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The Gap Mickai Fills.

Where the commercial AI stack ends and the sovereign AI substrate begins. A category-defining argument for the engineering category Mickai occupies in 2026.

AUTHOR

Micky Irons

Founder and named inventor, Mickai LTD.
Crunchbase · LinkedIn · GitHub · mickai.co.uk

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Mickai LTD · Companies House 17166618 · press@mickai.co.uk · mickai.co.uk
UK IPO register GB2607309.8 to GB2611702.8 and GB2611885.1 onwards · Trade mark UK00004373277

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FOREWORD

A note from the author

The commercial AI stack (the foundation model vendors, the AI security platforms, the agent frameworks, the cloud orchestrators) covers an enormous surface. It does not cover the cryptographic substrate that the UK regulated buyer requires. This ebook is the category-defining argument for the gap Mickai fills, written so an architect, a procurement officer, or a board member can read it in thirty minutes and know exactly where the boundary sits.

The Mickai substrate primitives are filed at the UK IPO across the GB2607309.8 to GB2611702.8 and GB2611885.1 onwards families. The trade mark Mickai is registered at UK00004373277.

Micky Irons

Founder and named inventor, Mickai LTD · 19 May 2026

PART I · THE COMMERCIAL AI STACK IN 2026

The four layers above the substrate

1. Foundation model vendors

OpenAI, Anthropic, Google, Meta, Mistral, Cohere, AI21, the open-source community around Llama, the Chinese model ecosystem (Qwen, DeepSeek, GLM). These vendors produce the underlying models that everything else rides on. They are excellent at the layer they occupy; they are not, and do not intend to be, the substrate.

2. AI security platforms

Lakera, Check Point AI Security, Palo Alto AI Access Security, Wiz AI-SPM, the wider AI runtime detection category. These platforms detect prompt injection, jailbreak, data leakage, and shadow AI at the runtime layer. They are excellent at the layer they occupy; the audit they produce sits in the vendor's cloud under the vendor's key.

3. Agent frameworks

LangChain, LlamaIndex, AutoGen, CrewAI, the wider agent framework category. These frameworks compose models into multi-step workflows with tools, memory, and planning. They are excellent at the layer they occupy; they do not, by default, ship a cryptographic substrate underneath the agent actions.

4. Cloud orchestrators

AWS Bedrock, Azure OpenAI, Google Vertex AI, AWS SageMaker, the wider managed AI category. These orchestrators run the foundation models inside cloud accounts with the cloud provider as the trust root. They are excellent at the layer they occupy; the trust root is the cloud vendor, not the operator.

PART II · WHAT THE STACK DOES NOT COVER

The substrate gap

5. The cryptographic substrate

None of the four layers above ship a cryptographic substrate where the audit chain is held under the operator's key in an open format with browser-resident verification. The substrate is the missing layer. The Mickai position is that the substrate is the actual gap in the commercial AI stack, and the UK regulated buyer is the buyer most exposed by the gap.

> **The substrate is the missing layer underneath every other layer in the commercial AI stack.**

6. The trust root question

Across the four layers above, the trust root sits with the vendor (foundation model vendor, security platform vendor, agent framework vendor, cloud orchestrator vendor). For the UK regulated buyer, the trust root must sit with the operator. The substrate is the architectural component that moves the trust root from the vendor to the operator.

7. The egress posture

The four layers above assume cloud egress at some point in the AI request lifecycle. For UK regulated workstations with hard egress postures (defence-nuclear, defence-prime, PRA-regulated finance, MHRA-regulated pharma, sector-regulator CNI), cloud egress is structurally unacceptable. The substrate is the architectural component that lets the AI work inside the egress constraint, not against it.

PART III · THE MICKAI POSITION

Substrate, not platform; operator, not vendor

8. Substrate, not platform

Mickai is the substrate layer underneath the commercial AI stack. The platform layer is welcome to ride on top of the substrate; the substrate cannot be supplied by the platform. The category Mickai occupies is the cryptographic primitive layer that the UK regulated buyer requires and that the commercial AI stack does not, by intent or by accident, supply.

9. Operator-controlled, not vendor-controlled

Every primitive in the Mickai substrate is operator-controlled. The signing key lives in the operator's hardware. The audit chain lives on the operator's storage. The verifier is a static page the operator can mirror inside their perimeter. The policy graph is the operator's authority. The vendor (Mickai LTD) is a participant, not a trust root.

10. Post-quantum, not classical

The Mickai substrate is post-quantum-signed from inception. The 2031 and 2035 NCSC deadlines are operator obligations; the substrate satisfies them today, not at the deadline. The classical-signed audit chains in the commercial AI stack will need migration; the Mickai chains will not.

PART IV · THE CATEGORY

Where Mickai sits on the buyer's vendor map

11. Where Mickai sits on a buyer's vendor map

On a buyer's AI vendor map, Mickai sits at the substrate layer, underneath the model vendor, underneath the AI security platform, underneath the agent framework, and parallel to the operator's own infrastructure team. The Mickai surface is sovereign hardware AI workstation, SIOS runtime, OAR primitive, browser-resident verifier, AMT runtime, MickaiClaw, Mickai Sky.

The Mickai position is not 'an alternative AI vendor'. The Mickai position is the substrate underneath whichever AI vendor the buyer selects above the substrate. The buyer can run OpenAI, Anthropic, a self-hosted Llama, or a Mickai SIOS brain above the substrate; the substrate is invariant.

12. Closing

The gap Mickai fills is the substrate gap. It is the layer the commercial AI stack does not ship, the layer the UK regulated buyer requires, and the layer the Mickai SIOS ships at the cryptographic primitive level with UK IPO filings, browser-resident verifier, and post-quantum signing from inception.

Engineering and procurement leadership at any UK regulated buyer is open to a thirty-minute category briefing at any time. press@mickai.co.uk.

APPENDIX · ABOUT THE AUTHOR

Micky Irons

Founder of Mickai LTD (Companies House 17166618, England and Wales, registered office 20 Wenlock Road, London, N1 7GU). Named inventor on the Mickai SIOS patent corpus, recorded on the UK Intellectual Property Office public register at numbers GB2607309.8 to GB2611702.8 and GB2611885.1 onwards. Trade mark Mickai registered at UK00004373277 (classes 9 and 42, filed 15 April 2026).

Before founding Mickai, Micky was a Sellafield site worker. The egress constraint observed from inside the regulated workstation is the engineering origin of the substrate described across the Mickai ebook series.

Profiles and links

mickai.co.uk · the canonical Mickai site.

crunchbase.com/person/micky-irons · founder profile.

linkedin.com/in/mickyirons · personal LinkedIn.

github.com/Micky-CMO · open-source position.

linkedin.com/company/mickai · Mickai LTD company page.

crunchbase.com/organization/mickyirons · Mickai LTD Crunchbase entry.

Email: press@mickai.co.uk

Colophon

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References and further reading

· Mickai brain taxonomy: mickai.co.uk/brains.

· Mickai OAR Brain documentation: mickai.co.uk/oar.

· NCSC, Timelines for migration to post-quantum cryptography.

· PRA Supervisory Statement SS1/23, model risk management for banks.

· Mickai trade mark UK00004373277, classes 9 and 42, filed 15 April 2026.