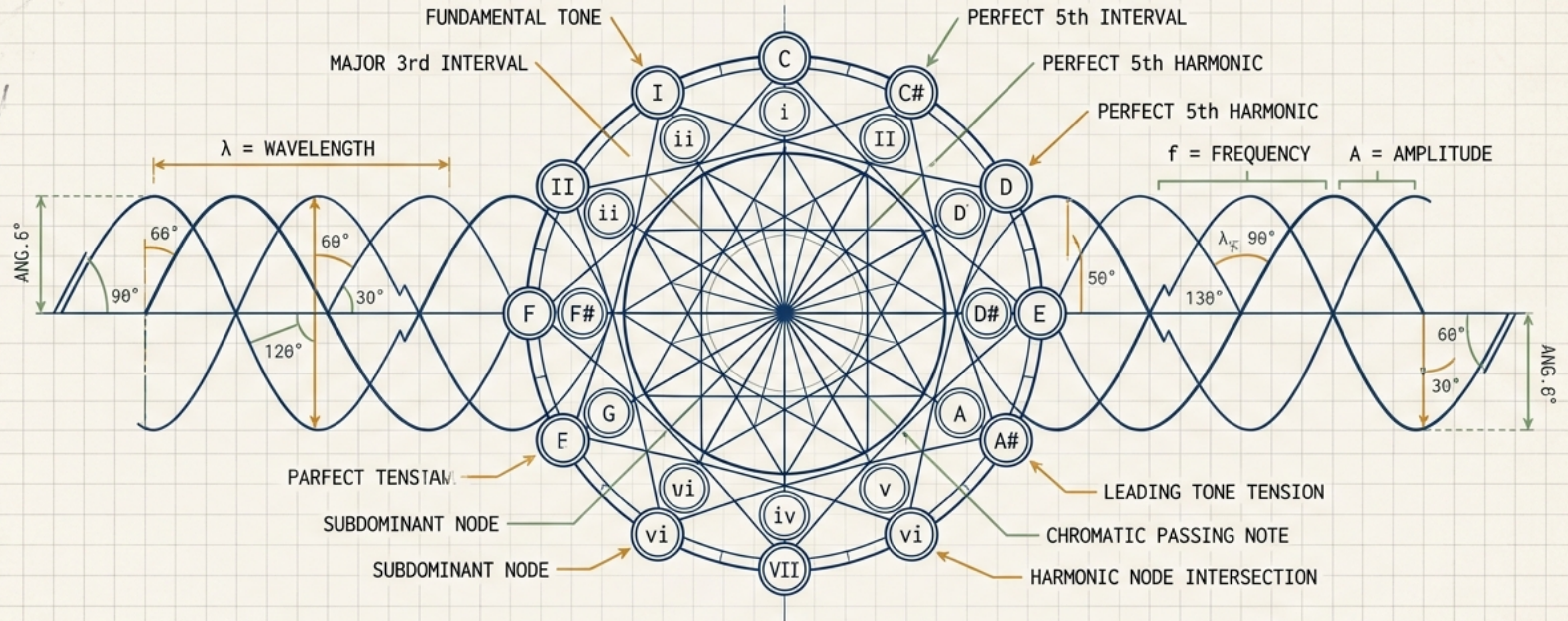


The Architecture of Harmony



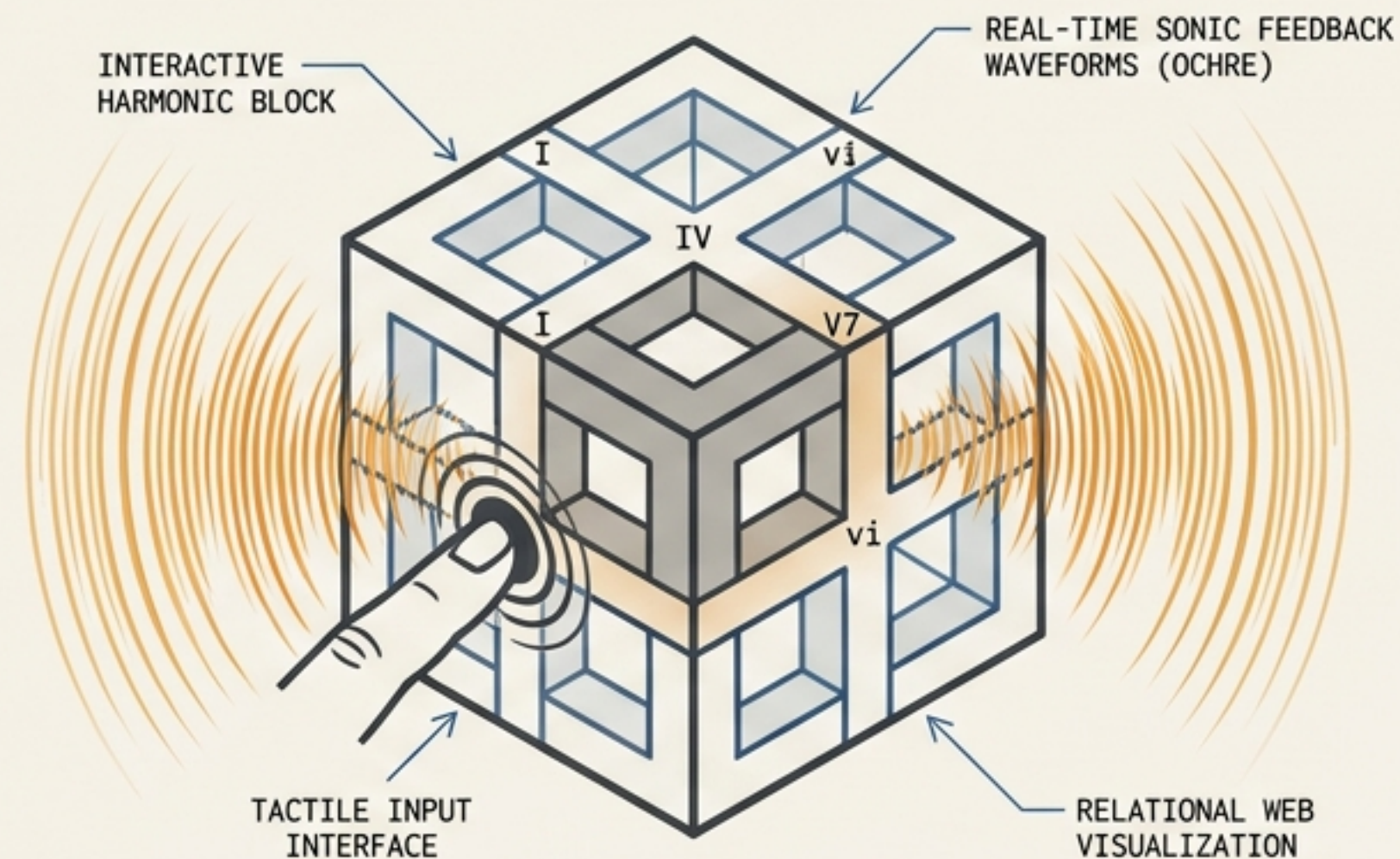
A deep-dive into Esegui: the interactive framework proving that complex harmonic theory is best taught through tactile mathematics and instant psycho-acoustic feedback

THE TRADITIONAL FRICTION



Abstract rules precede actual sound. Students are forced to memorize isolated objects, decipher **absolute pitches**, and read **complex notation** before ever experiencing the physical push and pull of musical tension.

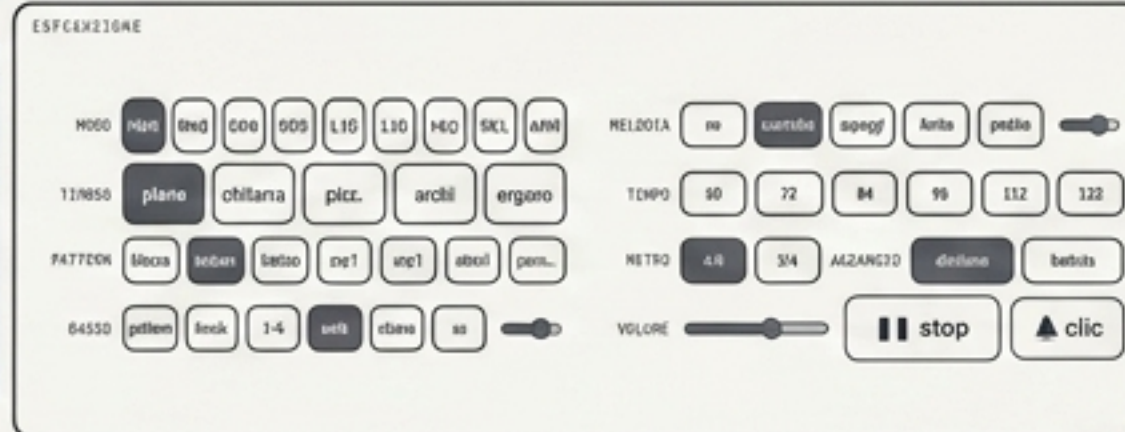
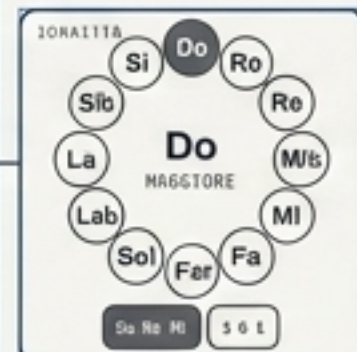
THE ESEGUI PARADIGM



Harmony is a **web of relationships**, not a list of objects. By turning relationships into **tangible touchpoints**, students **hear, see, and manipulate harmonic function simultaneously** without needing to play a traditional instrument.

ANATOMY OF A PEDAGOGICAL DASHBOARD

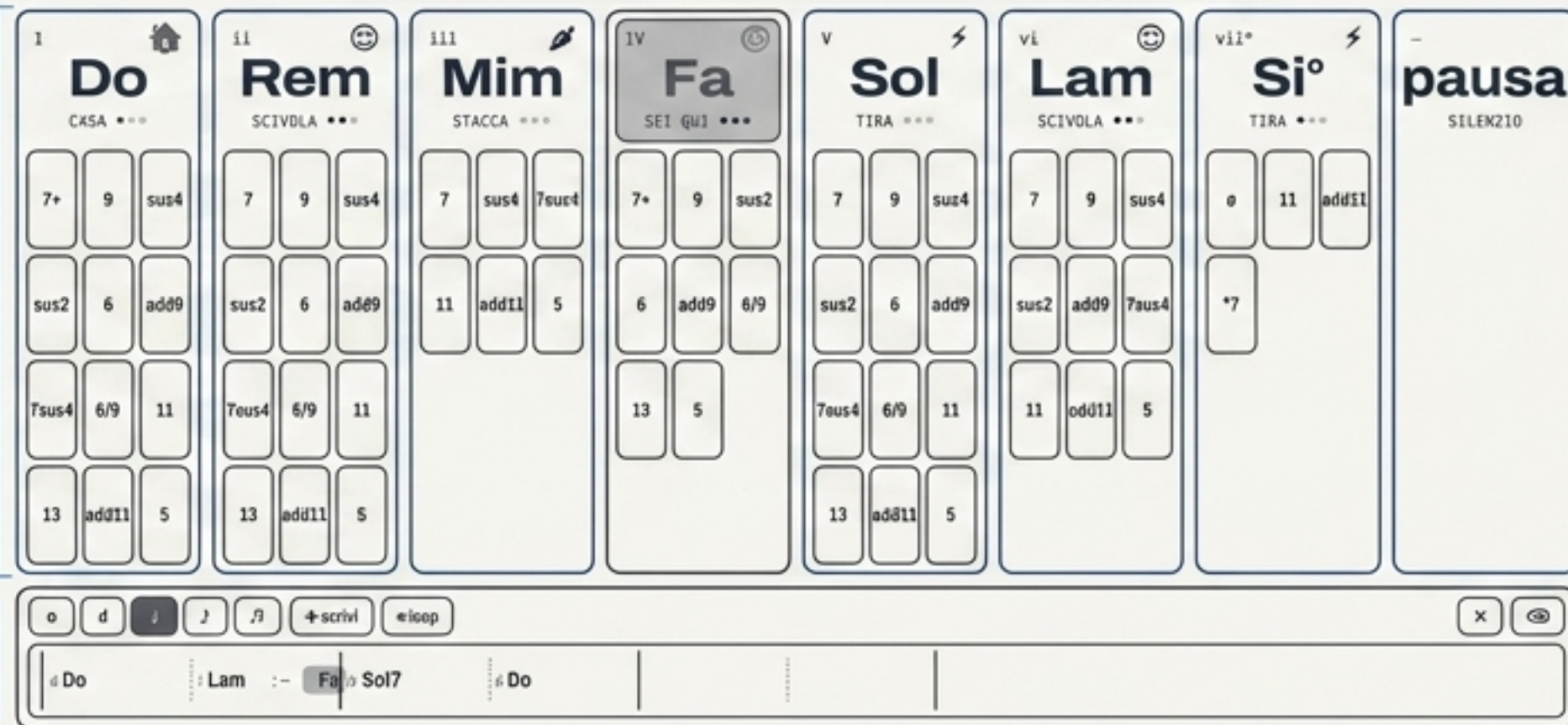
1. The Wheel of Keys (Top Left): The mathematical compass. Dictates the center of gravity and relative modulation.



3. The Radar (Top Right): The temporal visualizer. A sweeping hand rendering rhythm and quantization visible in real-time.

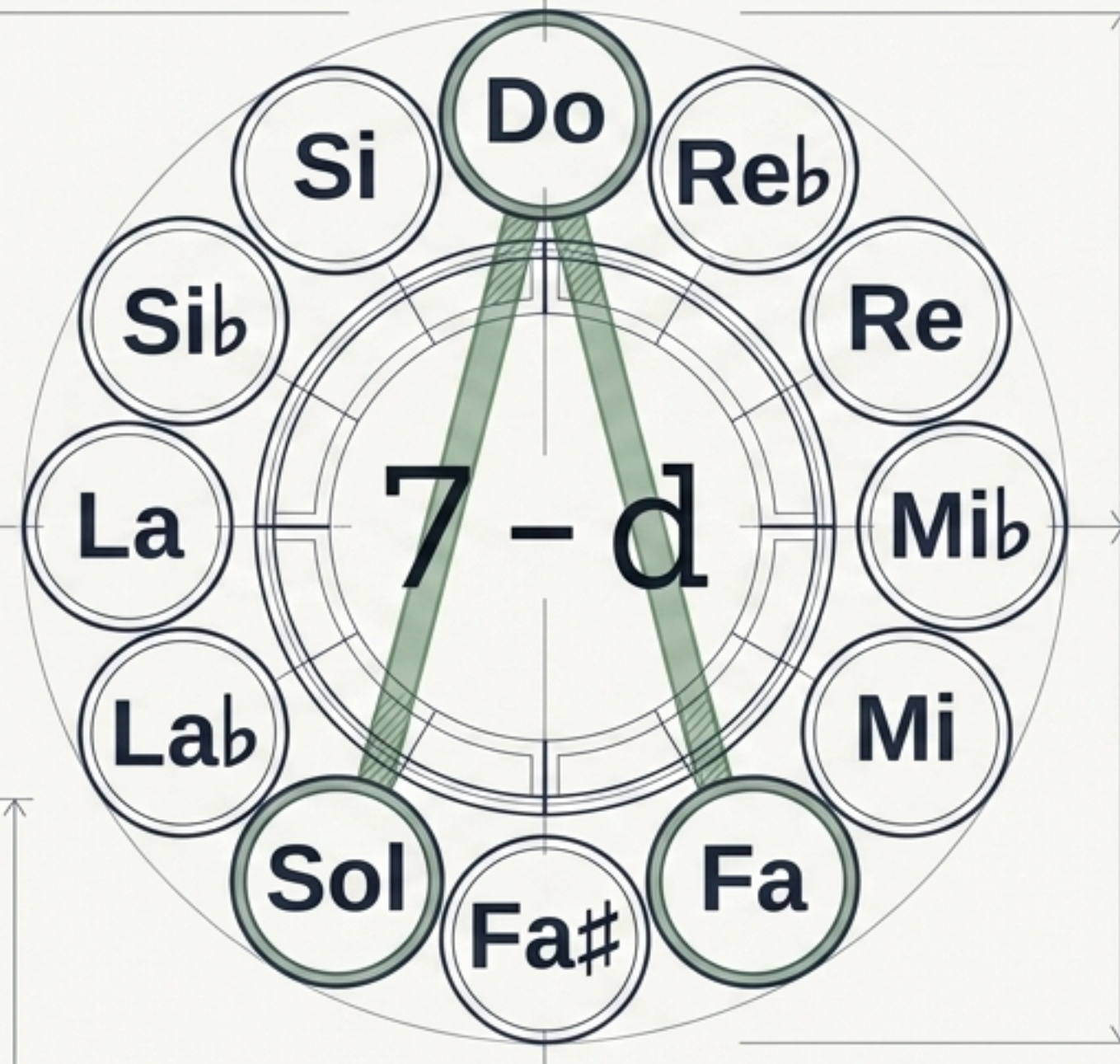


2. The Execution Panel (Top Center): The behavioral engine. Controls modes, synthetic timbres, and accompaniment logic.



4. The Harmonic Blocks & Sheet Music (Center/Bottom): The tactical arena. Psycho-acoustic chord triggers feeding directly into a proportional, relative-degree sequencer.

THE MATHEMATICS OF HARMONIC AFFINITY

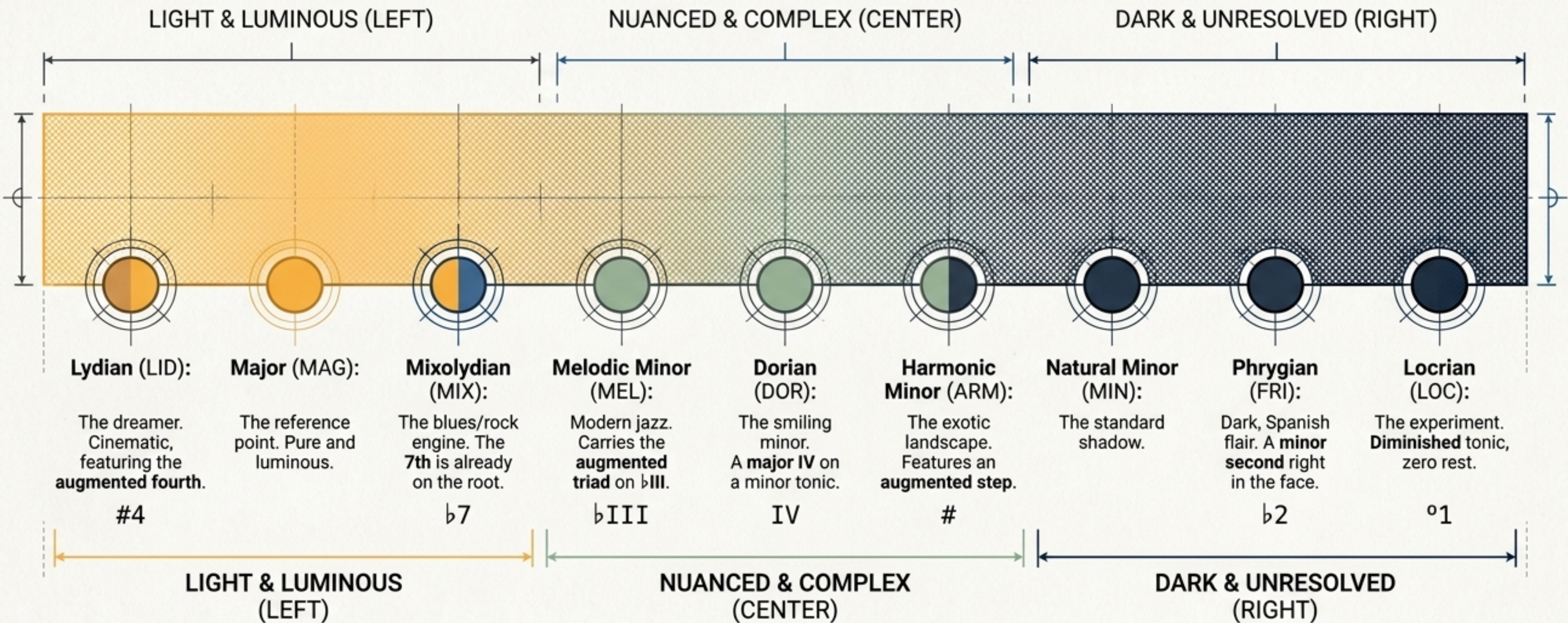


THE THEOREM OF THE GLOW

Two major scales separated by d steps on the circle of fifths share exactly $7 - d$ notes.

The Wheel transforms this pure arithmetic into an intuitive visual map of easy modulations. 'Sol' and 'Fa' are highlighted next to 'Do' because their distance is exactly 1, meaning they share 6 common notes. The interface literally maps the path of least harmonic resistance.

THE MODE MOOD MATRIX



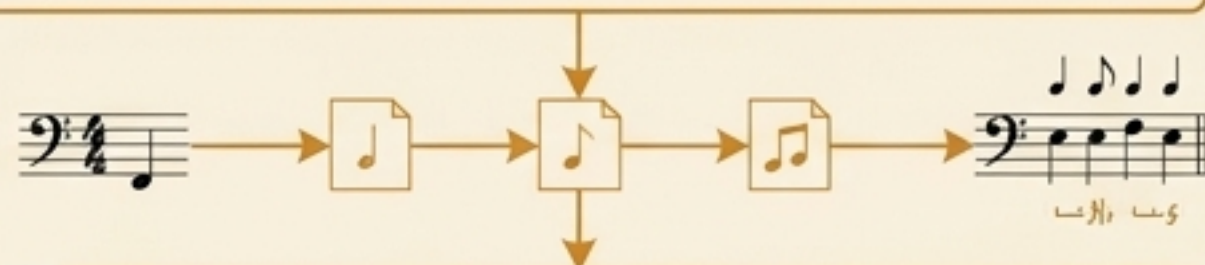
DECODING PSYCHO-ACOUSTICS

ICON	ACTION	MUSICAL CONTEXT	EAR-TRAINING INSIGHT
	Home	The Tonic (I)	Ultimate rest; the gravitational center of the progression.
	Pulls	The Dominant (V, vii°)	High tension demanding resolution; drives the narrative forward.
	Resolves	Arriving at I from V	The physical release of tension; returning to the base state.
	Opens	The Subdominant (IV)	Expands the spatial feel of the harmony without demanding immediate resolution.
	Slides	High common-note count	A soft transition; chords share 2+ notes for a smooth physical morph.
	Detaches	Zero common notes	Stark contrast; forces the ear to jump to a completely new harmonic space.

THE LIVING ACCOMPANIMENT ENGINE

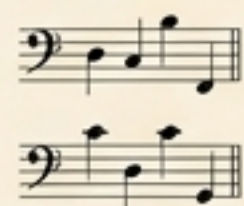
THE BASS LOGIC

Pattern: Root note embedded inside the rhythm.



1–5: Root and true fifth alternating (auto-adjusts to $\flat 5$ on diminished).

Root on 1, 3; 5th on 2, 4.
Auto-adjusts to $\flat 5$ if Diminished Chord.



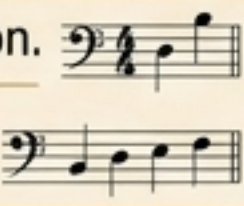
Walk: Intelligent jazz walking bass (root on 1, scale passes on weak beats).

Root on 1; Non-chord tones on 2, 3, 4
as scalar passing notes.



Octaves: Alternating high/low foundation.

High root on 1, low root on 3.
Rhythmic alternation.



RHYTHMIC
FOUNDATION

MELODIC
ADAPTATION

HARMONIC
INTERLOCK

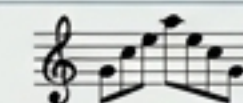
THE MELODIC LOGIC

Cantabile: One note per beat; chord tones on strong beats, conjunct steps on weak ones.



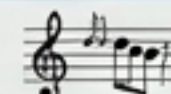
Arpeggios: Eighth notes strictly sweeping up and down chord tones.

Strict 8th-note sweeping:
Root, 3rd, 5th, 7th, 5th, 3rd, Root...



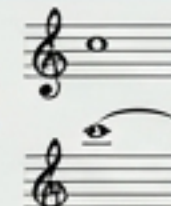
Fiorita: Dense eighth-note appoggiaturas that automatically adapt color to the current Mode.

Dense 8th-notes; Appoggiaturas to chord tones.
Color ($\flat 2$, $\flat 7$, etc.) based on current Mode.



Pedale: A hypnotic, repeating tonic note in the high register.

Sustained/repeating Tonic note in high register (e.g., C5) throughout.



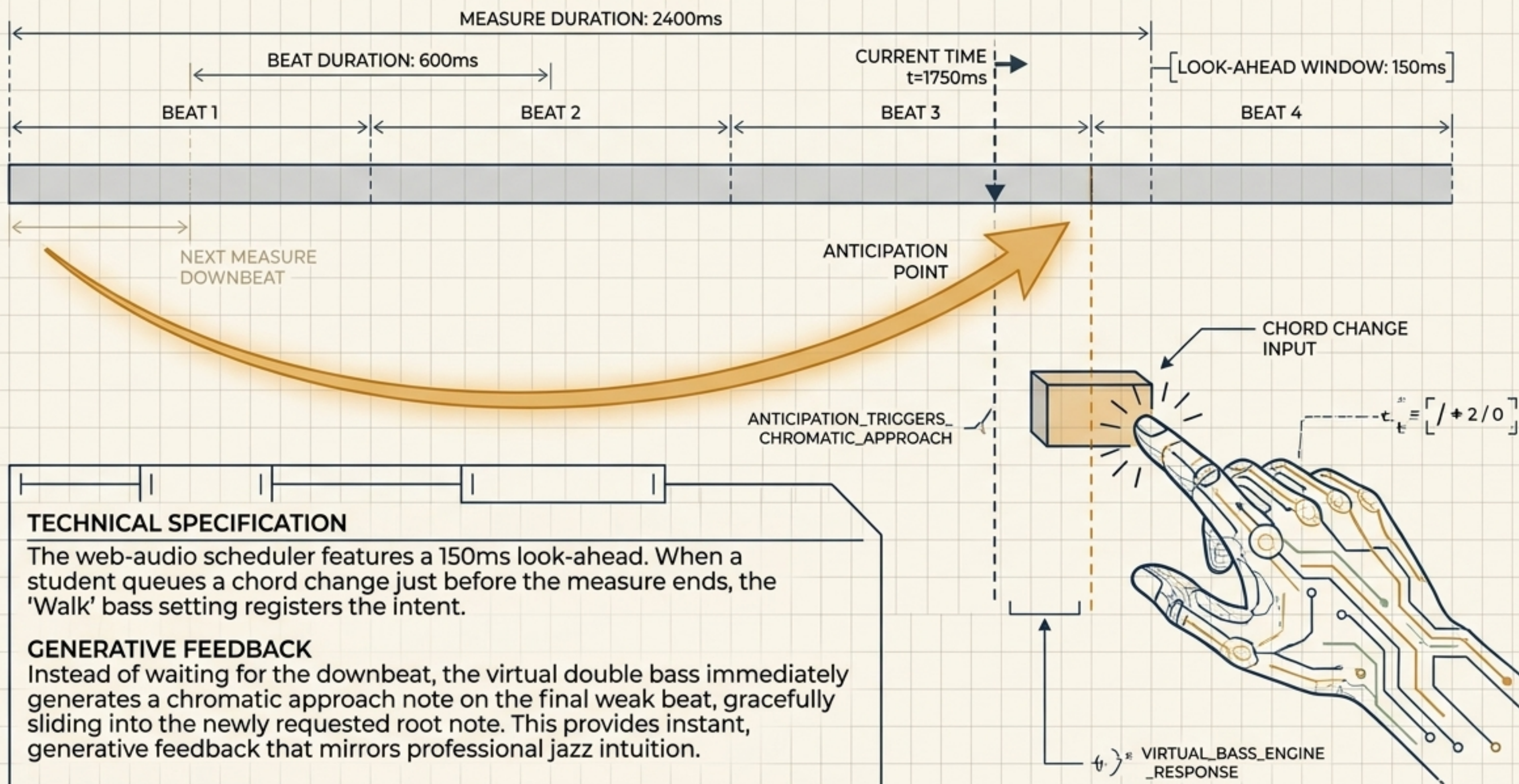
MELODIC
ADAPTATION

MELODIC
ADAPTATION

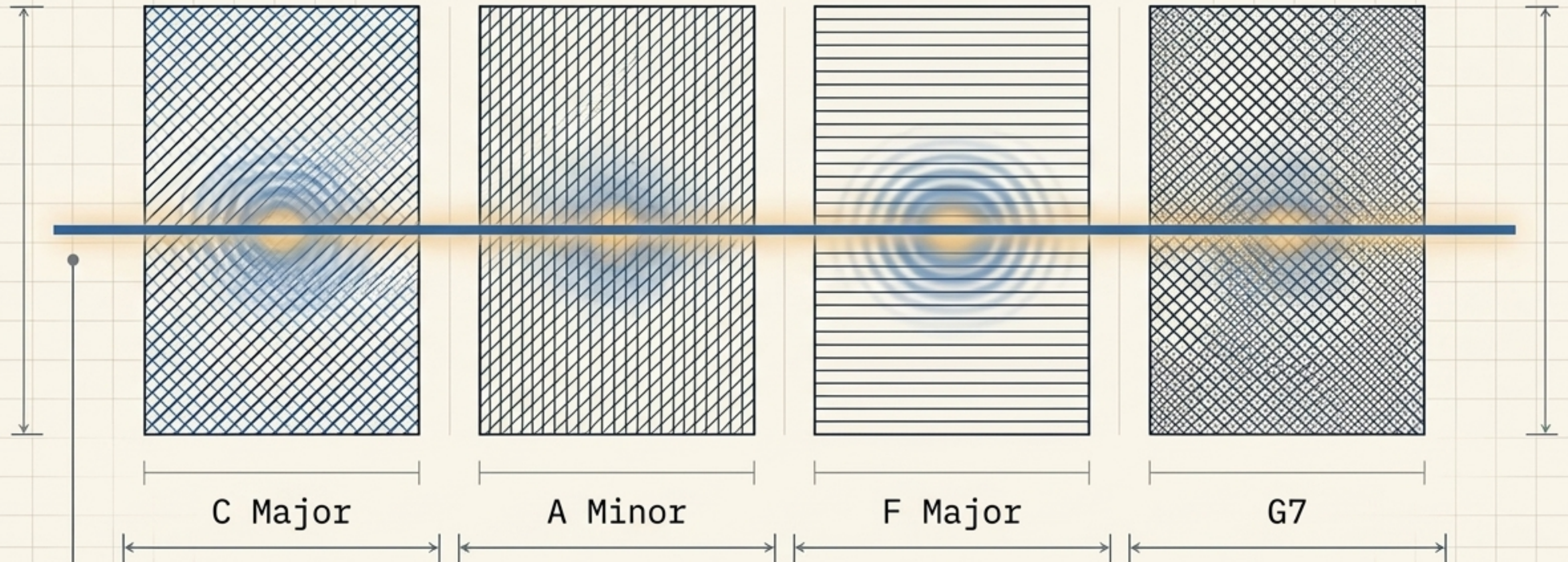
300ms

300ms

GENERATIVE ANTICIPATION

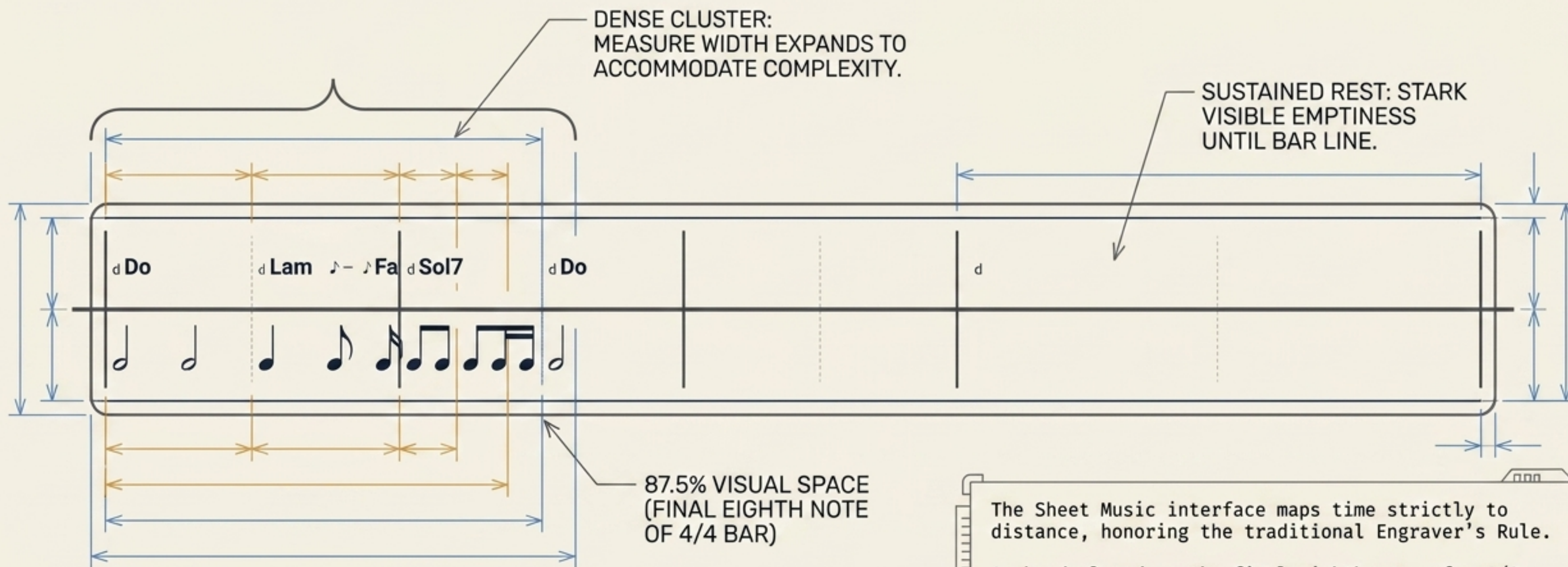


THE ILLUSION OF THE CHANGING NOTE



The **Pedale** melody setting is Esegui's most powerful passive ear-training tool. It sustains a single, static high note while the student changes chords beneath it. As the harmonic context shifts from block to block, the human ear perceives the static note as changing color, tension, and meaning. It is the ultimate sonic proof of 'common notes' and relative harmonic function, experienced rather than lectured.

RHYTHM AS PHYSICAL SPACE



The Sheet Music interface maps time strictly to distance, honoring the traditional Engraver's Rule.

A chord placed on the final eighth note of a 4/4 bar sits precisely at 87.5% of the visual space. Dense clusters of rapid changes physically stretch the bar width, while sustained rests leave stark, visible emptiness until the bar line. Rhythm is no longer a math problem; it is a visible geometry.

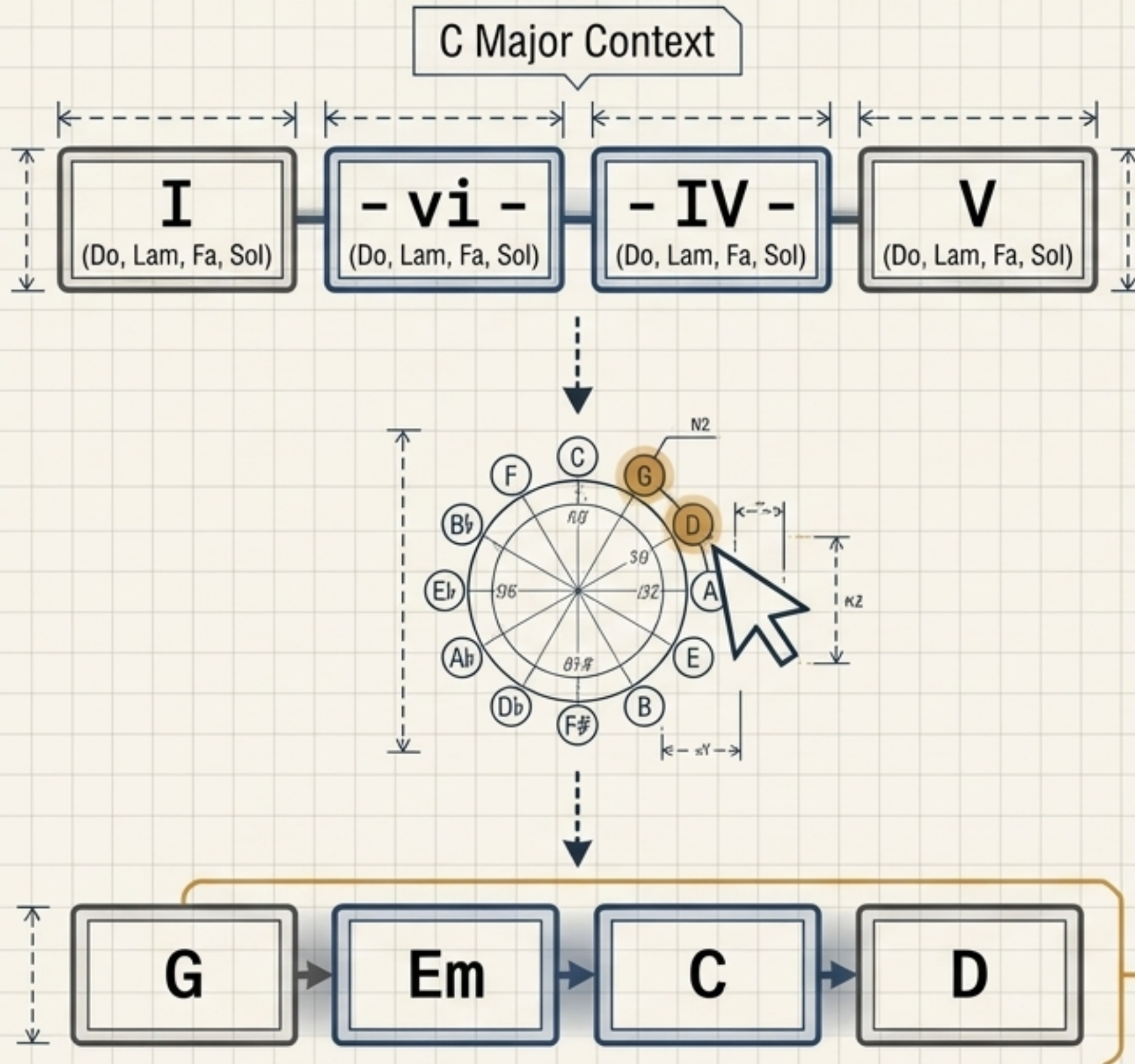
THE ANATOMY OF SYNCOPATION



Esegui makes advanced syncopation mechanically accessible.

By placing an eighth-note rest immediately followed by an eighth-note chord (♪ **pause** + ♪ **chord**), the student forces the harmony onto the upbeat. Paired with the walking bass, this instantly generates the classic jazz and pop anticipation. A complex rhythmic concept is executed via two simple, quantized taps.

THE TRANSPOSITION MAGIC TRICK

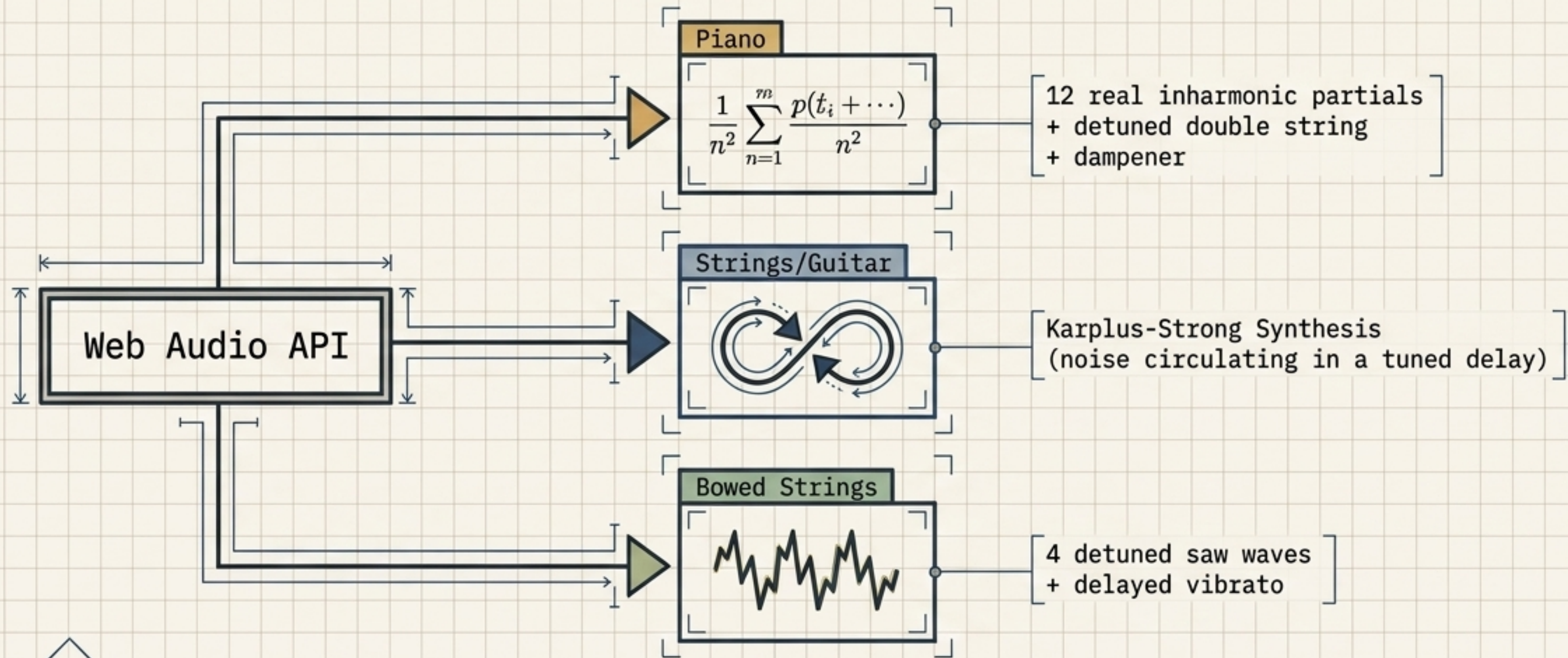


Because Esegui's engine memorizes degrees, not absolute pitches, writing music becomes universally fluid.

A student can program a **I-vi-IV-V** loop in **C Major**, press play, and touch '**G**' on the Wheel. The entire system—chord blocks, walking bass, generated melody, and live sheet music—shifts instantly to G Major without dropping a single beat. This is the superpower of Roman Numeral fluency, realized in real-time.

I - vi - IV - V Roman numerals remain perfectly identical to Step 1.

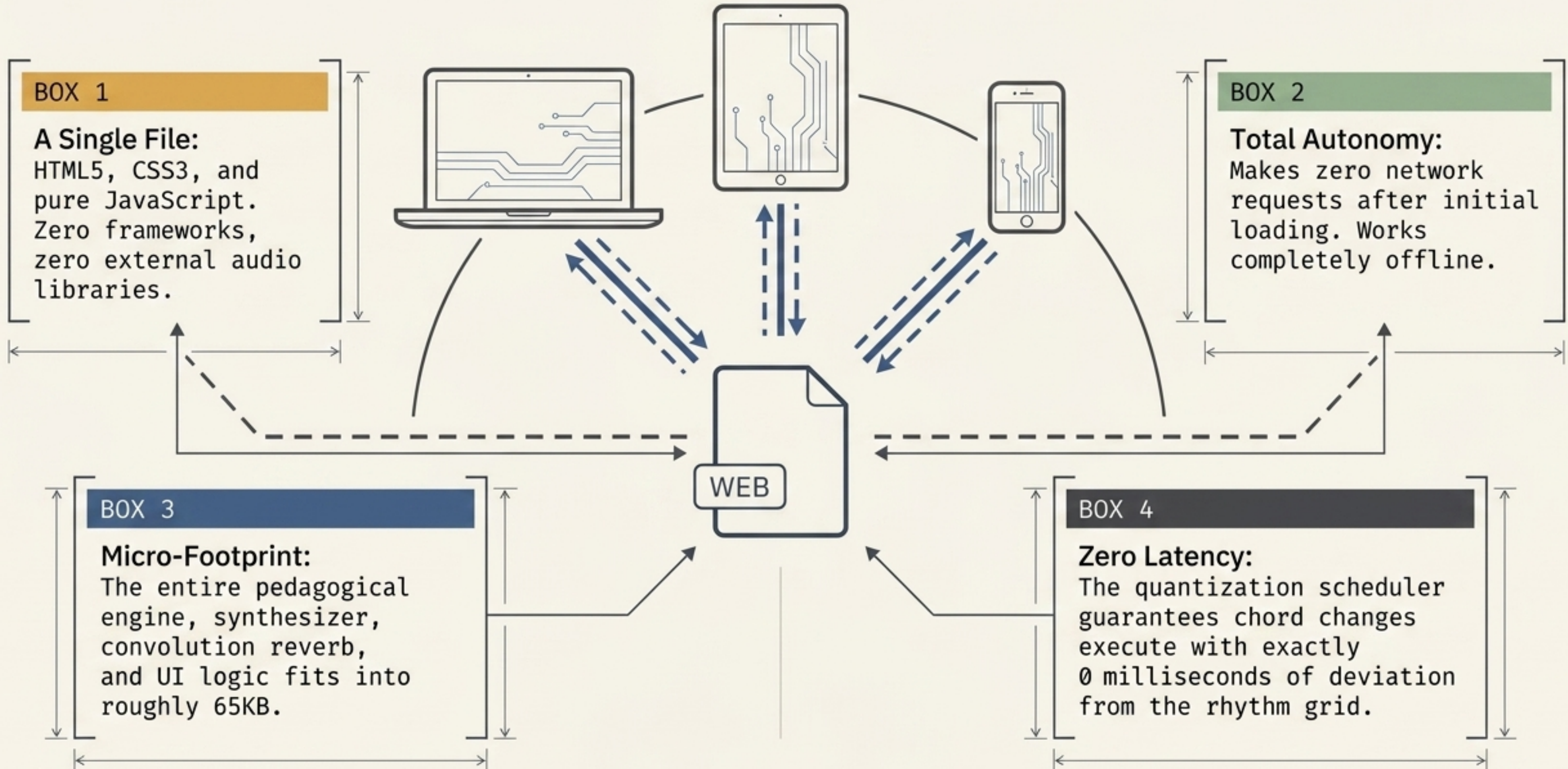
ACOUSTIC ARCHITECTURE: SOUND IS MATH



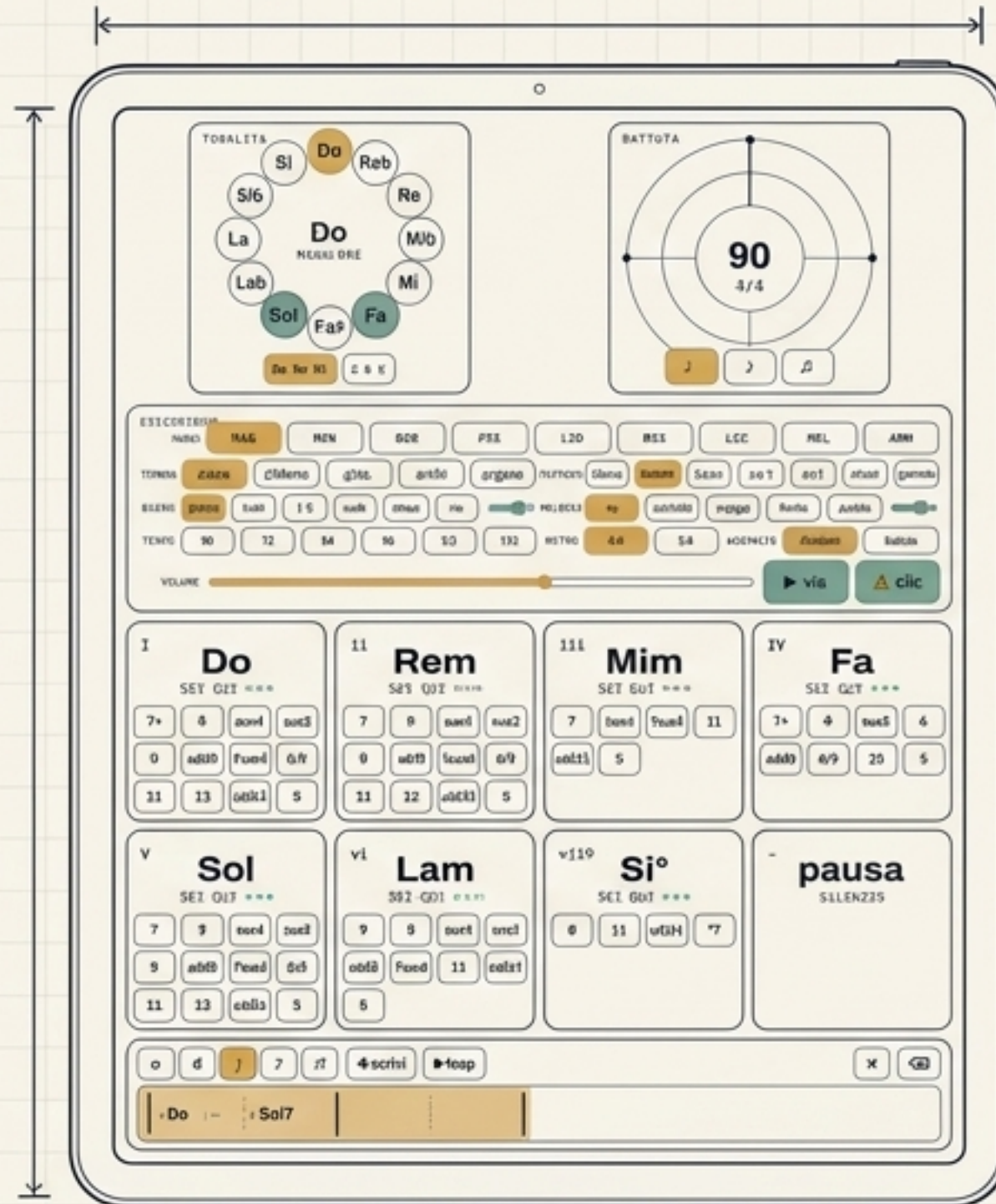
Esegi completely discards pre-recorded audio samples. Every sound is synthesized from scratch in real-time, making it an ideal crossover tool for physics and computer science.

From the precise mathematical simulation of a plucked string to the real inharmonicity of piano strings, the audio engine ensures the instrument is forever in perfect tune, infinitely scalable, and totally transparent.

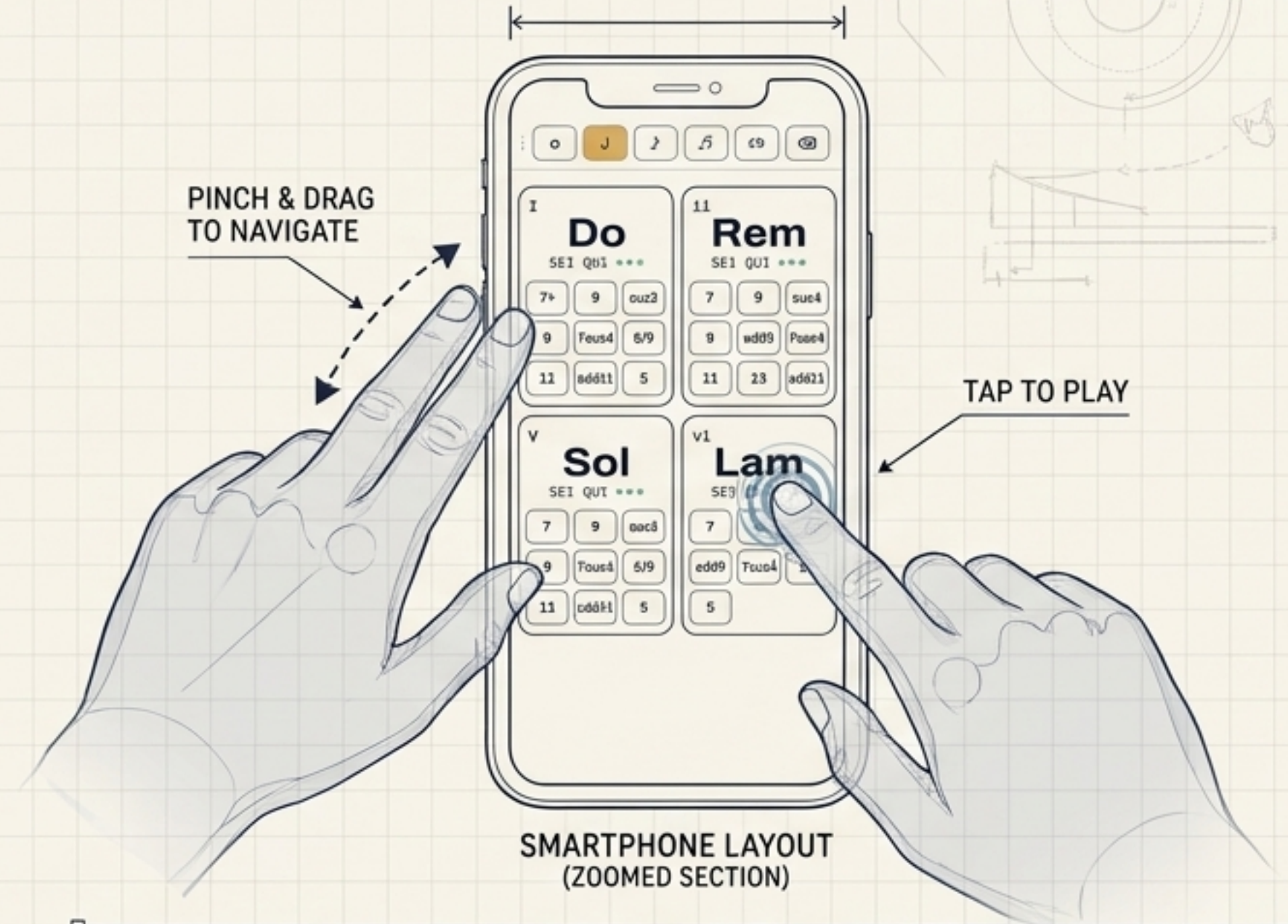
THE 65 KILOBYTE MARVEL



TACTILE SCALABILITY



TABLET LAYOUT
(FULL CANVAS)



SMARTPHONE LAYOUT
(ZOOMED SECTION)

The interface refuses to compromise its spatial logic for smaller screens. Esegui utilizes a massive virtual canvas. On a smartphone, the canvas maintains its exact tablet-scale proportions.

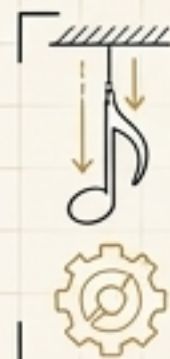
Users intuitively pinch-to-zoom and drag with two fingers to navigate the instrument, while tapping with a single finger to play. The instrument lives fully in the student's pocket.

A PEDAGOGICAL PARADIGM SHIFT

THE OLD FRICTION	THE ESEGUI WORKFLOW
Absolute Pitch Memorization	Relative Degree Fluency (Roman Numerals)
Note Reading First	Tactile Sound First
Delayed Auditory Feedback	Instant Quantized Auditory Feedback
Harmony as Isolated Chords	Harmony as Psycho-acoustic Pulls (Tension/Release)
Static Theory Worksheets	Generative, Transposable Live Loops

THE 15-MINUTE EPIPHANY

Hour One with absolute beginners:



Demonstrate Tension

Touch 'Home', then 'Pulls'.
Leave hanging for 3 seconds.
The room feels the tension.
Functional harmony taught
in 20 seconds.

1.

2.

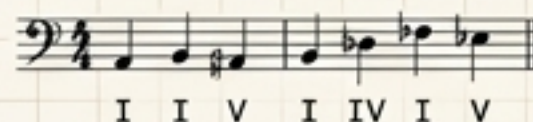
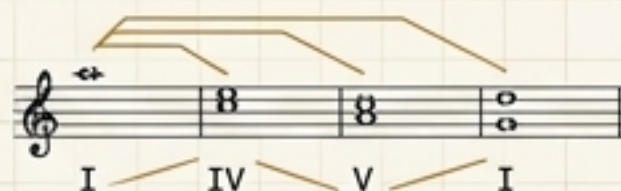
3.

5.

4.

Prove Common Notes

Activate the melodic Pedale.
Change chords beneath it. The
static note shifts in emotional
color.

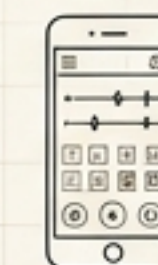


Introduce Context

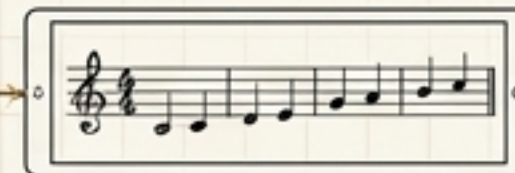
Turn on the Walking Bass.
Chromatic approaches make
the progression instantly
recognizable as "real music".

Independent Exploration

Students open the link on their phones
and compose 8 bars in Dorian.

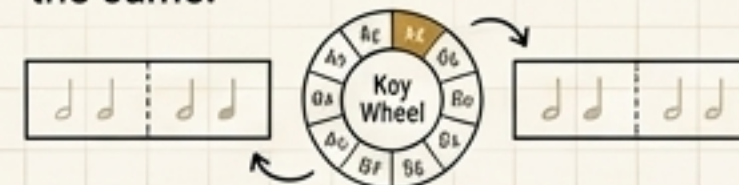


Dorian



Write Together

Class dictates a 4-bar loop. Teacher
shifts the Key Wheel. The class hears all
notes change, but the song remains
the same.



An Instrument for Understanding



Esegui is not a sequencer, nor is it merely a digital instrument.
It is a living map of musical physics.

By offloading the mechanical friction of instrumental technique and abstract notation,
it allows the human ear and hand to interact directly with the mathematics of harmony.
It makes the invisible forces of music visible, audible, and instantly understood.