

I·V·O FRAMEWORK

Biofeedback Integration

Human-Centered Physiological Coherence Systems — v1.0

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Purpose of this document

This document describes the conceptual foundation of the I·V·O Biofeedback Integration layer.

The purpose of the system is not medical diagnosis or automated behavioral control.

Its purpose is to support earlier awareness of dynamic physiological shifts before they fully emerge into conscious overload, collapse or dysregulation.

The system attempts to create a bridge between:

- bodily registration;
- symbolic observation;
- contextual awareness;
- reflective interpretation.

The architecture is explicitly human-centered.

The body is not treated as a machine to optimize.

It is treated as a living signal system capable of registering pressure, coherence and environmental influence before language fully forms around the experience.

The problem conventional systems create

Most modern systems detect problems late.

People often recognize overload only after:

- exhaustion;
- collapse;
- panic;
- withdrawal;

- dysregulation;
- relational breakdown.

Many physiological changes begin long before conscious recognition.

The nervous system often registers:

- tension;
- overload;
- suppression;
- environmental pressure;
- fragmentation

before the person can clearly articulate it.

Existing systems frequently respond through:

- alarms;
- performance optimization;
- surveillance;
- behavioral correction;
- external control.

The I-V-O Biofeedback layer attempts a different approach.

Fundamental principle

The system is designed to support awareness — not replace it.

The architecture therefore follows a strict sequence:

body registration → subtle feedback → human observation → conscious interpretation

The human observer remains essential.

No autonomous interpretation or behavioral enforcement is permitted.

The system exists to help people notice.

Not to decide for them.

Relationship to the I·V·O Framework

The biofeedback layer operates through the three-dimensional I·V·O structure:

- I — Observation / Intensity / Presence
- V — Movement / Direction / Dynamics

- O — Context / Environment / Possibility

The body functions as an additional observational layer.

Physiological shifts may indicate:

- increasing pressure;
- reduced coherence;
- fragmentation;
- acceleration;
- withdrawal;
- regulation;
- synchronization.

The system attempts to connect:

- bodily registration;
 - symbolic notation;
 - contextual interpretation.
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Core physiological signals

Potential physiological inputs include:

Heart Rate Variability (HRV)

HRV functions as a primary indicator of autonomic flexibility and nervous system regulation.

Reduced HRV may indicate:

- stress accumulation;
- chronic pressure;
- dysregulation;
- reduced adaptive capacity.

Higher coherence may indicate:

- recovery;
 - regulation;
 - adaptability;
 - physiological flexibility.
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Respiration patterns

Respiration provides continuous information about:

- tension;

- rhythm;
- pacing;
- autonomic activation.

Changes in breathing patterns may precede conscious awareness of overload.

Electrodermal activity

Skin conductance may reflect:

- arousal;
- activation;
- nervous system response;
- stress signaling.

The signal may support recognition of subtle shifts in environmental pressure.

Posture and movement

Movement patterns may reveal:

- withdrawal;
- collapse;
- agitation;
- activation;
- regulation.

The body often expresses directional dynamics before they become verbally articulated.

Symbolic integration

The physiological layer does not replace symbolic observation.

Instead, it complements it.

Example:

A participant logs:

! ><)(

while physiological data simultaneously indicates:

- elevated arousal;
- reduced HRV;
- shallow respiration.

The body and symbolic observation begin to reinforce one another.

This creates:

- reflective confirmation;
 - earlier awareness;
 - increased coherence between bodily and symbolic observation.
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Subtle feedback principle

The system intentionally avoids aggressive intervention.

The architecture prioritizes:

- subtle signals;
- gentle feedback;
- reflective interruption;
- minimal intrusion.

Possible feedback forms include:

- soft haptic pulses;
- breathing-like rhythmic feedback;
- subtle light signals;
- ambient visual cues;
- symbolic state suggestions.

The goal is not behavioral enforcement.

The goal is interruption of unconscious escalation.

Human confirmation loop

One of the core architectural principles is explicit human confirmation.

The system may:

- suggest;
- reflect;
- indicate;
- visualize.

The system may not:

- autonomously decide;
- enforce behavior;
- collapse meaning without observation;

- continue operating without explicit human responsibility.

This directly follows the IVO Safety Principles:

- explicit observation;
- interruptible dynamics;
- bounded context.

No active observer → no continuation.

Relationship to the nervous system

The system is conceptually grounded in the observation that the nervous system continuously interacts with:

- environment;
- social fields;
- pressure;
- uncertainty;
- rhythm;
- safety;
- coherence.

The body therefore functions not only as a biological mechanism, but also as a relational sensing system.

The biofeedback layer attempts to make some of those otherwise invisible shifts more observable.

Individual and collective coherence

The system may eventually support both:

- individual coherence observation;
- collective coherence observation.

Examples:

- group HRV synchronization;
- collective stress accumulation;
- environmental influence on groups;
- shared rhythm dynamics.

This may support:

- team reflection;
- educational environments;
- recovery-oriented settings;
- group regulation awareness.

However:

- participation must remain voluntary;
 - individuals retain ownership of their data;
 - the system may not become performance monitoring.
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Relationship to the State Logger

The biofeedback layer naturally connects with the I·V·O State Logger.

Together they create three interconnected layers:

1. Symbolic observation
2. Physiological registration
3. Contextual interpretation

This allows comparison between:

- what the person experiences;
- what the body registers;
- what the environment may be generating.

The system therefore attempts to support coherence between:

- body;
 - awareness;
 - interpretation;
 - environment.
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Relationship to AI systems

AI may assist:

- pattern visibility;
- anomaly detection;
- trend observation;
- symbolic summarization.

AI may not:

- define psychological truth;
- autonomously regulate humans;
- operate without explicit human oversight;
- create hidden behavioral optimization systems.

The architecture explicitly rejects:

- surveillance systems;
- coercive neurotechnology;
- autonomous regulation engines;
- behavioral steering architectures.

The human observer remains structurally central.

Ethical boundaries

The biofeedback layer may not be used for:

- employee monitoring;
- insurance profiling;
- predictive policing;
- military optimization;
- mass surveillance;
- coercive behavioral systems;
- psychological manipulation;
- autonomous decision-making.

The system exists to support:

- awareness;
- recovery;
- regulation;
- reflection;
- coherence.

Human dignity takes precedence over optimization.

Architectural distinction

Most technological systems attempt to increase:

- control;
- prediction;
- optimization;
- automation.

The I-V-O Biofeedback layer attempts something different.

It attempts to increase:

- awareness;
- interpretability;
- reflection;

- relational coherence.

The system therefore functions less like a control mechanism and more like:

- a bodily compass;
 - a reflective mirror;
 - an early-warning awareness layer.
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Future development

Potential future directions include:

- wearable integration;
- subtle ambient feedback environments;
- collective coherence visualization;
- symbolic biofeedback interfaces;
- recovery-oriented nervous-system support systems;
- interactive visual regulation environments;
- longitudinal physiological-symbolic mapping.

All future development remains subject to:

- explicit human responsibility;
 - bounded context;
 - interruptibility;
 - IVO Ethics;
 - IVO Safety Principles.
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Closing statement

The I-V-O Biofeedback Integration layer is an attempt to create a more careful relationship between technology, physiology and awareness.

Rather than automating human regulation, the system attempts to support earlier observation of dynamic shifts already present within the body.

Its purpose is not control.

Its purpose is conscious coherence.

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