

WUMBO Engine · APL-Mirrored Index

Cross-links the WUMBO Engine to the APL Operator's Manual so engineering artifacts (machines, fields, operators, states) mirror how the engine is built and used.

[Open Manual Index](#)[Open LaTeX Manual \(HTML\)](#)[Download APL Manual \(PDF\)](#)[Download WUMBO Engine \(PDF\)](#)[Rhythm Entrainment Demo](#)

How This Mirrors APL

Engine creation in WUMBO maps 1-to-1 onto APL: machines define processing contexts, fields define physical domains, operators define transformations, and UMOL states define regime/phase behavior.

Machines

Conductor (clock), Oscillator Bank (reactor), Coupling Controller (regulator), Output Multiplexer (encoder).

APL: Machines

Domains

Wave timing (AudioContext), geometric rhythm (CSS/animation), embodied feedback (haptic/bio).

APL: The Three Fields · Domains

Operators

schedule(), couple×, integrate+, amplify^, decohere%, gate(), emit→.

States (UMOL)

Ignition ($u \uparrow$), Empowerment ($u \rightarrow$), Resonance ($m \approx$), Nirvana ($m \equiv$),

APL: Universal Operations

Shutdown ($d\downarrow$), Pause ($d\perp$),
Re-entry ($u\circlearrowleft$).

APL: Operator States

WUMBO → APL Engineering Map

Clock & Scheduler

AudioContext master clock + look-ahead/Worklet.

Machine: Conductor

Op: schedule()

Field: Wave

Kuramoto Solver

Coupled oscillator bank + order parameter r, ψ .

Machine: Reactor

Op: couplex, integrate+

State: m (modulation)

Adaptive Controller

Closed-loop K adaptation by coherence/phase error.

Machine: Regulator

Op: amplify \wedge / decohere%

State: regime shifts

Biosignal I/O

HRV (BLE), keystroke cadence, latency compensation.

Machine: Sensor/Encoder

Op: gate(), reduce \perp

Field: Bio \leftrightarrow Wave

Multi-Modal Output

Audio/visual/haptic emission locked to master time.

Machine: Emitter

Op: emit \rightarrow , align \approx

Field: Wave/Geom/Body

Network Sync

WebSocket + timesync, WebRTC DataChannels.

Machine: Conductor (distributed)

Op: sync \leftrightarrow , sample()

State: coherence r

Roman Numeral Cross-Links

I. Atlas Entry

Manual:
Domains/Fields ·

II. Atlas Entry

Manual: States ·
Operators · Machines ·
Domains/Fields

III. Atlas Entry

Manual:
Domains/Fields ·

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Why: regime/alignment
→ transformation/sculpt

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Manual: Operators ·
States · Machines ·
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Focus: Operators

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Why:
transformation/sculpt →
regime/alignment

XXXII. Atlas Entry

Manual: States ·
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Why: regime/alignment
→ transformation/sculpt

XXXIII. Atlas Entry

Manual: Operators ·
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Why:
transformation/sculpt →
sensory/context

XXXIV. Atlas Entry

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Why: regime/alignment
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XXXV. Atlas Entry

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Why: regime/alignment
→ transformation/sculpt

XXXVI. Atlas Entry

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Why: sensory/context →
transformation/sculpt

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Why: regime/alignment
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Why: regime/alignment
→ transformation/sculpt

XXXIX. Atlas Entry

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Focus: States

Domains/Fields

Why: regime/alignment
→ sensory/context

XL. Atlas Entry

Manual: Machines ·
Operators ·
Domains/Fields ·
States

Focus: Machines

Operators

Why: execution/clock →
transformation/sculpt

XLI. Atlas Entry

Manual: States ·
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Why: regime/alignment
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XLII. Atlas Entry

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Why: sensory/context →
transformation/sculpt

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Why: regime/alignment
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XLIV. Atlas Entry

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XLV. Atlas Entry

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Why:
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Why: sensory/context →
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regime/alignment

execution/clock

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C. Atlas Entry

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Why: sensory/context →
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