The Maritime Safety Award, for technological achievement, was awarded to ASC Shipbuilding for the work of its Emergency Response Group and the Electrical and Controls Team in developing an integrated fire detection and broadcasting system to improve the safety of both the workforce and the ship during construction. The challenge which was successfully met by ASC was to devise a system which effectively met the requirements of both old and new construction facilities, and modern production techniques.

In just over a decade ASC Shipbuilding has constructed a world class shipbuilding facility and developed an end to end shipbuilding capability through its highly qualified workforce. ASC is delivering three of the most advanced and complex warships ever built in Australia for the Royal Australian Navy. ASC prides itself in making Safety its number 1 priority and the above has been achieved with a good safety record with no major fires resulting in the no loss of personnel or plant.

Before the start of Production in 2010, a safety gap analysis was undertaken on the facility and the methodology of building the Air Warfare Destroyer (AWD) in the ASC Shipyard. The facility was a combination of both new and old buildings which consisted of varying levels of fire detection systems, ranging from none to the latest Australian Building Code standards.

The methodology used to build the AWD consists of the construction of smaller blocks (modules) in differing locations throughout the ASC Shipyard and consolidating them to complete a full ship. Each block is able to be moved between locations to enable specific tasks to be performed during each stage of the build. However there was no fire detection system on the blocks or until the fire detection systems on the ship had passed functional testing.

The problem was therefore how do we provide one fire detection and broadcasting system that can meet the needs of a Ship during build and also a facility with varying levels of fire detection systems installed, in order to protect ASC employees and the Ship during Build?

The solution was to build an Emergency Management Infrastructure, with Equipment and ERG Team that would integrate the facility and Ship Construction process together to provide one fire detection system that can be monitored from one location - Main Security Building (MSB).

The technological solution was the in house design and build of Portable Alarm Control Panels (PACP) by the Electrical and Controls Team. The PACP are a portable frame used for the management of fire detection and broadcasting during the block stage of the Ship Build Process. It consists of a Fire Indication Panel (FIP) with in-built Manual Call Point (MCP) and has the ability to connect additional audible alarms, flashing lights, MCP's and smoke detectors, which can be mounted easily throughout the Block or the area where the PACP is to provide coverage. The design included a philosophy of maximum "plug and play" interconnectivity of the fire detection and escalation equipment. Up to a maximum of 64 MCP’s or smoke detectors can be added to each circuit. This meant as the Ship grew during consolidation, so could the fire detection and broadcasting system.
The PACP assembly also incorporates a radio transmitter for incident monitoring and escalation to the MSB. Each radio transmitter is uniquely numbered so as to be instantly identified at the MSB should an alarm be activated and the ERG could respond to.

The ERG are integral to the system solution for the process and procedures that were developed in house for the Emergency Management System. The ERG were formed as part of the safety gap analysis in 2010 and worked alongside the Electrical and Controls Team in developing an integrated solution to the problem. The ERG, who are volunteers from within the organisation, are the first responders to any incident. The ERG Team are trained in fire, first aid and rescue. They incorporated into the PACP’s a state board which every employee must put his named tag on before entering any block during construction. That way during an evacuation the tags are removed and the ERG can identify any employees left on board.

This ASC in house designed, built and proven over the last 8 years, Emergency Management System can easily be adapted to off-site locations to support work on any ships during maintenance or build.