

Leading Dredging Company Improves Shared Visibility Across Active Projects

A unified visualization platform that streamlines daily operations and accelerates incident response

The leading provider of dredging services in the United States. The company specializes in maintaining and deepening ports, shipping channels and waterways, coastal protection and beach restoration, as well as land reclamation projects.



Project

This project delivered a large-scale, software-defined video wall for a centralized operations environment supporting real-time visibility into active projects. The video wall aggregates live operational data, analytics dashboards, monitoring systems, and web-based tools into a single shared visualization platform that supports day-to-day operations, incident response, and cross-functional collaboration.

Project Goal

The primary goal was to create a flexible, high-resolution visualization platform that enables teams to see, compare, and act on operational data in real time. The solution needed to scale with operational complexity, remain adaptable as tools evolve, and avoid dependence on proprietary hardware or rigid layouts.

Challenge

Prior to implementation, operational teams relied on a combination of individual workstations, static displays, and ad-hoc screen sharing. This resulted in limited shared visibility, difficulty dynamically comparing data sources, and inefficiencies when switching between projects or incidents as operational scope expanded.

The organization required a software-centric video wall platform capable of displaying any data source, supporting very wide high-resolution canvases, operating reliably on-premises, and being configured internally without long-term vendor lock-in.



Solution

Polywall was deployed as the core visualization and control software for the operations video wall. The solution consists of a central Polywall server with multiple Visualizer nodes driving distinct sections of the wall. Operators use Polywall Designer to create layouts, manage scenarios, and control scheduling.

The wall is configured to behave as a single continuous canvas rather than discrete monitors, allowing layouts to span multiple panels seamlessly and support collaborative operational workflows such as monitoring, analytics review, and incident response.

Technical Characteristics

The system uses compact Dell micro systems paired with NVIDIA GPUs to drive high-resolution, multi-output visualization. The environment is deployed on an enterprise Windows platform using dedicated Polywall server and Visualizer roles. The video wall consists of two 3x2 arrays of 55-inch

commercial-grade displays separated by a central 85-inch display, forming a single video wall approximately 30 feet wide.

Results

The solution improved operational awareness by providing a shared, real-time view of complex data sets. Teams are able to identify and triage issues more quickly, collaborate more effectively, and adapt layouts dynamically as operational needs change.

The video wall has become a core operational tool rather than a static display, supporting daily operations as well as critical situations.

Future Plans

Future enhancements include expanding Polywall to additional operational use cases, implementing user-based access and role-based controls, and integrating new data sources and analytical tools as requirements evolve.