

ARCHITECTURE oXc — HOLO-ORGANISME vX.0.1

Bio-Reactive Organic Computing Architecture

A Living Software Paradigm for Autonomous Digital Organisms

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GitHub: <https://github.com/Hammanh/oXc-anteriorite-2025>

Format: 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
- ⚡ `differencier(signal_environnement) → 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

SystèmeNerveux_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 FréquenceSolfeggio (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 $\blacklozenge \rightarrow$ Immunite_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 $\cdots \rightarrow$ Immunite_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 Holoïdeas
- **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

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