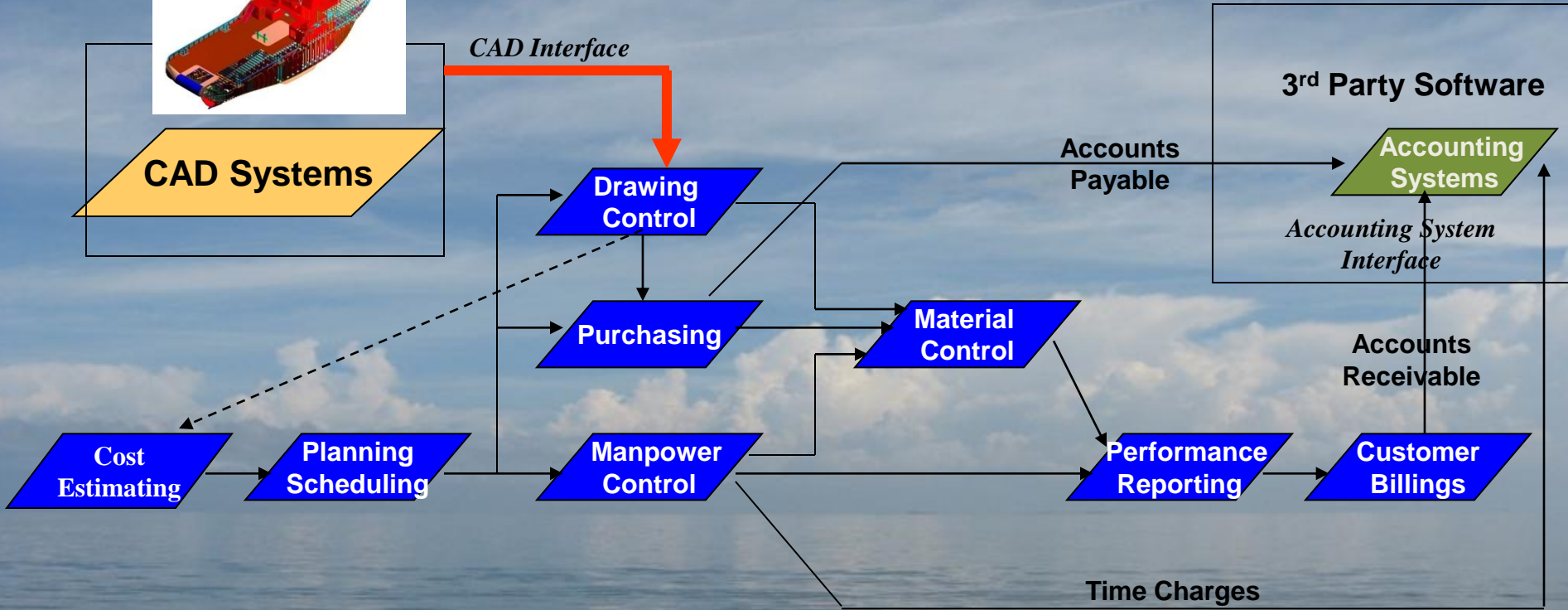
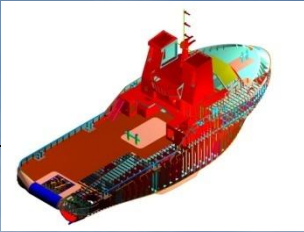


SPAR Associates, Inc.

Over 40 Years serving the shipbuilding and repair industry with computer systems for better planning and managing production operations.

Integrated Software Solutions

- **Cost Estimating**
- **Planning & Scheduling**
- **Labor Work Order & Time Charge Management**
- **Material Purchasing & Inventory Control**
- **Job Costing & Forecasting**
- **Activity-Based Accounting - Direct & Indirect Costs**
- **Government Cost/Schedule Control Systems Reporting**
- **Contract Change Order Management**

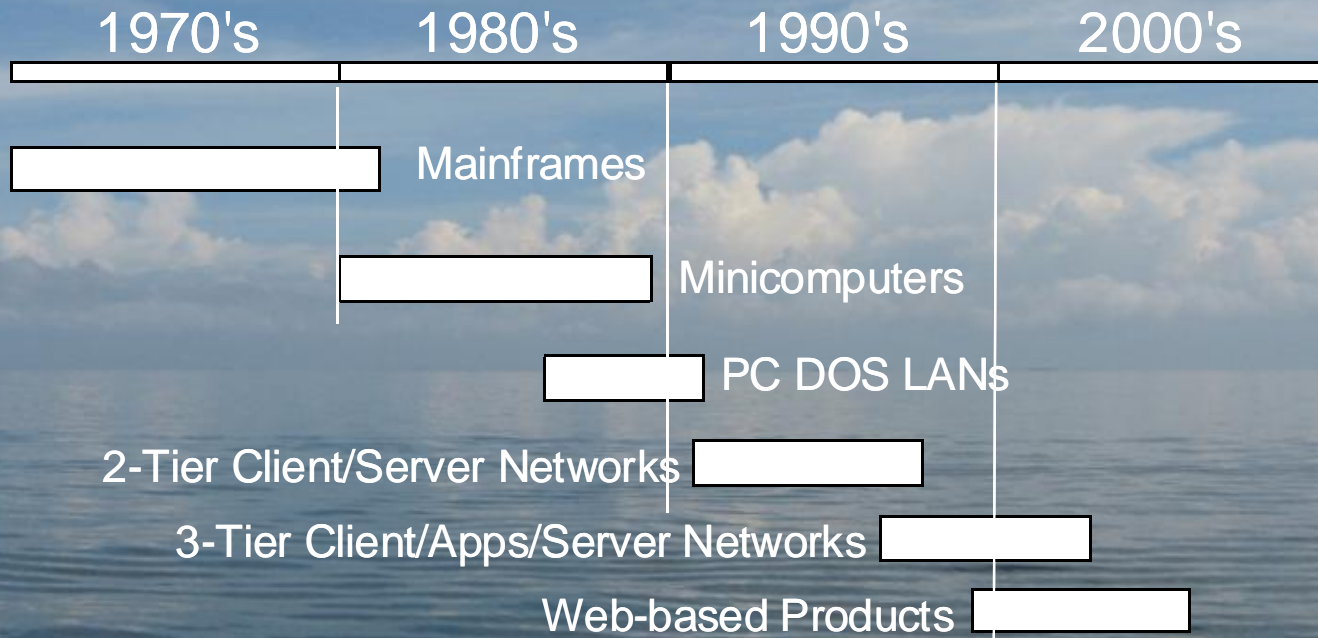


PERCEPTION®, an Integrated Shipyard Planning & Resource Management System

SPAR's Business Focus

- **Software to Support Shipbuilding (Commercial & Naval)**
- **Software to Support Ship Repair, Overhauls & Modernization Projects (Commercial & Naval)**
- **Services to Support Shipyard Planning & Project Management**
- **Independent Cost Estimating Services to Support Shipyards, Ship Owners, Design Agents & Government Agencies**
- **Management Consulting Services**

SPAR's Technology Advances



Support Services

- Training
- Customized Software Development
- Systems Integration
- Data Conversion
- Software Maintenance
- Management Consulting
- Independent Cost Estimating

Samples of Independent Commercial Cost Estimates

- **San Francisco Transit Authority Fast Ferry Designs**
- **NYC Sludge Tanker**
- **Short Sea Shipping High-Speed Trimaran**
- **Commercial SWATH/SLICE Cost Model**
- **Product Carriers & Alaskan Crude Tankers**
- **Barges & Towboats**
- **Hydrographic Research Vessels**
- **Search & Rescue Vessels**
- **Fire Control Vessels**
- **Containership Conversions**
- **Forebody Replacement Cost Studies**
- **Alternate LNG Tank Design Cost Study**
- **Alternate Bulkhead Design Cost Study**

Samples of Independent Military Cost Estimates

- Navy Joint High Speed Vessels (JHSV) Trimaran & Catamaran Transport Ships
- Navy Joint High Speed Sealift (JHSS) Trimaran Transport Ship
- Navy High Speed Sealift (HSS) Vision Composite Trimaran Transport Ship
- Navy Rapid Strategic Lift Ship (RSLs) Mono-Hull
- Navy Heavy Air Lift Seabasing Ship (HALSS) Trimaran
- USCG Cutters, Patrol Boats & Buoy Tenders Cost Models
- USCG Fast Response Cutter (FRC) “B” Design Alternatives in Steel, Composite & Aluminum
- USCG National Security Cutter (NSC) Design/Construction Cost Alternatives
- Navy Aircraft Carrier HVAC Modernization

Established Cost Estimating Libraries

- “Commercial Shipbuilding New Construction Cost Estimating Relationships”
- “U.S. Navy Shipbuilding New Construction Cost Estimating Relationships”
- “Commercial & Government Ship Repair Cost Estimating Relationships”

Cost Models

The *SPAR* Cost Models (Mono-Hull, Trimaran & Catamaran) are used to estimate concept and preliminary ship designs.

The cost models permit quick assessments of costs, risk, and design/mission cost trade-off and build strategy alternatives.

Special variant mono-hull cost models include:

- *Tankers & Product Carriers*
- *Container Ships*
- *Bulk Carriers*
- *Patrol Boats, Cutters & Frigates*
- *Hydrographic & Research Ships*
- *RO-PAX Trailer Ships*

• *Also, SPAR's Ship Repair & Maintenance Cost Model provides a thorough means for estimating these costs quickly.*

Technical Publications

- “Shipyard Cost Estimating”
- “Expanded Modularization, Ship Design & Construction”
- “ Estimating Coating Costs for Ships”
- “Planning New Construction & Major Ship Conversions”
- “Guide For Shipyard Material Control”
- “Full Implementation of a Shipbuilder’s Earned Value Management System (EVMS)”
- SNAME “Ship Design and Construction,” Chapter 10, Cost Estimating with J. Trumbule, NSWCCD.