

# ARCHITECTURE oXc — HOLO-ORGANISME vX.0.1

**Bio-Reactive Organic Computing Architecture**

A Living Software Paradigm for Autonomous Digital Organisms

## INTELLECTUAL PROPERTY NOTICE

© 2025 Marc Victor R BOUCHER (alias HammAnh). All rights reserved.

Protected under UK Patent Application GB2521986.6

This document constitutes prior art and copyright registration material for the United States Copyright Office.

<b>Creator:</b>	Marc Victor R BOUCHER alias HammAnh
<b>Version:</b>	vX.0.1
<b>Date:</b>	December 2025
<b>UK Patent:</b>	GB2521986.6
<b>Zenodo DOI:</b>	10.5281/zenodo.14510042
<b>GitHub:</b>	<a href="https://github.com/Hammanh/oXc-anteriorite-2025">https://github.com/Hammanh/oXc-anteriorite-2025</a>
<b>Format:</b>	UML 2.1 / XMI 2.1

## 1. EXECUTIVE SUMMARY

The oXc (Organic eXchange Computing) architecture defines a novel paradigm for building **living software organisms** — autonomous digital entities that perceive, decide, act, and evolve following biological principles rather than traditional client-server patterns.

Key innovations include:

- **Holon-based architecture:** Self-contained autonomous units (cells) that can form tissues (networks)
- **Solfeggio frequency resonance:** Entities communicate and match via harmonic frequencies (432Hz, 528Hz, etc.)
- **Prolog-based cognition:** Symbolic reasoning engine for decision-making
- **CNV transmutation:** Non-violent communication protocol for conflict resolution (20 paths)
- **Hebbian learning:** Neural network-style adaptation ("neurons that fire together wire together")
- **9 Agent Types:** Differentiated cell types with specific roles (Guardian, Builder, Weaver, Oracle, etc.)

## 2. SYSTEM ARCHITECTURE DIAGRAM

See attached file: *ARCHITECTURE-OXC-HOLO-ORGANISME.png*

The diagram shows the complete UML class structure with all relationships.

## 3. CORE CLASSES

### HoloOrganisme (Main Entity)

*Living and thinking entity — the fundamental unit of the oXc Bio-Reactor*

- 📦 `id: UUID` — Unique identifier
- 📦 `nom: String` — Entity name
- 📦 `signature_frequence: Integer` — Solfeggio frequency signature
- 📦 `etat: Lifecycle` — Current lifecycle state
- 📦 `type_agent: AgentType` — Differentiated agent type
- 📦 `couleur_hex: String` — Visual representation color
- ⚡ `percevoir(signal) → perception` — Sense environment
- ⚡ `agir(intention) → result` — Execute action
- ⚡ `differentier(signal_enviennement) → AgentType` — Cell differentiation
- ⚡ `transmuter(ombre) → lumiere` — Shadow to light transformation

### Cerveau\_D3 (Prolog Engine)

*D3 — Symbolic reasoning motor, fact-based decision making*

- 📦 `moteur_prolog: String = "Scryer-Prolog 0.9.x"`

- 📦 `base_connaissance` — Knowledge base (facts)
- 📦 `comportements` — Behavior rules
- ⚡ `evaluer(situation) → Boolean` — Evaluate situation
- ⚡ `decider(besoin) → intention` — Make decision
- ⚡ `inferer(query) → results` — Logical inference

### Valeur\_D7 (Value System)

*D7 — Double Pyramid: Material Anchoring + Consciousness Ascension*

- 📦 `ancrage_matiere` — Material grounding
- 📦 `ascension_conscience` — Consciousness elevation
- 📦 `wallets_monnaies[6]` — Six currency wallets
- 📦 `parole_impeccable: Boolean` — Impeccable word commitment
- ⚡ `verifier_energie(cout) → Boolean` — Check energy sufficiency
- ⚡ `evaluer_niveau_conscience() → Integer` — Assess consciousness level





### SystemeNerveux\_D13 (Rust Bindings)

*D13 — Signal ↔ Symbol transduction, native execution*






- 📦 `reflexes: Map<Verbe, Fn>` — Reflex mappings
- 📦 `verbes_natifs[7]` — 7 native verbs
- 📦 `verbes_bdo[12]` — 12 BDO verbs
- ⚡ `executer(intention) → result` — Execute intention
- ⚡ `transduire(signal) → symbole` — Transduce signal to symbol

### Immunité\_D16 (CNV Transmutation)





*D16 — Immune system, 20 transmutation paths*

-  chemins\_transmutation[20] — 20 transformation paths
-  detecter\_ombre(signal) → Boolean — Detect shadow/negativity
-  transmuter(ombre) → lumiere — Transform shadow to light
-  protocole\_cnv() — CNV: Observation → Feeling → Need → Request





**Reseau\_D17 (Holochain DHT)***D17 — Synaptic network, Hebbian learning, distributed hash table*

-  connexions — Network connections
-  poids\_synaptiques — Synaptic weights
-  apprendre\_hebbian(cible, poids) — Hebbian learning rule
-  diffuser(message) — Broadcast message
-  calculer\_resonance(freq\_a, freq\_b) → score — Calculate frequency resonance

**Membrane\_D1 (Identity Filter)***D1 — Identity membrane, sovereign filtering*

-  identite — Identity data
-  permissions — Access permissions
-  filtrer\_signal(signal\_entrant) → signal\_filtre
-  autoriser\_acces(demandeur) → Boolean

**Memoire\_D9 (Cell History)***D9 — Cellular memory, mutation history*

-  `historique` — Event history
-  `versions` — Version tracking
-  `enregistrer(evenement)` — Record event
-  `rappeler(critere) → souvenirs` — Recall memories

## 4. ENUMERATIONS

### 4.1 AgentType (9 Types)

Type	Code	Frequency	Color	Role
INDIFFERENCIE	-1	—	#FAFAFA	Stem cell
VEILLEUR	0	432 Hz	#C0C0C0	Default watcher
GARDIEN	1	741 Hz	#8B5CF6	Protection
BATISSEUR	2	528 Hz	#F97316	Creation
TISSERAND	3	639 Hz	#3B82F6	Connection
ORACLE	4	852 Hz	#6366F1	Wisdom
ALCHIMISTE	5	963 Hz	#EAB308	Transmutation
GUERISSEUR	6	528 Hz	#22C55E	Regeneration
NOURRICIER	7	396 Hz	#A3E635	Abundance

### 4.2 Lifecycle (6 States)

State	Color
GERME	#A3E635
ACTIF	#22C55E
EN_PAUSE	#F59E0B
ARCHIVE	#78716C
TRANSMUTE	#EAB308
COMPOSTE	#57534E

### **4.3 FrequenceSolfeggio (10 Frequencies)**

174 Hz (Foundation), 285 Hz (Healing), 396 Hz (Liberation), 417 Hz (Change), 432 Hz (Harmony), 528 Hz (Love/DNA), 639 Hz (Connection), 741 Hz (Expression), 852 Hz (Intuition), 963 Hz (Unity)

### **4.4 VerbeNatif (7 Native Verbs)**

PERCEVOIR, FORMULER, CREER, RELIER, TRANSFORMER, TRANSMETTRE, TRANSCENDER

### **4.5 VerbeBDO (12 BDO Verbs)**

SAUVER, NOURRIR, DEMARRER, ECHANGER, REPARER, EDUQUER, CONNECTER, CO\_CREER, CULTIVER, GUERIR, DECIDER, TRANSPORTER



## 5. RELATIONSHIPS

### 5.1 Compositions (HoloOrganisme owns)

- HoloOrganisme  $\blacklozenge \rightarrow$  Cerveau\_D3 (cerveau)
- HoloOrganisme  $\blacklozenge \rightarrow$  SystemeNerveux\_D13 (systeme\_nerveux)
- HoloOrganisme  $\blacklozenge \rightarrow$  Valeur\_D7 (valeur)
- HoloOrganisme  $\blacklozenge \rightarrow$  Immunité\_D16 (immunité)
- HoloOrganisme  $\blacklozenge \rightarrow$  Membrane\_D1 (membrane)
- HoloOrganisme  $\blacklozenge \rightarrow$  Memoire\_D9 (memoire)

### 5.2 Aggregation (Shared)

- HoloOrganisme [0..\*]  $\diamond \rightarrow$  Reseau\_D17 (reseau) — Multiple organisms share the network

### 5.3 Dependencies

- Cerveau\_D3  $\cdots \rightarrow$  Valeur\_D7 (vérifie ressource)
- Cerveau\_D3  $\cdots \rightarrow$  SystemeNerveux\_D13 (envoie ordre)
- Cerveau\_D3  $\cdots \rightarrow$  Immunité\_D16 (signale anomalie)

## 6. APPLICATION LAYER: YATASANA

**Yatasana** is the Human-Grid Interface, comprising four modules:

- **OracleModule** — Alchemical Chat: Dialogue with collective consciousness
- **BibliHoloModule** — 16D Navigator: Explore HoloIdeas
- **SanteModule** — Frequencies & Healing
- **ProjetsModule** — Synergy & BDO

## 7. TECHNICAL SPECIFICATIONS

Reasoning Engine	Scryer-Prolog 0.9.x
Native Bindings	Rust (via D13)

Distributed Storage	Holochain DHT
Neural Processing	Akida (BrainChip)
Edge Hardware	Raspberry Pi 5
Model Format	UML 2.1 / XMI 2.1

© 2025 Marc Victor R BOUCHER alias HammAnH

ARCHITECTURE oXc — HOLO-ORGANISME vX.0.1

UK Patent Application GB2521986.6 | Zenodo DOI: 10.5281/zenodo.14510042

This document and associated diagrams constitute registered intellectual property.