An Estimating System
For
New Construction & Ship Repair

PERCEPTION ESTI-MATE
PERCEPTION was developed to permit cost estimating that can reflect modern ship design and production methods.

Using product- and process-based information, cost estimates can be generated quickly and accurately at any level of detail:

- **Parametric cost estimates** based upon modifiable ship design and mission characteristics
- **Standard shipbuilding & ship repair interim products & services**
- **Detail cost estimates** based upon engineered bills of material and equipment specifications.
System Benefits

1. *PERCEPTION* has **flexible features** to address almost any estimating situation, whether for commercial or government requirements.

2. *PERCEPTION* offers a **toolbox of easy-to-use functions** to help the estimator expedite the process and ensure the estimate is both complete and accurate.

3. *PERCEPTION* allows cost data to be cataloged in convenient and easy-to-use database libraries.

4. *PERCEPTION* cost libraries ensure all estimators are using **consistent information**.

5. *PERCEPTION* libraries can be configured to accurately define standard shipyard production processes to ensure every estimate is complete, nothing is missing.
Benefits for the Estimator: Provide an estimating tool that provides an array of functional capabilities:

- Automated Cost Escalation
- Global Edits and Update Features
- Application of Learning Curves
- Complexity & Productivity Factors
- Cost Trade-Off
- Cost Risk Analysis
- Return Cost Data Analysis
- User Documentation of Cost Estimate
- Tracking of Estimate Sources and Changes
- Central database of important cost information
- An estimating tool that is easy to use and easy to learn
ESTI-MATE Integrates The Shipyard Business Processes:

- Provides a system that can operate across different business units
- Provides a system that can interface easily with other systems and popular desktop software products.
- Provides a system that can interface with design and engineering (CAD/CAE) systems
- Provides a system that can interface with shipyard production control systems
ESTI-MATE develops estimates at various stages of design:

1. **Concept Design** using parametric formulas & cost models

2. **Preliminary Design** using historical data and libraries of standard work packages

3. **Contract Design** using library work packages & detail bills of material

4. **Ship Repair & Overhauls** using library work packages & detail bills of material
General Features

1. Breakout of labor, material & subcontractor costs
2. Automated calculations of labor, taxes, & indirect costs from rate tables
3. Multi-year and multiple work center rates
4. Multi-ship contract proposals
5. Convenient global copy, change & delete functions
6. Ship weight control reporting
ESTI-MATE is a relational database system cataloging costs in unique formats that enable estimates to be developed and reviewed from many different points of view.
1. By ship engineered systems work breakdown structure (SWBS)

2. By construction interim product (ship zones, hull blocks, units, etc.) work breakdown structure (PWBS)

3. By shipyard chart of accounts (“COA”) of departments, work centers & work stations

4. By contract line item (CLIN)

5. By ship repair work item or paragraph
Summarizing Costs Up Through Various Work Breakdown Structures

Contracts may have multiple "projects"

- PWBS
  - Ship Zones
    - Cutter Zones
    - Grand Blocks
  - Units Blocks
  - Assemblies
  - Sub-Assemblies
  - Mfg Parts

- SWBS
  - SWBS Groups
  - Ship Systems

- COA
  - Departments
  - Stages
  - Work Stations

For summarizing costs by Standard Shipyard WBS

For summarizing costs by Ship Owner's WBS

Detail cost items of the estimate reference whatever WBS is being used for the project.
Multi-Ship/Project Contract
Work Breakdown Structures
Special libraries can be developed:

• Prior Contracts
• Standard Production Rates
• Standard Material Costs
• Standard Work Packages
• Cost Estimate Formulas & Equations
PERCEPTION manages extensive cost estimating libraries

1. Various libraries of Cost Estimating Relationships ("CERs")

2. Standard Parts Catalog for detail parts costs

3. Standard Interim Products & Services Packages that identify standard manufacturing, assembly and support operations plus material requirements

4. Rate & Cost Escalation tables
Develop Libraries of Labor & Material Cost Packages:

- Complete Equipment Packages
- Cargo Zone Packages
- Accommodations Outfit Packages
- Safety Equipment Packages
- Electronics Packages
- Shipyard Services Packages

.....and more.
Typical Standard Unit Costs for shipyard production processes:

1. Hull block construction by type of structural assembly
2. Piping systems by size & type pipe
3. Electrical system by size & type cable
4. Standard costs per linear, square & cubic units of measure
5. Standard costs for production services
### Interim Product Packages for the Estimating Environment

<table>
<thead>
<tr>
<th>Package ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1AL-APEAK</td>
<td>Aft Peak</td>
</tr>
<tr>
<td>2AL-BHD-CRGL</td>
<td>Corregated Bhds</td>
</tr>
<tr>
<td>3AL-BHD-ER</td>
<td>Engine Room Bulkhead</td>
</tr>
<tr>
<td>4AL-BHD-L</td>
<td>Longitudinal Bhds - Av.</td>
</tr>
<tr>
<td>5AL-BHD-SCRN</td>
<td>Screen Bulkheads</td>
</tr>
<tr>
<td>6AL-BHD-T</td>
<td>Transverse Bhds - Av.</td>
</tr>
<tr>
<td>7AL-BTHRST</td>
<td>Bow Thruster Unit - Av.</td>
</tr>
<tr>
<td>8AL-BULWARK</td>
<td>Bulwarks (Average)</td>
</tr>
<tr>
<td>9AL-CASING</td>
<td>Elevator Casing</td>
</tr>
<tr>
<td>10AL-CROSTK</td>
<td>Aft Cross Tanks</td>
</tr>
<tr>
<td>11AL-DBTM-10</td>
<td>Double Bottoms (Av. 10% Shaped)</td>
</tr>
<tr>
<td>12AL-DBTM-25</td>
<td>Double Bottoms (Av. 25% Shaped)</td>
</tr>
<tr>
<td>13AL-DBTM-50</td>
<td>Double Bottoms (Av. 50% Shaped)</td>
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<tr>
<td>14AL-DBTM-75</td>
<td>Double Bottoms (Av. 75% Shaped)</td>
</tr>
</tbody>
</table>

### Package Detail Information for the Estimating Environment

<table>
<thead>
<tr>
<th>Package ID</th>
<th>Package Item ID</th>
<th>Description</th>
<th>Quantity</th>
<th>UoM</th>
<th>Work Center</th>
<th>SWBS Account</th>
<th>Labor CER</th>
<th>Material CER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1AL-BHD-ER</td>
<td>01</td>
<td>Engine Room Bulkhead Prep &amp; Fab</td>
<td>1.00</td>
<td>MTOI</td>
<td>0</td>
<td>100</td>
<td>13,550.6</td>
<td>0.0000</td>
</tr>
<tr>
<td>2AL-BHD-ER</td>
<td>02</td>
<td>Engine Room Bulkhead Assemble</td>
<td>1.00</td>
<td>MTOI</td>
<td>0</td>
<td>100</td>
<td>141,341.7</td>
<td>0.0000</td>
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<tr>
<td>3AL-BHD-ER</td>
<td>03</td>
<td>Engine Room Bulkhead Erect</td>
<td>1.00</td>
<td>MTOI</td>
<td>0</td>
<td>100</td>
<td>69,594.9</td>
<td>0.0000</td>
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<tr>
<td>4AL-BHD-ER</td>
<td>04</td>
<td>Engine Room Bulkhead Weldout</td>
<td>1.00</td>
<td>MTOI</td>
<td>0</td>
<td>100</td>
<td>373,434.7</td>
<td>0.0000</td>
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<tr>
<td>5AL-BHD-ER</td>
<td>05</td>
<td>Mild Steel (A, B, C, CS, D, E)</td>
<td>1.00</td>
<td>MTOI</td>
<td>0</td>
<td>100</td>
<td>0.0000</td>
<td>$1,035,680</td>
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<td>25AL-DECK-UPROM</td>
<td>Upper Prom Deck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26AL-DECK-WTHR</td>
<td>Weather Decks - Av.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27AL-DKHSE-AV</td>
<td>Deckhouse - Total Av.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28AL-FND-EQUIP</td>
<td>Foundations - Misc. Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Putting together an estimate from manual cost entries and from cost libraries.

- CER Libraries
- Parts Catalog
- Standard Package Library Cost Items
- Project Estimate
- Manual Cost Items
### Sample List of Standard Estimating Packages

<table>
<thead>
<tr>
<th>Package</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 TA-Boiler</td>
<td>Boiler package</td>
</tr>
<tr>
<td>55 TA-Compressed Air</td>
<td>Compressed air system package</td>
</tr>
<tr>
<td>56 TA-Cooling</td>
<td>Central cooling package</td>
</tr>
<tr>
<td>57 TA-EOS</td>
<td>Engineering operating station package</td>
</tr>
<tr>
<td>58 TA-FO Pure</td>
<td>Fuel oil purification system</td>
</tr>
<tr>
<td>59 TA-FO Trans</td>
<td>Fuel oil transfer system</td>
</tr>
<tr>
<td>60 TA-H2O Treat</td>
<td>Water treatment system</td>
</tr>
<tr>
<td>61 TA-Hydraulic</td>
<td>Hydraulic service pack</td>
</tr>
<tr>
<td>62 TA-Inert gas</td>
<td>Inert gas system</td>
</tr>
<tr>
<td>63 TA-LO Pure</td>
<td>Lube oil purification system</td>
</tr>
<tr>
<td>64 TA-LO Service</td>
<td>Lube oil service system</td>
</tr>
<tr>
<td>65 TA-MSD</td>
<td>Marine sanitation package</td>
</tr>
<tr>
<td>66 TA-Potable</td>
<td>Potable water system</td>
</tr>
<tr>
<td>67 TA-Reefer</td>
<td>Refrigeration and chilled water package</td>
</tr>
<tr>
<td>68 TA-Seawater</td>
<td>Seawater system</td>
</tr>
<tr>
<td>69 TA-Sludge</td>
<td>Sludge transfer system package</td>
</tr>
<tr>
<td>70 TA-Spares</td>
<td>Spare parts package</td>
</tr>
<tr>
<td>71 TA-Workshop</td>
<td>Workshop package</td>
</tr>
<tr>
<td>72 TD-Accommodations</td>
<td>Outfit costs of the deckhouse accommodations</td>
</tr>
<tr>
<td>73 TD-CargoHandling</td>
<td>Tanker cargo handling package</td>
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<tr>
<td>74 TD-CrewCosts</td>
<td>Annual salary and benefit cost of ship’s normal crew compliment</td>
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<tr>
<td>75 TD-Design</td>
<td>Engineering and design package</td>
</tr>
<tr>
<td>76 TD-Generator</td>
<td>Generator package</td>
</tr>
<tr>
<td>77 TD-Machinery</td>
<td>Engine room support services</td>
</tr>
<tr>
<td>78 TD-MainEngine</td>
<td>Main engine package</td>
</tr>
</tbody>
</table>
Sample Standard Package Item List

<table>
<thead>
<tr>
<th>Package</th>
<th>It ID</th>
<th>It Description</th>
<th>Quantity</th>
<th>UoM</th>
<th>Labor Hours</th>
<th>Material Cost</th>
<th>Work Center</th>
<th>SWBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PME1</td>
<td>1</td>
<td>Main Engine</td>
<td>1.00</td>
<td>EA</td>
<td>0.00</td>
<td>$6,500,000.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>2</td>
<td>Gearbox</td>
<td>1.00</td>
<td>EA</td>
<td>0.00</td>
<td>$75,000.00</td>
<td>25</td>
<td>241</td>
</tr>
<tr>
<td>PME1</td>
<td>3</td>
<td>Mfg hold-down bolts</td>
<td>1.00</td>
<td>PKG</td>
<td>500.00</td>
<td>$5,000.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>4</td>
<td>Machine M/E &amp; G/B Chocks</td>
<td>1.00</td>
<td>PKG</td>
<td>600.00</td>
<td>$6,000.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>5</td>
<td>Land Main Engine</td>
<td>1.00</td>
<td>PKG</td>
<td>300.00</td>
<td>$0.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>6</td>
<td>Land Gear Box</td>
<td>1.00</td>
<td>PKG</td>
<td>200.00</td>
<td>$0.00</td>
<td>25</td>
<td>241</td>
</tr>
<tr>
<td>PME1</td>
<td>7</td>
<td>Align &amp; Chock Main Engine</td>
<td>1.00</td>
<td>PKG</td>
<td>900.00</td>
<td>$0.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>8</td>
<td>Align &amp; Chock Gear Box</td>
<td>1.00</td>
<td>PKG</td>
<td>500.00</td>
<td>$0.00</td>
<td>25</td>
<td>241</td>
</tr>
<tr>
<td>PME1</td>
<td>9</td>
<td>Fit Main Engine &amp; Gear Box Coupling</td>
<td>1.00</td>
<td>PKG</td>
<td>200.00</td>
<td>$0.00</td>
<td>25</td>
<td>242</td>
</tr>
<tr>
<td>PME1</td>
<td>10</td>
<td>Install collision chocks</td>
<td>1.00</td>
<td>PKG</td>
<td>50.00</td>
<td>$2,500.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>11</td>
<td>Run &amp; test main engine machinery</td>
<td>1.00</td>
<td>PKG</td>
<td>200.00</td>
<td>$0.00</td>
<td>25</td>
<td>233</td>
</tr>
<tr>
<td>PME1</td>
<td>12</td>
<td>Fab &amp; Install M/E Seats</td>
<td>1.00</td>
<td>PKG</td>
<td>3,500.00</td>
<td>$126,000.00</td>
<td>25</td>
<td>182</td>
</tr>
</tbody>
</table>
*ESTI-MATE* provides a toolbox of special functions to add, change and delete data:
Plug & Play different module & package options

Plug & Play different manufacturing & outsourcing options

Plug & Play different schedule options
In addition to a wide variety of standard reports........,
an optional graphical report writer, as well as Standard Query Language (SQL), is available for customized reports and output formats.
### Summary of Costs by Ship Systems Work Breakdown Structure

#### Chesapeake Marine Industries

**SWBS Account Summary Report (SUM03)**

**Contract PD-337 - Multiple Commercial Cargo Ship Program - Estimating**

<table>
<thead>
<tr>
<th>Account Description</th>
<th>Labor</th>
<th>Labor</th>
<th>Material</th>
<th>SubCon</th>
<th>SubCon</th>
<th>Travel</th>
<th>Direct</th>
<th>Taxes</th>
<th>Indirect</th>
<th>Total</th>
<th>Profit</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hours</td>
<td>Cost</td>
<td>Cost</td>
<td>Hours</td>
<td>Cost</td>
<td>Hours</td>
<td>Cost</td>
<td>Hours</td>
<td>Cost</td>
<td>Cost</td>
<td>Hours</td>
<td>Cost</td>
</tr>
</tbody>
</table>

**Project 337 - Ship 11 Sample Detail Cost Estimate**

**Group 3: Electric Plant**

- **321 Ship Service Power Cables**
  - 33,000 Labor Hours
  - 503,500 Material Cost
  - 1,740,000 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 2,245,500 Direct Cost
  - 43,500 Taxes
  - 479,405 Indirect Cost
  - 2,766,405 Total Cost
  - 193,041 Profit
  - 2,056,346 Total

- **322 Emergency Power Cable System**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **323 Casualty Power Cable System**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **324 Switch Gear & Panels**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **331 Lighting Distribution**
  - 21,000 Labor Hours
  - 250,440 Material Cost
  - 790,120 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 1,070,560 Direct Cost
  - 10,722 Taxes
  - 258,842 Indirect Cost
  - 1,388,080 Total Cost
  - 96,437 Profit
  - 1,454,917 Total

- **332 Lighting Fixtures**
  - 9,150 Labor Hours
  - 121,238 Material Cost
  - 329,400 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 450,638 Direct Cost
  - 9,235 Taxes
  - 108,382 Indirect Cost
  - 567,254 Total Cost
  - 40,266 Profit
  - 507,510 Total

- **341 SSTG Lube Oil**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **342 Diesel Support Systems**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **343 Turbine Support Systems**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **398 Electric Plant Operating Fluids**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **398 Electric Plant Repair Parts & Tools**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

**Group 3 Totals**

- **76,819 Labor Hours**
- **1,017,552 Material Cost**
- **3,279,880 SubCon Hours**
- **0 SubCon Cost**
- **0 Travel Cost**
- **4,297,878 Direct Cost**
- **41,987 Taxes**
- **950,529 Indirect Cost**
- **5,338,403 Total Cost**
- **369,446 Profit**
- **5,695,850 Total**

**Group 4: Command & Surveillance**

- **400 Command & Surveillance**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **401 General Arrangement - Command & St**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **402 Security**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **403 Personnel Safety**
  - 600 Labor Hours
  - 7,950 Material Cost
  - 21,600 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 28,550 Direct Cost
  - 540 Taxes
  - 7,107 Indirect Cost
  - 35,577 Total Cost
  - 2,640 Profit
  - 35,837 Total

- **404 Radio Frequency Transmission**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **405 Antennas**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total

- **450 Operations & Training**
  - 0 Labor Hours
  - 0 Material Cost
  - 0 SubCon Hours
  - 0 SubCon Cost
  - 0 Travel Cost
  - 0 Direct Cost
  - 0 Taxes
  - 0 Indirect Cost
  - 0 Total Cost
  - 0 Profit
  - 0 Total
# Summary of Costs by Product Work Breakdown Structure

## Chesapeake Marine Industries

### PWBS Zone Summary Report (SUM04)

**Contract PD-337: Multiple Commercial Cargo Ship Program - Estimating Der**

<table>
<thead>
<tr>
<th>Zone Description</th>
<th>Labor Hours</th>
<th>Labor Cost</th>
<th>Material Cost</th>
<th>SubCon Hours</th>
<th>SubCon Cost</th>
<th>Travel Cost</th>
<th>Direct Cost</th>
<th>Indirect Cost</th>
<th>Total Cost</th>
<th>Profit</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Ship Design &amp; Engineering</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>02 Shipyard Support Services</td>
<td>329,098</td>
<td>4,393,310</td>
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24
# Cost Item Detail Listings

**Chesapeake Marine Industries**

**Cost Item Listing by SWBS Accounts (C103)**

**Contract PD-337 Multiple Commercial Cargo Ship Program - Estimating Demo**

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<th>Cost Center</th>
<th>Item Heading</th>
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<th>Group Range</th>
<th>Account Range</th>
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<th>UoM</th>
<th>Labor CER</th>
<th>Matl CER</th>
<th>Labor Hours</th>
<th>Labor Cost</th>
<th>Material Cost</th>
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## Sample Summary Cost Proposal

**Chesapeake Marine Industries, Inc.**

**Estimate Date:** 08/08/2002

### TO CUSTOMER

400 Seventh Street SW  
Washington, DC  20590

### ESTIMATE

**Contract PD-337 - Multiple Commercial Cargo Ship Program - Estima**

**Project 337 - Ship #4 Sample Detail Cost Estimate**

### PROPOSAL FROM

Chesapeake Marine Industries  
627 West Street  
Annapolis, MD  21401

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<th>Description</th>
<th>Unit Price</th>
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PERCEPTION has full Import/Export capabilities from

- Microsoft Excel
- Microsoft ACCESS
- dBASE
- Paradox
- ASCII Text Files
- SQL ODBC Databases
System’s Integration

CAD Systems

Accounting Systems

PERCEPTION

Desktop & Internet Products

- Volo View Express
- Acrobat Assistant
- Internet Explorer
- Outlook Express

- Microsoft Access
- Microsoft Excel
- Microsoft FrontPage
- Microsoft Outlook
- Microsoft PowerPoint
- Microsoft Word
PERCEPTION ESTIMATE is fully integrated with other PERCEPTION Shipyard Management Functions.
An integrated system of shipyard business functions.
Directly from the estimate, *PERCEPTION* can be directed to create ......

- Work Orders ready for execution
- Material Requisitions ready for purchasing or stock reservations
Pre-Developed Databases that are available for purchase:

1. Ship Repair Unit Cost Library (CERs)
2. Commercial New Construction Unit Cost Library (CERs)
3. Parametric Mono-Hull Cost Model
4. Parametric Catamaran Cost Model
5. Parametric Trimaran Cost Model
6. Parametric Cost Models - Patrol Boat, Cutter, Corvette & Frigate Cost Model; Tanker/Product Carrier, RO-PAX; Container Ship; Bulk Carrier; Hydrographic/Research Vessel; Tank Barges; Forebody Replacement
SPAR Associates, Inc.

Over 30 Years Providing

• Shipyard management software
• Software development services
• Training & maintenance support
• Planning & scheduling services
• Cost estimating services
• Management consulting
Over 35 Years Serving the Shipbuilding & Repair Industry

Spar Associates, Inc.
927 West Street
Annapolis, MD 21401 USA