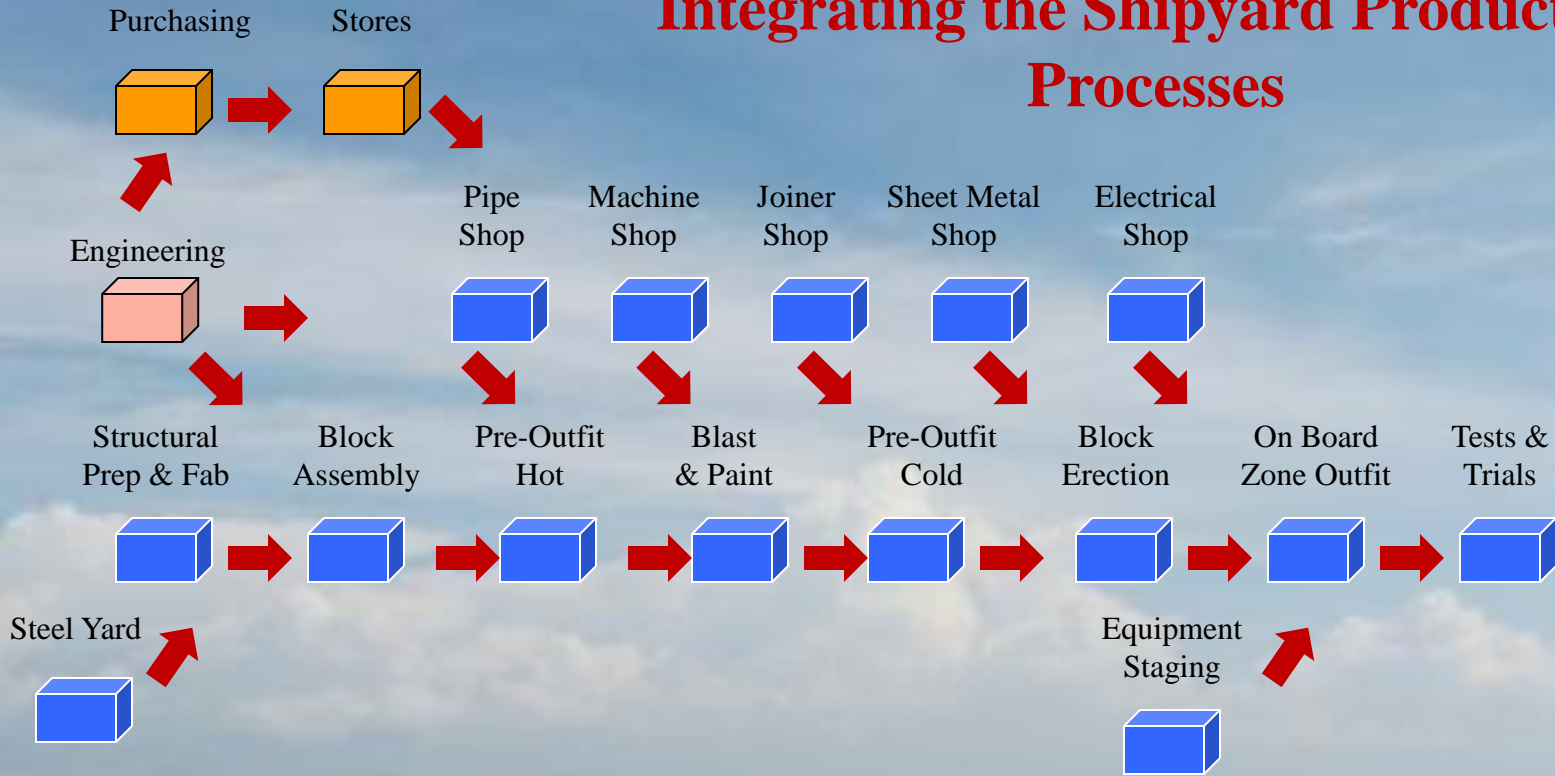


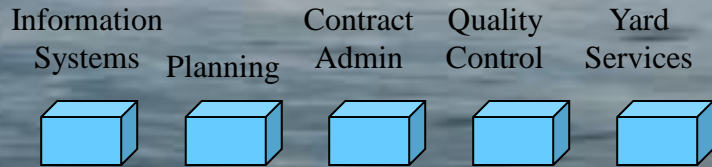
PERCEPTION[®]

**A Shipbuilder's Enterprise Resource Planning (ERP) &
Earned Value Management (EVM) System**

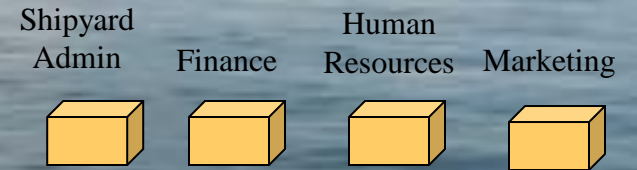
Integrating the Shipyard Production Processes



Support Services



Shipyard Administration

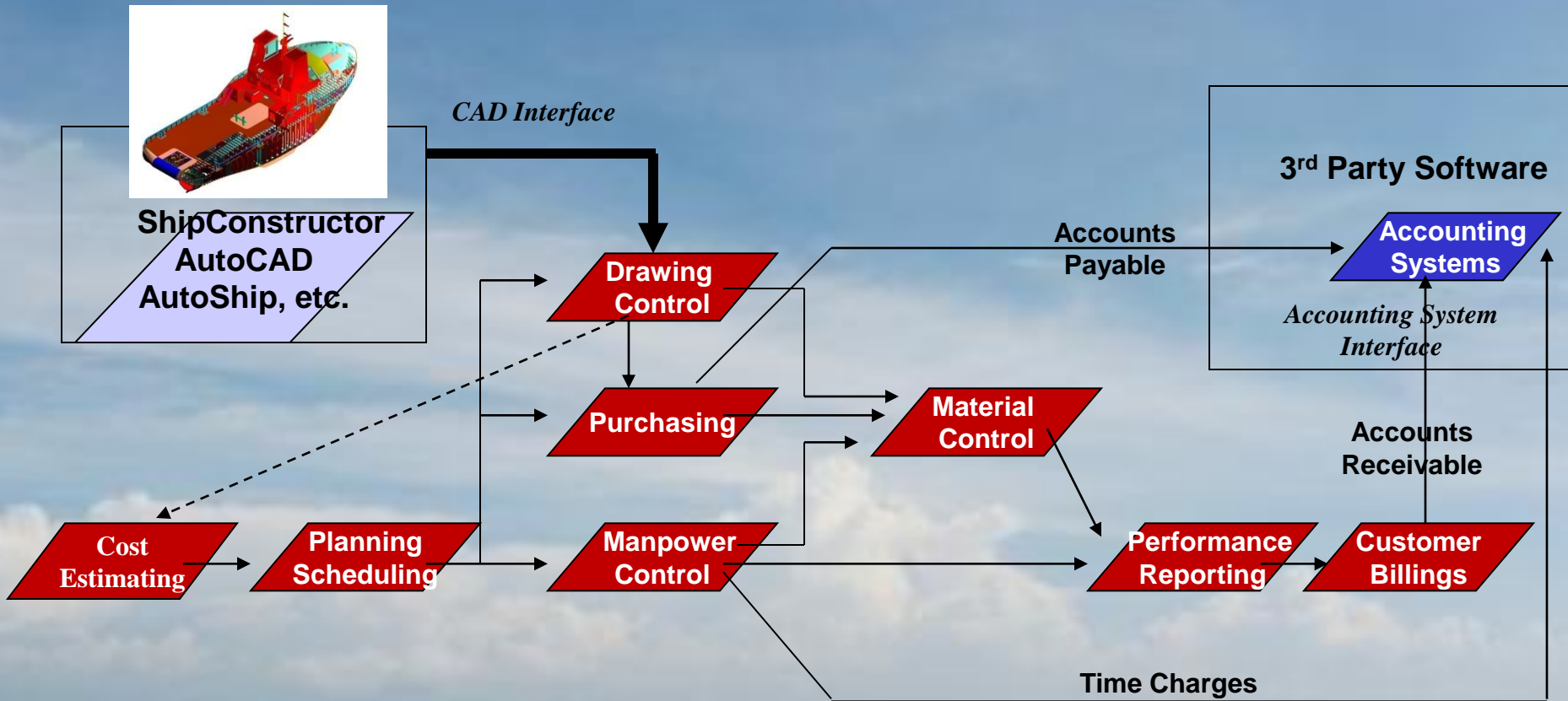


ERP

“An Enterprise Resource Planning (ERP) system is an integrated computer-based application used to manage internal and external resources, including tangible assets, financial resources, materials, and human resources.

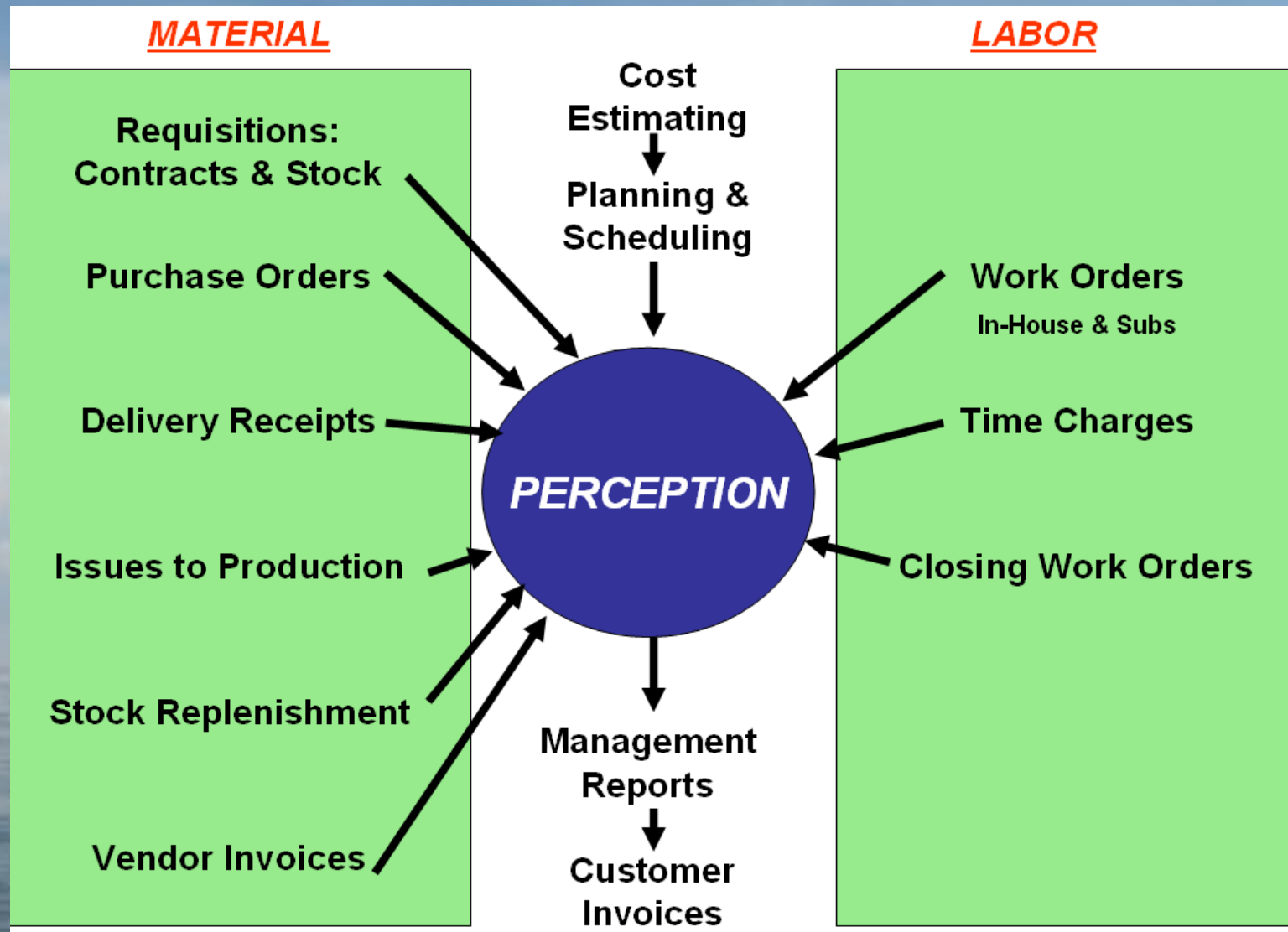
Its purpose is to facilitate the flow of information between all business functions inside the boundaries of the organization and manage the connections to outside stakeholders. Built on a centralized database and normally utilizing a common computing platform, ERP systems consolidate all business operations into a uniform and enterprise-wide system environment.”

From Wikipedia, the free encyclopedia

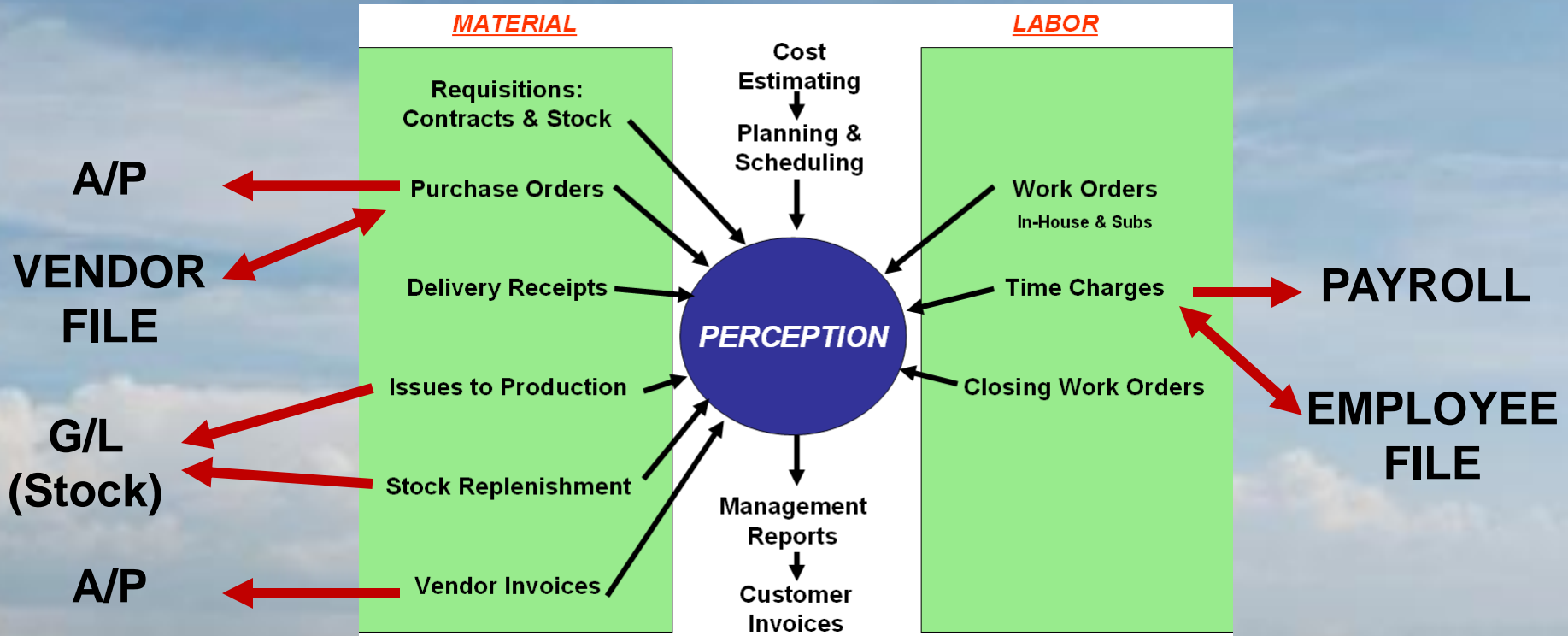


PERCEPTION Integrated Shipyard Resource Management System

PRIMARY SYSTEM FUNCTIONS



INTERFACES WITH ACCOUNTING SYSTEM

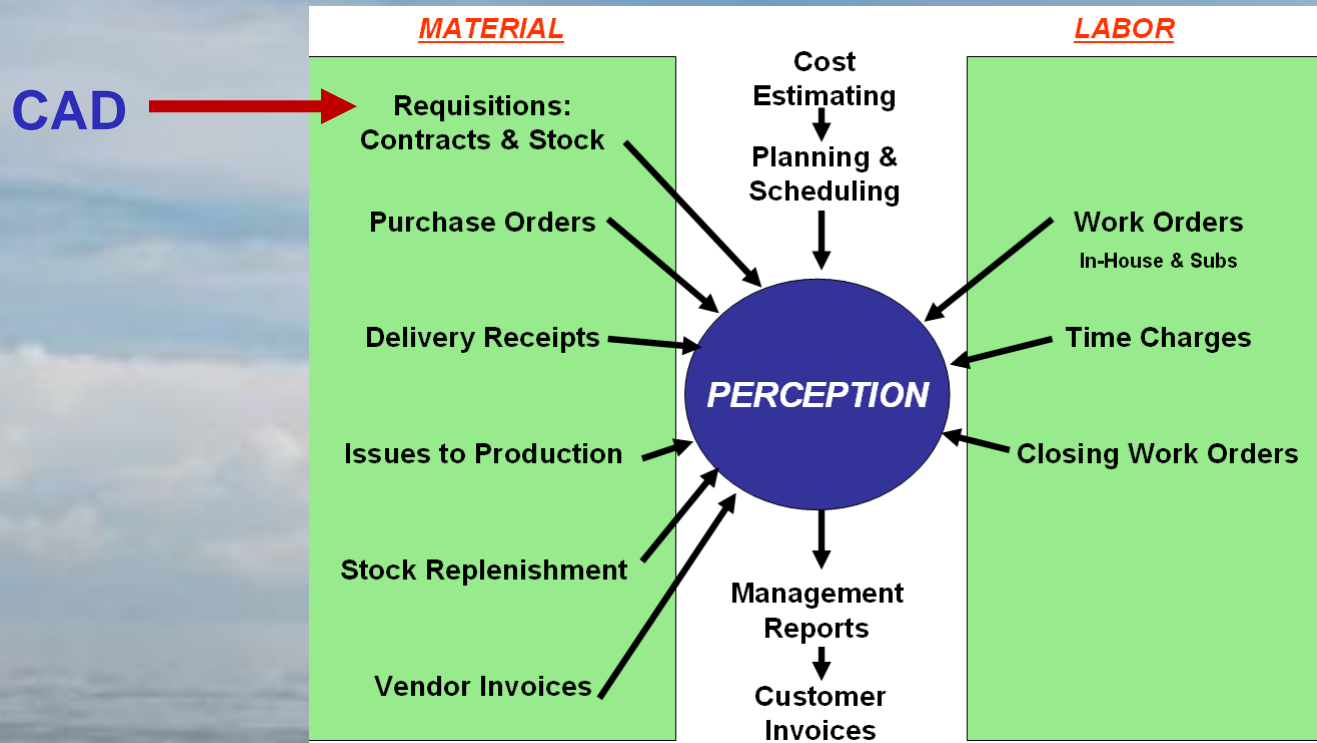


A/P = Accounts Payable

A/R = Accounts Receivable

G/L = General Ledger

INTERFACES WITH CAD SYSTEM



Most generic ERP systems do not provide a robust EVM capability.

None provide an EVM capability specifically designed for the shipbuilding and ship repair industry.

EVM

“Earned value management (EVM) is a project management technique for measuring project progress in an objective manner.

EVM has the ability to combine measurements of scope, schedule, and cost in a single integrated system. When properly applied, EVM provides an early warning of performance problems.

Additionally, EVM promises to improve the definition of project scope, prevent scope creep, communicate objective progress to stakeholders, and keep the project team focused on achieving progress.”

From Wikipedia, the free encyclopedia

The following are typical production problems that EVM can recognize early:

<ul style="list-style-type: none"> • <i>Incomplete engineering drawings are preventing the manufacture of pipe spools in time to meet on-block assembly schedules leading this work to be done on-board with a 3:1 penalty in labor hours.</i> 	<p>Engineering Problem</p>
<ul style="list-style-type: none"> • <i>Rented crane services arrives a week early with nothing to do.</i> 	<p>Planning Problem</p>
<ul style="list-style-type: none"> • <i>Poor night shift welding causing excessive rework and impacting day shift progress</i> 	<p>Quality Work Problem</p>
<ul style="list-style-type: none"> • <i>Panel line not able to maintain throughout that impacts platen schedules.</i> 	<p>Scheduling Problem</p>
<ul style="list-style-type: none"> • <i>Late material deliveries creating cost and schedule problem with out-of-sequence work.</i> 	<p>Material Expediting Problem</p>

EVM Terminology Used by PERCEPTION

BAC = Total Budget At Completion

BCWS = Budgeted Cost of Work Scheduled (Sum of Budgets Scheduled To Date)

BCWP = Budgeted Cost of Work Performed (Actual Progress x BAC)

ACWP = Actual Cost of Work Performed

EAC = Estimated Cost At Completion (Six Methods Provided & Tracked)

ETC = Estimate To Complete (EAC – ACWP)

Planned Progress = % Budget Scheduled To Date (BCWS/BAC)

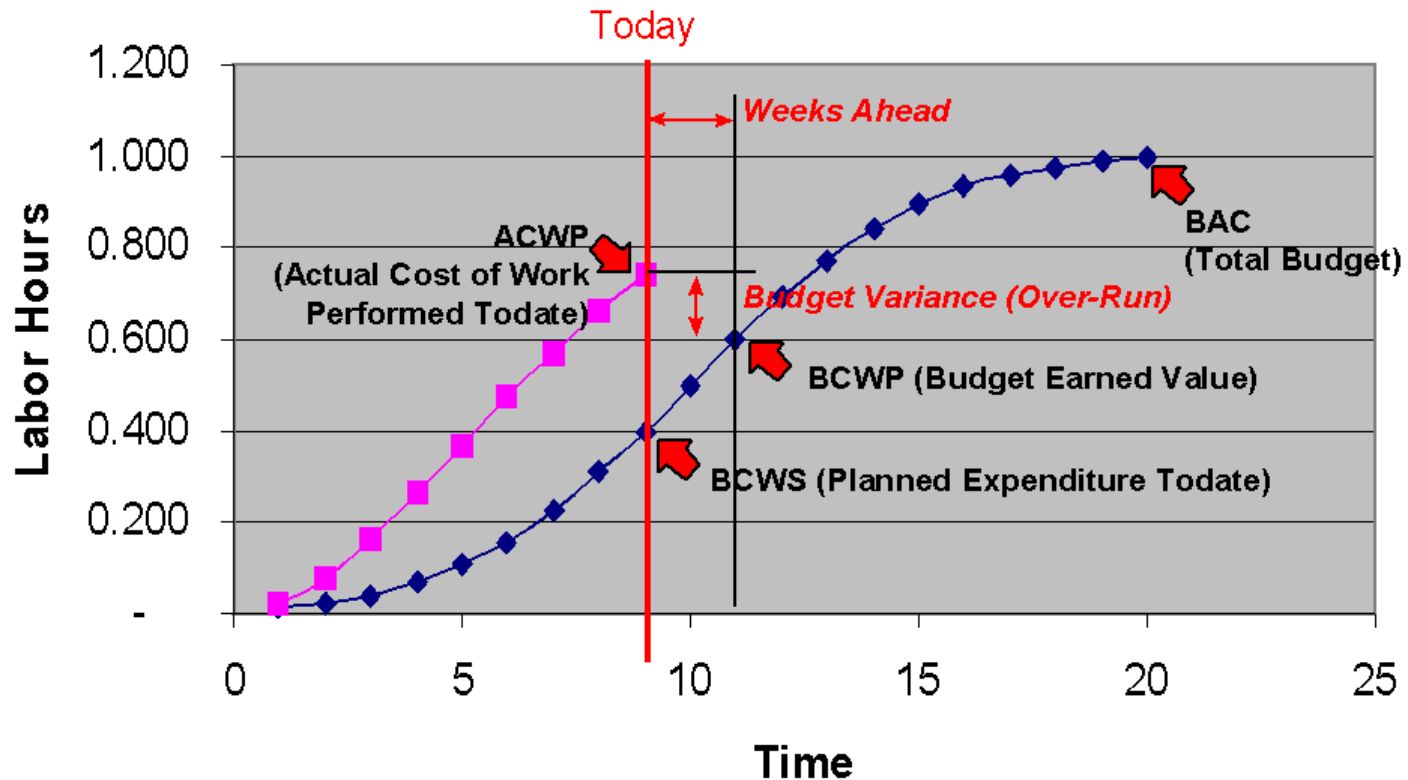
Actual Progress = % Physical work progress regardless of cost expended

(BCWP/BAC)

Performance Indexes = Measures of Cost and Schedule Performance (CPI, SPI, FCPI, TCPI, etc.)

PERCEPTION automatically determines EVM progress and performance information.

Measuring Schedule Performance



PERCEPTION determines WBS level performance from work performance.

- ✓ **Rework**
- ✓ **Change Orders**
- ✓ **Labor Hours per 1% Progress**
- ✓ **Production Process Rates by Stage of Construction**
- ✓ **Weeks Ahead/Behind Planned Schedules**
- ✓ **Trend Weeks Ahead/Behind for 100% Progress**
- ✓ **Forecast & Trend Over-Run/Under-Run**
- ✓ **Performance Indexes (CPI, SPI, and others)**

ERP



EVM

Coordinate Resources

**Measure Progress &
Performance**

SPAR's PERCEPTION© System Combines ERP & EVM to better plan, coordinate and manage the shipyard.

Unlike other ERP and EVM systems, PERCEPTION was designed specifically for shipyards.

PERCEPTION ties together all areas of Earned Value Management:

- 1. Cost Estimating**
- 2. Planning, Budgeting & Scheduling**
- 3. Labor Work Order & Manpower Management**
- 4. Purchasing & Inventory Control**
- 5. Change Order Management**
- 6. Earned Value Performance Measurement Reporting**
- 7. Cost & Schedule Forecasting**
- 8. Cost Analysis For Future Work Estimating**

**PERCEPTION:
An Integrated
System of
Shipyard
Business
Functions**



PERCEPTION ESTI-MATE

Cost Estimating

New Construction & Repair



Cost Estimating

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.

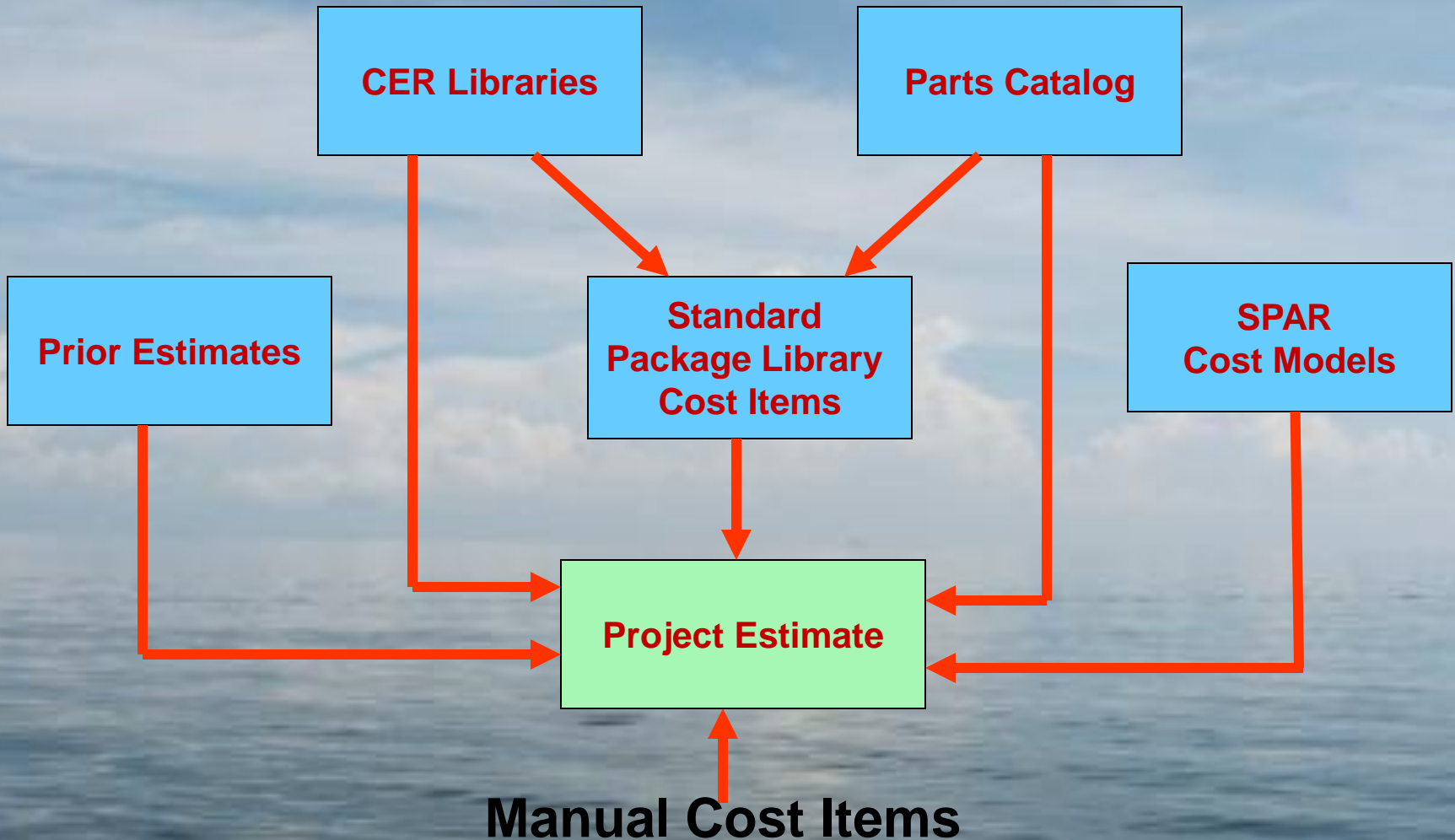
System Benefits

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.

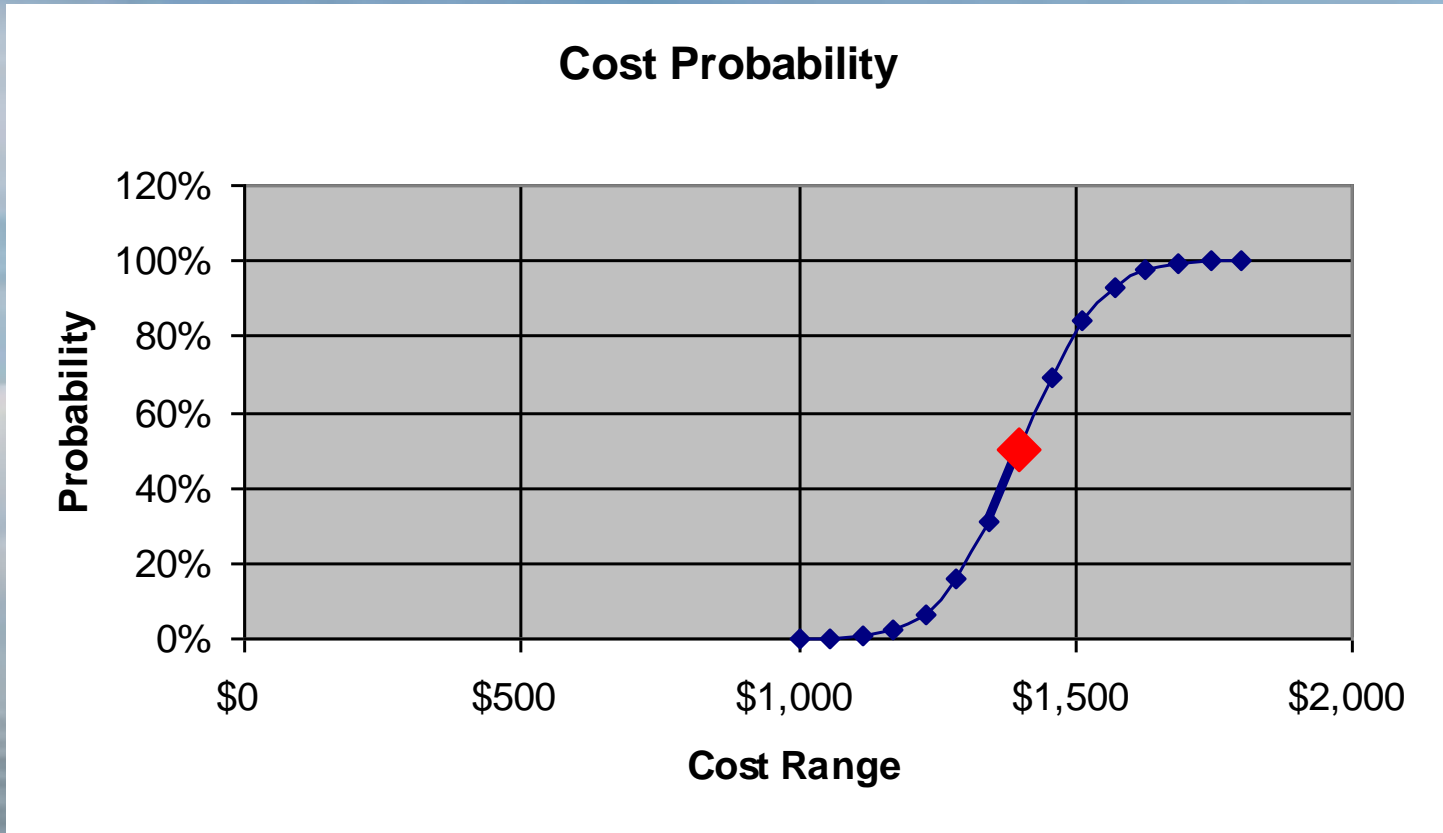
***PERCEPTION* can manage extensive cost estimating libraries**

- 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**

Putting together an estimate from manual cost entries, prior estimates and from cost libraries.



Cost Risk Analysis

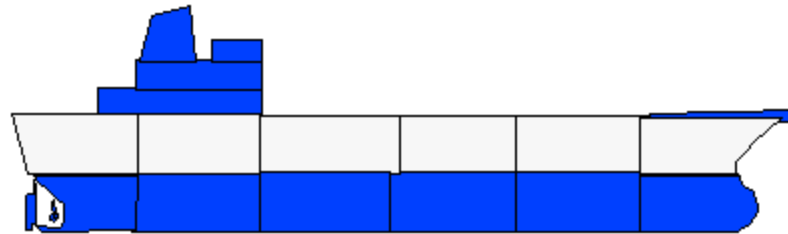
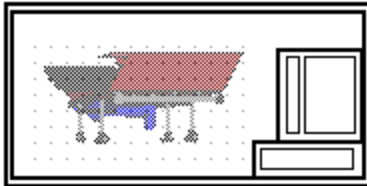
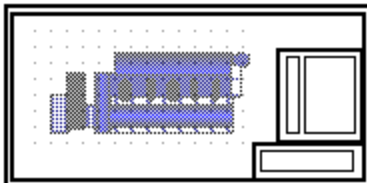
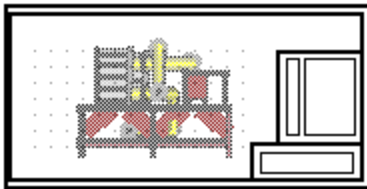


For large, complex bids, *PERCEPTION* provides more confidence in the cost estimates

PERCEPTION PERT-PAC Production Scheduling

Scheduling Deliveries to Meet Master Product Schedules

Interim Product Bills of Material

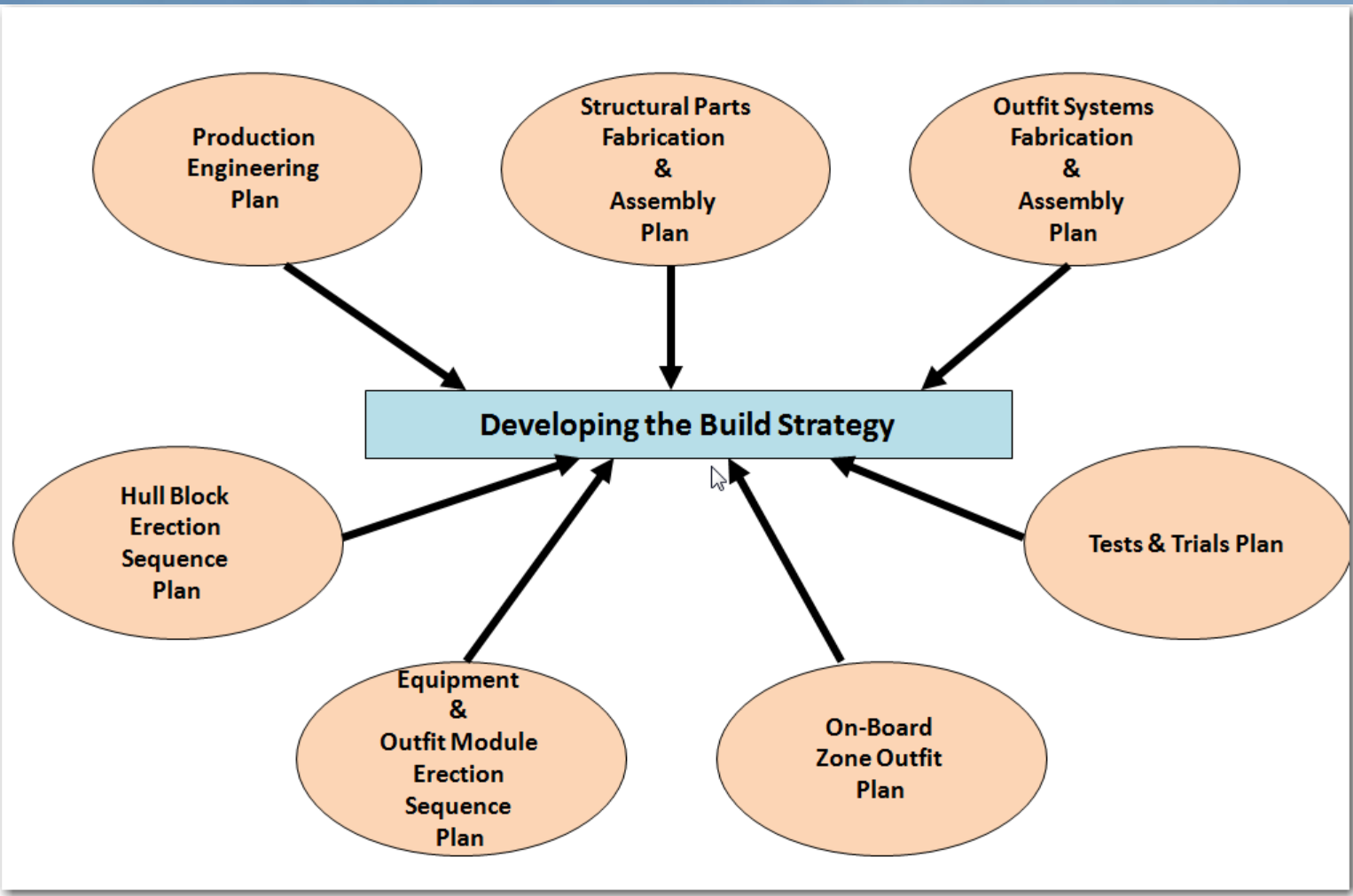


On-Unit Schedules

Master Product Schedules

On-Block Schedules

Ship Zone Schedules

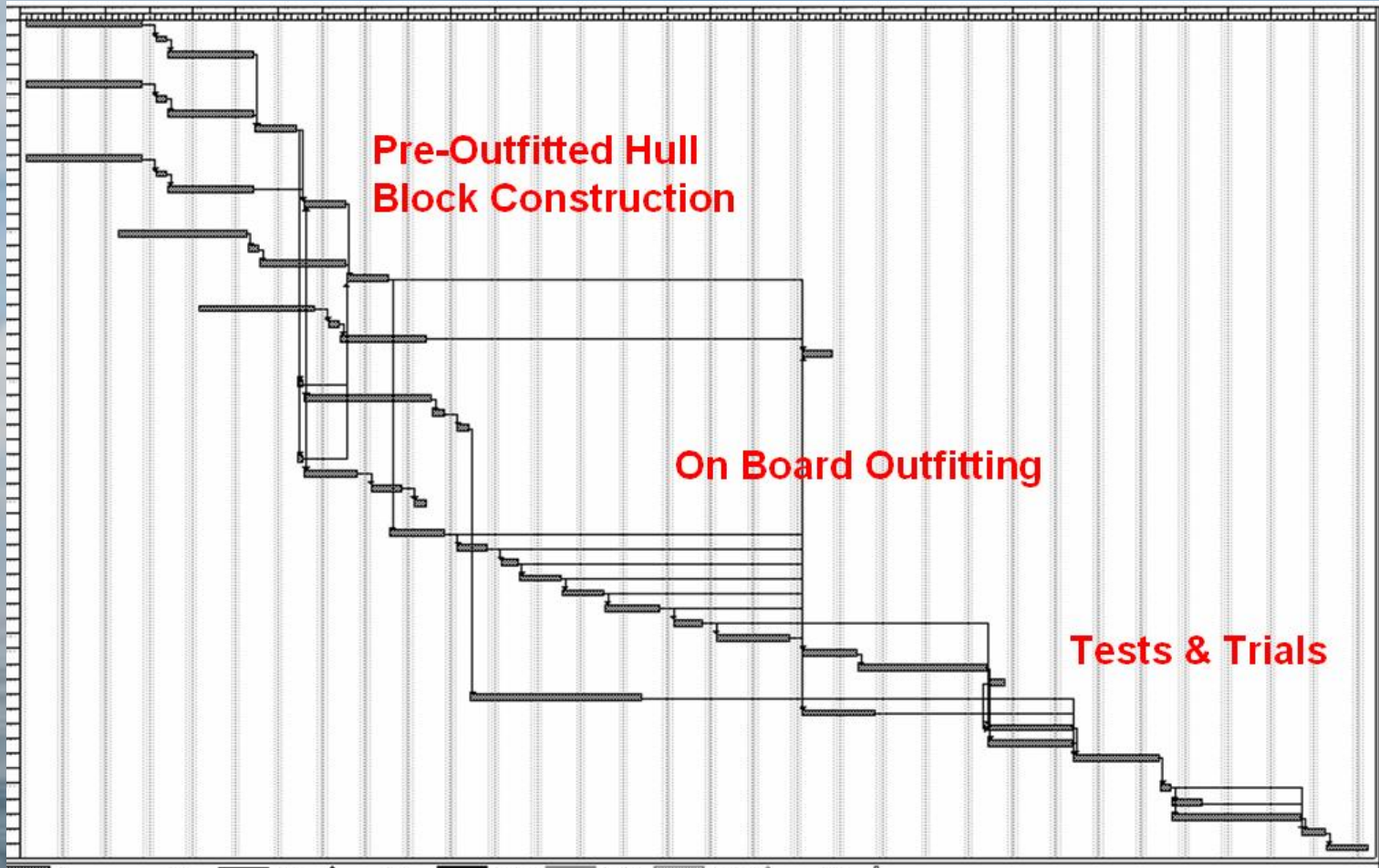


All successful shipyard contracts are based on a well-thought-out and executed build strategy

PERCEPTION provides a system's integration feature for using Microsoft *Project* to automatically develop and schedule Planning Activities.

PERCEPTION maintains schedule updates automatically.

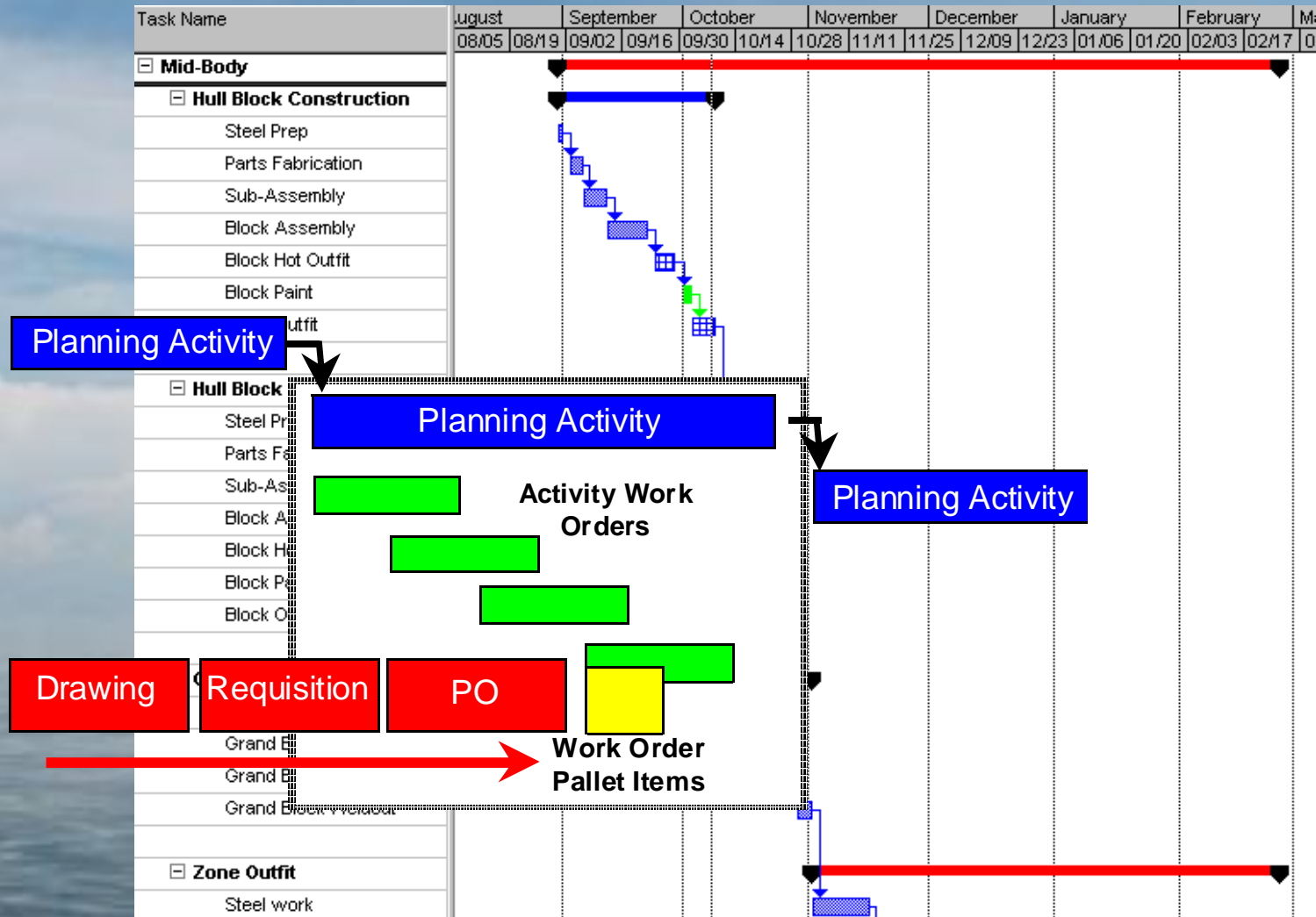
Planning & Scheduling

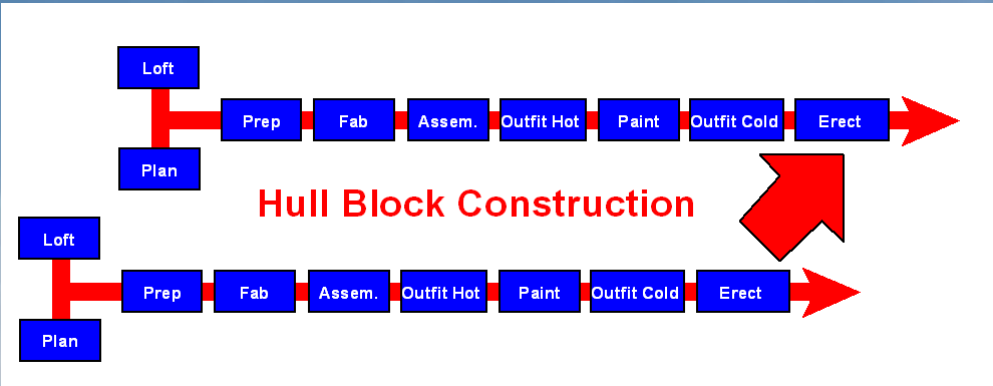


***PERCEPTION* has features for planning and scheduling all project activities:**

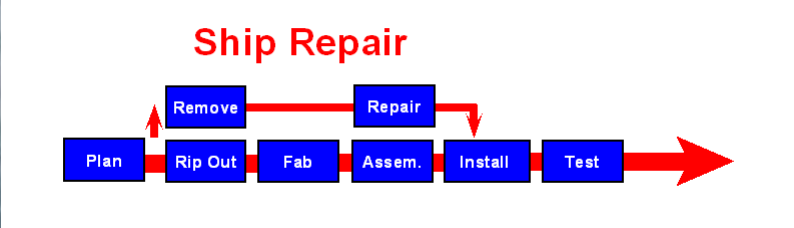
- **Schedule Design & Engineering Activities**
- **Schedule Engineering Drawings**
- **Schedule Production Work Orders**
- **Schedule Work Order Material Pallets**
- **Schedule Purchased Material Deliveries**
- **Schedule Subcontractors**
- **Schedule Tests & Trials**

PERCEPTION Links M/S *Project's* Schedules to Labor Work Orders & Material



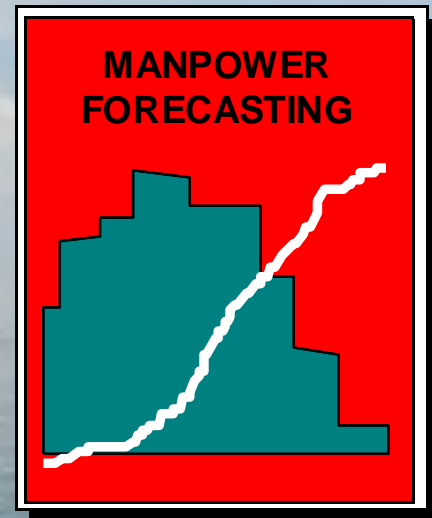
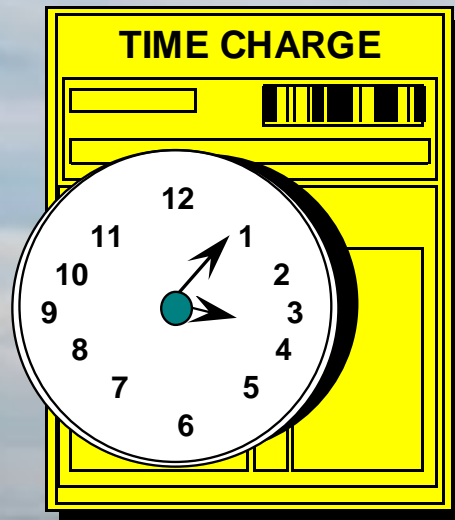
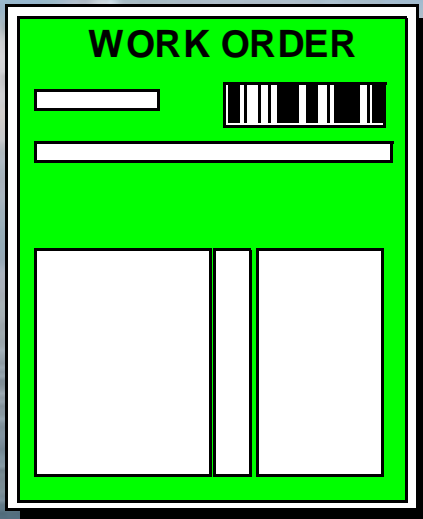


Scheduling requires the proper sequencing of work and related project activities.



PERCEPTION WORK-PAC

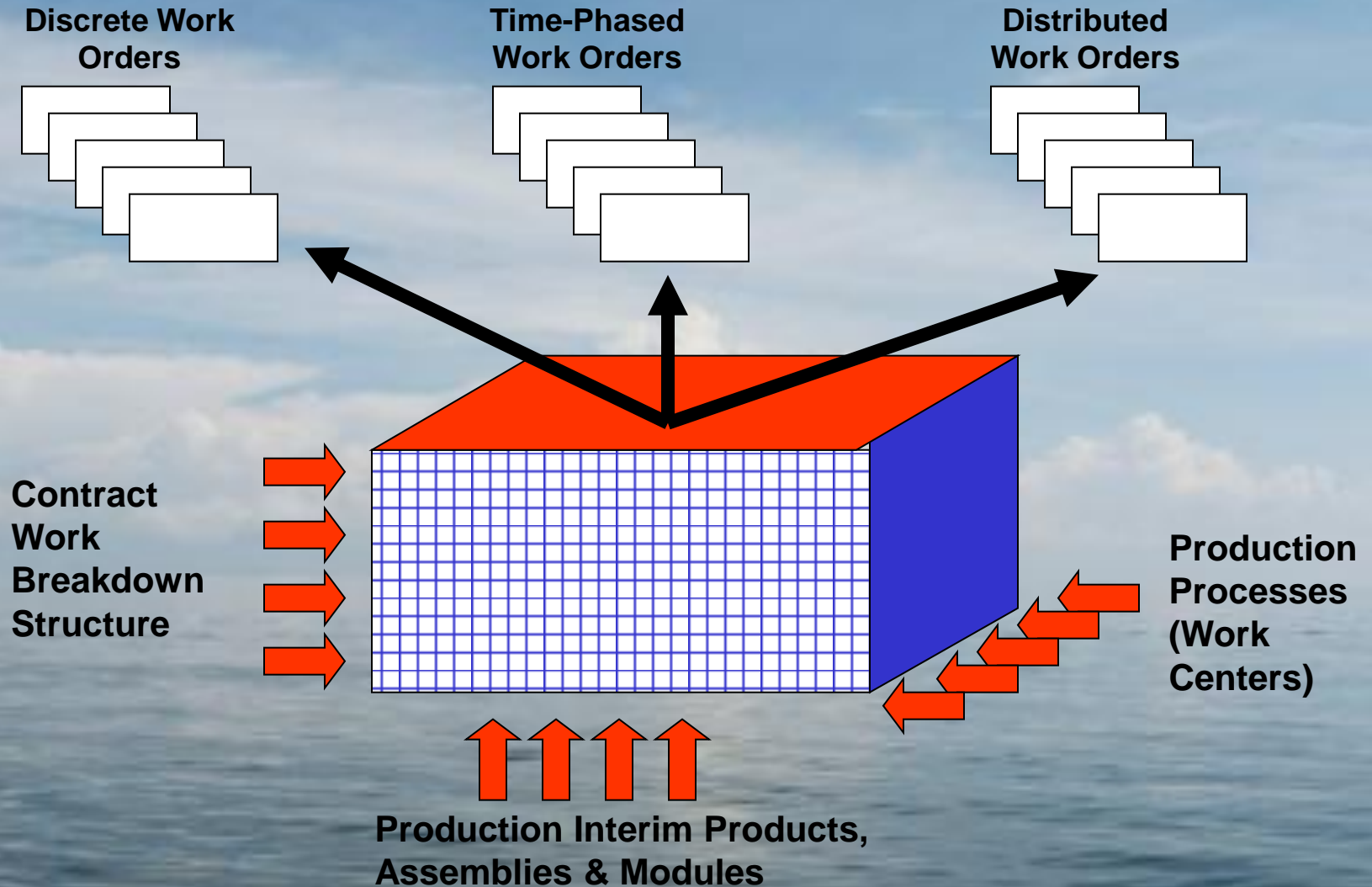
Managing Labor Costs & Schedules



System Benefits

- 1. Better labor planning cost/schedule control.**
- 2. Improved management control of job progress and labor expenditures.**
- 3. Immediate job cost reporting and summarization.**
- 4. Fast and accurate reporting of labor cost problems.**
- 5. Labor costing by project (job) work breakdown structure and by organization structure.**
- 6. Automated final labor cost forecasting based upon actual performance.**
- 7. Automated job progressing - no manual assessments required.**
- 8. Generous checks for erroneous data and bad timecard charges.**

Three Types of Work Orders Provide Extra Flexibility



The system allows the user to develop three different types of work orders:













1. **Discrete work order** (default) that can clearly be assigned to any single element or level of the project WBS.
2. **Distributed work order** that cannot be assigned to any single project WBS element, but rather includes work that involves multiple elements.
3. **Time-phased level of effort work order** that has no clear-cut end product, but rather is a service to be provided over time within a fixed budget.

05/13/2002 16:02:35

(Date format: MM/DD/YYYY)

Chesapeake Marine Industries
Bar Code Work Order Listing Report (BAR02)
 Work Center/WO Planned Start Date Sort

Contract: Ship Repair to Ship Repair	Project: 0 to ZZZZZZZZ	Division: 0 to ZZZZZZZZ
Work Center: 0 to ZZZZZZZZ	Outfit/Zone: 0 to ZZZZZZZZ	Department: 0 to ZZZZZZZZ
Work Order: 0 to ZZZZZZZZ	Unit: 0 to ZZZZZZZZ	Process: 0 to ZZZZZZZZ
Group: 0 to ZZZZZZZZ	Assembly: 0 to ZZZZZZZZ	Planned Date: 01/01/1950 to 01/01/2050
Account: 0 to ZZZZZZZZ	Sub Assembly: 0 to ZZZZZZZZ	Actual Date: 01/01/1950 to 01/01/2050
Zone: 0 to ZZZZZZZZ	Part: 0 to ZZZZZZZZ	Drawing: 0 to ZZZZZZZZZZZZZZZZZZZ

Work Order	Heading	Start Date	Finish Date		Work Order	Heading	Start Date	Finish Date	
Work Center: 0					Work Center: 0				
506001	Remove & replace sea grids	00/00/0000	00/00/0000		120006	Top coat alkyd	09/29/1998	10/09/1998	
102002	U.T. emergency room bhd	09/29/1998	10/09/1998		127001	Paint ships name	09/29/1998	10/09/1998	
700001	Dock preparation	09/29/1998	10/09/1998		129001	Paint draft marks	09/29/1998	10/09/1998	
102001	U.T. hull	09/29/1998	10/09/1998		201001	Rivets & seams	09/29/1998	10/09/1998	
112001	Remove manhole covers	09/29/1998	10/09/1998		112003	Repairs to covers	09/29/1998	10/09/1998	
112002	Replace manhole covers	09/29/1998	10/09/1998		500001	Tailshaft readings - Revised	09/29/1998	10/09/1998	

Sample Bar Coded Work Order List for Time Charging using Bar Code Scanners (Optional)

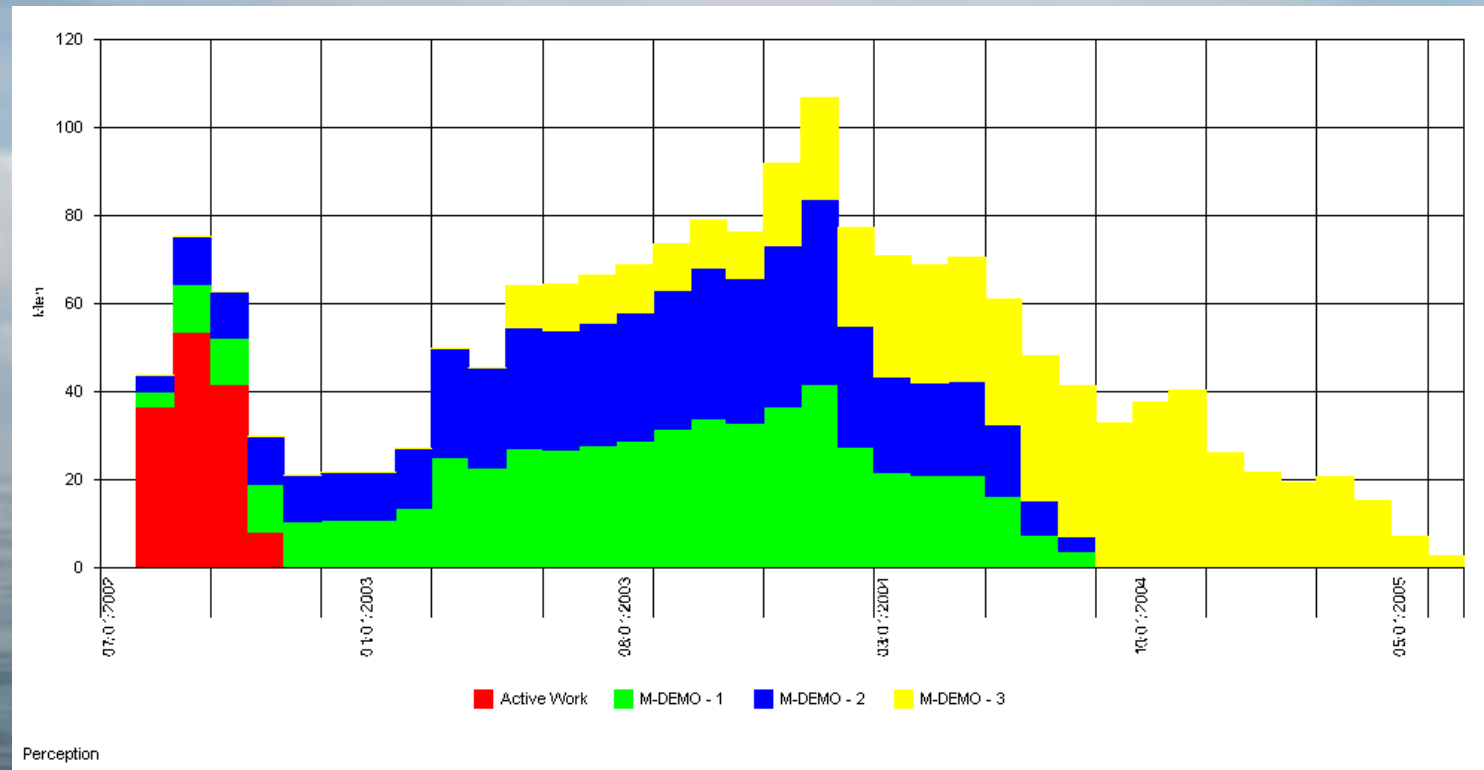
Tracking Manpower Requirements

- **As Planned in Baseline**
- **As Currently Planned**
- **As Actually Expended To Date**
- **As Forecast to Complete**

Manpower can be evaluated by WBS, by shipyard work center, for one project or across multiple projects.

The analysis can combine current back-log with proposed new work.

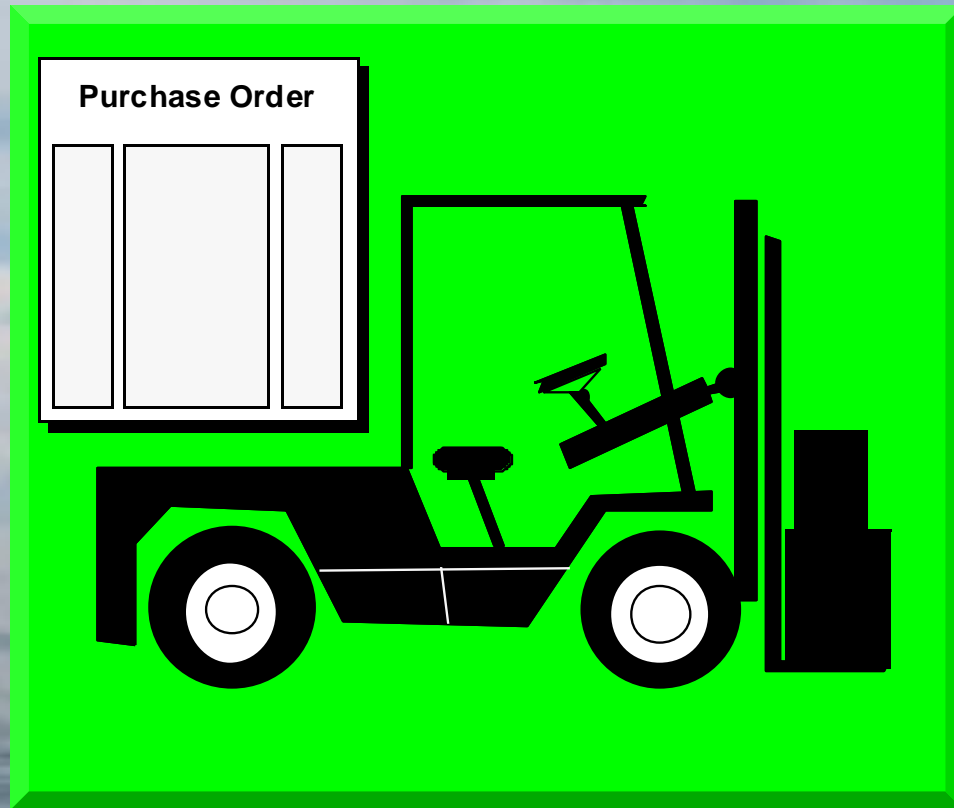
Total Shipyard Manpower Modeling (New Work Modeled On Top Of Active Work)



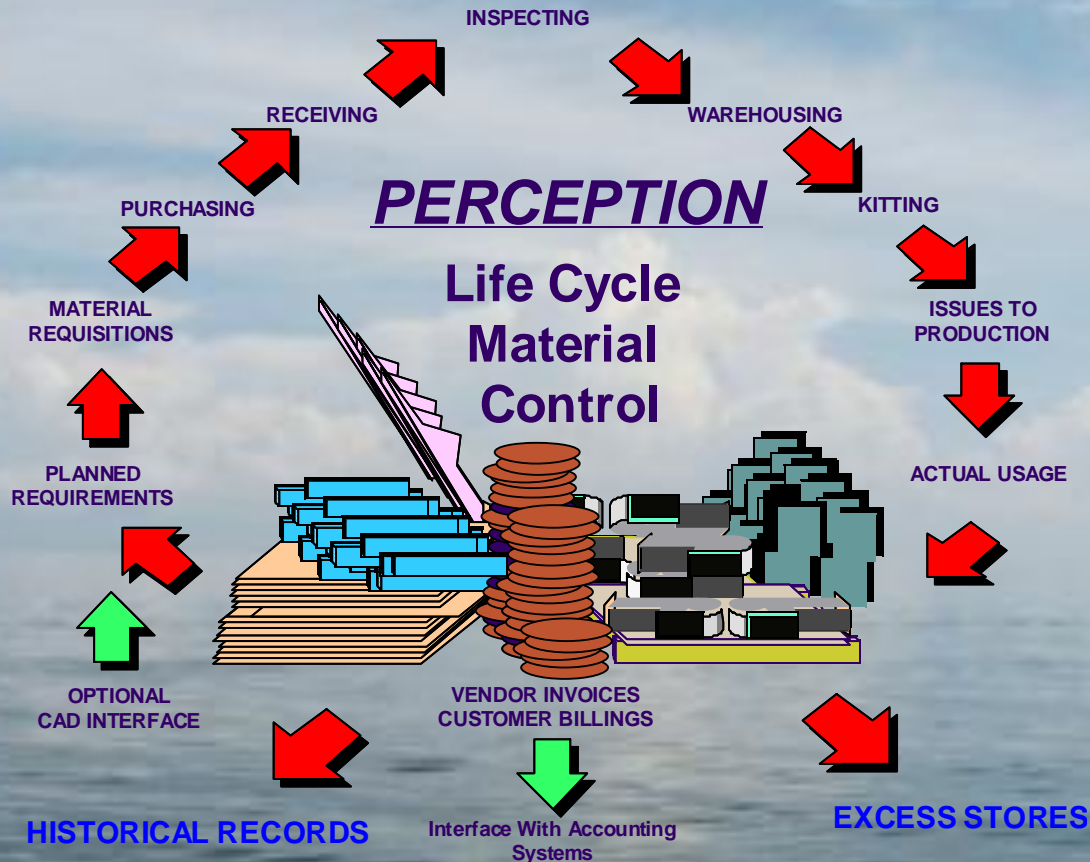
Perception

PERCEPTION MAT-PAC

Managing Purchasing & Material Control



Managing Material From Engineering to Production



Sources of Ship Materials:

- **Direct purchased material (spec items & standard parts)**
- **Stock inventory**
- **Owner-furnished material**
- **Manufactured parts**

Tracking Material Throughout the Shipyard

- **Engineering Bills Of Material**
- **Stock, Direct Purchase & Manufactured Parts**
- **Material Requisitions**
- **Purchase Orders, RFQs And Amendments**
- **Delivery Expediting Information**
- **Delivery Receipts & Inspections**
- **Warehousing & Storage Locations**
- **Work Order Pallets**
- **Issues To Production**
- **Vendor Invoice Control**
- **Customer Invoice Control**
- **Tool Room Control**


***PERCEPTION* tracks material and subcontractor costs via issued purchase orders or via open purchase orders & vendor invoices.**

Purchasing

PERCEPTION generates a variety of purchase orders:

- Normal POs formulated directly from purchase requisitions
- QUICK PO for items not entered on a requisition.
- Blanket Purchase Agreement
- Bulk Purchase Order

Purchasing schedules that are integrated with technical and production schedules ensure production can perform its work on schedule

Chesapeake Marine Industries				Page 1 of 1	
Purchase Order 12346				Terms 2%/10/30	
A101 Sales Office SPAR Associates, Inc 927 West Street Annapolis, MD 21401, USA				Ship To Chesapeake Marine Industries 927 West Street Annapolis, MD 21401 Care of Vendor	
Date Of Order 03/19/0001	Required In Yard	Promised ETA	F.O.B. Annapolis	Phone 410-263-6593	Amendment ID
Sales Contact L. Deschamps	Seller's Reference Letter 9/1/01	Purchaser	Ship Via UPS	Fax 410-267-0503	Amendment Date
PO Heading Misc. sailboat fittings					
Item	Qty	UoM	Description	Unit Price	Ext Cost
			DELIVERY: ALL MATERIAL SHALL BE DELIVERED IN SHIPYARD NO LATER THAN SEPTEMBER 19th		
1	1.00	EA	Harben Roller Furling set Cat No. 1234-4321	0.0000	0.00
2	1.00	SET	Furling lines & blocks	0.0000	0.00
CERTIFICATES SHALL BE SUPPLIED IN QUADRUPPLICATE FREE ISSUE TO SHIPYARD Discounts to apply per April agreement					
				Currency Canadian	
				Subtotal	0.00
				Total Shipping	0.00
				Total P.O. Cost	0.00
				Domestic Cost	0.00
Exchange Rate Exchange Date 0.65 12/16/1998					
Authorized Signature _____					

PERCEPTION manages all purchasing and material control cost and schedule functions:

- **Purchase Requisitions**
- **Requests for Quotations (RFQs)**
- **Purchase Orders**
- **Expediting Functions & Reports**
- **Receiving Functions**
- **Vendor Invoice Control**
- **Transactions To Accounting System's Accounts Payable (A/P) & General Ledger (G/L)**

Tracking & Managing Material Costs and Schedules

- **Total Committed Costs:**
 - *Purchases + Stock Used + Stock Reserved*
- **Total Purchases**
- **Purchases Received**
- **Purchases On Back Order**
- **Purchases Used**
- **Purchases Paid**
- **Stock Used**
- **Stock Reserved**

**Costs & Schedules
Reported by Project
and Yard-Wide**

Bar Code Options for Material Control

- Tool Room Control
- Production Issues
- Physical Inventory

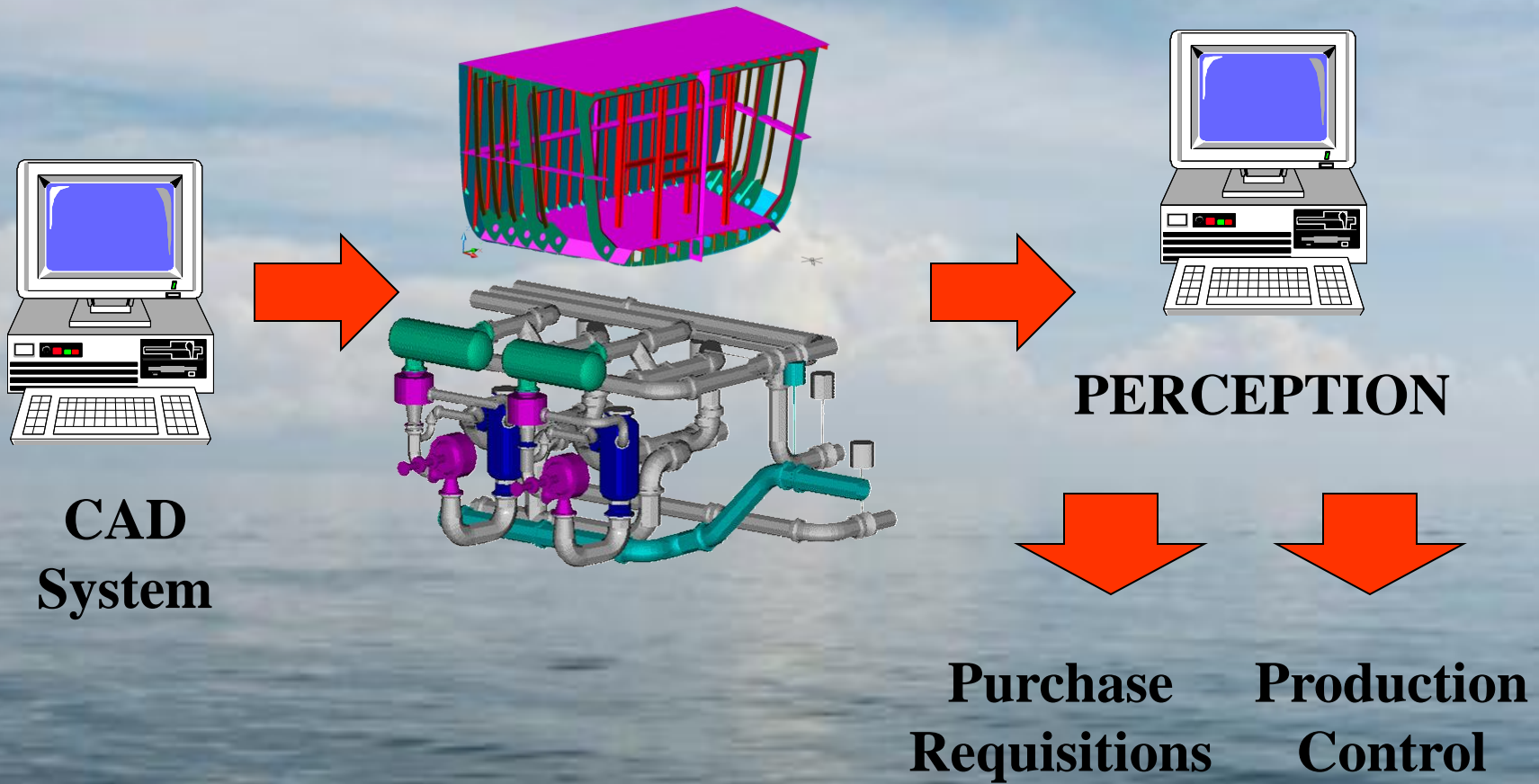


System's Integration With CAD (Optional)

PERCEPTION has been linked to various Ship Design and Engineering systems for down-loading detail bills of material:

- *ShipConstructor* by ShipConstructor Software, Inc.
- The Navy's *ASSET* Ship Concept Model
- Proteus Engineering's *FlagShip* suite
- Intergraph's *GSCAD*
- Autodesk's *AutoCAD* general design system
- Rebis' *AutoPLANT* piping system design and engineering system
- Bentley System's *MicroStation*

Options to Automate Transfer of BOMs from CAD systems.



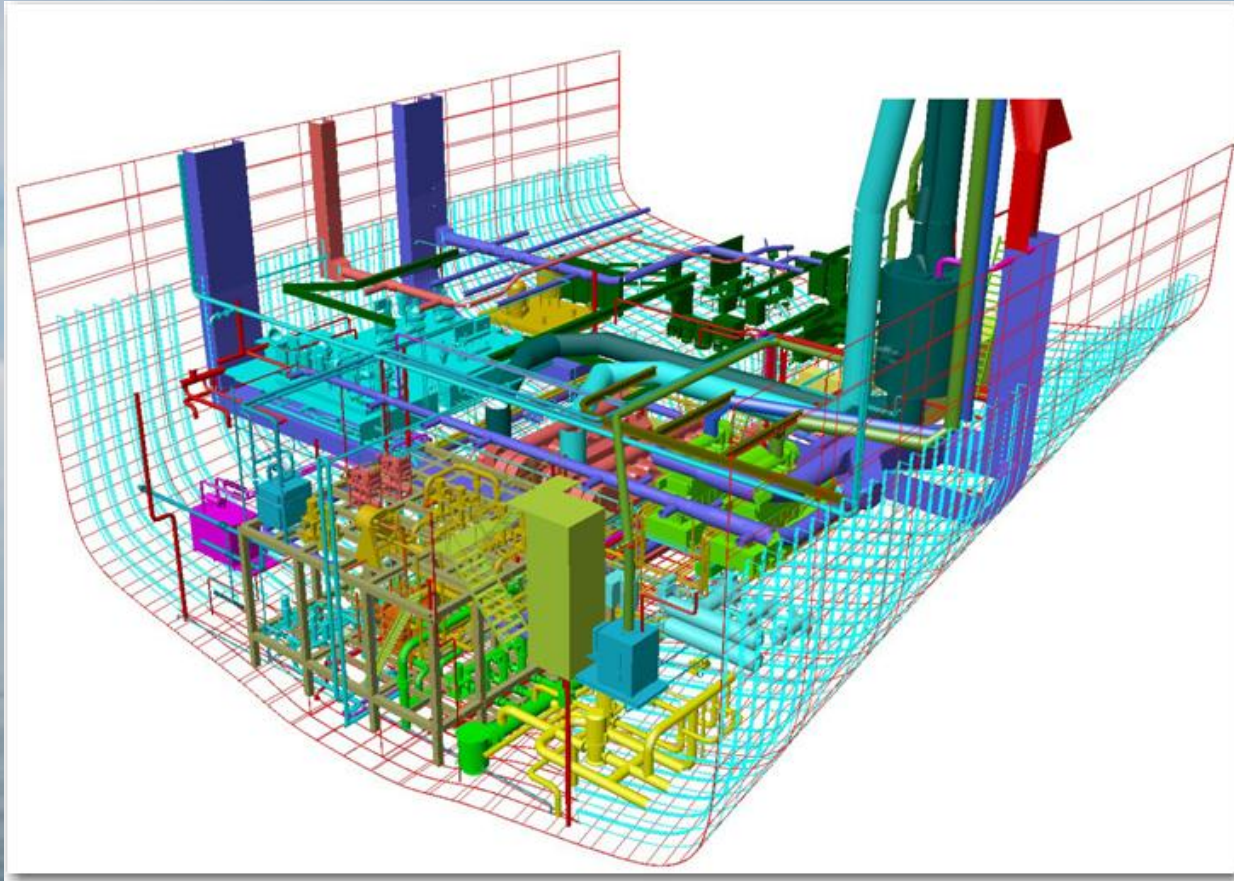
Drawing Control (Disciplined drawing controls will prevent cost and schedule problems in production)

Material requirements for a project can begin with requisitions.

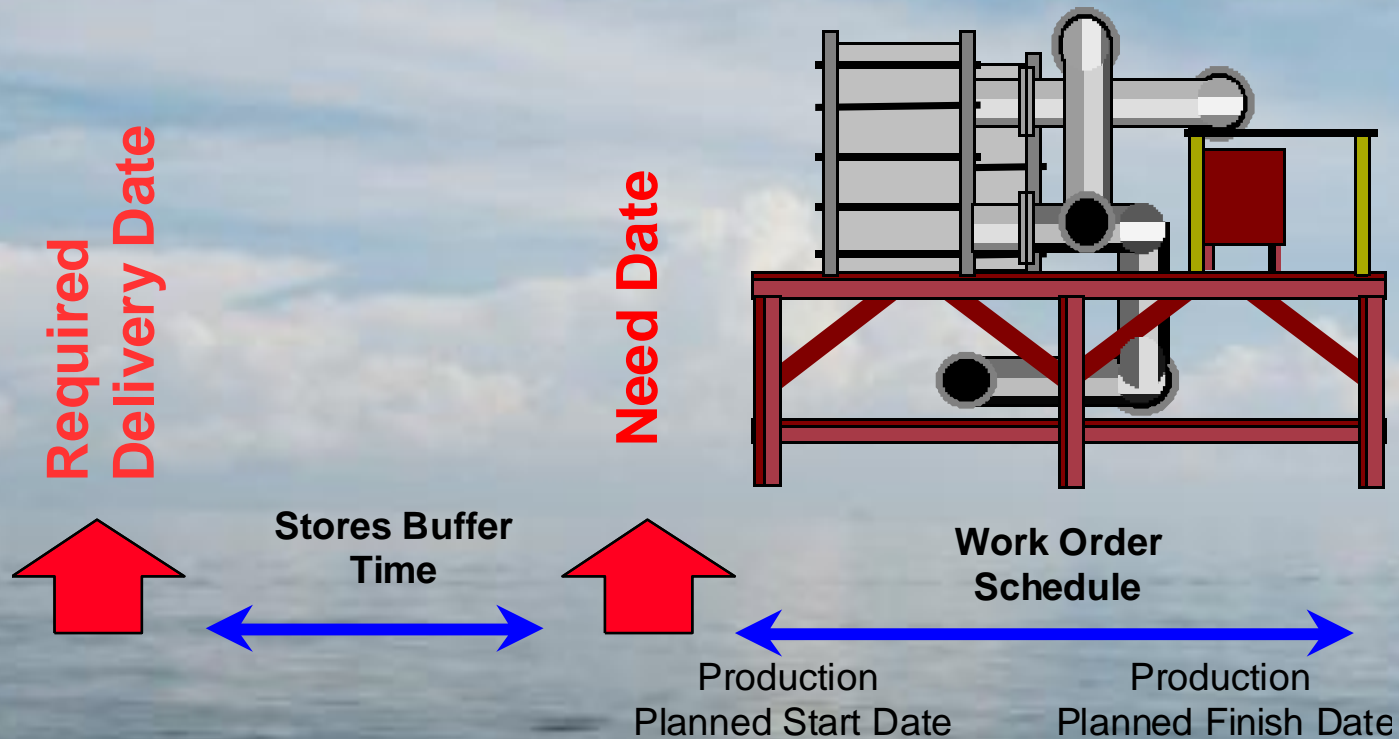
However, requisitions can be preceded by engineering drawings and their bills of material (BOMs).

Drawing BOMs can be entered manually or via downloading this detail information from CAD systems.

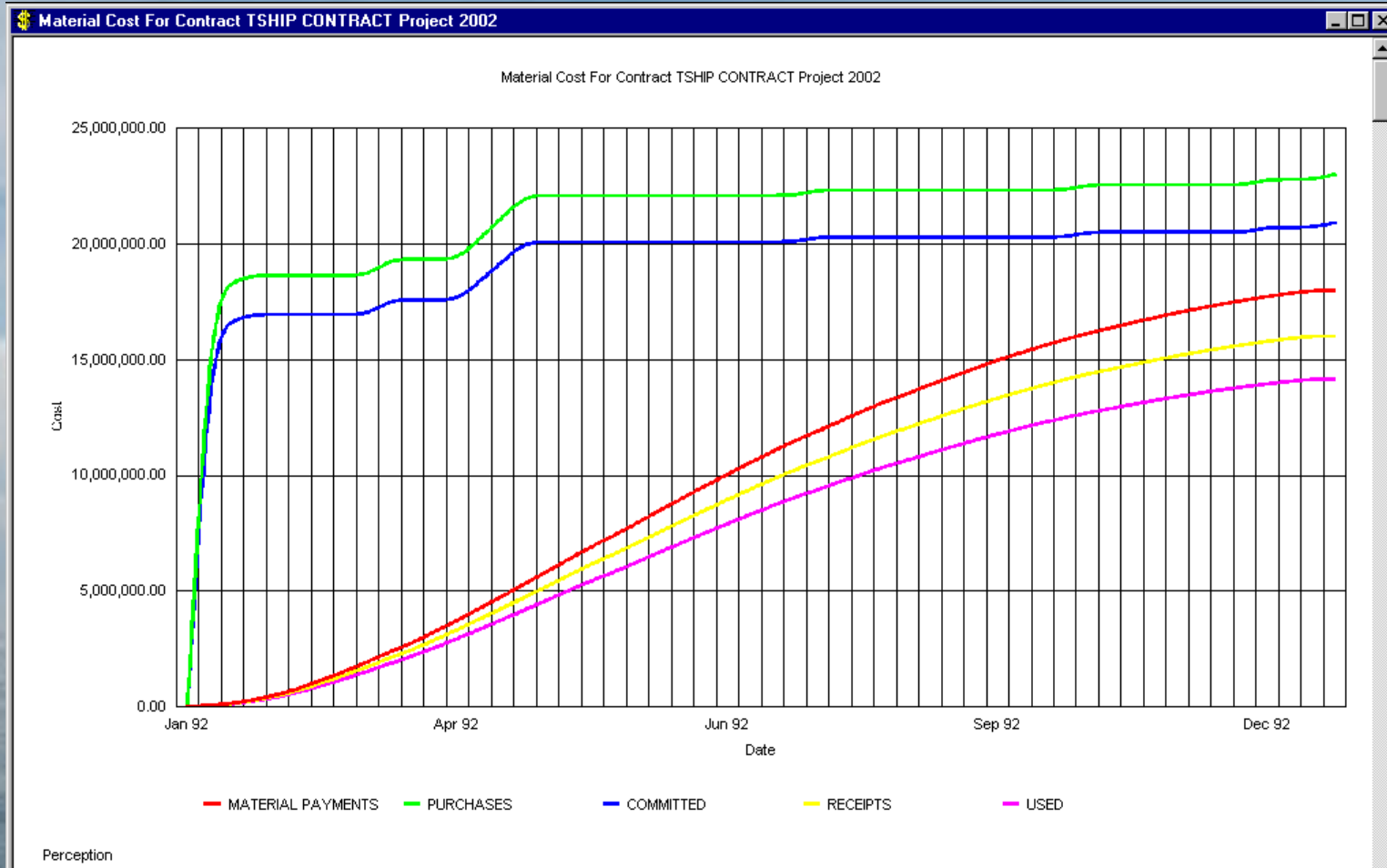
Electronically accessing CAD design data can significantly expedite the purchasing and material control process.



Material Deliveries Must Be Scheduled to Meet Required Delivery Dates



Tracking Material Costs



Various Tabular & Graphical Reports

PERCEPTION supports a Parts Catalog that can be used in the following areas of the system's capabilities:

- Cost estimating that identifies detail material requirements using Part IDs from the catalog.
- Stock inventory control, where stock items are managed in the Parts Catalog.
- Standard Direct Purchase Material Items that provide the means for bulk purchasing benefits.
- Production pallet planning and management functions using standard parts (stock and/or direct purchase items) from the catalog.
- Engineering drawing bills of material using standard parts (stock and/or direct purchase items) from the catalog.

Storage & Warehouse Controls


- *PERCEPTION* allows real-time tracking of warehouse materials.
- *PERCEPTION* allows same type commodity to be stored in any number of different storage locations.

Vendor Invoice Controls

PERCEPTION provides functions for entering vendor invoices to cross check against purchase order requirements and delivery status information.

The system's accounting interface provides the means to electronically transfer the vendor invoice transactions directly to the shipyard's Accounts Payable system.

Customer Billings

Chesapeake Marine Industries 927 West Street Annapolis, MD 21401			Invoice Page 1 of 2	
			Date 10/31/2001	Invoice # 1234
BILL TO Laury 927 West Street Annapolis, MD 21401		DRAFT	PROJECT DESCRIPTION Sample Material Control	
BILLING PERIOD	DUE DATE		TERMS	CONTRACT
09/15/2001 To 10/15/2001	11/30/2001	Net 30 Days	A-DEMO	01
ITEM	DESCRIPTION	QTY	RATE	AMOUNT
11	Mechanical & Electrical Labor	31.20	50.00	1,560.00
15	Yard Work Labor	36.31	50.00	1,815.50
20	F E12 Self Tapping FH SS 10 x 3/4	4.00	0.12	0.48 T
21	ANC 312503 12-10 H/S Ring Trml 5/16 (pkg 3)	1.00	3.86	3.86 T
22	ANC 312303 12-10 H/S Ring Trml 10 (pkg 3)	1.00	3.94	3.94 T
23	EDS 9635B Edson throttle handle	1.00	62.10	62.10 T
24	F F27 Self Tapping PH SS 12 x 3/4	4.00	0.28	1.12 T
25	1234-20 V-Belt 25-7240	1.00	12.03	12.03 T
26	1234-21 V-Belt 25-7290	1.00	12.57	12.57 T
27	F F09 Self Tapping OH SS 10 x 1	2.00	0.11	0.22 T
28	CLR X Bleach Gal	1.00	1.79	1.79 T
29	PRS 4539 Heavy Duty Thick Latex Gloves	2.00	0.39	0.78 T
31	PRS 4539 Heavy Duty Thick Latex Gloves	2.00	0.39	0.78 T
32	HSE 1.5 SANI 1-1/2 in. Sanitation Hose	15.00	2.30	34.50 T
33	SCN 38-50 1-1/2 - 2-1/16 in. SS Clamp	6.00	3.14	18.84 T
34	F F30 Self Tapping PH SS 12 x 1-1/2	2.00	0.20	0.40 T
35	NAPA 1452 Oil Filter	1.00	10.11	10.11 T
36	DRD 25005 Drydene Dexron III/Mercon QT	1.00	3.25	3.25 T
37	Y 40030GT Oil 30Wt Oil Qt	4.00	3.59	14.36 T
38	1234-33 JS 10-24225-1 Pump	1.00	307.92	307.92 T
39	1234-34 Freight (pump)	1.00	15.10	15.10 T

- Immediate Time & Material Charges
- Milestone Progress Billings
- Fee-Based Charges

The system's accounting interface provides the means to electronically transfer the vendor invoice transactions directly to the shipyard's Accounts Receivable system.

PERCEPTION

EVM Cost Tracking & Forecasting Projects

- ***PERCEPTION* tracks cost and schedule performance at both detail and summary levels.**
- **Forecasts are made by the system based upon earned value methods**
- **Trends are developed by the system to provide management with improved visibility of changes to contract performance.**

Tracking & Managing Costs and Schedules

- Labor Hours
- Labor Dollars
- Overhead Dollars
- Material Dollars
- Purchased Services
- Total Dollars

Tracking & Managing Costs and Schedules

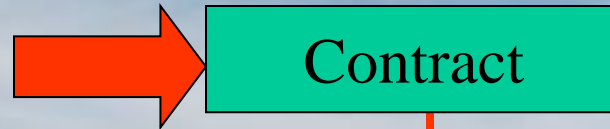
- Original Estimated Costs & Schedules**
- Baseline Costs & Schedules**
- Current Plan Costs & Schedules**
- Actual Costs & Schedules**

Tracking & Managing Costs and Schedules

- **By SWBS (Ship Systems)**
- **By PWBS (Ship Zones, Hull Blocks & Assemblies)**
- **By Shipyard Chart of Accounts (Work Centers)**
- **By CLIN (Contract Line Item)**

Each project has a hierarchy of information managed by the system, flowing from lowest level details to the highest level summary.

The “Contract” is the highest project level

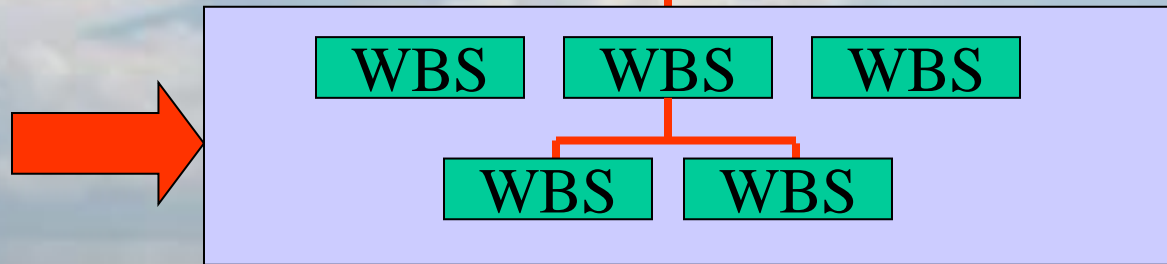


The “Project” is the highest operations project level



A contract may have multiple projects (e.g., multiple ship programs).

The WBS is an intermediary hierarchy depending on the project requirements.



Cost Estimate



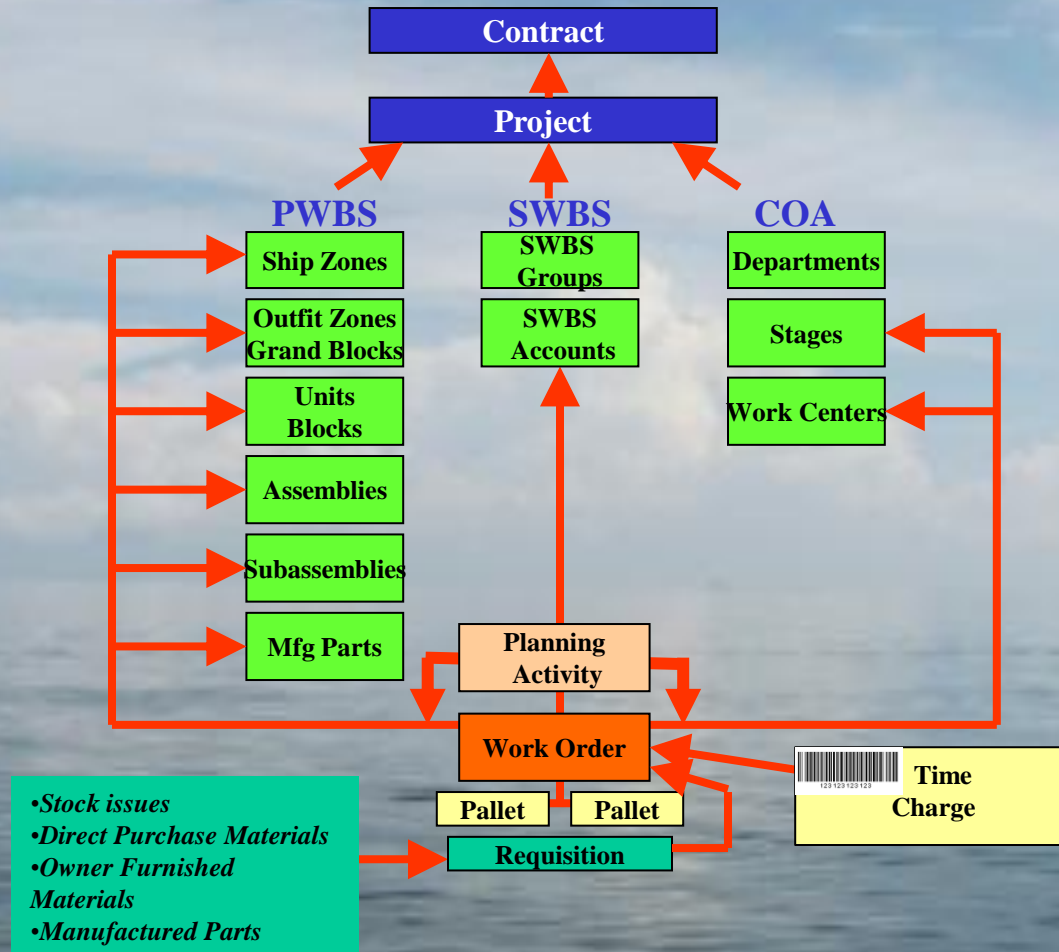
Material Resources



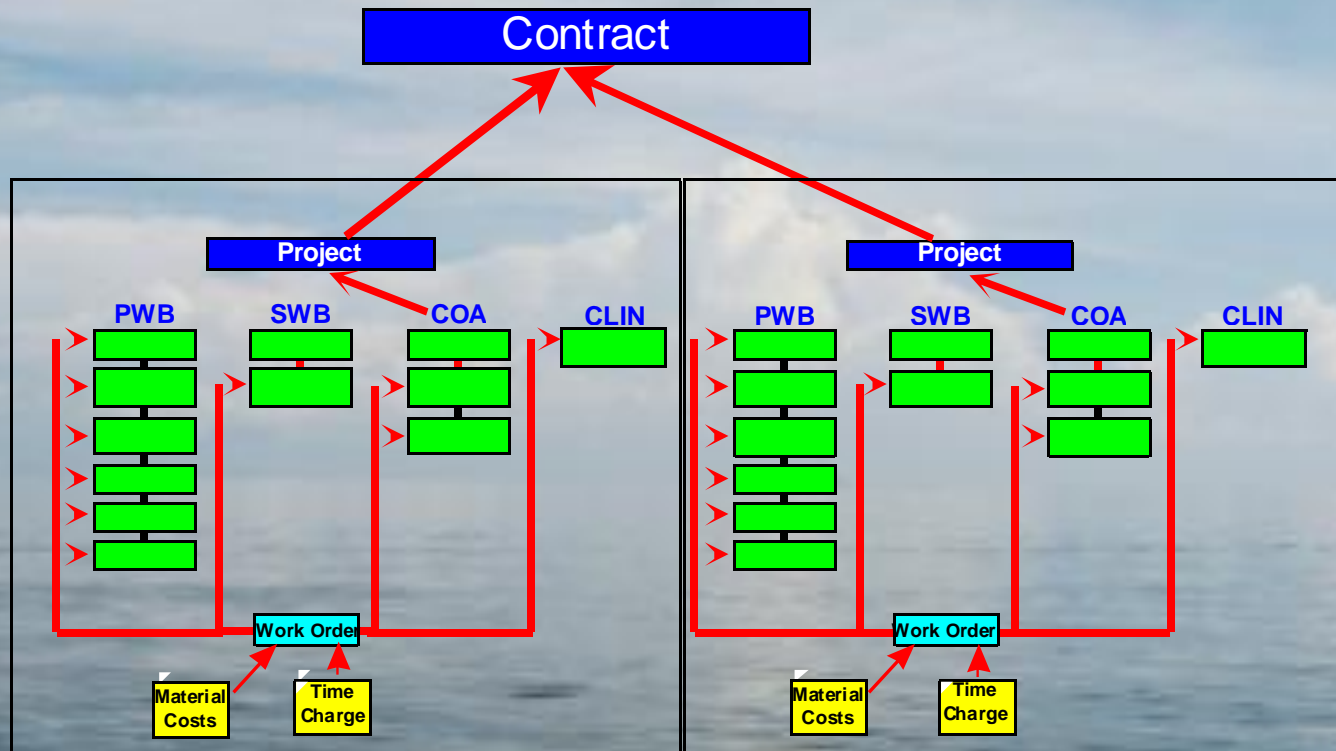
Labor Resources

The lowest level of project information

Project transactions can reference one or more different work breakdown structures. The WBS can be as simple or as complex as needed, contract by contract.



Multi-Ship Program Management Cost & Schedule Consolidation



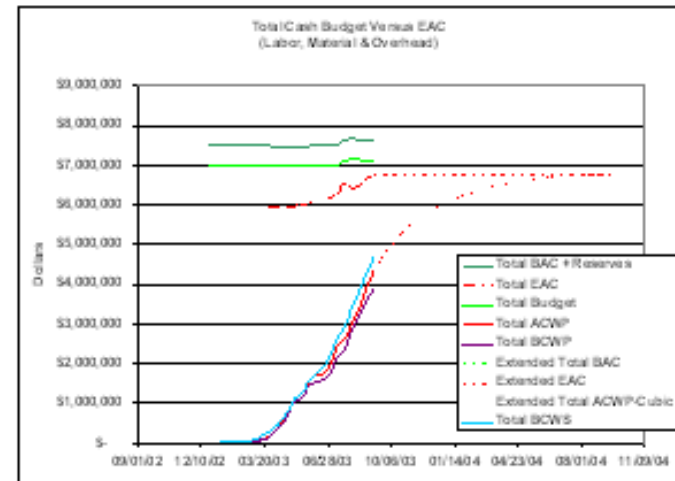
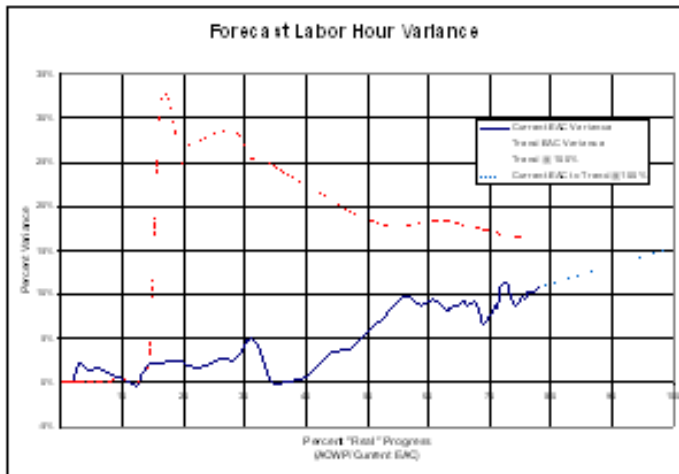
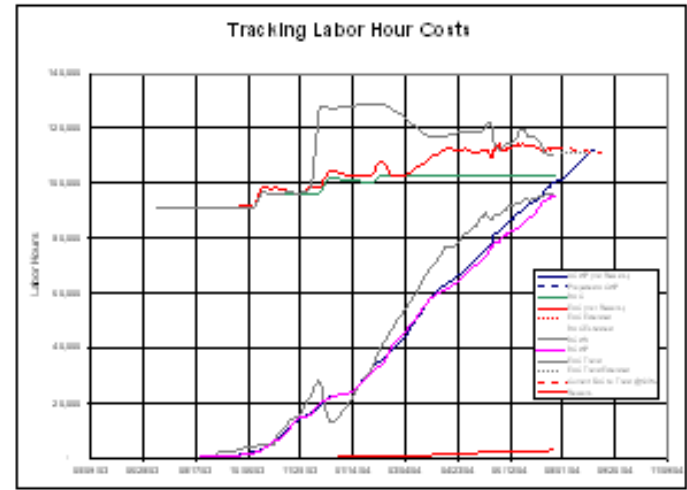
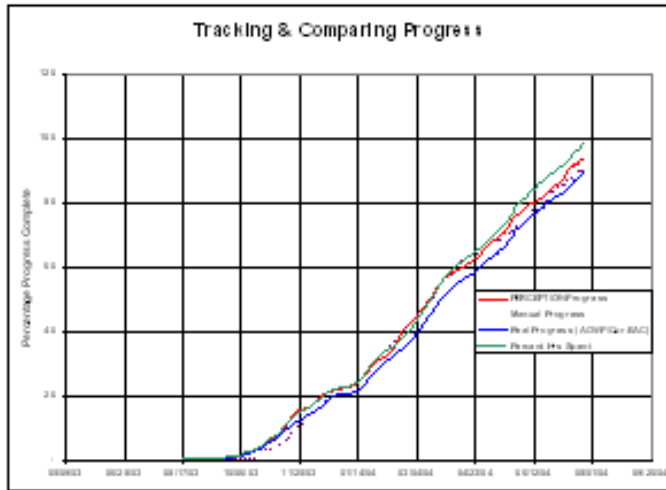
Tracking & Managing Material & Labor Costs and Schedules

- **BAC: Budget At Completion**
- **MR: Management Reserves**
- **BCWS: Budgeted Cost of Work Scheduled**
- **BCWP: Budgeted Cost of Work Performed (aka Earned Value)**
- **ACWP: Actual Cost of Work Performed**
- **EAC: Estimated Cost At Completion**
- **EAC Trend for 100% Progress**
- **Planned, Actual, & Manual Progress**
- **Estimated & Trend Completion Schedule**

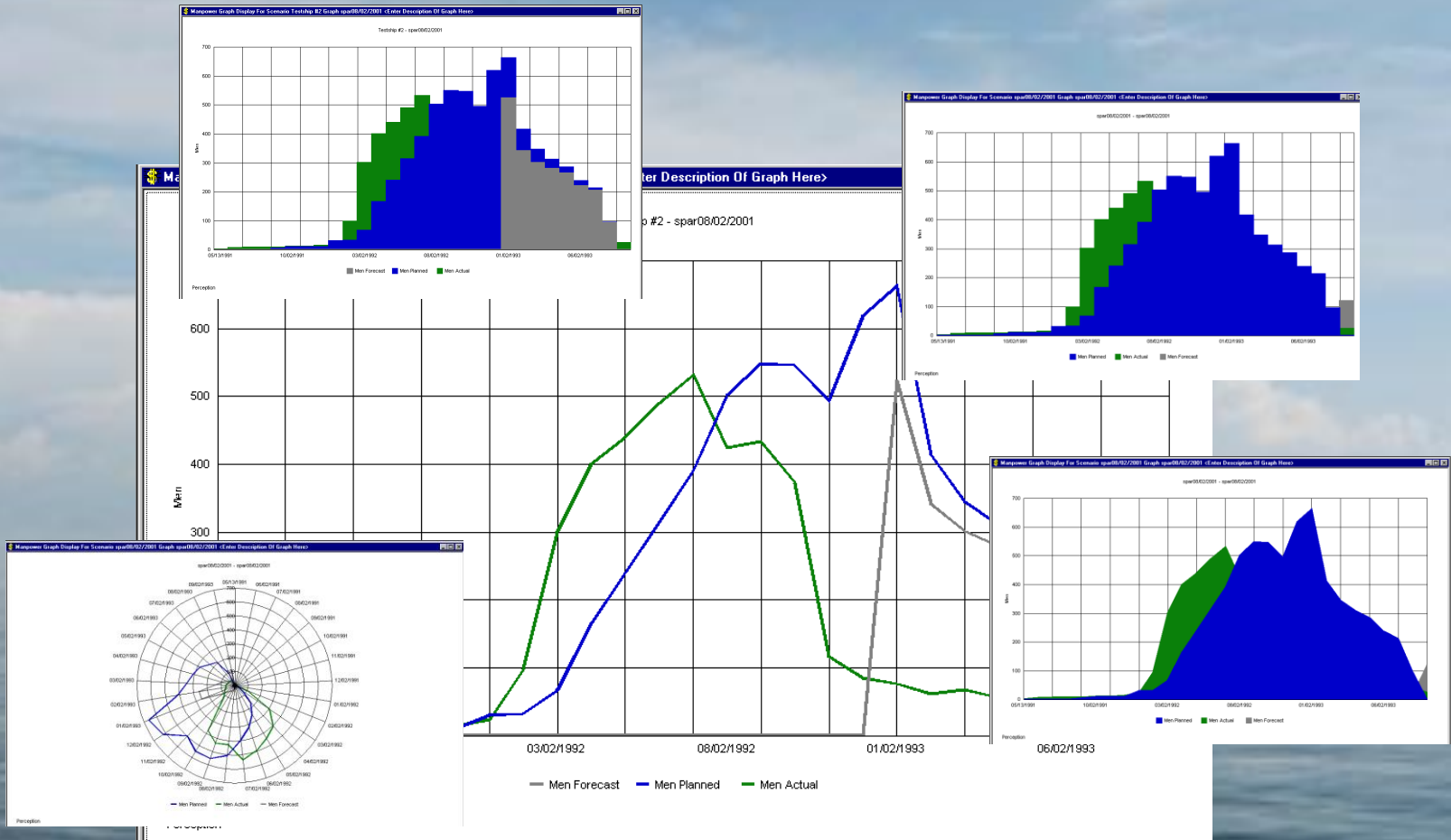
Tracking & Managing Special Costs and Schedules:

- ✓ **Rework**
- ✓ **Change Orders**
- ✓ **Labor Hours per 1% Progress**
- ✓ **Production Process Rates by Stage of Construction**
- ✓ **Weeks Ahead/Behind Planned Schedules**
- ✓ **Trend Weeks Ahead/Behind for 100% Progress**
- ✓ **Forecast & Trend Over-Run/Under-Run**

Sample Graphic Reports – Provide Better Visibility of Performance over Time



Many Reporting Formats



SWBS Summary Progress Reports Available At Group and Account Levels.

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(Date format: MM/DD/YYYY)

SPAR Associates, Inc.

Page 1 of 1

SWBS Group Progress Report (PROG02)

Contract TSHIP CONTRACT - T-SHIP Series Contract

Project: 0 to ZZZZZZZZ Group: 0 to ZZZZZZZZ

Group	Description	Effective Date:	Percent Progress				Current Labor Hours				Final Hours			
			Planned	Actual	Ahead	Weeks Ahead	BCWS	BCWP	Actual Hours	Schedule Ahead	Budget	EAC	ETC	Savings
Project 2002		01/14/1993	Severn Bulk Carrier (work orders)											
			68.66	68.04	-0.62	-0.33	698,984	692,646	660,706	-6,338	1,017,998	984,817	324,111	33,181
0	STEELWORK		90.85	95.36	4.51	3.65	431,102	452,518	450,719	21,416	474,528	474,895	24,176	-367
1	ACCOMODATIONS OUTFIT		16.55	26.00	9.45	4.70	9,138	14,358	16,020	5,221	55,222	58,120	42,100	-2,898
2	CARGO SYSTEMS OUTFIT		56.66	64.47	7.81	1.58	31,964	36,370	26,925	4,406	56,418	44,712	17,787	11,706
3	MECHANICAL SYSTEMS OUTFIT		38.56	32.92	-5.64	-1.47	31,921	27,265	20,641	-4,656	82,784	73,453	52,812	9,331
4	PIPING SYSTEMS		55.66	48.02	-7.64	-3.40	45,891	39,601	26,504	-6,290	82,450	62,160	35,656	20,290
5	MACHINERY SYSTEMS		54.17	39.12	-15.05	-6.11	15,112	10,913	7,712	-4,199	27,899	23,832	16,120	4,067
6	ELECTRICAL SYSTEMS		38.33	8.95	-29.38	-9.20	22,242	5,195	4,821	-17,047	58,027	55,591	50,770	2,436
7	PRODUCTION SERVICES		57.24	62.95	5.71	3.99	73,617	80,951	81,089	7,334	128,601	131,270	50,181	-2,669
8	OWNER CHANGES		55.12	16.71	-38.41	-25.13	13,485	4,089	4,282	-9,396	24,466	32,702	28,420	-8,236
9	DESIGN & DRAWING		88.80	77.66	-11.14	-8.93	24,512	21,436	21,993	-3,076	27,603	28,084	6,091	-481
Group Totals for Project - 2002			68.66	68.04	-0.62	0.62	698,984	692,695	660,706	-6,289	1,017,998	984,817	324,111	33,181



Critical Information: Weeks Ahead (or behind), Scheduled Hours Ahead (or behind) & Labor Hours EAC

WORK-PAC Center Progress Report (PROG14)

Labor Hours

Contract: 1999-01 to WBS-Various
 Project: 2002 to 2002
 Work Center: 0 to ZZZZZZZZ

Work Center	Description	Percent Progress		Weeks Ahead	% Diff	Current Labor Hours				Final Hours			
		Planned	Actual			BCWS	BCWP	Actual Hours	Schedule Ahead	Budget	EAC	ETC	Savings
T01	Steel Fabrication	100.00	88.96	-746	-11.04	66,936	59,546	61,253	-7,390	66,936	68,851	7,598	-1,915
T02	Steel Assembly	100.00	100.00	8	0.00	198,324	198,324	199,069	0	198,324	199,069	0	-745
T03	Steel Erection	100.00	98.88	-753	-1.12	64,799	64,073	56,093	-726	64,799	56,728	635	8,071
T04	Steel Weldout	100.00	94.29	-759	-5.71	93,817	88,460	98,253	-5,357	93,817	104,201	5,948	-10,384
T05	Mould Loft	100.00	100.00	17	0.00	13,802	13,802	11,420	0	13,802	11,420	0	2,382
T06	Material Control	100.00	71.46	-758	-28.54	28,981	20,710	19,874	-8,271	28,981	27,811	7,937	1,170
T07	Planning and Control	100.00	75.82	-758	-24.18	19,327	14,654	13,816	-4,673	19,328	18,222	4,406	1,106
T09	Drawing Office	100.00	70.00	-701	-30.00	27,600	21,000	21,000	5,600	27,600	27,600	5,610	0
T10	Production Services											1,775	-3,366
T11	Carpenter's Shop											1,462	333
T15	Miscellaneous											1,661	2,007
T21	Joiner Shop											1,511	-1,826
T22	Rigging Shop	100.00	72.77	-759	-27.23	21,515	15,656	10,724	-5,859	21,515	14,738	4,014	6,777
T23	Outfit Shop	100.00	55.26	-765	-44.74	28,606	15,808	14,627	-12,798	28,606	26,470	11,843	2,136
T24	Pipe Shop	100.00	62.31	-766	-37.69	42,939	26,755	26,504	-16,184	42,939	42,534	16,030	405
T25	Machine Shop	100.00	62.02	-765	-37.98	12,023	7,457	7,712	-4,566	12,023	12,435	4,723	-412
T26	Electrical Shop	100.00	25.84	-770	-74.16	18,660	4,822	4,821	-13,838	18,660	18,660	13,839	0
T31	On-Board Joinerwork											1,201	-3,684
T32	On-Board Rigging											1,494	6,208
T33	On-Board Outfit											1,355	7,810
T34	On-Board Pipework											1,115	13,396
T35	On-Board Electrical											1,885	3,991
T36	Maintenance	100.00	3.54	-783	-96.46	39,367	1,394	0	-37,973	39,367	37,972	37,972	1,395
Report Totals		100.00	68.40	-603	-31.60	1,014,390	693,895	660,525	-320,495	1,014,393	979,538	319,013	34,855

Summary Progress Reports by Production Work Centers

**Know what production process cost &
schedule needs management attention**

PWBS Zone Progress Report (PROG04)

ct TSHIP CONTRACT - T-SHIP Series Contract - Production Demo

Project: 2002 to 2002 Zone: 0 to ZZZZZZZZ

Zone	Percent Progress				Current Labor Hours				Final Hours							
	Planned	Actual	Ahead	Weeks Ahead	BCWS	BCWP	Actual Hours	Schedule Ahead	Budget	EAC	ETC	Savings				
Project 2002	Effective Date: 01/05/1993				Severn Bulk Carriers (Detail Work Orders)											
Default WBS - SWBS	Project Totals:				65.37	67.93	2.56	1.38	663,105	689,077	660,525	25,972	1,014,393	984,555	324,030	29,838
A	Tank Top Midships	100.00	100.00	0.00	0.00	29,184	29,184	33,004	0	29,184	33,004	0	0	-3,820		
B	Lower Side Tanks Midships	100.00	100.00	0.00	0.00	52,132	52,132	56,825	0	52,132	56,825	0	0	-4,693		
C	Upper Side Tanks Midships	92.67	99.00	6.33	13.86	56,006	59,829	58,519	3,823	60,433	58,918	399	1,515			
D	Spar Deck Tween Hatch	100.00	100.00	0.00	0.00	18,380	18,380	12,669	0	18,380	12,669	0	5,711			
E	Screen Bhds	89.55	98.84	9.29	16.00	15,644	17,267	14,928	1,624	17,470	15,104	176	2,366			
F	Aft Peak Units	90.59	96.10	5.51	2.00	17,591	18,661	17,640	1,070	19,418	18,355	715	1,063			
G	Fore Peak Units	65.09	96.46	31.37	14.43	25,673	38,044	36,426	12,371	39,440	37,763	1,337	1,677			
H	Cross Tanks	100.00	100.00	0.00	0.00	11,743	11,743	11,672	0	11,743	11,672	0	71			
I	Shedder Plates												205	170		
J	Hoppers												46	2,005		
K	Machinery Deck												0	-19		
L	Main Deck & Engine Room Bhd												0	-684		
M	Loop Belt Unit												0	-406		
N	Deckhouses & Funnel												1,278	350		
P	Aft Shell Units	92.91	99.00	6.09	8.14	15,199	16,195	17,886	997	16,359	17,992	106	-1,633			
R	Engine Room Tank Top	100.00	100.00	0.00	0.00	6,788	6,788	8,296	0	6,788	8,296	0	-1,508			
S	Tank Top Fwd E Aft	100.00	100.00	0.00	0.00	10,004	10,004	10,555	0	10,004	10,555	0	-551			
T	Lower Side Tanks Fwd & Aft	100.00	100.00	0.00	0.00	21,507	21,507	26,709	0	21,507	26,709	0	-5,202			
U	Upper Side Tanks Fwd & Aft	63.76	93.81	30.05	5.43	10,855	15,970	17,882	5,115	17,024	19,062	1,180	-2,038			
00	Misc. Ship-Wide	37.68	45.58	7.90	1.86	18,983	22,963	15,977	3,980	50,379	40,632	24,655	9,747			
10	Stern <Aft Peak>	88.90	86.82	-2.08	-1.14	5,376	5,251	4,838	-126	6,048	5,573	735	475			
13	Aft Peak	93.14	96.84	3.70	2.14	1,919	1,995	1,355	76	2,060	1,399	44	661			
20	Engine Room	36.79	32.66	-4.13	-4.00	7,867	6,985	6,394	-883	21,386	19,579	13,185	1,807			
21	Engine Room Below Floor Plates	100.00	100.00	0.00	0.00	4,211	4,211	4,394	0	4,211	4,394	0	-183			
22	Engine Room Above Floor Plates	53.09	48.10	-4.99	-2.86	17,686	16,024	13,279	-1,662	33,314	27,608	14,329	5,706			
23	Engine Room M.													5		
24	Engine Room M.													5		
25	Engine Room C													5		
26	H.F.O. Tank													5		
27	Engine Room C													5		
28	Funnel													5		
29	Main Control Room	2.56	11.27	8.71	0.86	9	39	39	30	346	346	307	0			
40	Sea Lift Cargo Deck	45.49	49.33	3.84	1.86	3,052	3,310	3,065	258	6,710	6,213	3,148	7,197			

Summary Progress Reports by Production Modules & Ship Zones

Know what ship zone/production interim product costs & schedule needs management attention

WORK-PAC Trade Progress Report (PROG15)

Labor Hours

Contract: 1999-01 to WBS-Various

Project: 2002 to 2002

Trade: 0 to ZZZZZZZZ

Trade	Description	Percent Progress		Weeks Ahead	% Diff	Current Labor Hours				Final Hours			
		Planned	Actual			BCWS	BCWP	Actual Hours	Schedule Ahead	Budget	EAC	ETC	Savings
T01	AIR TOOL ROOM	50.08	38.01	-9	-12.07	1,976	1,499	1,389	-476	3,945	3,654	2,265	291
T02	BLACKSMITHS	100.00	66.91	-11	-33.09	1,963	1,313	1,145	-650	1,963	1,711	566	252
T04	BURNERS	100.00	91.05	-22	-8.95	53,160	48,402	48,934	-4,758	53,160	53,745	4,811	-585
T05	CARPENTERS - SHIP	100.00	91.28	-14	-8.72	40,172	36,669	31,417	-3,503	40,172	34,417	3,000	5,755
T06	CHIPPERS/CAULKERS	100.00	86.26	-22	-13.74	14,267	12,307	7,988	-1,960	14,267	9,260	1,272	5,007
T07	CRANEMEN	100.00	72.51	-14	-27.49	20,793	15,077	16,788	-5,716	20,793	23,151	6,363	-2,358
T08	DRILLERS/REAMERS	51.12	36.43	-4	-14.69	358	255	215	-103	700	643	428	57
T09	ELECTRICIANS	62.47	39.27	-9	-23.20	16,824	10,575	9,691	-6,249	26,929	24,678	14,987	2,251
T10	FITTERS	100.00	97.01	-33	-2.99	71,509	69,371	66,572	-2,138	71,509	68,621	2,049	2,888
T11	FURNACEMEN - SLAB	100.00	100.00	8	0.00	1,415	1,415	1,279	0	1,415	1,279	0	136
T12	JOINERS	22.89	20.83	-1	-2.06	7,980	7,263	8,016	-718	34,866	38,485	30,469	-3,619
T13	LABOURERS	53.49										,368	-6,516
T14	MACHINISTS	100.00										,730	778
T15	MOULD LOFT	100.00										1	2,395
T16	PAINTERS	64.64										,556	694
T17	PIPE FITTERS	86.29										,986	1,368
T18	PLUMBERS	43.13	32.75	-3	-10.38	6,231	4,731	4,732	-1,499	14,447	14,447	9,715	0
T20	PUNCH SHED	100.00	93.45	-20	-6.55	12,142	11,347	10,044	-795	12,142	10,748	704	1,394
T21	RIGGERS	100.00	75.87	-24	-24.13	32,745	24,844	20,574	-7,901	32,745	27,116	6,542	5,629
T22	SHEET METAL WORKERS	26.64	57.19	9	30.55	3,084	6,619	5,653	3,535	11,573	9,884	4,231	1,689
T23	STAGE BUILDER ^{CS}	84.81	55.01	-9	-28.00	10,488	12,846	15,148	-6,641	22,077	27,003	11,045	-4,116
T24	STOCKYARD - S												,514
T25	STORESMEN												,247
T26	NIGHT MANAGE												,092
T28	WELDERS - ELE												,921
T29	NIGHT FOREME												0
T30	PREPARATION FITTER	100.00	97.33	-22	-2.67	17,692	17,220	17,263	-472	17,692	17,736	473	-44
T31	ON-BOARD PIPE WORKERS	100.00	81.74	-15	-18.26	41,584	33,991	29,280	-7,593	41,584	35,822	6,542	5,762
T32	ON-BOARD STEEL OUTFITTERS	48.51	54.13	1	5.62	8,893	9,924	8,534	1,031	18,333	15,765	7,231	2,568
T33	ON-BOARD ELECTRICIANS	100.00	100.00	12	0.00	654	654	1,188	0	654	1,188	0	-534
T34	ON-BOARD SHEET METAL WORKERS	89.99	79.66	-8	-10.33	24,846	21,994	21,993	-2,852	27,610	27,610	5,617	0
T35	ON-BOARD JOINERWORKERS	100.00	57.06	-21	-42.94	16,568	9,454	9,793	-7,114	16,568	17,163	7,370	-595
T36	QUALITY CONTROL	100.00	75.71	-19	-24.29	6,900	5,224	4,023	-1,676	6,900	5,314	1,291	1,587
T37	WELDERS - TACKING	0.00	100.00	8	100.00	0	0	0	0	0	0	0	0
	Report Totals	89.24	77.09	-402	-12.15	775,763	670,140	656,486	-105,623	869,313	857,278	200,792	12,035

Summary Progress Reports by Shipyard Trade/Craft

Know what production trade cost & schedule needs management attention

Comparing Production Costs with Estimate

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SPAR Associates, Inc.

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SWBS Group - Estimate vs Production Labor/Material Status Report (EvsP02)

Contract TSHIP CONTRACT - T-SHIP Series Contract

Project Range:

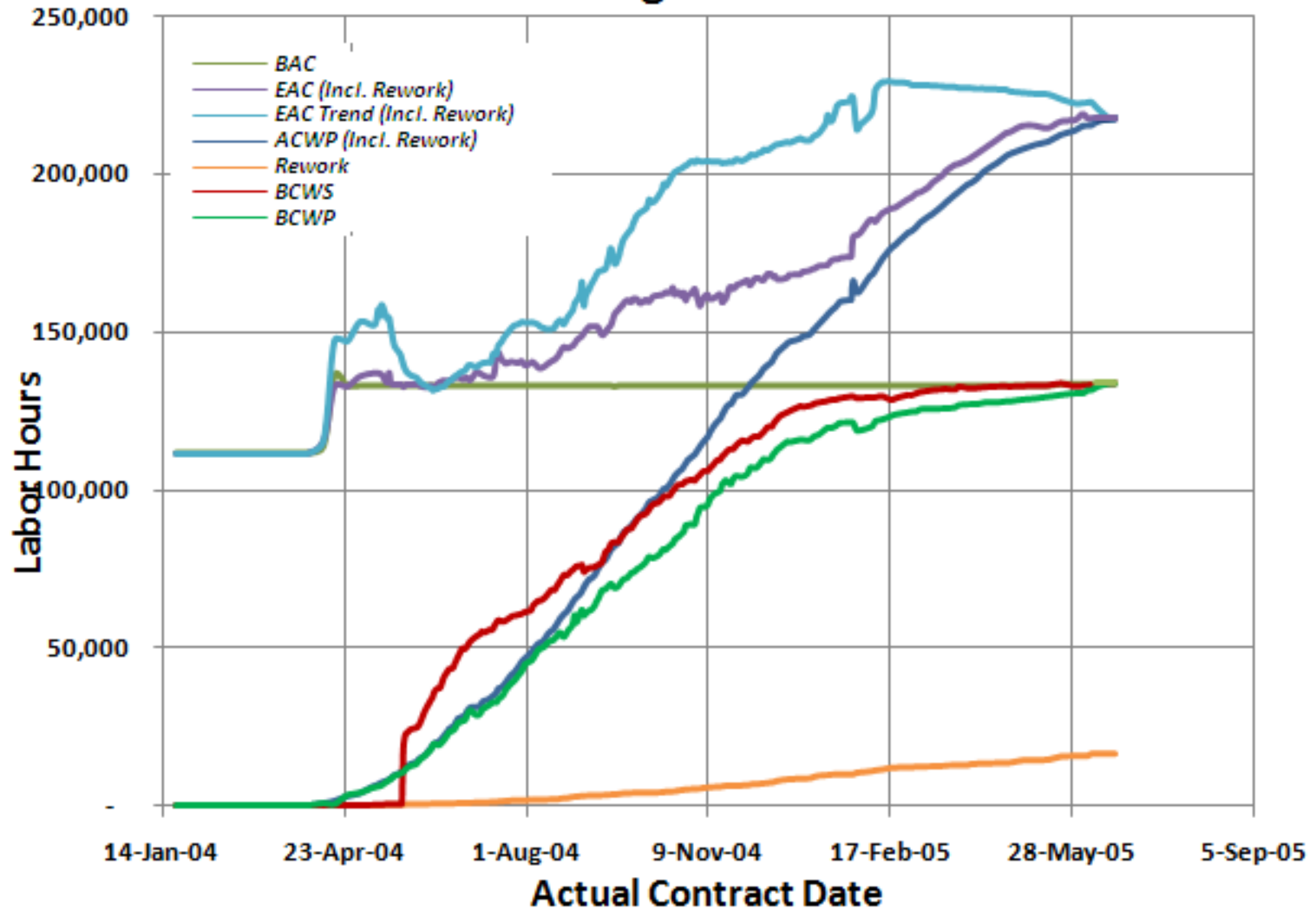
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Group Range:

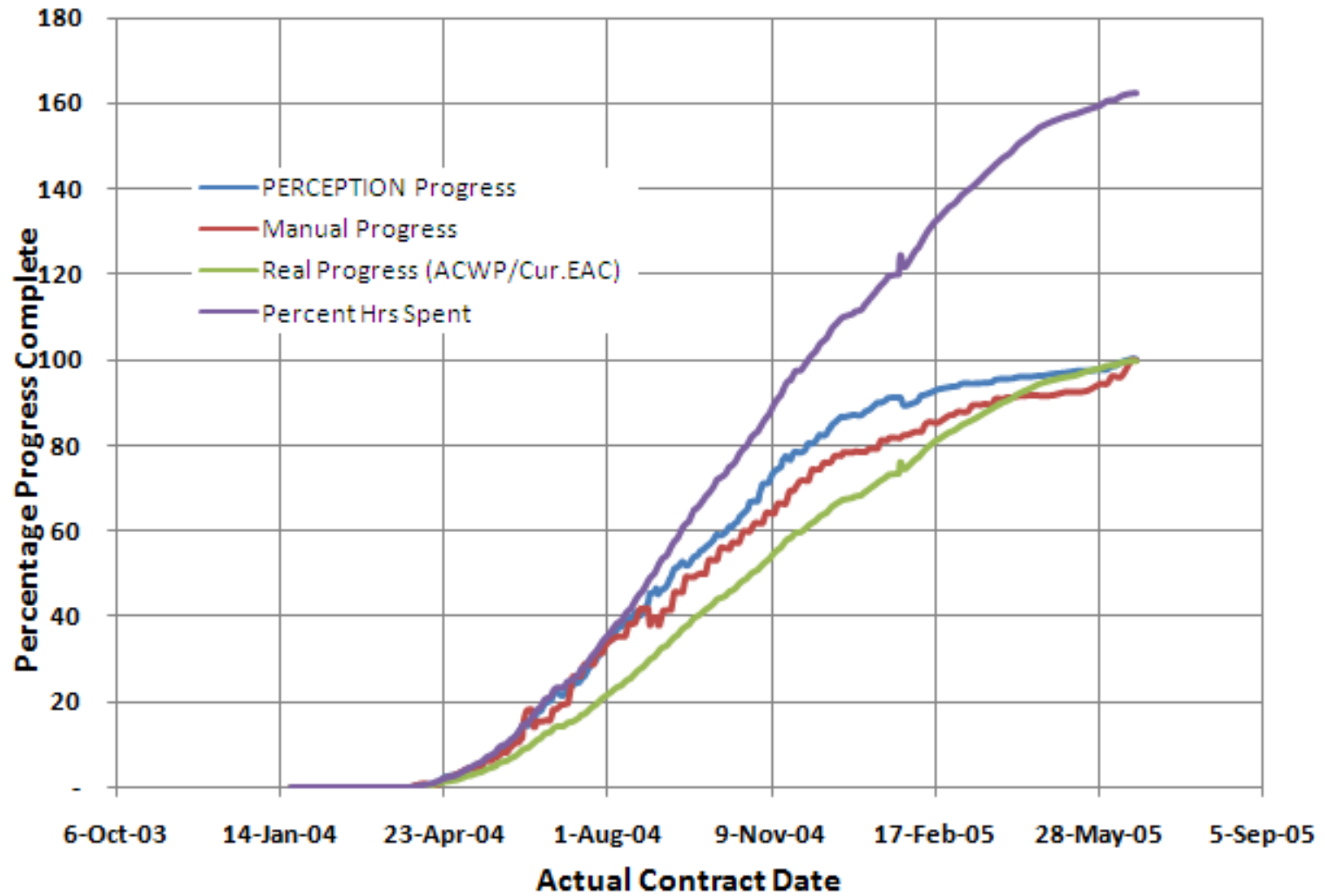
0 to ZZZZZZZZ

Group	Description	Estimated Hours	Production Budget Hours	Actual Hours	EAC Hours	Estimated Material Cost	Budget Material Cost	Committed Material Cost
Project 2002	Severn Bulk Carrier (work orders)	1,106,520	1,017,998	660,706	984,817	32,080,543	29,193,294	25,982,032
0	STEELWORK	515,791	474,528	450,719	474,895	17,150,061	15,606,555	13,889,834
1	ACCOMODATIONS OUTFIT	60,024	55,222	16,020	58,120	1,932,770	1,758,821	1,547,103
2	CARGO SYSTEMS OUTFIT	61,324	56,418	26,925	44,712	1,910,240	1,738,318	2,193,595
3	MECHANICAL SYSTEMS OUTFIT	89,983	82,784	20,641	73,453	2,708,477	2,464,714	2,108,533
4	PIPING SYSTEMS	89,620	82,450	26,504	62,160	2,603,448	2,369,138	687,686
5	MACHINERY SYSTEMS	30,325	27,899	7,712	23,832	849,100	772,681	1,376,678
6	ELECTRICAL SYSTEMS	63,073	58,027	4,821	55,591	1,699,813	1,546,830	1,981,189
7	PRODUCTION SERVICES	139,784	128,601	81,089	131,270	2,446,215	2,226,055	376,916
8	OWNER CHANGES	26,593	24,466	4,282	32,702	465,386	423,501	255,146
9	DESIGN & DRAWING	30,003	27,603	21,993	28,084	315,034	286,681	1,565,350
	Grand Total	1,106,520	1,017,998	660,706	984,817	32,080,543	29,193,294	25,982,032

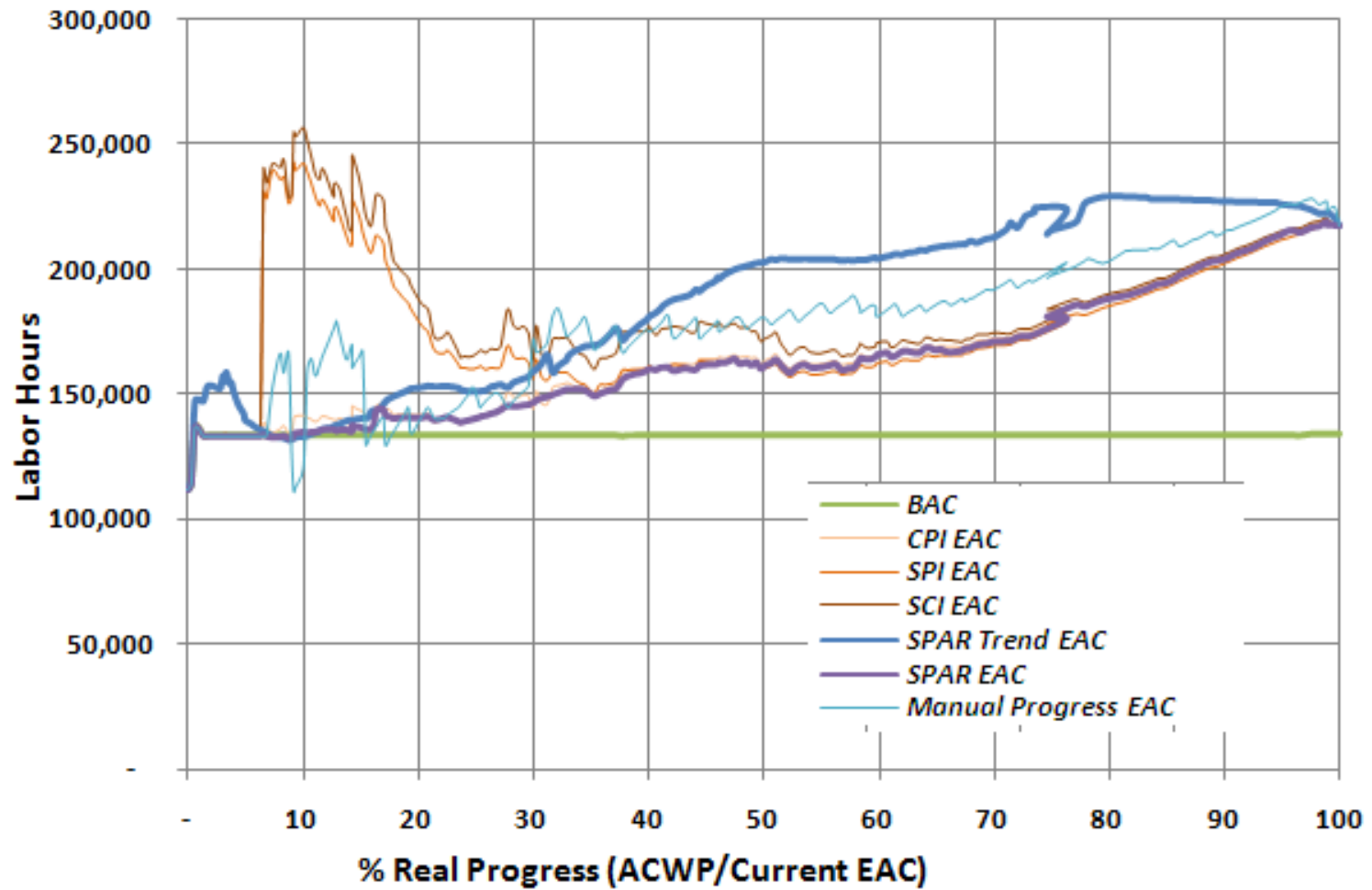
Tracking Labor Hour Costs



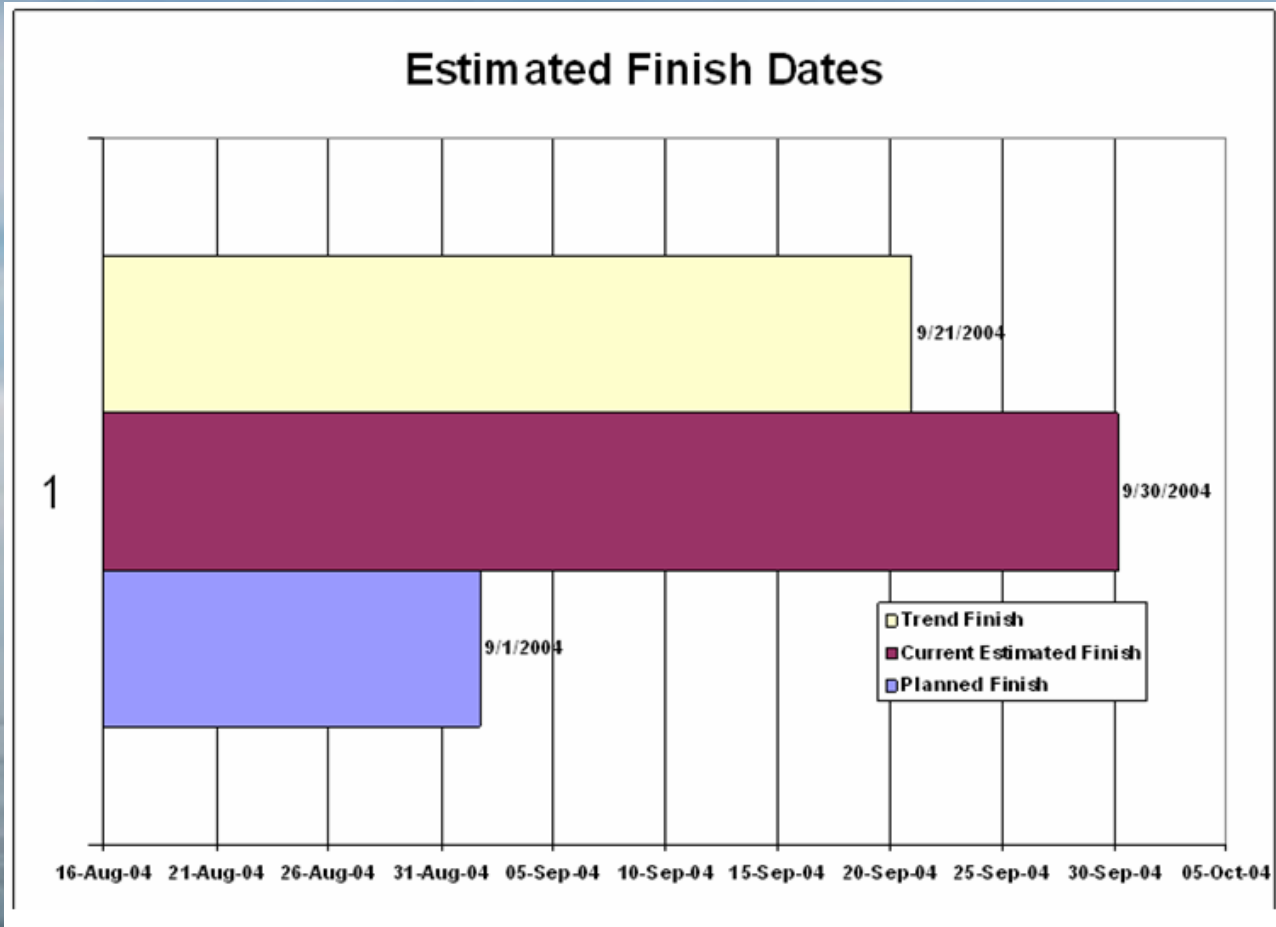
Tracking & Comparing Progress



Tracking Various Labor Hour EACs



Reporting Schedule Variances



Many Formats for Reporting Detail Work Order Status

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(Date format: MM/DD/YYYY)

SPAR Associates, Inc.
Work Order Listing Report (WO04)
 Project/SWBS Account/WC/WO Sort
 at TSHIP CONTRACT - T11

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(Date format: MM/DD/YYYY)

SPAR Associates, Inc.
Work Order Listing Report (WO05)
 Project/Zone/Planned Start Sort
 at TSHIP CONTRACT - T32

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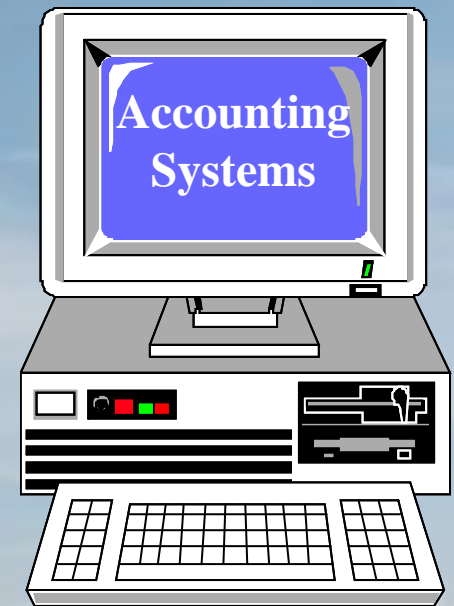
Work Center	Order	Heading	Unit	Acct	Auth	Planned Start	Planned Finish	Actual Start	Actual Finish	Sta	Budget Hours	Actual Hours	Over Run	Premium Hours	After Close	Rework Hours	% Prog
Project 2002 Effective Date: 01/14/1993 Severn Bulk Carrier (work orders)																	
Zone 00 MISC TOTAL SHIP																	
T32	24600	FABRICATE RIGGING	246	N		12/23/1992	02/02/1993	06/19/1992	00/00/0000	*	384	75.00		0	0	0	0.00
T36	60300	UNLOAD MCC CONNECT	603	N		12/23/1992	07/26/1993	00/00/0000	00/00/0000	LS	373	0.00		0	0	0	0.00
T23	30413	31-40 BBOARDS+TIMBER	304	N		01/05/1993	02/02/1993	09/23/1992	10/02/1992	C	497	490.00		0	0	0	100.00
T33	30422	WAY 21-30 TOP PACKED	304	N		01/05/1993	01/26/1993	07/21/1992	09/10/1992	C	277	285.00 *		0	0	0	100.00
T33	30442	CLEAR BERTH + HULL	304	N		01/05/1993	02/17/1993	00/00/0000	00/00/0000	LS	3,451	0.00		35	0	0	0.00
T33	31900	WT + OIL TIGHT DOORS	319	N		01/05/1993	05/14/1993	00/00/0000	00/00/0000	LS	111	0.00		0	0	0	0.00
T36	60600	FAB NAVVAID FITTINGS	606	N		01/05/1993	02/09/1993	00/00/0000	00/00/0000	LS	870	0.00		0	0	0	0.00
T23	30423	WAY 31-40 TOP PACKED	304	N		01/12/1993	02/02/1993	10/02/1992	10/09/1992	C	277	260.00		0	0	0	100.00
T33	30404	WAY 41-50 SET+PACKED	304	N		01/12/1993	02/09/1993	10/01/1992	10/30/1992	C	456	370.00		13	0	0	100.00
T33	30414	41-50 BBOARDS+TIMBER	304	N		01/12/1993	02/09/1993	08/20/1992	10/30/1992	C	497	328.00		11	0	0	100.00
T33	30436	JACKING SHORES+LUGS	304	N		01/12/1993	02/02/1993	00/00/0000	00/00/0000	LS	324	0.00		0	0	0	0.00
T33	30438	ROPE + STRAP TIMBERS	304	N		01/12/1993	02/02/1993	07/06/1992	11/06/1992	C	787	0.00		8	0	0	100.00
T33	30440	18 DRAG CHAINS+BOXES	304	N		01/12/1993	02/17/1993	00/00/0000	00/00/0000	LS	1,628	0.00		34	0	0	0.00
T36	60200	MASTS CABLING	602	N		01/12/1993	04/21/1993	00/00/0000	00/00/0000	LS	180	0.00		0	0	0	0.00
T31	16790	SIDELIGHTS SHOPWORK	167	N		01/20/1993	06/22/1993	08/12/1992	00/00/0000	*	152	41.00		0	0	0	0.00
T33	30424	WAY 41-50 TOP PACKED	304	N		01/20/1993	02/09/1993	10/12/1992	10/30/1992	C	277	147.00		0	0	0	100.00



Tracking Performance Costs & Status On-Line


Project Details Information									
Details	Material Status	Totals	Indexes	Variations	Notes	Baseline	Options	Milestones	Characteristics
Contract	TSHIP CONTRACT		Description	Savern Bulk Carriers (Detail Work Orders)					
Project	2002								
	Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Budgeted Cost	Estimated at Completion	Reserves	Effective Date:	01/14/1993	
Man-Hours:	693,209	689,077	660,525	1,014,393	984,555	1,000,000			
Rate/Hour:	17.30		16.27		16.16				
Labor Cost:	11,989,786	11,918,328	10,748,477	17,545,014	15,907,329	1,730,000			
	Budget + Reserves	Less EAC	Less Rework	= Labor Margin	Estimated Remaining Labor				
Man-Hours:	1,114,393	984,555	8,503	121,335	324,030			<i>NOTE: Rework included in ACWP or EAC</i>	
Labor Cost:	19,275,014	15,907,329	147,150	3,220,535	5,158,852				
	Start	Finish	Total Progress	67.93 %	(Closed	58.26 %	In-Process	9.67 %	
Planned	09/12/1991	09/17/1993	Total Planned	68.34 %	(Behind	-0.41 %	-0.21	weeks)	
Actual	05/13/1991	00/00/0000	Total Manual	58.20 %			Number of Work Packages:	2529	
							Budgeted Hours:	1,014,393.00	


PERCEPTION System's Integration



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

Interfaces With Accounting Systems

PERCEPTION

System Transactions

- Time Charges
- Purchases
- Stock Usage & Adjustments
- Customer Invoices
- Vendor Invoices

Accounting Systems

Payroll

General Ledger

Accounts Payable

Accounts Receivable

Established Interfaces With Popular Accounting Systems

PERCEPTION



Great Plains



ACC-PAC



Peachtree



Quick Books

**Generic Export
Transactions for
other systems**

Data Import/Export Features

PERCEPTION can import/export data in various formats:

- SQL ODBC
- Databases: Excel, Access, Oracle, SQL Server, Sybase SQL Anywhere
- Text files (comma, tab delimited & strings)
- Windows cut, copy & paste
- U.S. EDI Standard X12 (XML)
- Microsoft *Project*

PERCEPTION Tool Room Management

- **Control Check-out & Returns of Small Tools**
- **Track Tool Usage**
- **Track Tool Repairs**
- **Track Tool Costs & Purchasing Sources**



Miscellaneous PERCEPTION Features

Customizing Display Layouts

PERCEPTION offers a number of features that allows the user to customize the system windows & reports.

Project Details Information for the Estimating Environment (Designer Mode)

Details | Options | Milestones | Characteristics

Contract: 1999-01 | Description: Sample Ship Repair Project

Project: DES-1

Ship Type: Contain.

	Labor	Material	SubCon	Travel
Hours	211.90		0.00	
Cost	0.00	294.50	0.00	0.00
Profit	0.00	0.00	0.00	0.00
G&A	0.00	0.00	0.00	0.00
Overhead	0.00	0.00	0.00	0.00
Local Tax	0.00	0.00	0.00	0.00
Federal Tax	0.00	0.00	0.00	0.00
Sub Totals	0.00	294.50	0.00	0.00

Start Date	00/00/0000	Min. Risk	294.50	Weight	191.15
Finish Date	00/00/0000	Total Cost	294.50	Volume	0
		Max. Risk	294.50	# of Cost Items	9



Project Details Information for the Estimating Environment (Designer Mode)

Details | Options | Milestones | Characteristics

Contract ID: 1999-01 | Project ID: DES-1

Ship Type: Contain.

	Labor	Material	Project Description
Hours	211.90		Sample Ship Repair Project
Cost	0.00	294.50	
Profit	0.00	0.00	
G&A	0.00	0.00	
Overhead	0.00	0.00	
Sub Totals	0.00	294.50	

Start Date	00/00/0000	Min. Risk	294.50	# of Cost Items	9
Finish Date	00/00/0000	Total Cost	294.50		
		Max. Risk	294.50		

Modified Data Window (En español)

Project Details Information for the Estimating Environment				
Details	Options	Milestones	Characteristics	
La identificación del contrato				R-27
identificación de Proyecto				270
	El trabajo		la Materia	
Las horas	551,752.50			
El costo	5,517,525.00		9,375,711.92	
La ganancia	926,944.26		566,058.72	
Los Costos Administrativos	993,154.53		738,337.37	
El Costo de arriba	2,758,762.50		0.00	
El impuesto local	0.00		234,392.92	
Los subtotales	10,196,386.29		10,914,500.93	
La Fecha del comienzo	00/00/0000	El Coste total		El Riesgo mínimo 21,110,887.22
La Fecha del fin	00/00/0000		21,110,887.22	El Riesgo máximo 21,110,887.22

Proyecte la Descripción

Lead ship (Sample Detail Estimate)

Data Window Designer

All columnar worksheets, free-form data windows and most system reports can be edited & customized by the user:

- 1. Text Headings & Data Field Labels can be modified to suit specific user requirements. This includes using non-English text and Windows-supported non-English alphabetic characters.**
- 2. Un-needed data columns and free-form data fields can be hidden from displayed view.**
- 3. Data Fields re-arranged and re-sized in free-form data windows.**

On-Line User Help

On-Line Help is only a click away:

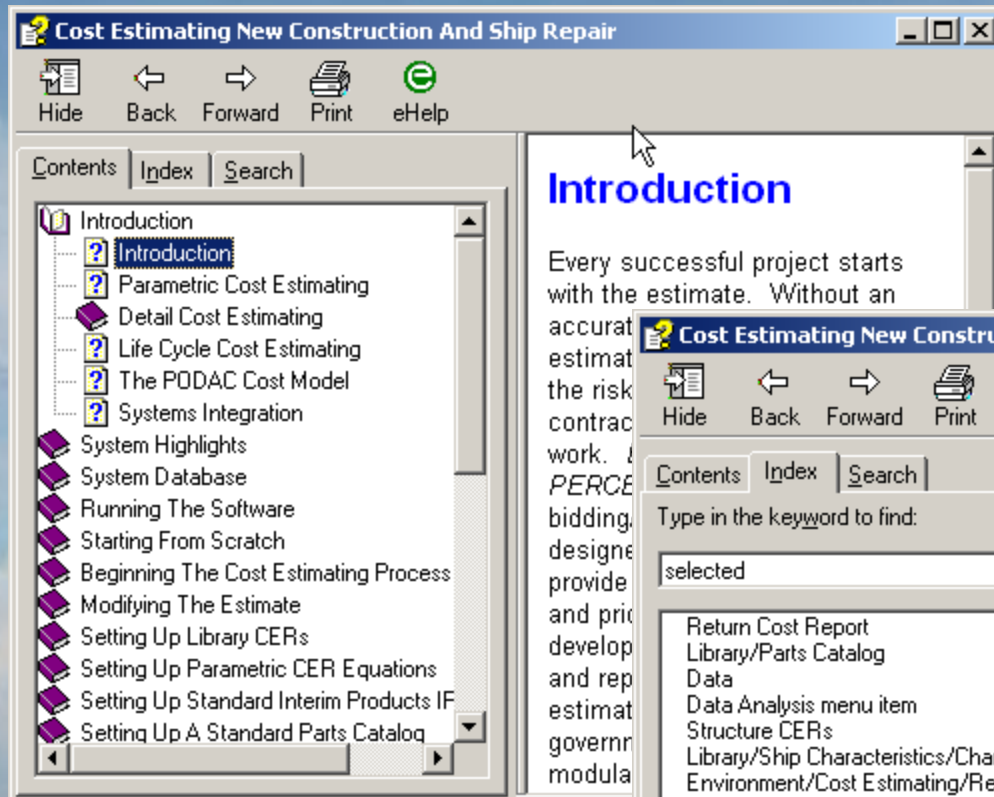
The screenshot displays the 'PERCEPTION - Total Shipyard Management' application window. The menu bar includes File, Edit, View, Environment, Library, Data, System, Reports, Window, and Help. The Help menu is open, showing options like Contents (F1), Getting Started With Perception, and various help topics for different environments. In the background, a table titled 'Project Information for the Estimating Environment' is visible, listing contracts, ship types, and projects.

Contract	Ship Type	Project
11999-01	Contain.	DES-1
262-0101-01	INDUSTRY	101
3A-DEMO	AGOR	01
4A-DEMO	WLM	02
5A-DEMO	O-PSV	1
6A-DEMO	TAKR	101
7A-DEMO	O-PSV	2
8B-DEMO	SUL	01
9B-DEMO	OSV	2
10B-DEMO	Ferry	4
11B-DEMO	OBO	5
12Barge	Barge-H	1

Help menu items:

- Contents (F1)
- Getting Started With Perception
- Help with Cost Estimating Environment
- Help with Engineering Environment
- Help with Planning and Scheduling Environment
- Help with Production Engineering Environment
- Help with Material Control Environment (00/00/)
- Help with Purchasing Environment (00/00/)
- Help with Stores Management Environment (00/00/)
- Help with Accounting Environment (00/00/)
- About Perception 7.0...
- Sample Material Control (00/00/)
- Sample Work Orders (00/00/)
- Sample Manpower (00/00/)
- Sample Cost Estimate (00/00/)
- Sample Cost Estimate w/Templates (00/00/)
- Open Hopper (00/00/)

Help is available by section of user manuals and by index reference.



Help also is available by keyword search.

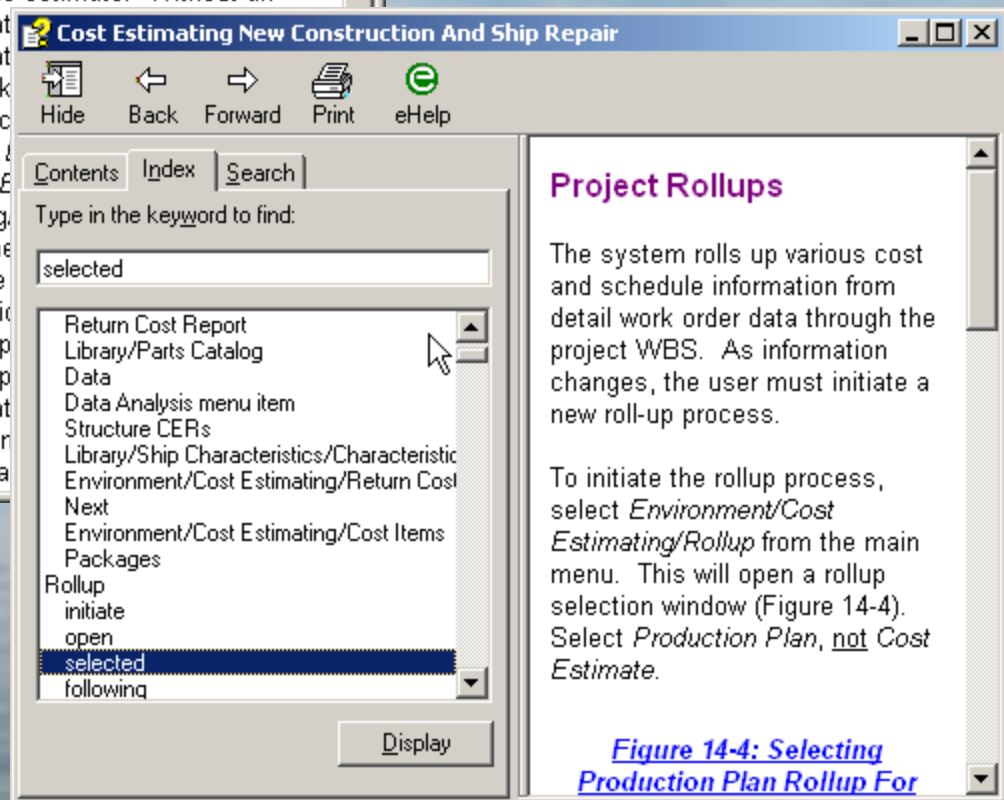


Figure 14-4: Selecting Production Plan Rollup For

Training Tutorials

***PERCEPTION* system includes a wide range of training tutorials depending upon the user's specific needs and scope of system functions authorized to use.**

These tutorials minimize training and re-training costs. They can be exercised any time for the user's convenience.

Training Tutorials:

Getting Started – General System Features

Starting A New Project

ESTI-MATE Cost Estimating Libraries

ESTI-MATE Estimating New Construction

ESTI-MATE Estimating Ship Repair

PERT-PAC Integrated Scheduling

PERT-PAC Scheduling Hull Block Construction

**WORK-PAC Starting From Scratch for Work Order
Planning & Management**

WORK-PAC Generating Work Orders

WORK-PAC Project Manpower Planning & Forecasting

WORK-PAC Shipyard Total Manpower Modeling

**MAT-PAC Starting From Scratch for Material Planning,
Purchasing & Inventory Control.**

MAT-PAC Managing Drawings

MAT-PAC Managing Stock Inventories

MAT-PAC Material Requisition

MAT-PAC Purchase Orders

MAT-PAC Receiving & Warehousing

MAT-PAC The Parts Catalog

MAT-PAC Tool Room Management Control

MAT-PAC Withdrawing Material

MAT-PAC Work Order Pallets

Project Manager Activities

Reports - Labor Cost & Work Progress

Reports - Material Cost & Schedule Status

Accounting New Project Setup

Accounting Customer Billings

Accounting Interface Setup

Accounting Time Charges

Accounting Vendor Invoices

PERCEPTION Software

PERCEPTION is a WIN32 application based on PowerBuilder. PowerBuilder is a 4GL software development tool that enables new software development 10-times faster than 3GL tools. PowerBuilder expedites fast & easy interfacing/integrating with other WIN32 and .NET applications.

It is a two-tier Client/Server System which also can be operated over the Internet using a remote central database.

PERCEPTION Database

PERCEPTION uses the SyBase SQL Anywhere database, a powerful RDBMS system which includes a self-tuning query optimizer and dynamic cache sizing features. Unlike other large-scale database systems, these features minimize any database administration functions for the user.

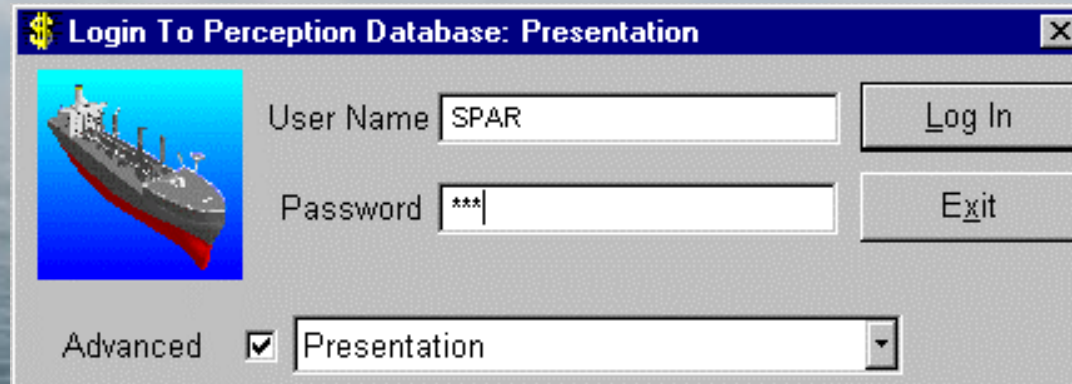
SQL Anywhere can integrate securely and reliably to databases using enterprise-class synchronization. This is the only synchronization technology to link with leading mobile devices, Sybase, Oracle, Microsoft, MySQL and IBM databases in the enterprise.

Sybase, now an SAP company, will be servicing all future SAP software systems.

System Security

All users are required to log into the system with their name and password.

Each user also is formally assigned authorized areas of the software to access and restricted from all others.



The screenshot shows a Windows-style login dialog box with a blue title bar containing a yellow dollar sign icon and the text "Login To Perception Database: Presentation". On the left side of the dialog is a small image of a red and white cargo ship. The main area contains two text input fields: "User Name" with the text "SPAR" and "Password" with three asterisks "***". To the right of the "User Name" field is a "Log In" button, and to the right of the "Password" field is an "Exit" button. At the bottom left, there is a checkbox labeled "Advanced" which is checked, followed by a dropdown menu currently displaying the word "Presentation".

SPAR Associates, Inc.

Over 35 Years Providing

- Shipyard management software
- Software development services
- Training & maintenance support
- Planning & scheduling services
- Independent cost estimating services
- Management consulting

Over 35 Years Serving the Shipbuilding & Repair Industry

