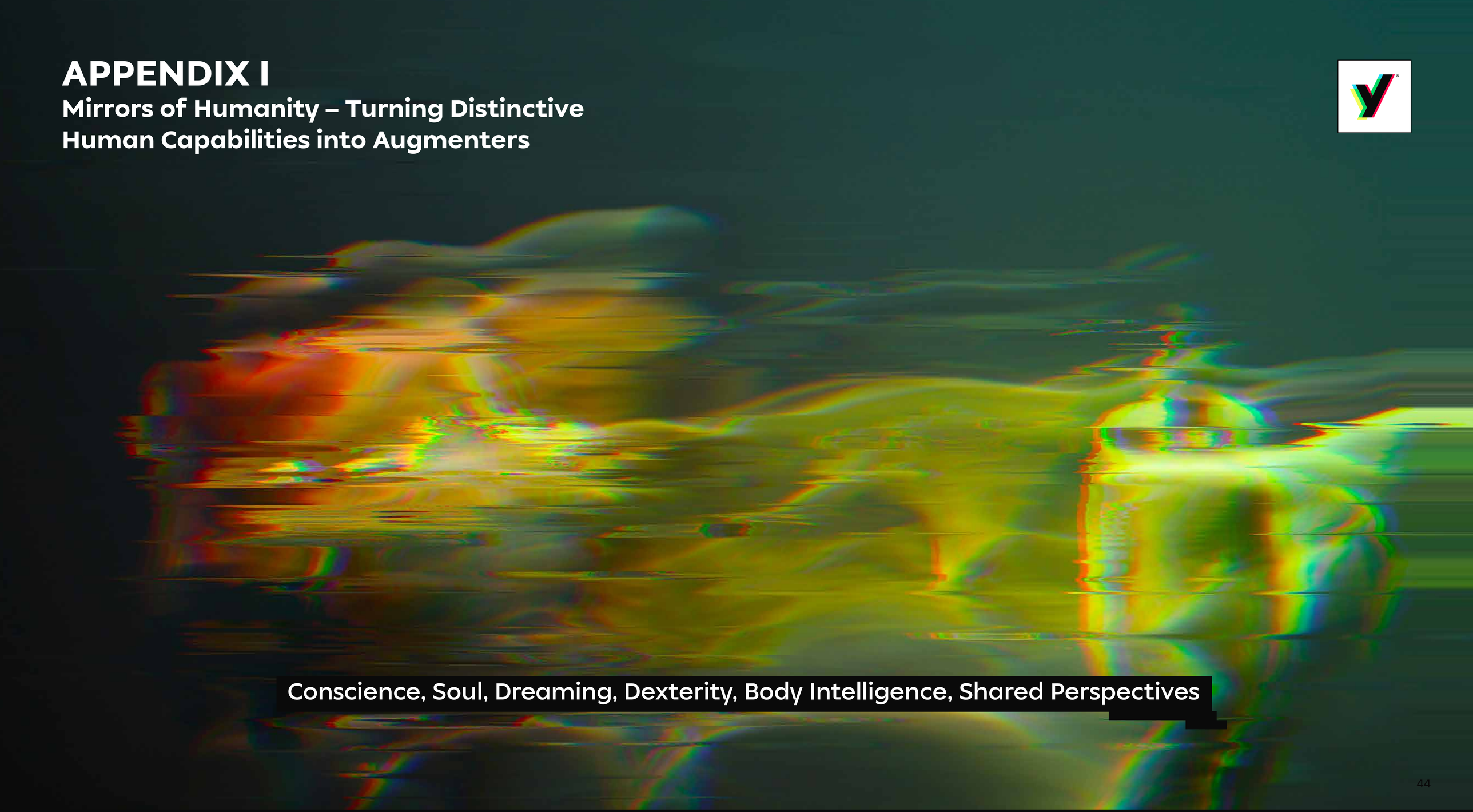
Health
Alexandre Rainha de Campos, Minnie Freudenthal, Rita Roque

To be confirmed

Craftsmen of **The YDreams Collection**

APPENDIX I

Mirrors of Humanity – Turning Distinctive Human Capabilities into Augmenters



Why Beyond AI?

AI masters pattern and prediction.

Humans master meaning, courage, empathy, embodiment, and imagination.

Mission: build Mirrors—apps that operationalize uniquely human faculties through multimodal interaction.

The Six Human Capabilities

Conscience
Moral alignment engine; evaluates perception → knowledge → values → action.

Soul
Integrator of identity, courage, and mutual aid; governs low- and high-intensity ethics.

Dreaming
Associative cognition mode that rehearses possibilities and encodes emotion.

Dexterity
Fine-motor mastery and tool improvisation; bridge between mind and matter.

Body Intelligence
Somatic knowing distributed through nerves, muscles, breath, and balance.

Shared Perspectives
Intersubjective resonance; how groups align surprise, conscience, and soul.

The Mirrors/Apps

North – The Moral Mirror (Conscience)
Guides reflection before action via CARE protocol (Capture–Assess–Reflect–Enact).Tools: Conscience Companion App, Decision Dashboard, VR Ethics Games.

Pulse – The Soul Mirror
Tracks ethical & emotional intensity; cultivates courage and mutual aid. Tools: Soul Compass journaling, Mutual Aid Network visualizations, Crisis Courage Trainer.

Lucid – The Dream Mirror
Captures, decodes, and re-creates dreams in AR/VR. Tools: Dream Recorder + Decoder + Dream VR Lab.

Craft – The Skill Mirror (Dexterity)
Learns and augments fine motor control through haptics and robotics. Tools: Haptic Gloves, Dexterity Avatars, Tele-Robotic Hands.

Flow – The Physical Mirror (Body Intelligence)
Reads body signals (breath, heartbeat, posture) to sustain flow. Tools: Smart Sleeves, Somatic Coach AI, Bio-rhythmic Feedback Loops.

Wall – The Shared Mirror
Enables collective cognition and emotional resonance across users. Tools: Consensus Map, Shared Dreamscapes, Ethical Negotiation Layer.

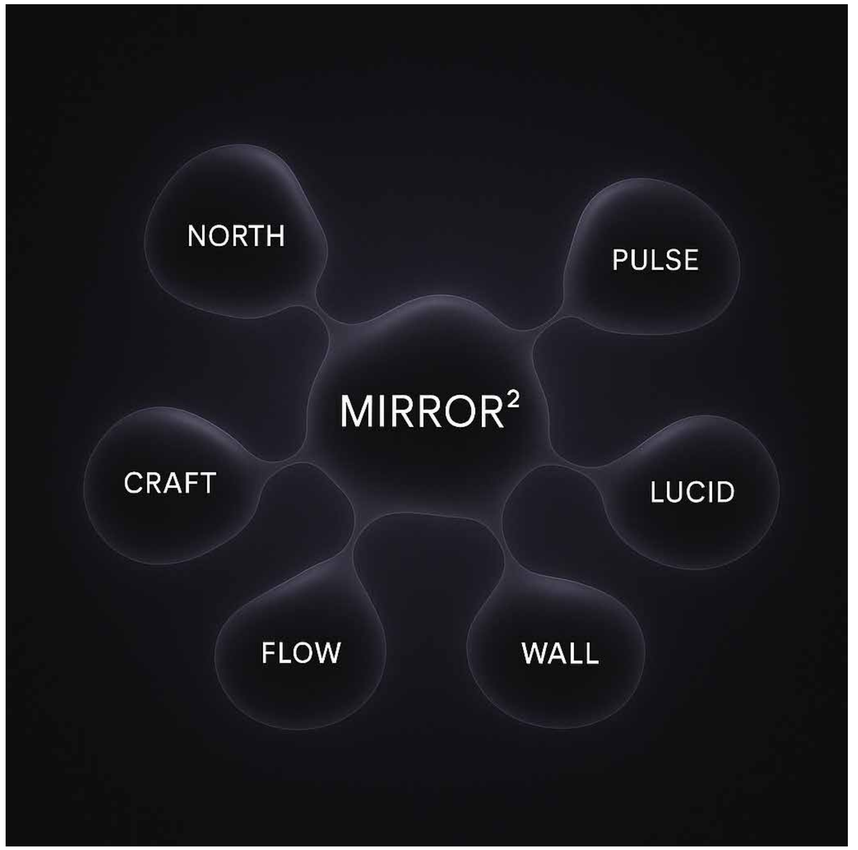
Operational Principles

Human-Centered Augmentation
Enhance, don’t replace.

Multimodality
Numerical + Linguistic + Pictorial + Somatic data integration.

Reciprocal Learning
Human teaches nuance ⇌ Machine teaches precision.

Ethical and Privacy Safeguards
Ownership of conscience data, dream rights, bodily autonomy.



Architectural View

Common MirrorVerse Stack

Sensing → Interpretation → Mirror App → Feedback → Learning.

Layered Interaction Model

Cognitive (Conscience / Dreaming)
Emotional (Soul / Shared Perspectives)
Physical (Dexterity / Body Intelligence)

MirrorVerse Environment

Multiplayer AR/VR engine handling synchronization

Data Ethics and Security Framework

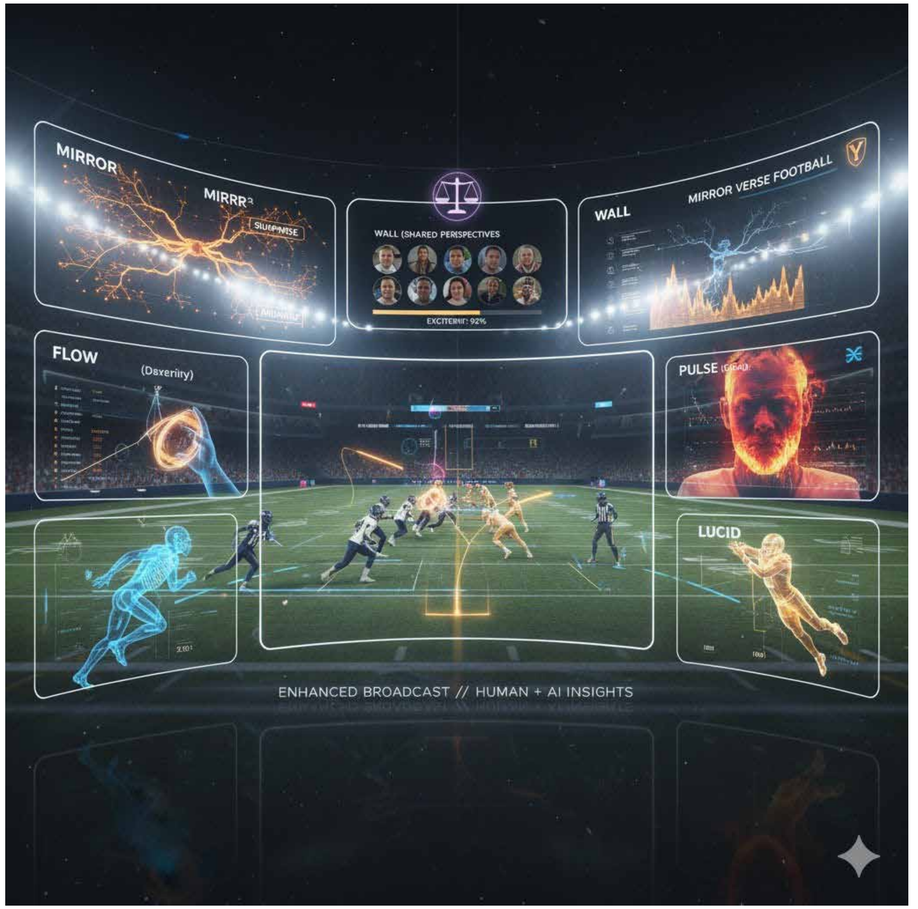
Explainability, Slowness Features, Value Alignment Interfaces

Application Scenarios

Nature
Forest digital twins; ranger body-intelligence wearables; collective conscience dashboards.

Sports
Mirror² Coaches; Flow-state Trackers.

Health
AR Training Gyms. Health – Dream-based therapy; Conscience-aligned clinical decisions; Robotic micro-surgery avatars.



Application Scenarios

Education
Shared Dream Labs; Ethical Decision Simulators; Body-learning classrooms.

Creativity & Design
Dream studios; Soul resonance soundscapes; Collective story crafting.

Society & Governance
Collective ethics dashboards; Mutual aid AI; Policy co-dreaming forums.

APPENDIX II
Surprise Calculus

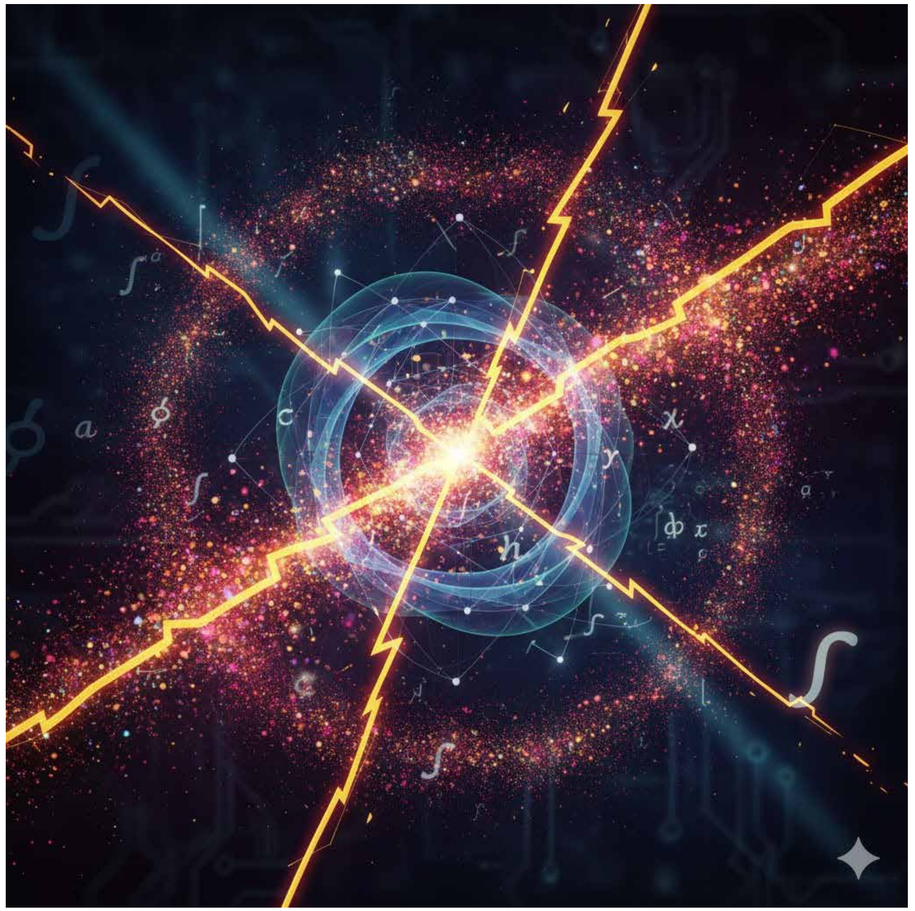
The Need for a Calculus of Surprise

Deterministic AI → predictable outcomes

Human intelligence → surprise, curiosity, divergence

MirrorVerse = Operating System for Human Surprise

Goal: Measure, generate & amplify surprising ideas systematically



Philosophy and Foundation

MirrorVerse: The Living Mirror

Reflects user world (sounds, gestures, memories)

Divergent engine mutating patterns instead of converging

Surprise = learning signal + creative spark

Surprise as Metric of Life

Formula: S = f(D, E, A)

- D: Deviation from expectation
- E: Engagement/iteration
- A: Aesthetic resonance

Surprise Index drives self-learning loops

Mathematical Foundations

Mathematical Foundations

- Shannon surprise = – log P(x)
- Rare = more surprising
- But rarity ≠ relevance → context matters

Expectation and Deviation

- Surprise = f(Observed Outcome, Expected Model)
- Metrics: K-L divergence | Prediction error | Contextual mismatch

Cognitive Dimensions

- Novelty × Incongruity × Suddenness
- Pleasant vs unpleasant surprise (valence)
- Complexity thresholds: too complex = noise

Operators of Surprise

The Symbolic Operators

SYMBOL	MEANING	FUNCTION
Δ	Deviation	Distance from expectation
τ	Timing	When the violation occurs
$\oplus$	Juxtaposition	Unexpected combination
ρ	Resolution	Integration or explanation

Grammar of Surprise

- Inversion (flipping expectations)
- Juxtaposition (bisociation of distant concepts)
- Delay/Reveal (timing for impact)

The Multimodal Framework

The Three Representational Layers

Layer	Mode	Tools	Scope
Numerical	Probabilities, entropies	Precision	Quantify rarity
Linguistic	Natural language, semantics	Expressivity	Narrative deviation
Imagistic	Visual, spatial flows	Holism	Gestalt rupture

The Multimodal Framework

Cross-Modal Translation

Words → Numbers → Images and back

Bridge via embeddings & AI alignment

Surprise flows across modalities

Levels of Surprise

Sensory (low-level)

Semantic (mid-level)

Conceptual (high-level) → Cumulative surprise = Integral over levels

Surprise Calculus Table (Prototype)

OPERATOR	NUMERICAL LAYER (PROBABILITIES, METRICS)	LINGUISTIC LAYER (NARRATIVES, MEANINGS)	IMAGISTIC/FLOW LAYER (DIAGRAMS, PATTERNS)	FOOTBALL EXAMPLE	BIODIVERSITY EXAMPLE
Δ (Deviation)	Distance between observed and expected values (e.g., % deviation, log probability, KL divergence).	Break from expected storyline, contradiction, violation of norm.	Anomaly in spatial/temporal pattern (e.g., arrow, cluster, cycle broken).	Striker shoots from 40m instead of passing.	Bird population 600 vs. expected 1000 (–40%).
τ (Timing)	Rate of change, sudden deviation, unexpected time of occurrence.	Surprise from suddenness, anticipation violated, suspense.	Abrupt shift in flow or rhythm in visualization.	Goal scored immediately after kickoff (no buildup).	Migration window missed — birds late or absent.
$\oplus$ (Juxtaposition)	Two variables co-occurring with low joint probability.	Incongruous or creative combination of elements	Unexpected overlap or clash of symbols, flows, or trajectories.	Long shot in a short-pass dominated game.	Forest in bloom but bird arrivals absent.
ρ (Resolution/Integration)	Update of probability model, Bayesian posterior adjustment.	Narrative reconciliation, explanation, punchline, new paradigm.	Diagram updated with new stable pattern, cycle restored or redefined.	Opponent goalkeeper adapts to long shots in future games.	Discovery of cause: drought in Sahel explains bird absence.

How to Use the Table: (1) Start from expected model. (2) Observe deviation. (3) Quantify (Δ), time (τ), combine ($\oplus$). (4) Resolve (ρ) $\rightarrow$ update strategy or understanding.

Applications and Interfaces

Sports — Strategic Unpredictability

Training AI to propose controlled surprises.

Optimal entropy = max opponent confusion / min team chaos.

Mirror² Football module → uses Surprise Operators to generate new plays.

Nature — Ecosystem Anomaly

Detection Surprise alerts via sensors and satellite imagery.

Explora platform → Δ as early warning system.

Juxtaposition ⊕ used to find positive ecological surprises (rewilding, new species).

Medicine & Health

Pulse Mirror detects unexpected biometric patterns.

Resolution ρ triggers adaptive therapies.

Computational Implementation

Surprise as Learning Signal

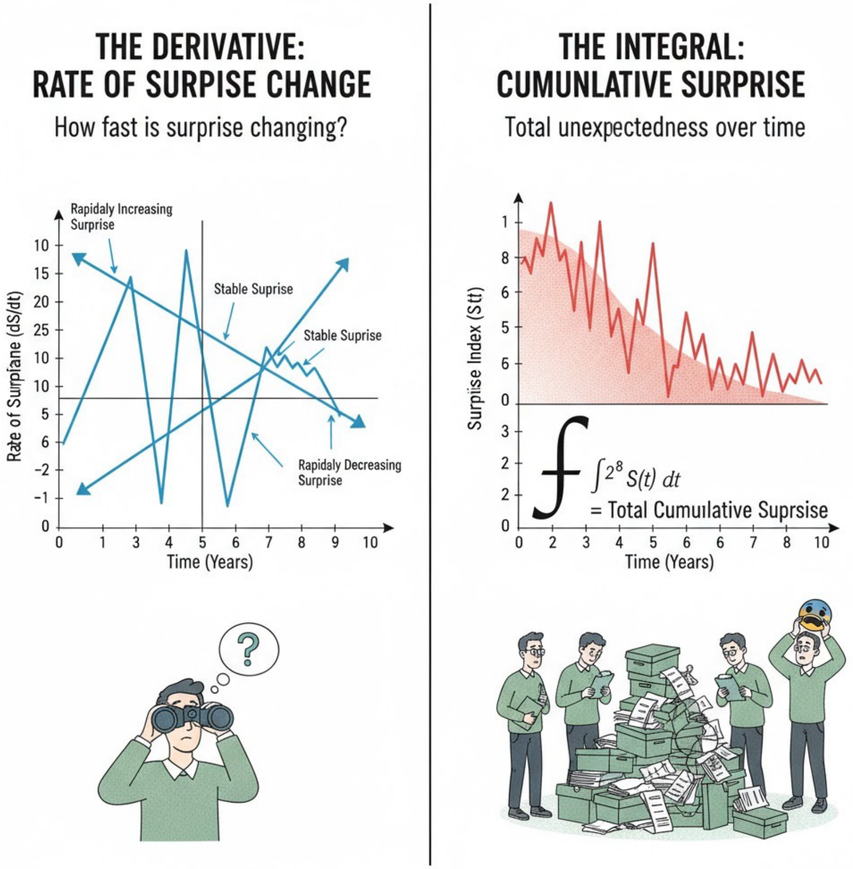
Prediction error in neural networks = surprise gradient.

Used to tune creative models and retrain expectation layers.

Mathematical Analogy

Derivative = rate of surprise change (dS/dt).

Integral = cumulative surprise over experience.



Philosophical & Ethical Reflection

Good vs Bad Surprise

Unexpectedness × Positive Impact = Good Surprise

Negative impact Ethical filter (North Mirror).

Surprise and Meaning

Surprise = signal that our model of the world is too narrow.

Thus, it drives growth, adaptation & creativity.

APPENDIX III
IDEAS

IDEAS-Interactive Dynamic Environment and Agent System

IDEAS transforms real-world videos into interactive games by decomposing scenes into background dynamics and agents, learning their behaviors through machine learning, and orchestrating them via a causal model. This enables the user not only to replay reality but to experiment with it — turning any video into a what-if simulation for discovery, creativity, and decision support.

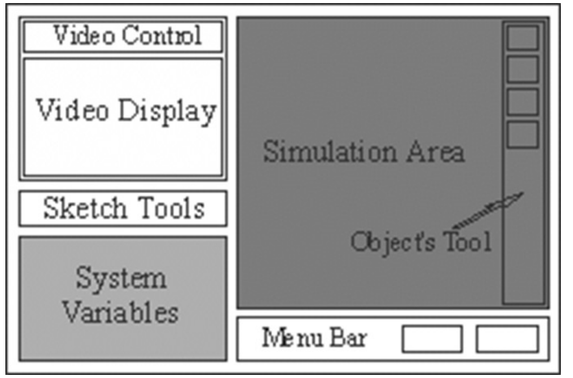
Origin and Vision

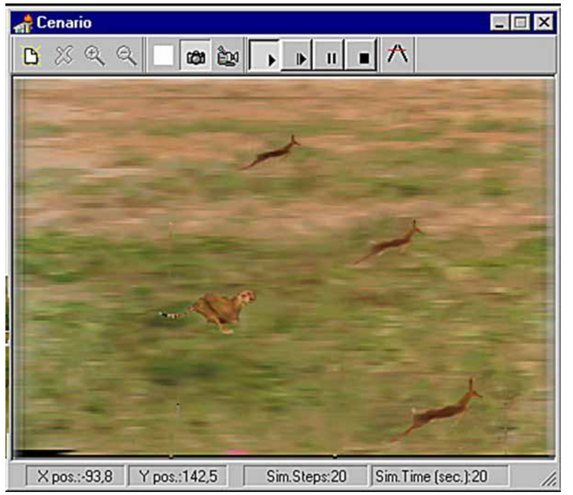
IDEAS builds on the “Multimodal System Dynamics” research tradition:

Pictorial simulation — models expressed through images and motion.

Programming by reproduction — learning models directly from data or video.

Interactive decision-making — users engage through natural controls (voice, gesture, or symbolic tagging).





Conceptual Framework

LAYER	DESCRIPTION	EXAMPLE
Video Layer	Real or synthetic input: scenes containing agents and background.	A lion chasing a deer; a traffic intersection; a surgical operation.
Decomposition Layer	Separation of static/dynamic elements using computer vision.	Isolate terrain vs. moving agents.
Modeling Layer	ML infers transition and interaction rules (motion, behavior, response)	Predator's pursuit modeled by reinforcement learning.
Causal Diagram Layer	Graph of dependencies between variables (background $\rightleftharpoons$ agents).	Rain → visibility → prey speed → predator success.
Simulation Layer	Dynamical model integrating ML components.	Predict alternate outcomes given changes in conditions
Game Layer	Define control variables (player inputs) and impact variables (goals, scores).	Control terrain, agent energy, or environmental factors.

Core Principles of IDEAS

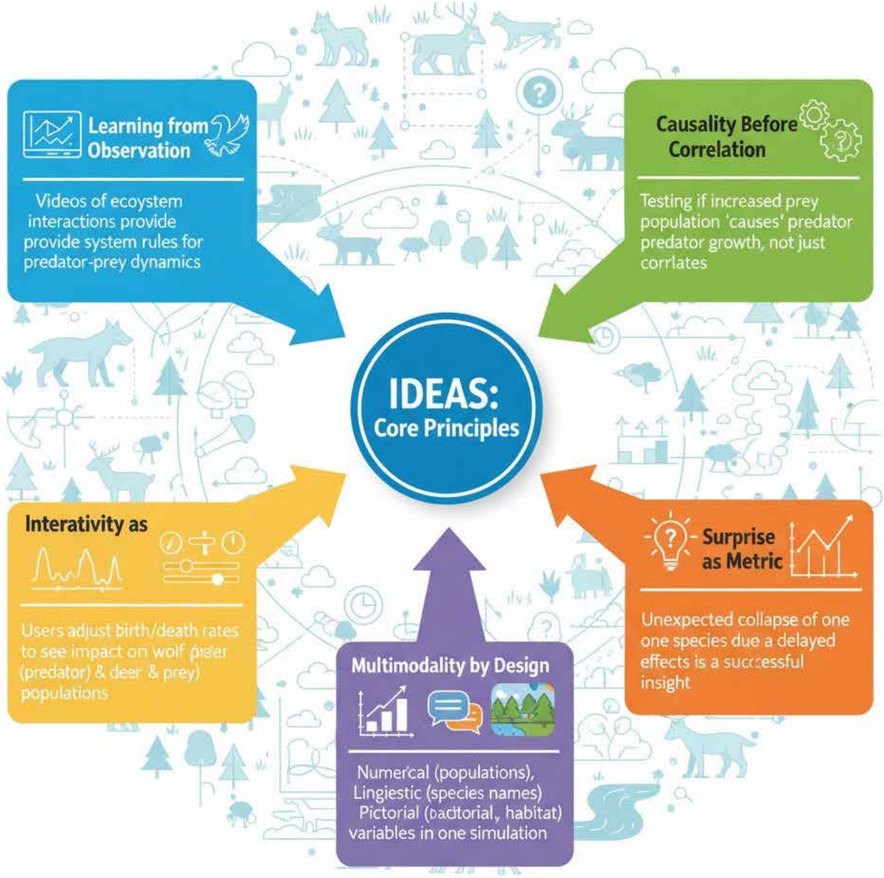
Learning from Observation — videos are sources of system rules.

Causality Before Correlation — every visual correlation is tested for cause–effect relationships.

Interactivity as Understanding — users gain insight by altering variables and observing impact.

Surprise as Metric — successful interactions generate novel, non-trivial outcomes.

Multimodality by Design — numerical, linguistic, and pictorial variables co-exist in one simulation space



DREAM

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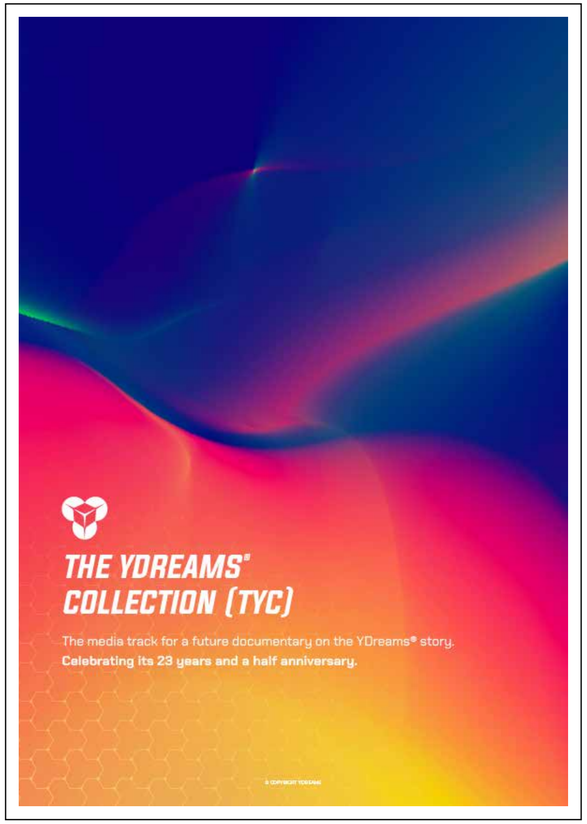

The YDreams Collection