One of the ways CTC reduces sea system total ownership cost is by developing prototype mechanized tools that address shipbuilding issues. For example, Ingalls Shipbuilding is implementing two mechanized tools that will reduce the labor to install cables by 20% on the ships constructed there. Ingalls Shipbuilding photo

Concurrent Technologies Corporation (CTC) is an independent, nonprofit, applied scientific research and development organization. As a nonprofit, CTC partners with clients to provide the best possible advanced engineering & manufacturing solutions. We offer extensive sea systems expertise, including:
- Manufacturing Innovation
- Prototype System Development
- Ship Structure & Materials
- Shipyard Process Improvements

CTC’s quality management system is certified to the ISO 9001:2015 and AS9100D:2016; CTC’s environmental management system is certified to 14001:2015.
CTC drives new technologies from research and development to sea systems application by implementing new technologies that will improve performance and by developing new manufacturing techniques that lower production costs.

In order to develop mechanized tools that effectively address shipyard manufacturing issues, CTC employs an iterative prototype approach, leveraging internal, industry, and shipyard expertise throughout the process.

CTC subject-matter experts help our clients develop and evaluate solutions that balance mission and performance requirements with life-cycle cost consideration. Through the investigation and analysis of proper materials and selection of available coatings, CTC designs systems capable of preventing, controlling, and mitigating corrosion.

By optimizing designs for maintainability throughout the life-cycle of components and systems, CTC helps reduce total ownership cost. In addition, we improve manufacturing processes to reduce clients’ acquisition costs.

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Integrated metrology approach to improve labor costs and schedule for several ships
Identified and optimized advanced metrology solutions, including laser scanning, to address construction alignment issues resulting from ship structure components being manufactured independently before being integrated into larger builds. Ingalls Shipbuilding (Ingalls) has begun implementation on all ship classes it constructs. The potential five-year savings are $4.3 million, based on reduced rework and schedule impacts.

Mechanized tools to reduce labor for pulling cable on surface ships
Developed easy-to-use, small, lightweight, power-assisted tools to reduce the amount of time and effort required to pull cable on a surface ship. The prototype tools have been used at Ingalls to install larger diameter cables on DDG and LHA. Ingalls plans to purchase more tools for the installation of Class III and IV cables on the ships it constructs. A 20% labor savings is expected.

HSLA-115 reducing top-side weight for CVN 78
Increased the performance of HSLA-100 steel through heat treatment so that it could be used at reduced thickness, and thus, reduced weight for CVN 78 class aircraft carriers. The use of HSLA-115 steel (named for its increased yield strength of 115 ksi) was used in the CVN 78 baseline design and implemented ahead of schedule in 2009. HSLA-115 reduced top-side weight by 100 to 200 long tons per hull.

Ingalls implements DDG 51 sonar dome manufacturing improvements ahead of schedule
Streamlined processes and procedures to fabricate the DDG 51 class sonar dome, which has a complex geometry and is challenging to construct. Ingalls is using two material removal tools (a mechanical arm and a plasma cutting and gouging system) for several ship classes, which are reducing labor and saving $15 million over five years.

Core Capabilities
- CTC drives new technologies from research and development to sea systems application by implementing new technologies that will improve performance and by developing new manufacturing techniques that lower production costs.
- In order to develop mechanized tools that effectively address shipyard manufacturing issues, CTC employs an iterative prototype approach, leveraging internal, industry, and shipyard expertise throughout the process.
- CTC subject-matter experts help our clients develop and evaluate solutions that balance mission and performance requirements with life-cycle cost consideration. Through the investigation and analysis of proper materials and selection of available coatings, CTC designs systems capable of preventing, controlling, and mitigating corrosion.
- By optimizing designs for maintainability throughout the life-cycle of components and systems, CTC helps reduce total ownership cost. In addition, we improve manufacturing processes to reduce clients’ acquisition costs.