The Zumwalt-class destroyer (DDG-1000) is the latest design in United States Navy destroyers. This advanced-technology, multi-mission ship will focus on land attack. With the latest state-of-the-art information technologies, the Zumwalt-class destroyer is designed to operate seamlessly with other naval, ground and land-based air forces in accordance with the Navy's "Network-Centric Warfare" concept of operations for the 21st Century architecture, with the ability to simultaneously handle multiple land and maritime threats.

Features of this new class of warship include a low radar profile, integrated power system, total ship computing environment infrastructure, serving as the ship's primary LAN, automated fire-fighting systems and automated piping rupture isolation. It is designed for a smaller crew to be less expensive to operate.

The ships will include an automated fire suppression system which is an advanced automated damage-control system that combines sensors, cameras and automated firefighting capabilities to ensure that the Zumwalt class ship has the fastest possible response time to life- and ship-threatening events. This system improves survivability in both peacetime and wartime while reducing the number of crew members needed for damage control.

Supporting the fire system is the Fire Detection system supplied by Meggitt Safety Systems that includes smoke, heat and flame detection capability. The system includes Very Early Smoke Detection Apparatus (VESDA) aspiration smoke detectors and Meggitt IR5 flame detectors providing fire detection capability with a low false alarm rate. Meggitt is a leading provider of shipboard fire detection systems for the U.S. Navy with products designed for the rugged, harsh environments of these applications. For proper operations, it was necessary to interface these detectors to a LonWorks based network and the fire system on board the DDG-1000.

Sierra Monitor was asked by Meggitt Safety Systems to quickly and reliably design the VESDA and MODBUS RTU to LonWorks protocol interfaces necessary to integrate the smoke and flame detectors to the LonWorks network. Sierra Monitor's extensive protocol library and experience provided the solution for this network integration.

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VESDA is a trademark of Xtralis Corporation
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