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Forge

AI-Powered 2D-to-3D Model Reconciliation for Ship Maintenance

PROBLEM STATEMENT

Unplanned work found after an availability starts is the Navy's #1 documented cause of maintenance delay.

- It starts with locked data: legacy drawings and dead CAD don't reflect the ship's real condition.
- Class rules and survey history sit scattered across paper, PDFs, and memory.
- Real scope gets discovered only after the hull is opened, not during planning.

BENEFITS

Unplanned work has cost the Navy 33,700+ excess maintenance days since FY2014. That's a readiness problem, not just a budget line.

- Fewer ships stuck in extended, unplanned availabilities means more ships ready for tasking.
- Predictive maintenance: real condition known before survey, no certification surprises.
- Frees planners from manually reconciling paper, dead CAD, and conflicting work orders.
- A direct lever on the Navy's $1.8B and growing maintenance backlog.

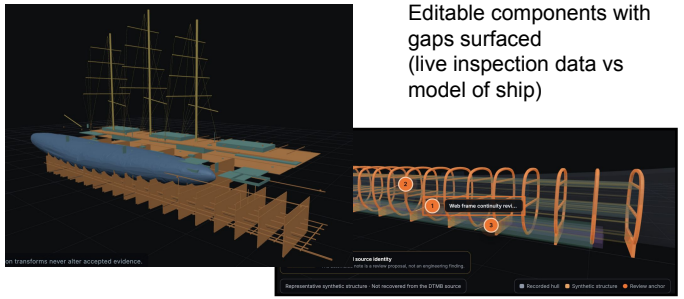
TECHNOLOGY SOLUTION

Forge reverse engineers legacy drawings and dead CAD into one editable, reconciled 3D model before the ship reaches the yard.

- Every component becomes editable: hull, engine, machinery, and outfitting.
- Reusable across sister ships and repeat part families, not just one hull.
- One living source of truth, updated with every inspection and repair.
- Every change goes through the surveyor or superintendent's approval gate.

GRAPHIC

Balclutha (1886): fully reconstructed 3D model from 2D drawings



Editable components with gaps surfaced
(live inspection data vs model of ship)