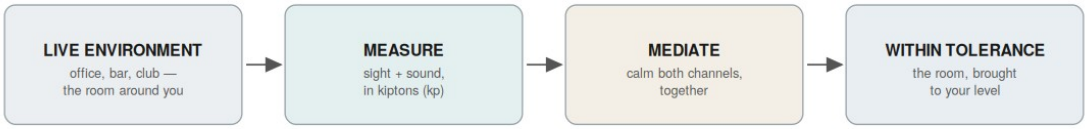
FRENETIC GO

TURNING THE ROOM DOWN TO YOUR LEVEL

A worn system that measures the sensory load of your live surroundings — across sight and sound — and calms it to within your personal tolerance, only while you are safely still.

From room to calm



The room is measured across sight and sound, then brought within your tolerance — only while you are still.

White Paper

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Contents

Executive summary

For sensory-sensitive and neurodivergent people, the hardest place to be is often not in front of a screen but in an ordinary room. Open-plan offices, busy bars and loud clubs present a continuous, uncontrollable barrage of sight and sound that can cause distress, exhaustion and withdrawal, and that can shut people out of work and social life. Noise-cancelling headphones help a little, but they work on loudness, in one sense only, and with no knowledge of the person wearing them.

Frenetic Go is a worn system that mediates the live physical world rather than a content stream. It is built from three off-the-shelf parts — a mixed-reality headset that shows a passthrough view of the real room, a sealed audio device, and a paired phone — sharing one personal profile. It measures the sensory load of the surroundings across both sight and sound using the Frenetic Index and the kipton scale defined in the companion Frenetic standard, combines them into a single composite load, and calms both channels together to bring the room within the wearer's personally calibrated tolerance, while keeping speech and safety-critical sounds clear.

Two design choices make this safe and practical. A motion interlock uses the phone's accelerometer and satellite positioning to detect when the wearer is walking or travelling, and disables all mediation the moment they are no longer still, so the system only ever alters perception when it is safe to do so. And the audio is handled by a split path that performs heavy analysis on the phone while applying the result locally with very low latency, with the wearer's own voice detected and let through so that conversation stays natural. The methods described here are the subject of a patent application by the inventor, Srinivas Kasturi, building on the earlier Frenetic application GB2611710.1.

1. The problem

The room, not the screen. A companion standard addresses the sensory load of audiovisual content. But for many people the more disabling problem is the live environment: the office they must work in, the bar where friends meet, the venue they would like to enjoy. These spaces cannot be paused, buffered or re-authored.

Loudness is not load. An open-plan office is rarely loud, yet it is acoustically dense — many overlapping quiet conversations, keyboard noise, notifications, ventilation, footsteps — and cognitively exhausting. Devices that react to loudness do nothing here, because nothing crosses a loudness threshold while the cumulative load is high.

One sense at a time. Headphones address sound; tinted glasses address light. Nothing measures and moderates sight and sound together, even though load compounds across the senses and the two cannot sensibly be tuned in isolation.

Detection without relief. Some wearables detect the onset of overload from the body and then alert the wearer or suggest a coping strategy. They notice the problem; they do not reduce the load of the environment itself.

The safety of immersive wear. Anything that alters or delays a person's perception of the world is dangerous if worn while moving. A system that calms the room must guarantee it does so only when the wearer is still.

And the privacy of attention. A device that watches and listens to a room raises an obvious concern. Mediation must happen on the device, with nothing recorded and nothing sent.

2. The solution

Frenetic Go answers each concern with one worn system that measures the room, calms it across both senses, keeps the wearer safe, and respects their privacy.

2.1 A worn system of three parts

The system pairs a mixed-reality headset, which presents a passthrough view of the real room through its forward cameras, with a sealed audio device and a phone. The headset and audio carry no control over the wearer's perception beyond the settings the wearer chooses, and the phone holds the personal profile and does the heavy thinking.

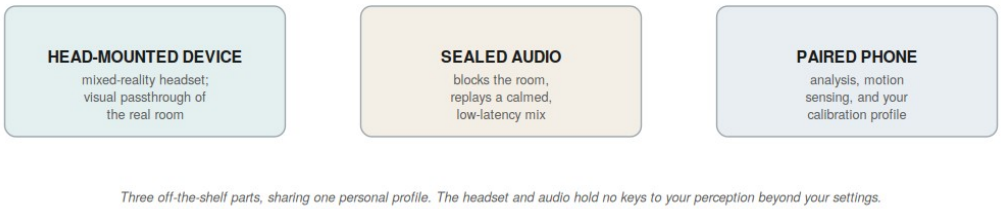

Figure 1. Three off-the-shelf parts, sharing one personal profile.

2.2 Measuring the room in kiptons

Frenetic Go measures the sensory load of the surroundings in the same unit as the companion content standard: the kipton, on a bounded 0-to-100 scale. The acoustic load is read from the room's sound, using measures of acoustic density — the number of concurrent sources, transient density, spectral complexity — rather than loudness. The visual load is read from the passthrough frames. The two are combined into a single composite load.

2.3 Cross-modal calming, coordinated

Because load compounds across the senses, it is the composite that matters, not either channel alone. Frenetic Go calms both channels together and lets the intervention in one respond to the load in the other. In a visually busy, moderately noisy office the system may quiet the sound more than the sound alone would warrant, because reducing what is easiest to reduce brings the whole experience back within tolerance with the least disruption.

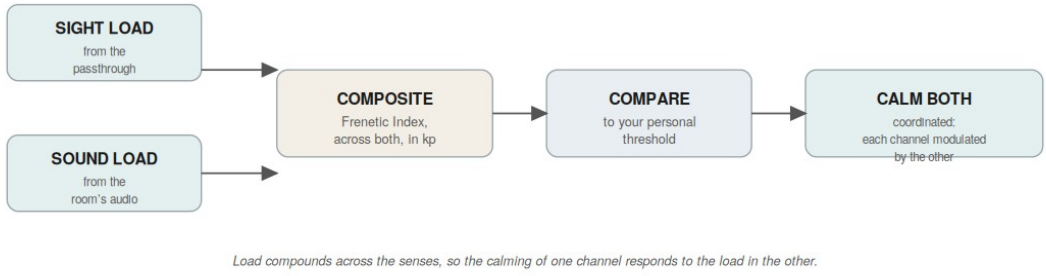

Figure 2. Load compounds across the senses, so calming one channel responds to the load in the other.

2.4 Sealed audio and a split path

The audio device is sealed, so the wearer hears a clean, calmed reproduction of the room rather than the room itself blended with a delayed copy. Heavy analysis — measuring the load and separating speech from background — runs on the phone, which updates a set of processing targets several times a second; a local stage applies those targets to the live

sound with very low latency. Because the phone sends settings rather than audio, the link to it adds no delay the wearer can hear.

2.5 Letting your own voice through

A sealed device would otherwise return the wearer's own voice to them on a delay, which is known to disrupt fluent speech. Frenetic Go detects when the wearer is speaking and steps back the processed feed in those moments, so the wearer hears their own voice naturally and can hold a conversation. It is the opposite of features that raise other people's voices; here, the wearer's own delayed voice is the thing removed.

2.6 Stationary only, by design

A motion interlock determines whether the wearer is still, walking, running, or travelling in a vehicle, using the phone's accelerometer together with its satellite positioning. Mediation is enabled only while the wearer is stationary, and is suspended the instant they move, restoring a direct view and direct sound. The positioning sensor catches motion the headset alone cannot — such as being a passenger in a moving car, where the wearer is still relative to the seat but travelling through the world.

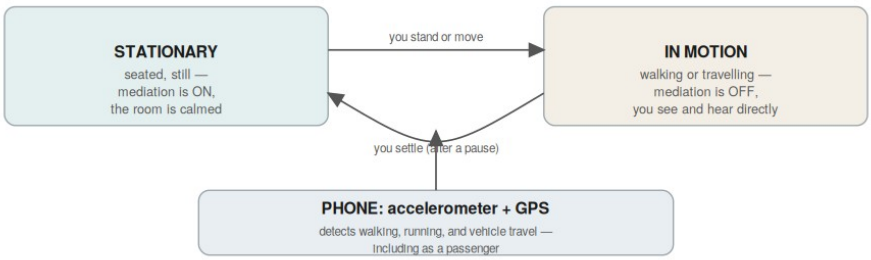

Figure 3. Mediation runs only when the wearer is still; movement restores direct perception at once.

2.7 Keeping speech and safety

Throughout, the system preserves what the wearer needs: the speech of a person addressing them, and safety-critical sounds such as alarms, a called name, or a nearby vehicle, are kept clear or emphasised even as the diffuse background load is reduced. Calming the room never means cutting the wearer off from it.

2.8 Your profile, carried over

The wearer's threshold and weights are the same personal profile defined by the Frenetic calibration, so a person who has calibrated for content is already calibrated for the room. One profile serves both the screen and the world.

3. Under the hood

3.1 The worn system

The headset provides forward-facing camera frames through a camera-access interface and renders the processed view to the wearer's display. The sealed audio device captures and reproduces sound and hosts the low-latency application stage. The phone supplies the motion sensors, the compute for analysis, and storage of the profile. The three communicate wirelessly.

3.2 Visual passthrough mediation

Raw camera frames are processed to reduce visual load — calming and desaturating the periphery, steadying motion, easing flashes — while regions that carry meaning, such as the face of a person speaking to the wearer or text they need, are preserved in clear form. Restricting operation to the stationary state keeps the unavoidable latency of camera passthrough comfortable, because the visual field is not swinging with head movement.

3.3 The split-path audio architecture

Analysis is latency-tolerant and runs on the phone; application is latency-critical and runs locally. The phone updates processing targets at short intervals; the local stage applies the most recent targets continuously. Sealing removes the echo that a delayed reproduction would otherwise create against directly heard sound, and wearer-voice detection prevents delayed feedback of the wearer's own speech.

3.4 The motion interlock

A classifier combines accelerometer characteristics with positioning-derived speed to place the wearer in a motion state. Stationary enables mediation; any in-motion or undetermined state suspends it, fail-safe, and re-enables only after the wearer has settled for a short interval. The interlock is at once a safety measure, the reason the passthrough latency is tolerable, and a guard against impaired situational awareness.

3.5 Built on the Frenetic Index

The measurement, the kipton scale, the composition function, the calibration and the learning from override are those of the companion Frenetic standard, applied here to live capture rather than to a content stream. Frenetic Go contributes the worn system, the cross-modal coordination of the real world, the split-path sealed audio with voice gating, and the motion interlock.

4. The ecosystem

Frenetic Go works fully on its own for one wearer, and gains from a wider setting. Taking part is optional and additive.

4.1 Roles

- **Wearers** calibrate once and carry one profile across content and the physical world.
- **Employers and venues** can adopt the system as a workplace adjustment or an accessibility provision, meeting duties owed to sensory-sensitive people.
- **Makers** extend the open software, build audio companions, and improve the on-device models.

4.2 One profile, screen and world

Sharing the Frenetic profile means a wearer's calibration is not duplicated effort: the threshold that softens a film also calms the open-plan floor. Personalisation belongs to the person, across every place Frenetic operates.

4.3 Privacy by design

The camera and microphone exist only to mediate. Frames and sound are processed on the device and discarded, never stored and never sent. Nothing identifies anyone, and no footage leaves the worn system. Measuring and calming the room does not mean watching or recording it.

4.4 Accommodation, not surveillance

The value of Frenetic Go is participation: a person who can now work in an office they had to avoid, or stay at a gathering they would have had to leave. Where an employer provides it, it is an adjustment for the employee's benefit, with the same on-device privacy guarantees.

> *A note on scope. This paper describes intended design and direction. It is not a commitment to deliver any specific feature, nor an offer of any product, security or token, nor medical, legal or financial advice. Frenetic Go is an accessibility aid, not a medical device, and is not a substitute for situational awareness. Details may change as the project develops.*

5. In practice

The office worker. Sam, who finds the open-plan floor unbearable by mid-afternoon, sits at their desk and the room settles: the diffuse babble drops back, the busy periphery calms, a colleague's voice stays clear. When Sam speaks, their own voice comes through naturally. When they stand to leave, everything returns to normal at once.

The friend at the bar. Priya joins friends at a loud bar she would normally avoid. Seated at the table, the wall of noise eases to a level she can hold a conversation in, while the friends' voices remain. She keeps full awareness of the room and takes the system off before walking out.

The commuter, protected. On the train home, Sam forgets to remove the headset, but the positioning sensor registers travel and the system stays off throughout the journey, restoring it only once Sam is settled and still again at home.

The maker. Dev builds an improved sealed audio companion and contributes the on-device voice-detection model back to the open project.

6. Design principles

- **Safety first, by interlock:** mediation only when the wearer is still; movement always restores direct perception.
- **Measure across the senses:** one composite load over sight and sound, calmed in coordination, not in isolation.
- **Keep what matters:** speech and safety-critical sound are always preserved.
- **Privacy by design:** processing on the device, nothing stored, nothing sent.
- **One profile for the person:** the same calibration serves both the screen and the room.
- **Honest about the landscape:** noise cancellation and adaptive audio exist; the contribution here is personalised, cross-modal, real-world load reduction with a safety interlock.

7. How this differs

The table sets common approaches today against the design described here. It aims to be fair rather than complete, and the features of other products vary.

Dimension	Common approaches today	Frenetic Go
What is reduced	Loudness, or specific wavelengths	Cross-modal cognitive load, in kiptons

Dimension	Common approaches today	Frenetic Go
Senses	One at a time	Sight and sound, coordinated
Personalisation	Generic modes	Calibrated threshold and weights per wearer
Speech and safety	Often lost or unmanaged	Preserved or emphasised by design
Safety while moving	No interlock	Stationary-only, with motion sensing
Privacy	May store or send data	On-device only; nothing stored or sent

8. Intellectual property and open source

The methods described in this paper — the worn measurement and cross-modal calming of a live physical environment in kiptons, the split-path sealed-audio architecture with wearer-voice gating, and the motion-dependent safety interlock using a paired device's accelerometer and satellite positioning — are the subject of a patent application by Srinivas Kasturi, building on the earlier Frenetic application GB2611710.1, whose Frenetic Index, kipton scale and personal calibration this system relies upon. In keeping with the project's open intent, reference software is intended to be released openly after filing, so that the community can build on, audit and extend the platform while the core inventions stay protected.

9. Roadmap

Phase 1, Foundations. The worn visual mediation on a mixed-reality headset, the motion interlock, and the shared Frenetic profile, delivering the seated, stationary experience.

Phase 2, Sound. The sealed audio companion and the split-path architecture with wearer-voice gating, and full cross-modal coordination.

Phase 3, Places. Workplace and venue provision, richer on-device models, and wider hardware support.

Dates and scope are indicative and will be confirmed as the project develops.

10. Conclusion

The hardest room can be made bearable without being cut off from it. By measuring the live world across sight and sound in kiptons, calming both together to within a wearer's own tolerance, keeping speech and safety clear, processing everything privately on the device, and working only when the wearer is safely still, Frenetic Go sets out to let sensory-sensitive people take part in the places that modern life had made too much.

Appendix A: Glossary

Frenetic Index / kipton (kp). The measurement of cognitive-perceptual sensory load, and its unit, defined in the companion Frenetic standard and used here for the live environment.

Composite load. A single Frenetic Index value combining the sight and sound load of the surroundings.

Passthrough. A camera-based view of the real room presented through the headset.

Sealed audio. An audio device that blocks direct room sound and reproduces a processed version.

Split path. Heavy analysis on the phone, low-latency application on the device, with only settings passing between them.

Motion interlock. The mechanism that enables mediation only when the wearer is stationary.

Appendix B: Important notices

This document is for information only and describes intended design and direction. It is not an offer or solicitation to buy or sell any security, token or other instrument, nor a promise of future features, availability or returns, nor medical, legal or financial advice. Frenetic Go is intended as an accessibility aid and not as a medical device, and it is not a substitute for the wearer’s own situational awareness. Statements about future plans are forward-looking and may change. Trademarks and product names of third parties belong to their respective owners and appear here only for comparison. The methods described are the subject of a pending patent application, and nothing here grants any licence.