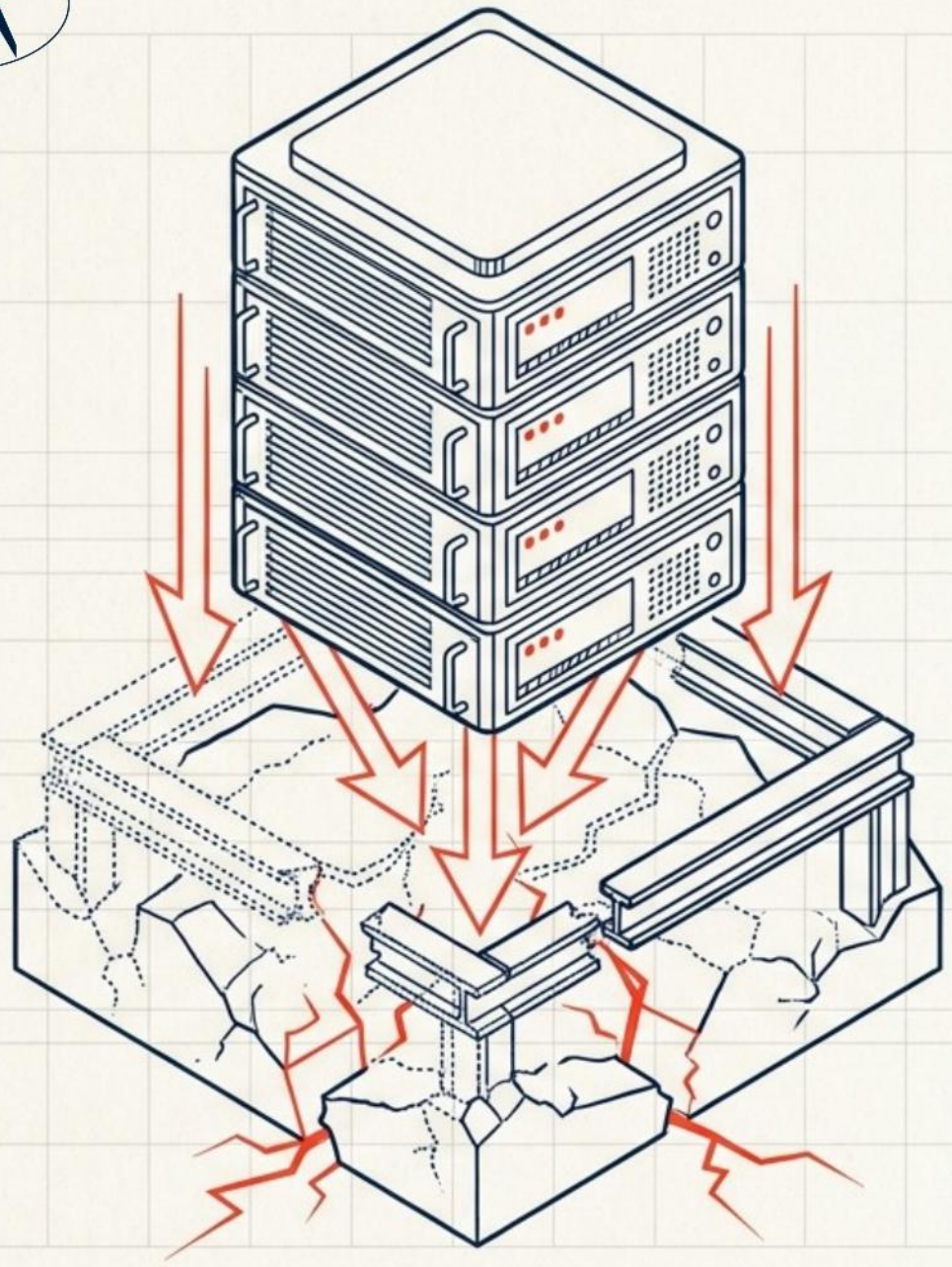


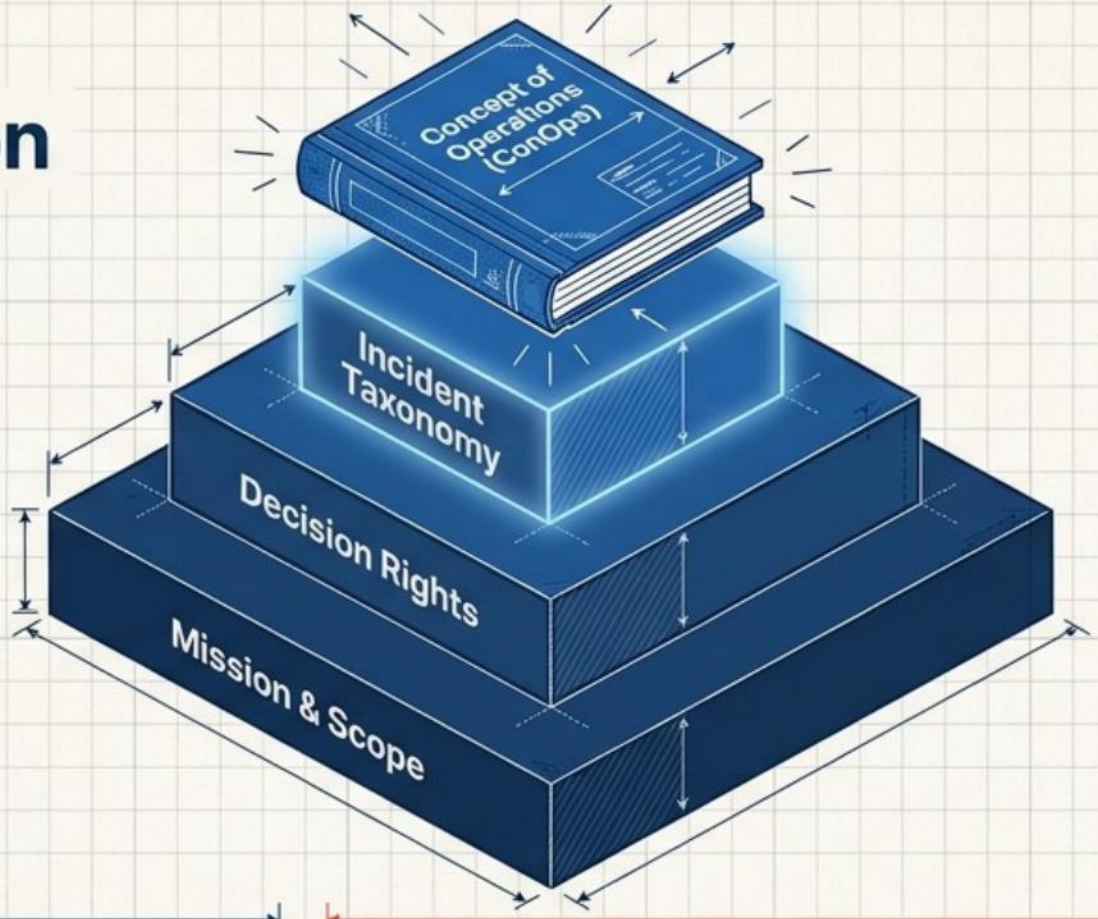
The #1 reason control room upgrades fail.

Skipping straight to technology acquisition (Phase 3) before defining governance and operational intent (Phase 1).

Insight: Technology merely amplifies whatever operating model exists. If governance is unclear, a new platform simply makes confusion faster and more more visible.

Phase 1: Pour the operational foundation before wiring the systems.

Objective: Establish the strategic foundation by defining the mission, scope, and decision rights.

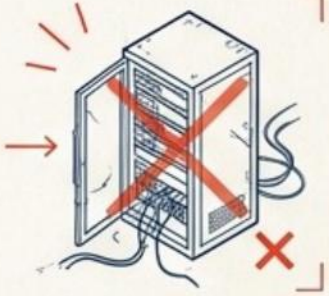


KEY OUTPUT:

A formal Incident Taxonomy (defining categories, severity levels, and response objectives) and the initial Concept of Operations (ConOps).

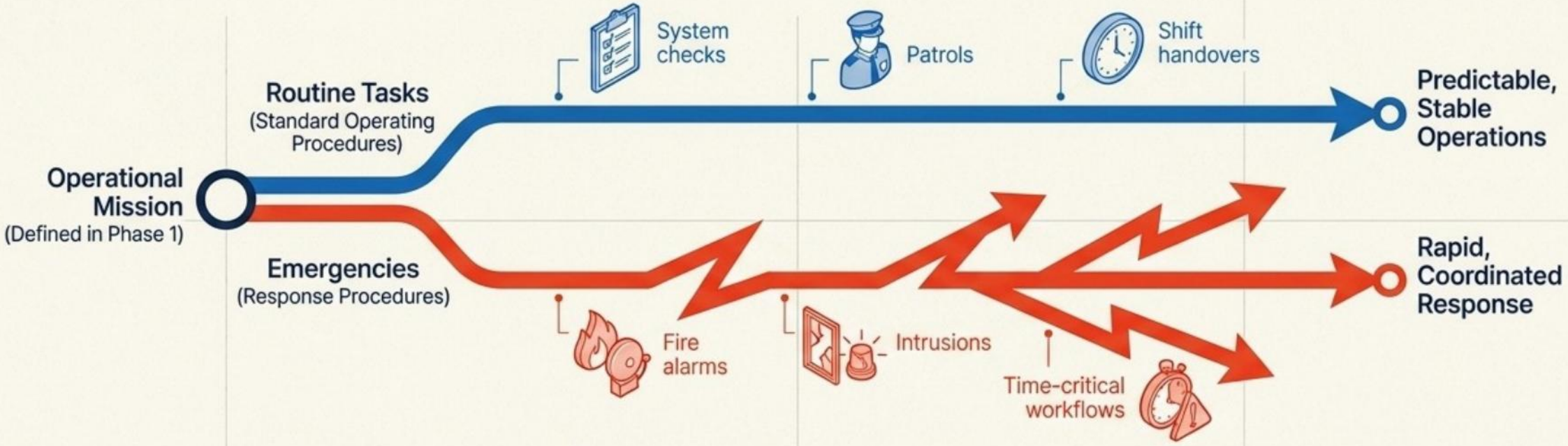
THE TRAP:

Starting with technology selection before defining the requirements and notification triggers for authorities



Phase 2: Translate the operational mission into human workflows.

Objective: Translate the mission into human workflows, defining roles, supervision ratios, and shift coverage.

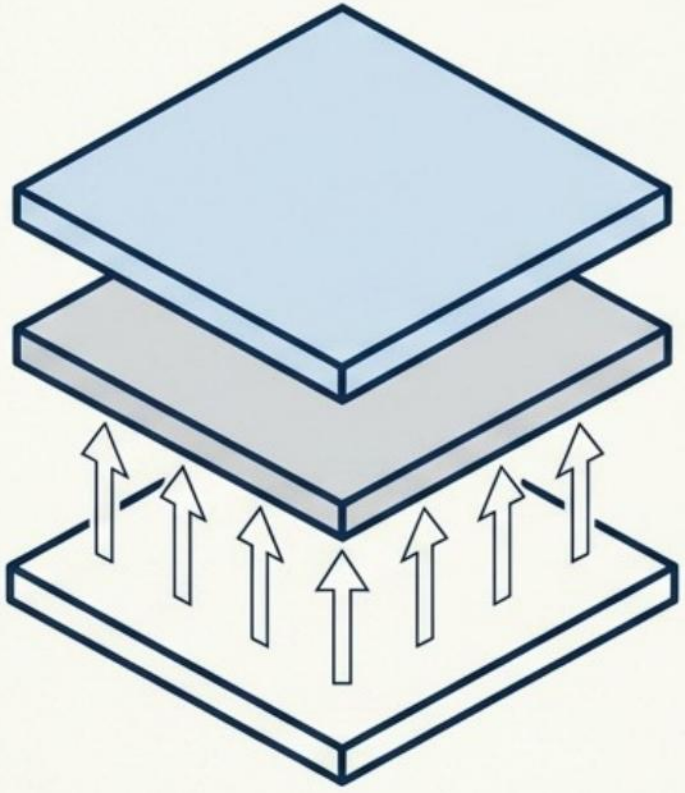


KEY OUTPUT:
Defined escalation logic and a clear separation between routine and emergency tasks.

THE TRAP:
Combining routine SOPs and time-critical Response Procedures into one vague, unusable document.

Phase 3: Design technology to enable the operation, not dictate it.

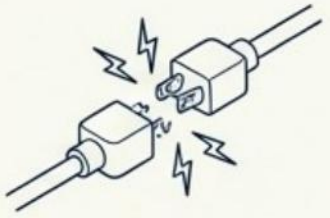
Objective: Design technology as an enabling layer that supports the operating model, focusing on system boundaries and data flows.



Human Workflows (Operators)

Orchestration Layer (PSIM / VMS / BMS)

Field Devices (Cameras, Sensors, Access Control)



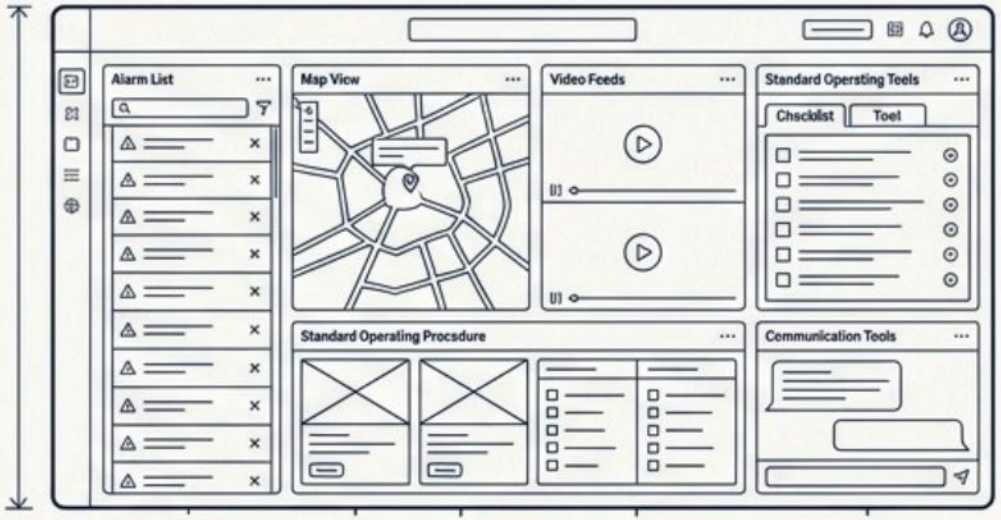
Diagnostic Check: If all automation failed for two hours, could the team still operate safely?

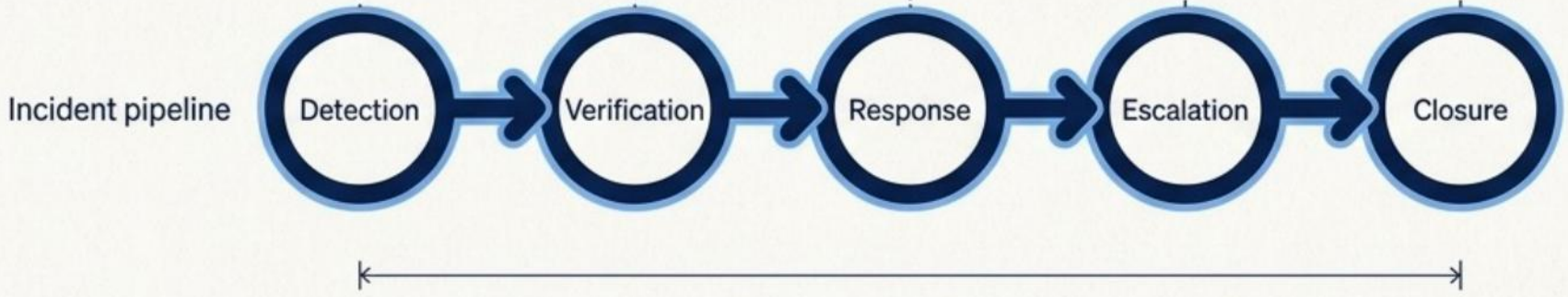
KEY OUTPUT:
A functional PSIM/VMS/BMS integration model and a Degraded Mode plan.

THE TRAP:
Over-integrating systems without clear operational value or failing to plan for how the team will operate safely if the platform fails.

Phase 4: Configure systems to guide the exact incident lifecycle.

Objective: Convert requirements into an operational configuration, implementing the full incident lifecycle.





KEY OUTPUT: Configured systems with standardized reporting fields and functional validation records.

THE TRAP: Focusing on 'technical success' (showing an alarm appears on screen) without validating if an operator can actually execute the procedure under pressure.

Phase 4

Scale

Phase 5: Prove the system works with real people under real stress.

Objective: Prove the system works with real people through scenario-based training and a disciplined handover from the project team to operations.

Tabletop Exercises

Disciplined Handover

Full-Scale Simulations

KEY OUTPUT: Exercise evaluation results and a signed-off Readiness Assessment.

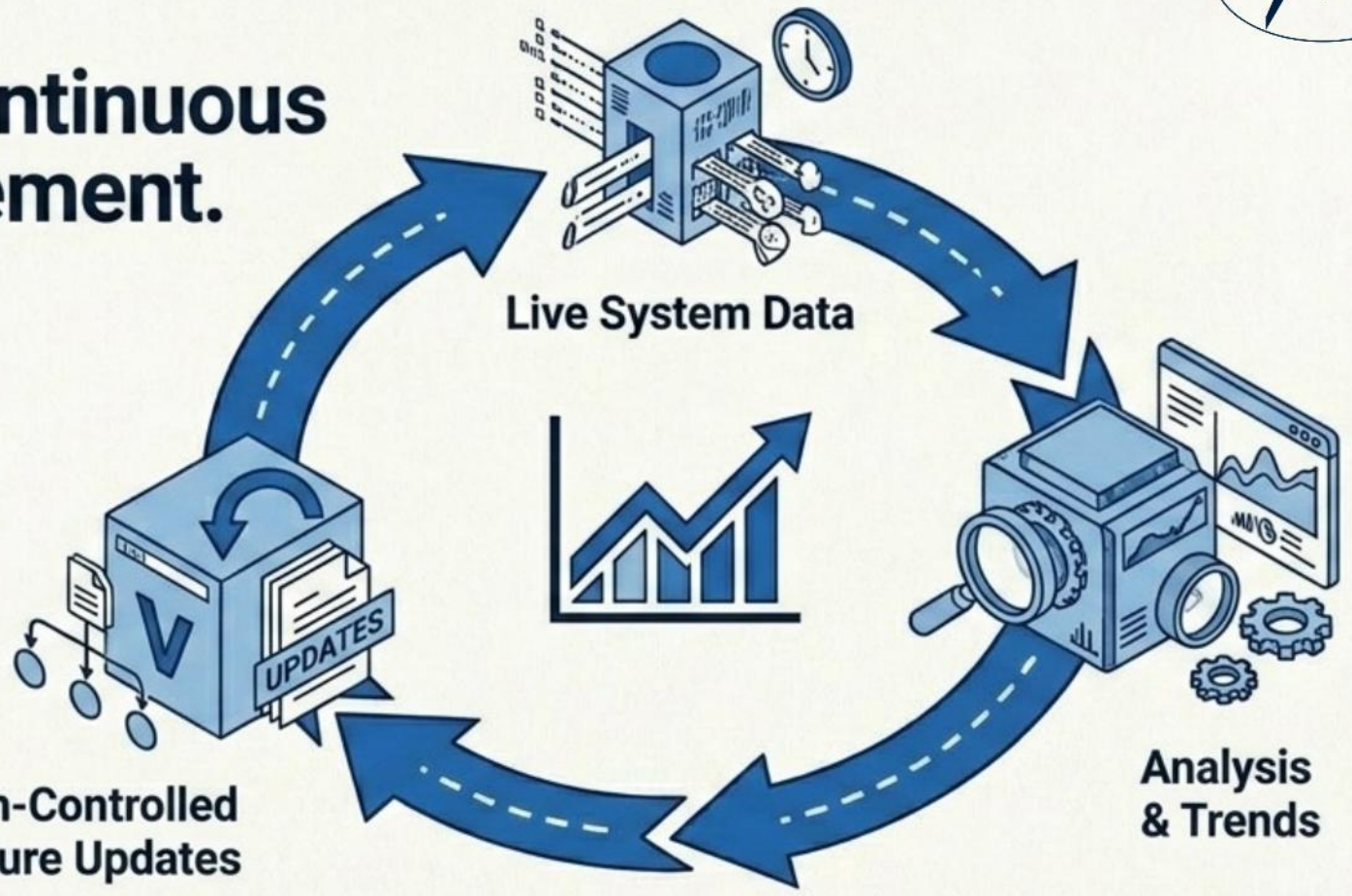
THE TRAP: Assuming readiness based on technical completion alone, rather than testing decision speed and communication.

Phase 5

Scale

Phase 6: Shift from implementation to continuous performance management.

Objective: Shift from implementation to performance management, using data to identify trends and refine controls.



KEY OUTPUT: A KPI framework covering detection, response, resolution, and compliance.

THE TRAP: Failing to define measurable KPIs or conducting operational reviews without translating findings into version-controlled updates.

Phase 6

Scale

A roadmap is only as strong as its most underestimated phase.

What phase do you see most underestimated in your organization?

Contact Marc Arnecke for your roadmap discussion

mar@armaco.org