

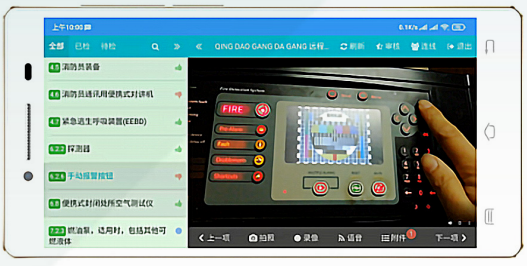
New Survey Technology and Equipment Laboratory

—New Survey Technology and Equipment Laboratory - Promoting the application of innovative ship survey means

Focusing on the construction of remote and intelligent survey capabilities, the Laboratory is engaged in technical services for remote survey, development and application of new ship survey equipment.

1. Technical service for remote survey of ships

- Key technical system and series of rules and standards for remote survey of ships have been established to guarantee quality and efficiency
- The multiple terminal+ship-to-shore coordinated scenario-based remote survey software system is developed
- The "5G/4G/VSAT+ AD hoc networking" communication in the enclosed space of ships is developed
- The technology and equipment for "5G+UAV"collection, transmission and remote control of remote survey images in enclosed space of ships are developed
- "3+1" remote ship survey service base has been established
- Remote survey has been carried out for over 1,600 ships





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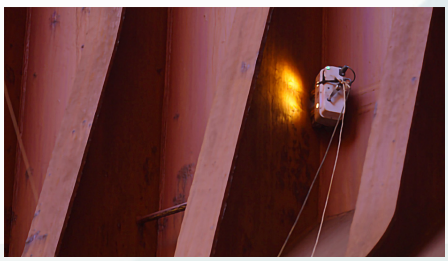


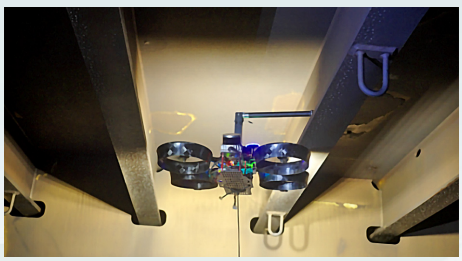
2. Development and application of new ship survey equipment

● A variety of UAV and robot has been developed to carry out close-up inspection and thickness measurement of ships, promoting solidly the application of remote inspection technology (RIT)







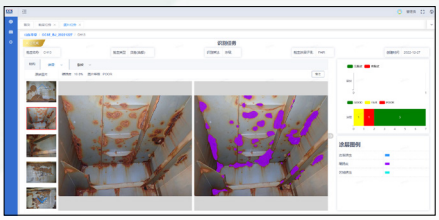


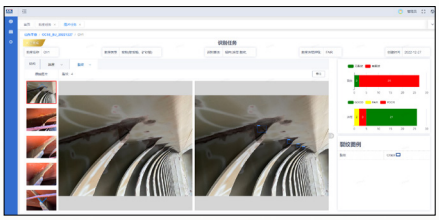
3. Intelligent survey capacity building

● The sample database of nearly 40,000 images covering typical hull structures and defects (including toe, longitudinal penetration, trough bulkheads, manholes and other structural nodes, coating damage, cracks and other defects) has been established

● Hull structure and defect image recognition algorithm model (toe end, longitudinal penetration, trough bulkhead, coating damage, cracks, etc.) based on deep learning is established

● Intelligent hull structure defect diagnosis system based on image recognition technology is developed





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