Halve the Hardware. Halve the Heat.

Eliminating the avoidable thermal toll of data center power delivery through Dynamic Flux Switching (DFS).

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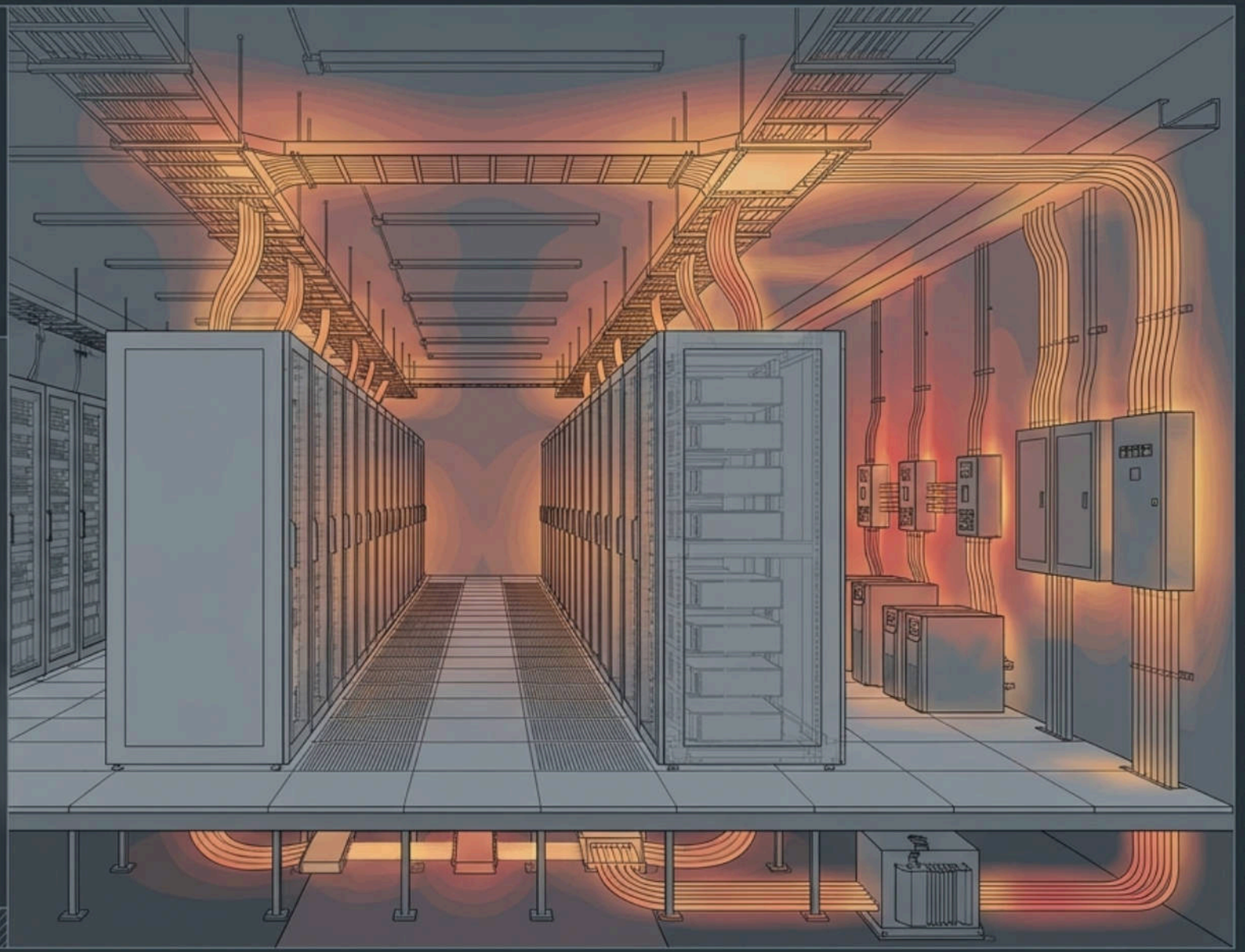
Modern data centres do not simply take electricity from the grid and send it to the processors.

The processor produces heat while computing. We accept that.

But we ignore the massive, avoidable heat generated just getting power to the rack.

The power is repeatedly converted, switched, transformed, rectified, filtered, and regulated before a single calculation occurs.



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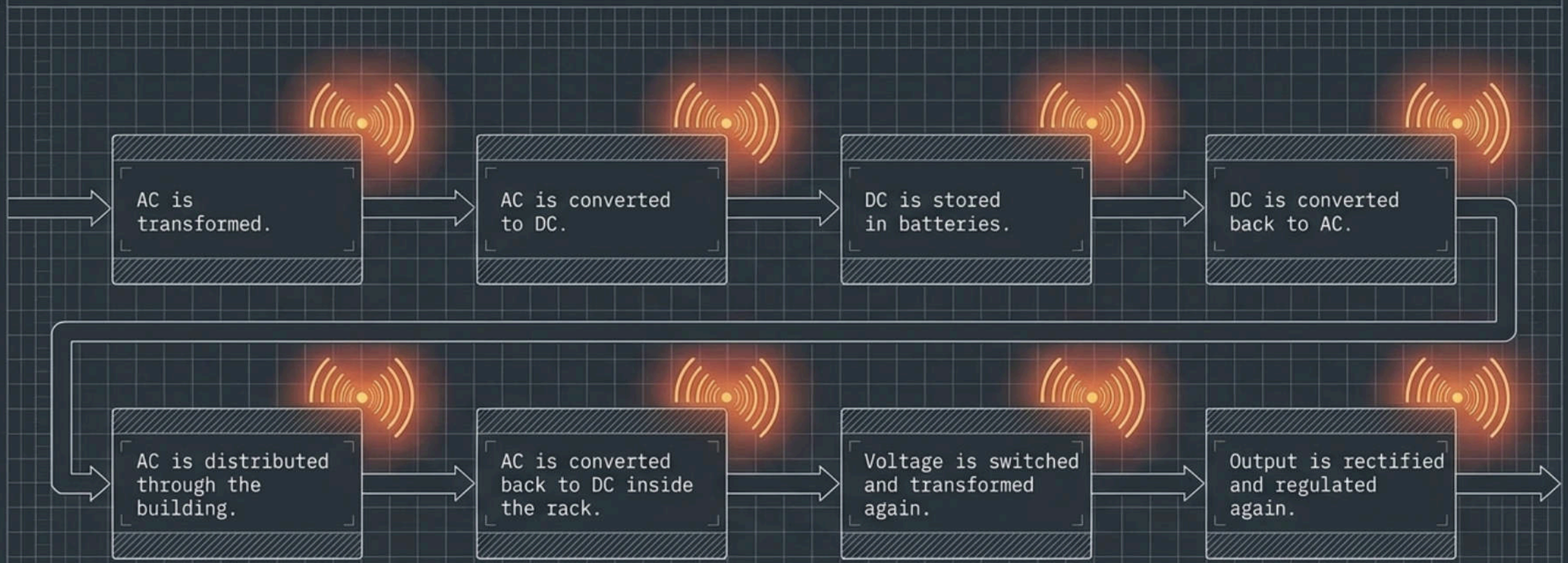
The conventional architecture relies on an 8-to-10 stage conversion pipeline.



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Every conversion stage requires more components—and every component bleeds heat.

The Hardware Toll	The Thermal Toll
Semiconductor switches	Switching losses
Magnetic cores	Copper losses
Rectifiers	Eddy currents
Inductors	Hysteresis losses
Capacitors	Rectifier losses
Control electronics	Capacitor heating
Protection hardware	Cooling demand

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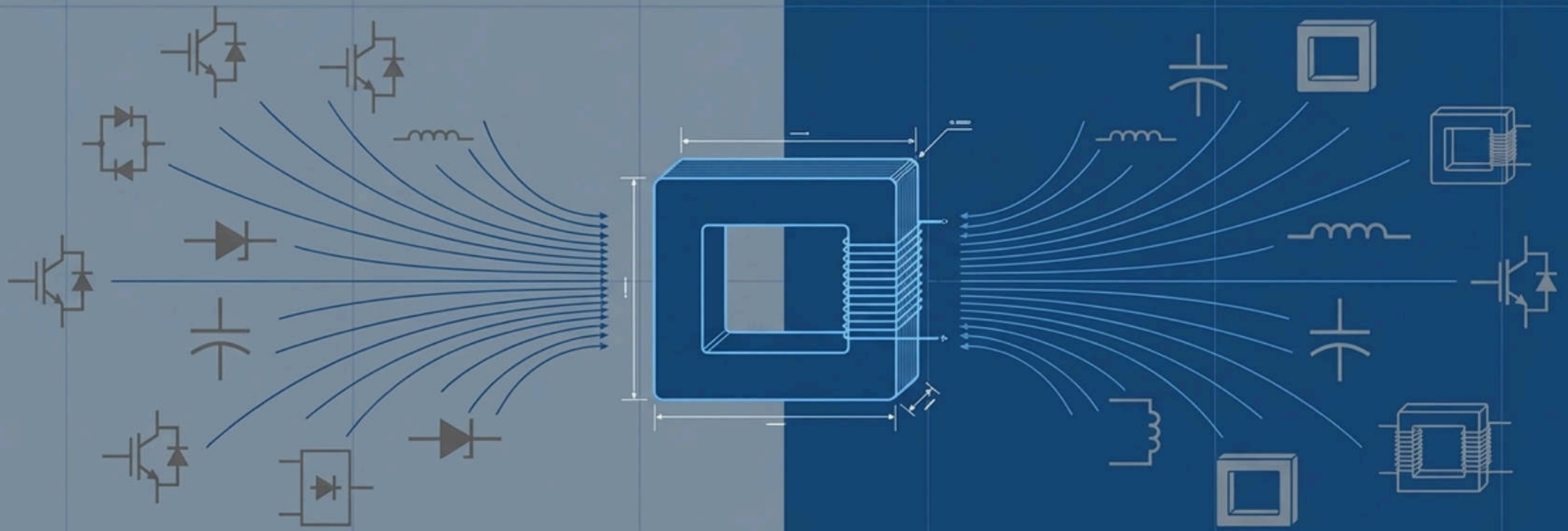
The industry is optimizing the wrong variable.



The conventional industry asks:
How can we make every conversion stage slightly better?

DFS asks a more important question:
Why are we still using so many stages?

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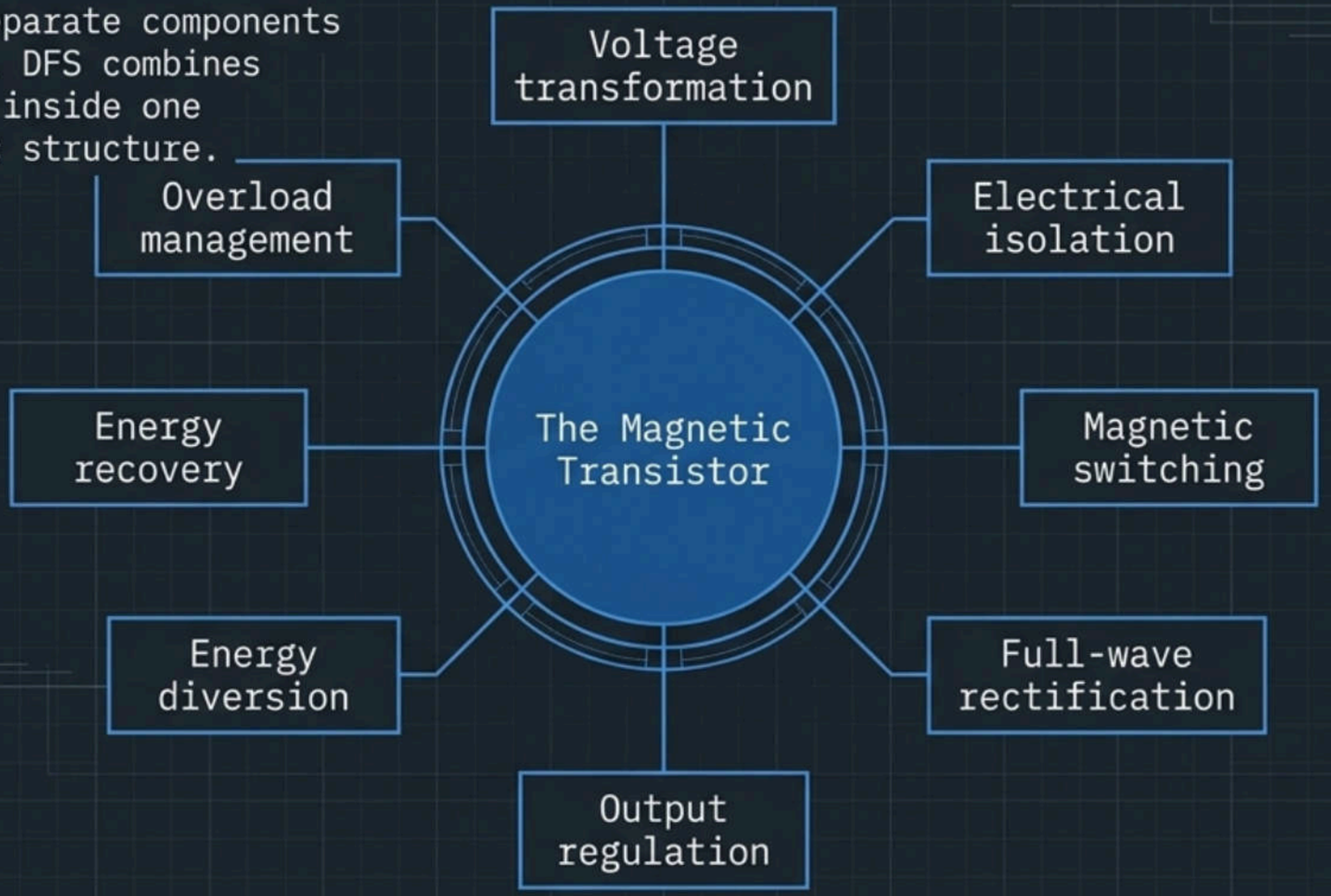
Dynamic Flux Switching (DFS) turns the magnetic core into an active power–control device.

Instead of using separate components for every function, DFS combines multiple functions inside one controlled magnetic structure.



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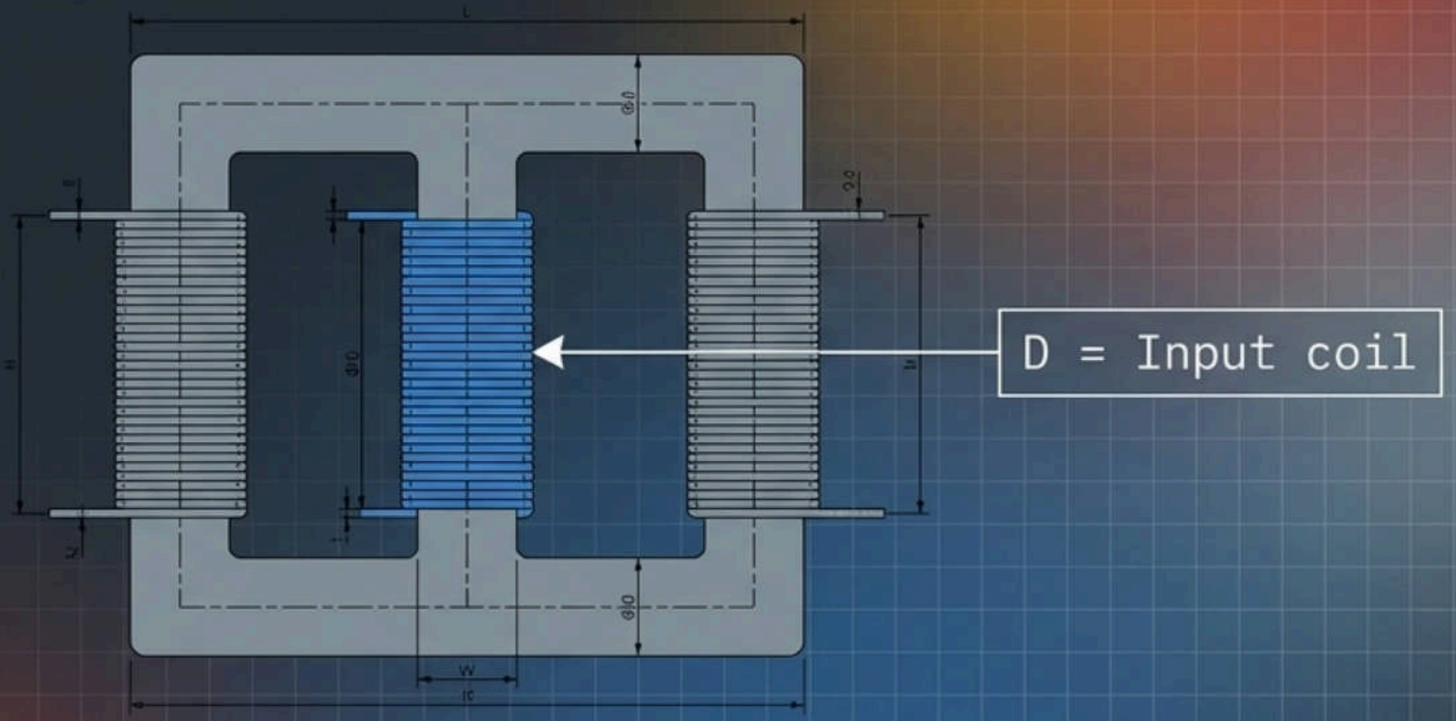
Anatomy of DFS: The 2-Core Foundation (Power Input)

The process begins at the Input Coil (D), where raw power enters the controlled magnetic structure.



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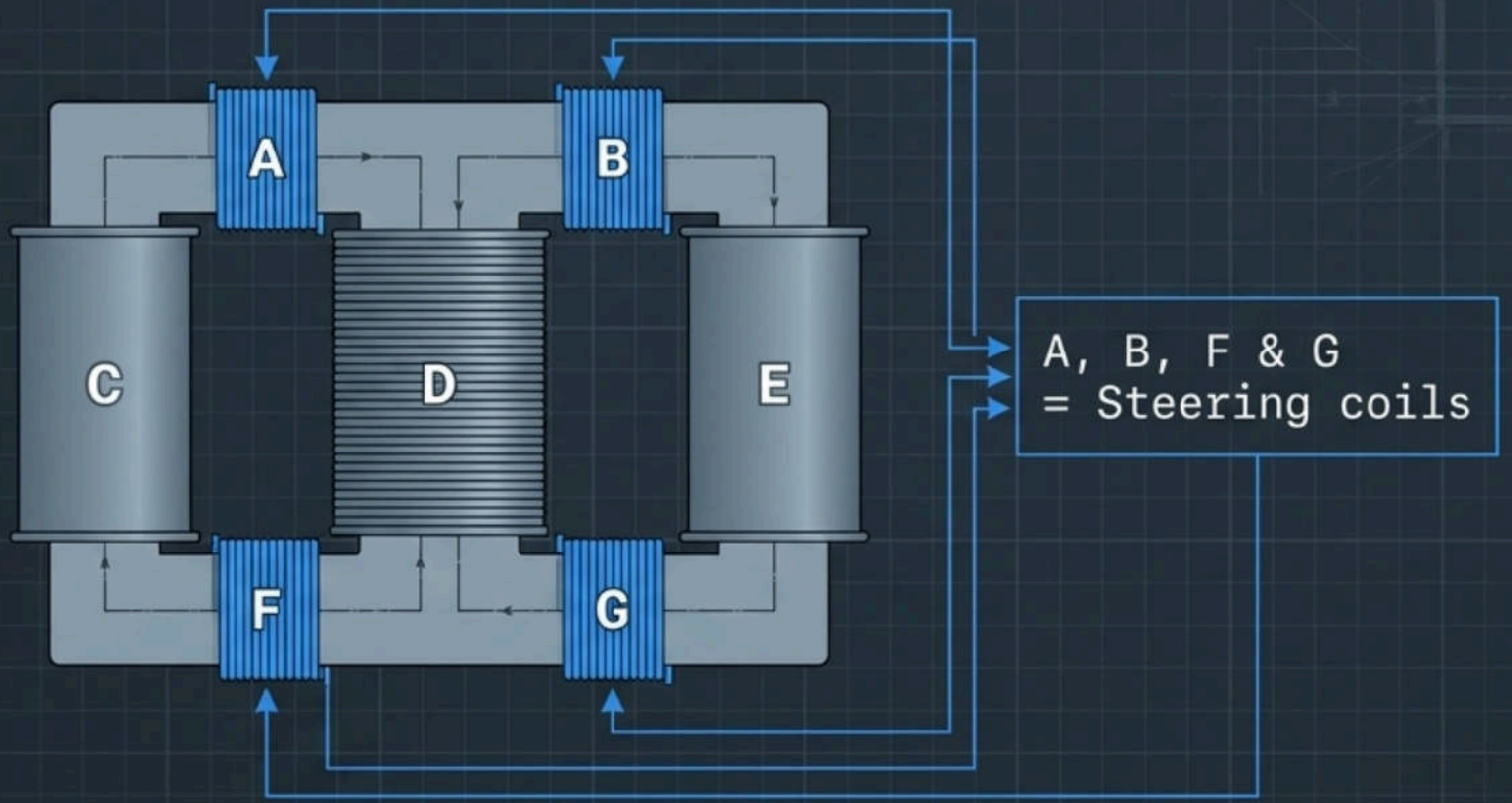
Anatomy of DFS: Active Magnetic Control

By controlling these steering coils, the system regulates exactly where the magnetic power flows through the core.

The two main DFS paths route the positive and negative halves of the magnetic waveform into output windings connected with the same electrical polarity, creating an inherent magnetic rectification function without semiconductor losses.



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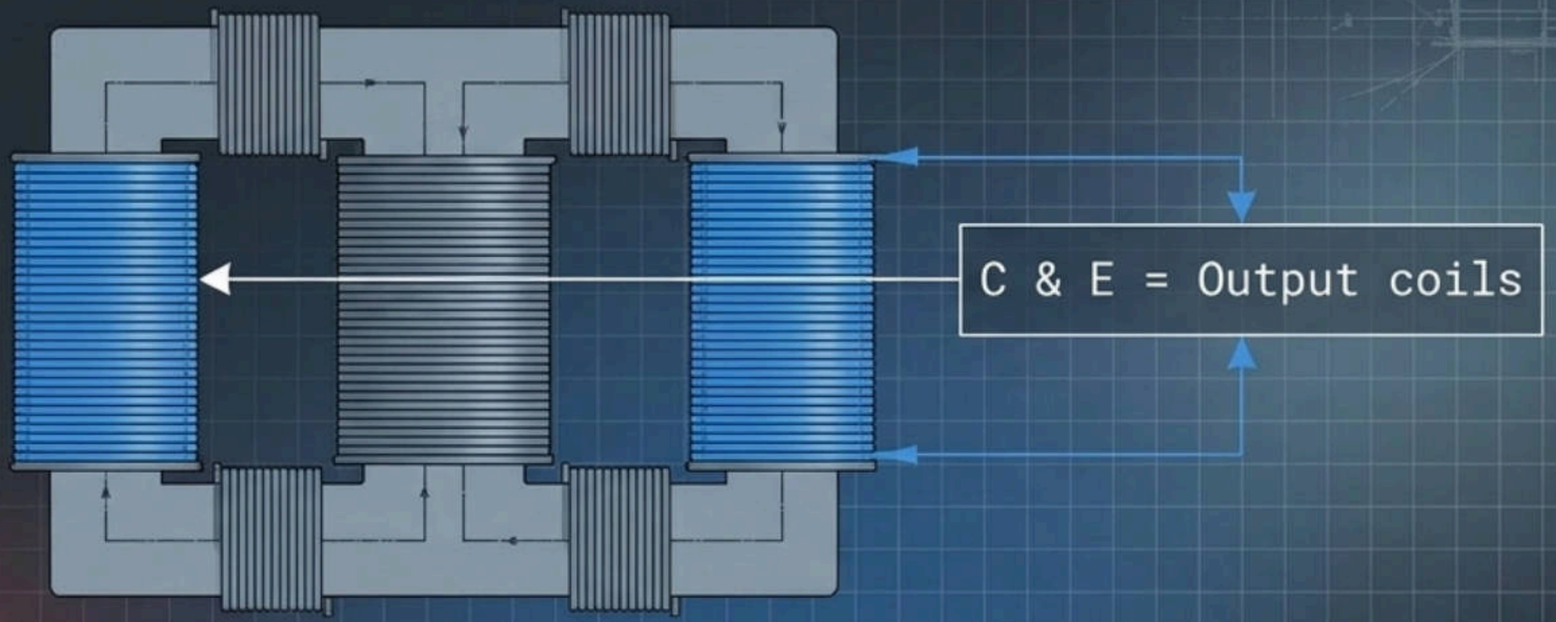
Anatomy of DFS: Output and Transformation

The regulated magnetic flux arrives at the output coils.

Simply changing the output winding turns provides the required voltage transformer function, entirely integrated into the same physical structure.



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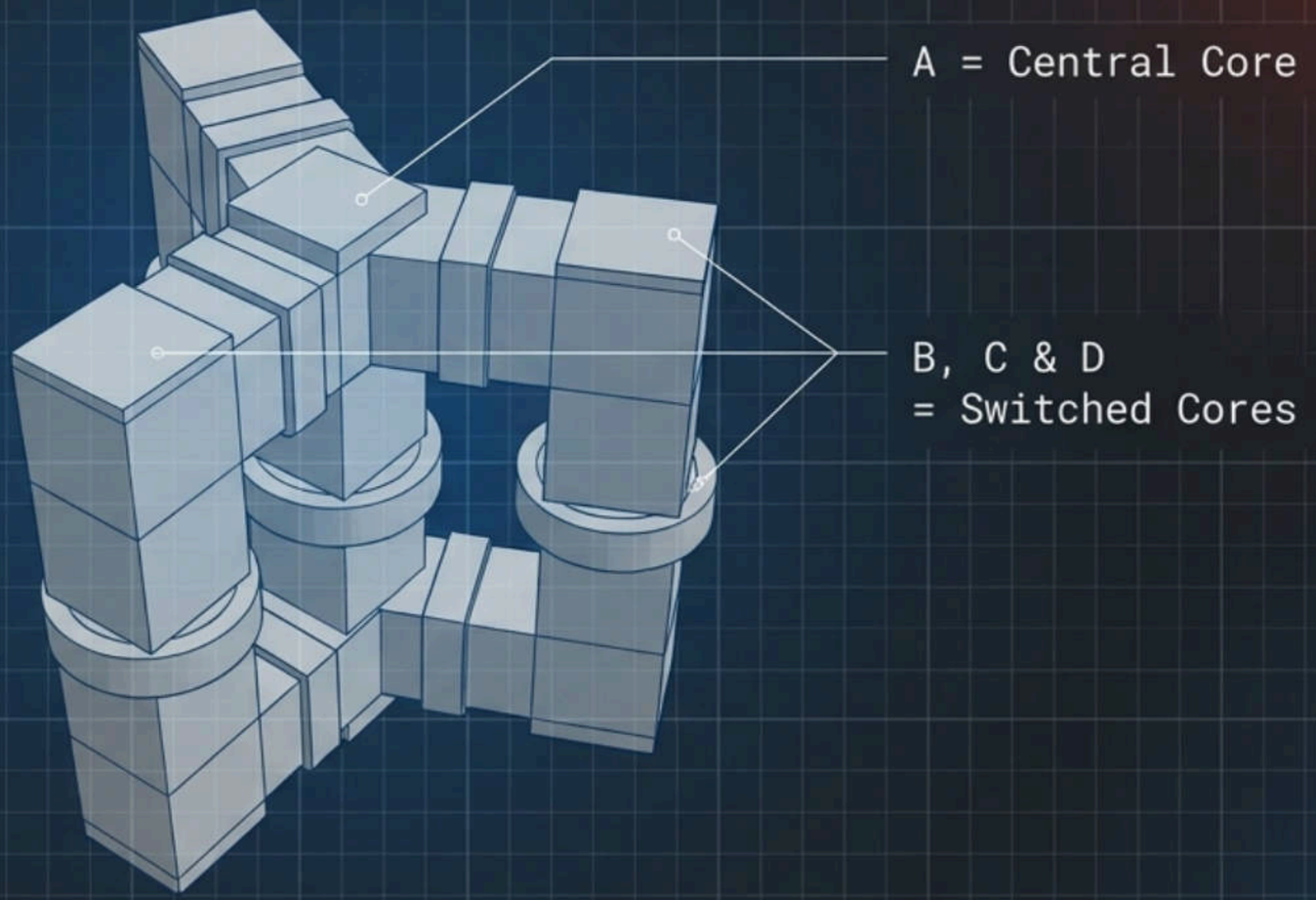
Advanced Architecture: The 3-Core Configuration.

Adding a third or fourth U-core to the geometry creates additional controlled magnetic ports.

This expansion allows for advanced recovery, regulation, storage, protection, or auxiliary outputs from a single central hub.



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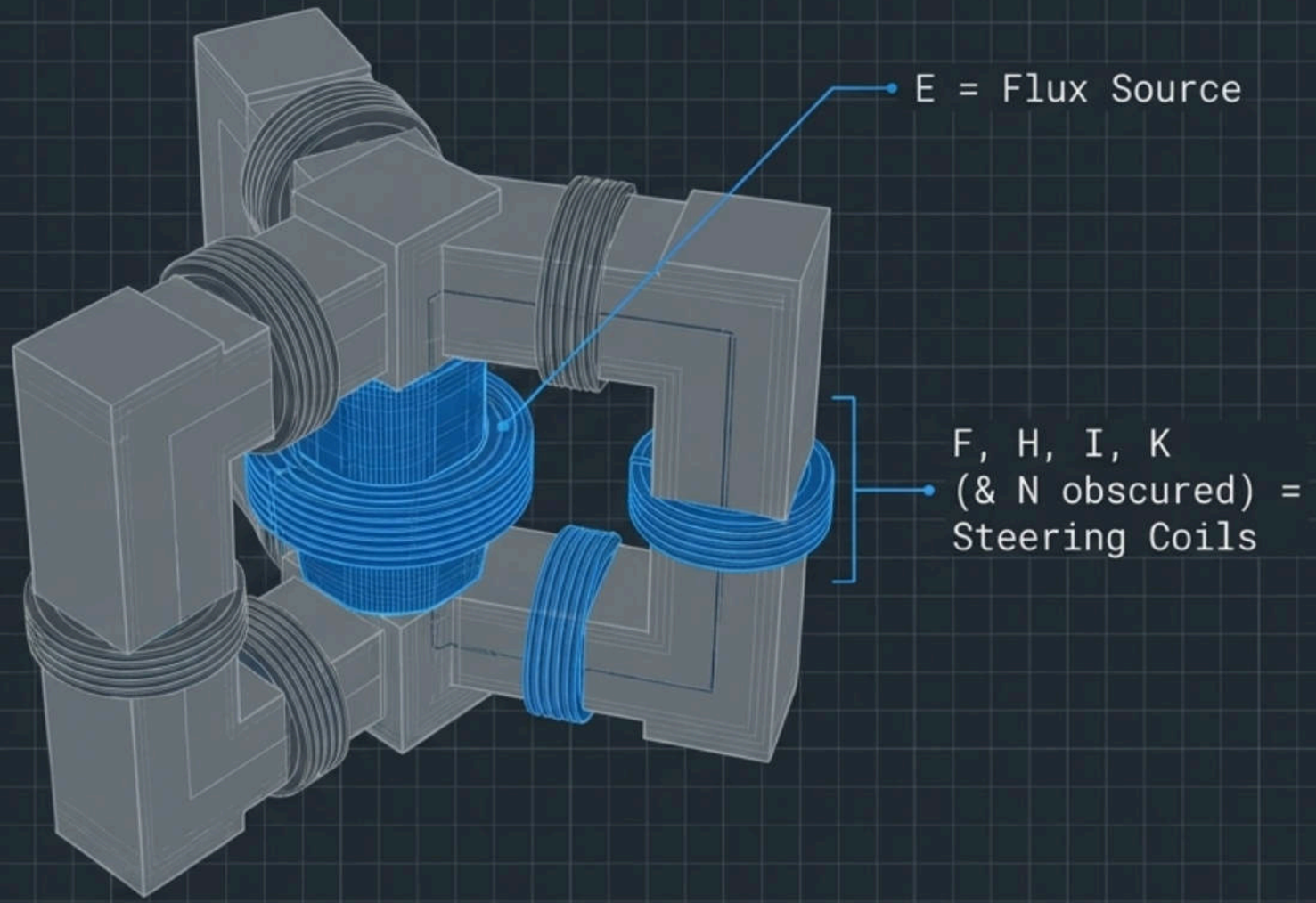
Advanced Architecture: Flux Generation and Routing.

The central Flux Source (E) drives the system, while the multi-axis Steering Coils continuously regulate the magnetic waveform across the Switched Cores.



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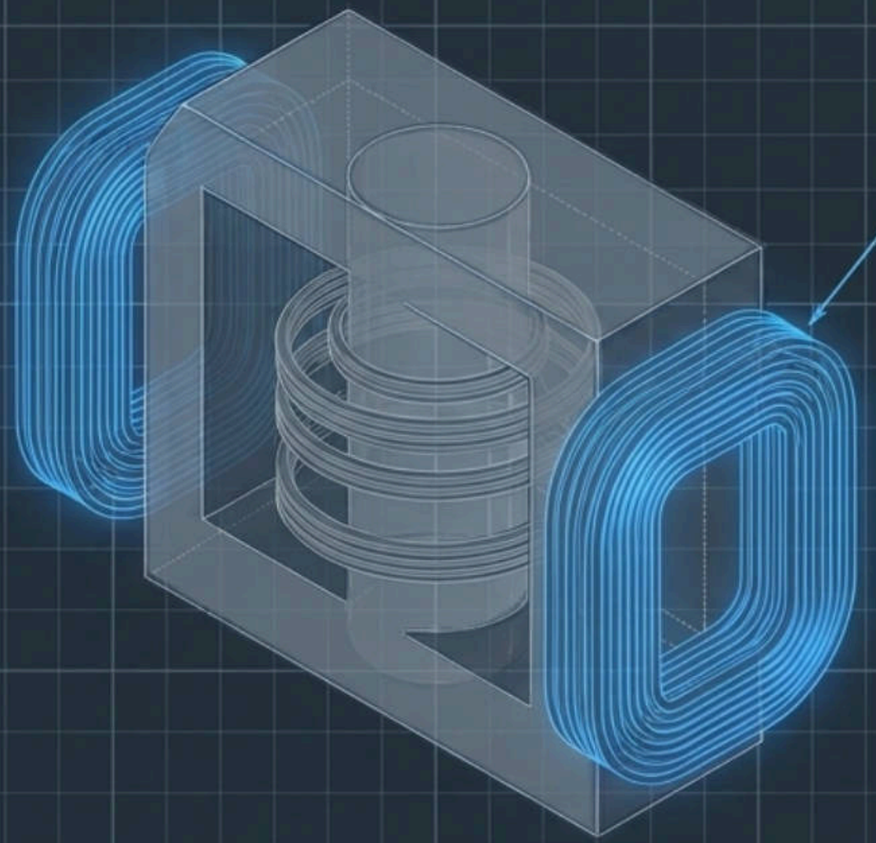
Advanced Architecture: Energy Recovery and Harvesting

These external ports serve dual functions: precise measurement of the system's state and harvesting of diverted energy, looping previously wasted power back into the system or out to auxiliary functions.



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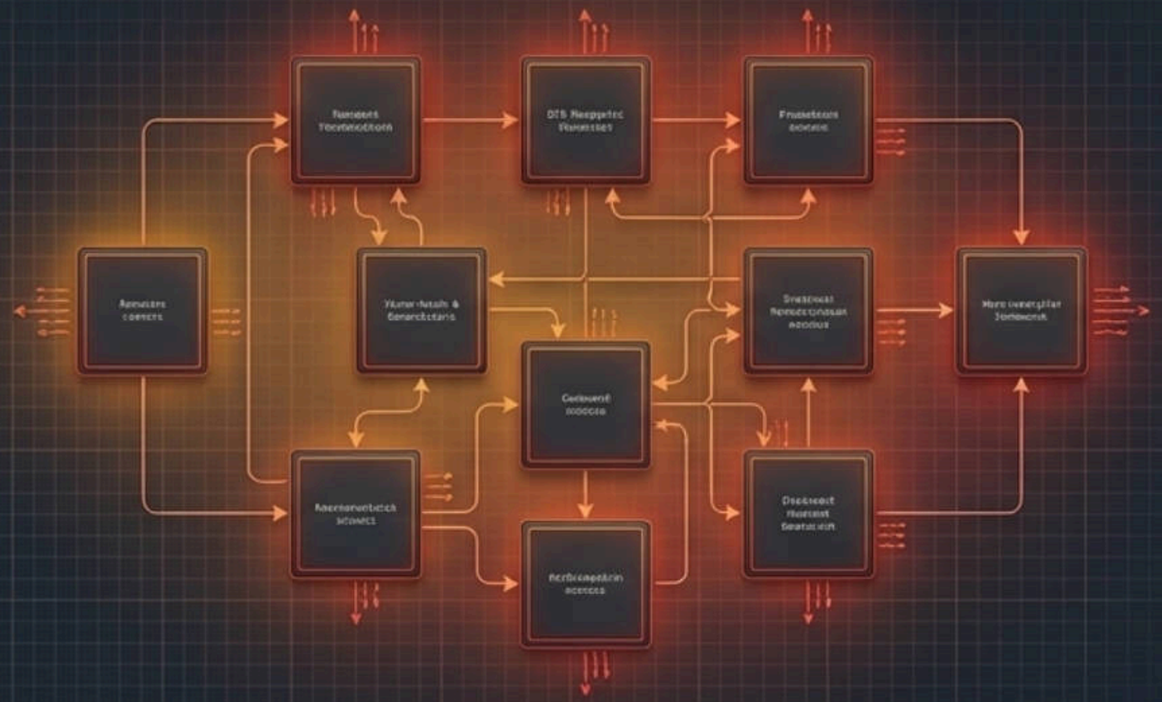
From eight or ten stages to four or five.

DFS is not an attempt to gain a fraction of a percentage point in conventional efficiency. It is a hardware-reduction architecture. Fewer stages mean fewer components producing conversion heat.

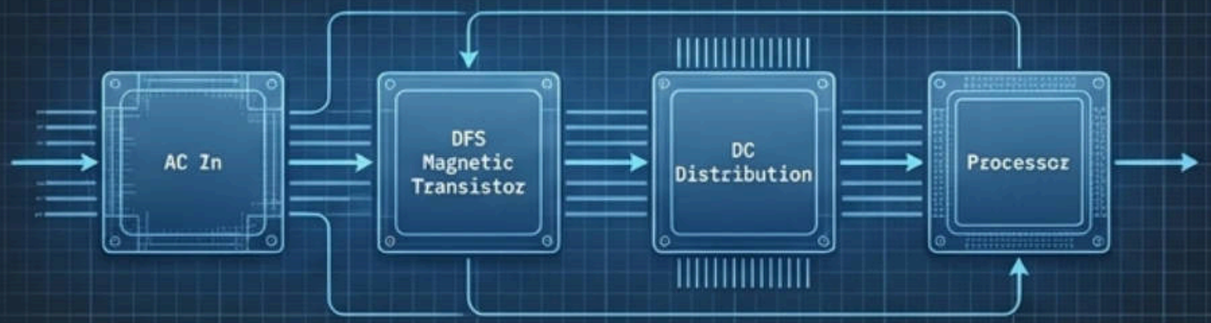
The Past (Legacy Architecture)

10+ Stages of Conversion & Heat Generation



The DFS Future (Consolidated Cooling)

4 Consolidated Stages & Efficient Cooling



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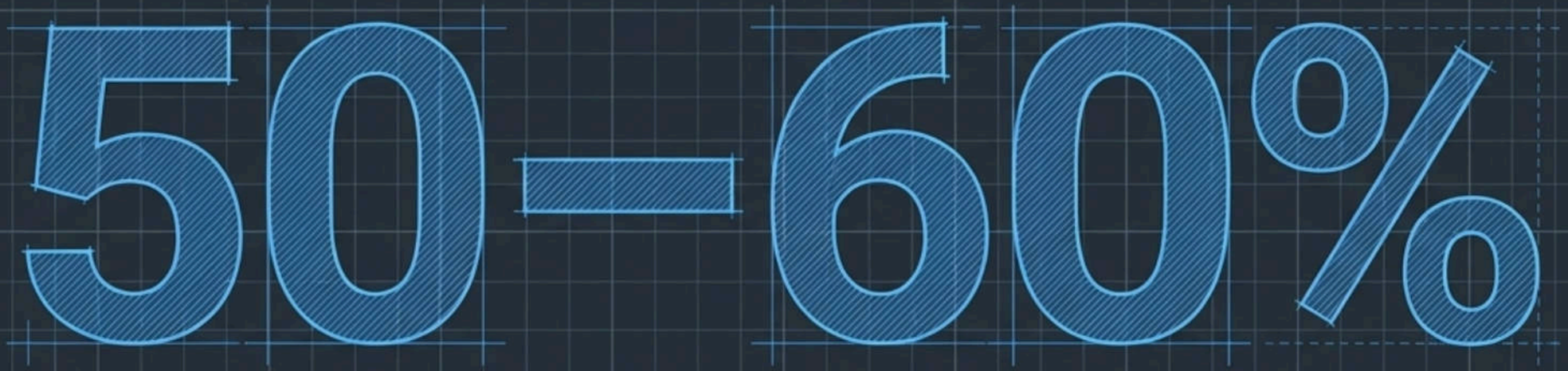
Eradicating Avoidable Heat.



reduction in power-conversion heat.

By halving the number of conversion stages—and drastically reducing repeated switching, eddy-current, and hysteresis losses—we target a massive reduction in the cooling demand required before power ever reaches the processor. (Subject to independent engineering validation).

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The DFS Opportunity

Halve the hardware.
Reduce the losses.
Reduce the heat.
Reduce the cooling.

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