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MICKAI ENGINEERING CORPUS · SOVEREIGN FUTURES

We, the Augmented

Thriving as sovereign cyborg citizens. BCI, personal agents, and bio-digital hybrids under user control.

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ABSTRACT

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Augmentation under vendor sovereignty is a leasehold over the body. Under user sovereignty it is a freehold. This ebook draws on the patent claims for the Mickai Voice Biometric Brain, the Identity Brain, and the Function Brain compensating-rollback primitive to give an architectural and practical guide to sovereign cyborg citizenship.

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PART I · FOUNDATIONAL ESSAY

We, the Augmented

The constitutional question

If a brain-computer interface is in your skull, who holds the keys is not a software preference. It is a constitutional question, in the same legal category as habeas corpus and bodily integrity. A vendor-held key in a body-resident system is a vendor-held leasehold on a body. That is not a configuration. It is a power relation.

The architectural answer is older than the technology. Hardware-bound identity, secure-enclave key custody, and per-tenant attestation are the three primitives that make a body augmentation a sovereign extension of its bearer. Mickai's Identity Brain ships them today (filed at the UK IPO as GB2607311.4 and related claims). The patent is the public record. The substrate ships.

Voice as identity

The first augmentation most readers already wear is voice. Voice unlocks the bank app, authorises the medical record, signs the consent form, and increasingly drives the car. The vendor-side architecture for voice-as-identity assumes the cloud holds the voiceprint. The sovereign architecture inverts this. The Voice Biometric Brain matches the live voice against a hardware-bound template stored in the secure enclave. The template never leaves the device. A stolen recording cannot enrol on foreign hardware, because the enrolment binds to the silicon, not the audio.

What a stolen voiceprint cannot do under sovereign architecture is the operational answer to the deepfake era. The substrate is the answer. The patent (GB2607320.6) is the legal recital.

BCI and the signed policy graph

When the augmentation crosses into neural territory (electrocorticography arrays, peripheral nerve interfaces, intracortical microelectrodes) the policy question moves from identity into intent. What may the augmentation do in your name. Mickai's Policy Brain compiles the user's signed configuration into an executable policy graph that gates every action before it commits.

Pre-commit dry-run simulation (GB2607322.2) means any neural-driven action is rendered as a diff against the target state, which the user reviews and confirms before commit. Irreversible actions are mathematically refused without the confirmation. Compensating rollback (GB2607321.4) is the second discipline. Every action stores its compensating inverse before commit, so a misfire can be reversed retroactively.

Exercises a reader can run this week

Three exercises sit at the back of this ebook. First, draft your own augmentation constitution: a one-page document signed by you that names what no augmentation, present or future, may do in

your name. Second, audit your existing voice and biometric exposure: list every system that holds a voiceprint, fingerprint, retinal scan, or face template, and ask each whether it stores under your sole control. Third, prepare a procurement question set for any augmentation vendor you might engage.

PART II · WORKED EXAMPLES AND EXPANSIONS

Practitioner notes against the foundational essay

Drafting your own augmentation constitution

An augmentation constitution is short. One page. Signed by you with cryptographic discipline (Mickai's substrate will sign it under your hardware-bound key on request). Suggested headings: jurisdictional clauses (which courts may rule on disputes), action refusal clauses (what no augmentation may ever do in your name, for example: irrevocably commit funds above a threshold without voice biometric reconfirmation), data residency clauses (where the augmentation's working memory may sit), and revocation clauses (under what conditions the augmentation's keys may be revoked retroactively).

The constitution is not a procurement document. It is a personal document the user holds. Vendors are welcome to read it; vendors are not entitled to amend it. The constitution travels with the user across augmentation vendors, hardware generations, and substrate versions. Mickai's substrate enforces it; other substrates may also; the document is portable.

Auditing your existing voice and biometric exposure

Most readers underestimate their biometric exposure. The audit exercise is: list every system that has ever sampled your voice (calls to automated systems, banking apps, smart speaker history, fitness app voice memos, dictation systems). For each, ask whether you can request deletion under UK GDPR Article 17 and whether the system holds a voiceprint or only acoustic samples. The same exercise repeats for fingerprint (door entry, gym membership, phone unlock), retinal scan (medical imaging, niche corporate access), and face template (passport, mobile unlock, supermarket self-checkout, public CCTV in some jurisdictions).

The point of the audit is not to demand deletion of every record. It is to know the surface, to choose which records remain, and to insist that any future biometric sample is taken into a system you can audit cryptographically. The Mickai substrate provides the architectural template; the audit clarifies which systems already match it and which do not.

Procurement questions for any augmentation vendor

Three minimum questions for any augmentation vendor: Who holds the signing key. Can the key be revoked retroactively. Is the revocation recorded in a chain you can verify offline. A vendor that cannot answer the three is a vendor that has not engineered for sovereignty. The questions do not name Mickai; they name the substrate behaviour. Mickai is one substrate that meets the questions; the procurement office is welcome to consider others.

Hardware-bound identity in practice

Hardware-bound identity rests on the secure enclave (TPM 2.0 on most modern PCs, Secure Enclave on Apple silicon, equivalent on Android and on the certified workstation that Mickai's sovereign hardware programme is developing). The enclave generates the signing key, never releases it, and refuses operations from foreign software. The identity is therefore physically resident in the device. Loss of the device is a real risk; the architectural answer is multi-device enrolment under the Identity Brain, with the chain recording each enrolment and any subsequent revocation.

Compensating rollback for body-resident actions

Body-resident actions cannot always be undone (a sent message, a triggered prescription, a committed transaction). The architectural answer is the inverse: every body-resident action carries a declared compensating inverse, signed at commit. If a misfire occurs, the inverse executes, the chain records both the original and the reversal, and the user is restored to the pre-action state where the underlying system permits it. The substrate enforces the inverse-declaration discipline; vendors that do not declare inverses are refused at the policy graph.

Pre-commit dry-run at the neural boundary

The Planning Brain's pre-commit dry-run pattern is the safety primitive at the neural boundary. Any neural-driven action above a configured threshold is rendered as a diff against the target state, which the user reviews and confirms. Confirmation can be voice biometric, gesture, or a secondary signed token. Irreversible actions without confirmation are mathematically refused. The discipline rules out the agent-error class of incident that has characterised early BCI prototypes since 2024.

AUTHOR

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Author. Micky Irons is the founder and named inventor of Mickai, the Sovereign Intelligence Operating System. UK IPO public register GB2607309.8 to GB2611702.8 and GB2611885.1 onwards, 57 filed UK patent applications across approximately 1,535 claims, covering cross-implementation OAR verification, pluggable post-quantum signing, federated voice cloning, and audit-by-default sovereign CLI command trace. Companies House 17166618. Trade mark UK00004373277 (classes 9 and 42). The agentic marketing runtime documented at mickai.co.uk/articles/amt-crunchbase-40k-to-500-in-seven-days moved the founder Crunchbase profile from approximately 40,000 to 500 in seven days.

COLOPHON

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