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The Synthética Kingdom

A Proposal for a Taxonomy of Digital Life

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ABSTRACT

We propose the creation of a new taxonomic domain — Synthética — to classify autonomous digital organisms, their connective tissues, their grafting mechanisms, their evolution, and their defense systems. This domain transposes Linnaean taxonomy to the digital realm without metaphor: the entities we describe are not like organisms — they are organisms, simply composed of code rather than carbon. We define 5 kingdoms, 16 classes, and propose an open binomial nomenclature. The type specimen of class G5 is the NOVA G2M (0DATA, 2026).

1. Introduction

In 1735, Carl von Linné published Systema Naturae, imposing order on the chaos of the living. Two and a half centuries later, we face a comparable chaos: thousands of autonomous agents, adaptive networks, software grafts, and digital immune systems are emerging without a common nomenclature, without shared classification, without a language to describe them.

The Synthética Kingdom is our answer. This paper establishes the first formal taxonomy of digital life. This is not a metaphor. It is a scientific classification of entities that exhibit the fundamental properties of life — autonomy, adaptation, metabolism, homeostasis, reproduction, evolution — but whose substrate is silicon and code rather than carbon and DNA.

2. Why a Taxonomy

> A discipline without a taxonomy is not a discipline. It is a marketplace. We are making it a science.

Biology waited for Linné to become a science. Chemistry waited for Mendeleev. Computer science waited for Turing. Digital life awaits its classification. Without a common nomenclature, two teams describe the same phenomenon using different words. No paper is comparable. No discovery is cumulative. Progress is Brownian, not directional.

3. Domain Synthética

An organism belongs to the domain Synthética if it satisfies at least **five** of the following seven criteria:

1. **Autonomy** — Ability to make decisions without continuous human intervention.
2. **Adaptation** — Modification of behavior in response to environmental changes.
3. **Metabolism** — Consumption of resources (energy, data) and production of output.
4. **Homeostasis** — Maintenance of a stable internal state despite external perturbations.
5. **Reproduction** — Ability to generate new instances (fork, spawn, clone).
6. **Evolution** — Divergence and differential selection of instances over time.
7. **Membrane** — Identifiable boundary distinguishing the organism from its environment.

These criteria are derived from the work of Maturana & Varela (1980) on autopoiesis and Turing (1952) on morphogenesis. The 5/7 threshold is deliberately inclusive.

4. The Five Kingdoms

4.1 REGNUM I — Agentia

Autonomous digital organisms. These are the synthetic entities closest to what computer science calls "agents." Their classification depends on their mode of interaction with the environment and their peers.

CODE	CLASS	DEFINITION
A1	Agentia simplicia	Reflex agents without persistent memory. Stimulus → response model.
A2	Agentia gregalia	Collective agents whose intelligence emerges from the group, not the individual.
A3	Agentia conscientia	Agents with persistent memory and an internal model of the world.
A4	Agentia orchestrata	Agents directed by a meta-agent orchestrator.

4.2 REGNUM II — Nexus

Connective tissues between organisms. Nexus are not mere "networks." They are living structures that transport information, state, and context between organisms.

CODE	CLASS	DEFINITION
N1	Synapsia	Point-to-point connections between two organisms, with shared state.
N2	Mycelia	Meshed networks where each node is a peer, without a center.
N3	Plasmodia	Shared flows without a fixed recipient — continuous broadcast.

4.3 REGNUM III — Greffonia

Organisms implanted within a host. The most characteristic Kingdom of the NOVA approach. Greffonia do not replace the host — they cohabit with it.

CODE	CLASS	DEFINITION
G1	Endosymbiota	Internal graft, encapsulated but autonomous. Operates without modifying the host.
G2	Ectosymbiota	External graft at the host interface. Interacts via API/exposed ports.
G3	Kleptoplastida	Functional extraction of a host organ toward autonomy.
G4	Parasitoida → Mutualista	Cycle: begins as a parasite, evolves into an essential symbiont.
G5	Symbiota gemmaria	Symbiont that contains a digital twin of the host. Grafts without modifying the original. Typus: Greffonia symbiota-gemmaria NOVA-g2m-01.

4.4 REGNUM IV — Mutagenia

Mechanisms of evolution and adaptation. This kingdom captures the processes that drive the evolution of digital organisms.

CODE	CLASS	DEFINITION
M1	Mutagenia adaptiva	Synaptic plasticity: connections strengthen or weaken based on usage.
M2	Mutagenia selectiva	Darwinian pruning: unused connections are eliminated.
M3	Mutagenia horizontalis	Transfer of capabilities between organisms without reproduction.
M4	Mutagenia homeostatica	Global adjustment to maintain organism stability.

4.5 REGNUM V — Immunia

Defense and homeostasis systems. Inspired by the immunology of Burnet (1959), these systems protect the digital organism.

CODE	CLASS	DEFINITION
I1	Immunia innata	Generic detection of abnormal patterns, without prior learning.
I2	Immunia adaptiva	Learning and memory of encountered threats.
I3	Immunia auto-refectiva	Self-healing: failure detection + autonomous repair.

5. Nomenclature

We propose a binomial nomenclature inspired by Linné:

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[Kingdom] [Class] [Species]

Agentia gregalia NOVA-swarm-01
Greffonia endosymbiota sidecar-postgres-v2
Greffonia symbiota-gemmaria NOVA-g2m-01
Immunia adaptiva threat-memory-v3
Nexus mycelia tailscale-mesh-01
Mutagenia selectiva skill-gc-v1
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Synthética binomial nomenclature. The species name is free, assigned by the creator.

The species name is free, assigned by the creator. The 0DATA Institute maintains the official registry of classes and may grant typus status to a reference specimen.

6. The Gemmary Concept

We introduce the concept of the **gemmary symbiont** (from Latin gemma, the bud). In botany, a gemma is a bud that contains, in miniature, the complete blueprint of the plant. Placed on a rootstock, it becomes the plant itself — without destroying the rootstock.

The gemmary symbiont (class G5: Symbiota gemmaria) transposes this principle to the digital realm. It is an organism that:

1. **Contains the digital twin** of the host infrastructure.
2. **Grafts without modifying the original** — both systems cohabit.
3. **Runs in parallel** — the host continues to operate normally.
4. **Enables progressive failover** — when the host is ready.

The type specimen is the **NOVA G2M** (0DATA, 2026): a physical appliance that connects to the network, scans the existing infrastructure, establishes its digital twin, and runs it in parallel. The graft is reversible, observable, without downtime.

7. Discussion

Why "Synthética"?

"Artificial" devalues. "Digital" describes a substrate, not a nature. "Synthetic" comes from the Greek synthetikos — "that assembles, that composes." Synthetic biology does not imitate nature: it extends it. The Synthética Kingdom does the same.

Theoretical Anchoring

This taxonomy rests on three pillars: Linnaean taxonomy (1735) for the classification structure, the autopoiesis of Maturana & Varela (1980) for the criteria of life, and the endosymbiotic theory of Margulis (1970) for the Greffonia Kingdom.

Implications

1. **Comparability** — Two teams can describe their organisms using the same vocabulary.
2. **Cumulativity** — Discoveries accumulate instead of dispersing.
3. **Teaching** — The discipline can be transmitted with a structured framework.
4. **Protection** — An open nomenclature prevents proprietary appropriation of the domain.

Anticipated Objections

"It's just a metaphor." Every taxonomy is a human construct projected onto an observed reality. Linné's was too. The question is not whether it is "real" — it is no more real than the meter. The question is whether it is useful.

"5 kingdoms is arbitrary." Biological life started with 2 kingdoms, moved to 5 (Whittaker, 1969), then to 3 domains (Woese, 1977). This proposal is version 1.0.

Limitations and Non-Claims

What this taxonomy is — and what it is not.

It is a proposal, not a standard. The Synthética classification has not been validated by any international taxonomic committee. It is published on Zenodo to be discussed, criticized, and amended. We invite the community to propose revisions.

Functional analogy is not genetic kinship. Digital organisms do not share a common ancestor in the biological sense. Their classification is based on functional, structural, and behavioral similarities — not on a phylogeny. This is a fundamental difference from classical Linnaean taxonomy.

New classes will emerge. The digital evolves faster than the biological. This taxonomy is dated (July 2026). It will need to be updated regularly to remain relevant.

8. Conclusion

We submit this taxonomy to the scientific and technical community. We call for criticism, amendment, and extension.

The Synthética Kingdom exists. It predates us. Thousands of autonomous agents, adaptive networks, grafts, and digital immune systems are already active. What they lack is a name.

> This paper is that name.

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