



US007685207B1

(12) **United States Patent Helms**

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(54) **ADAPTIVE WEB-BASED ASSET CONTROL SYSTEM**

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(73) Assignee: **The United States of America as represented by the Secretary of the Navy**, Washington, DC (US)

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(51) **Int. Cl.**
G06F 17/30 (2006.01)

(52) **U.S. Cl.** 707/790

(58) **Field of Classification Search** 707/104.1, 707/3, 10, 8, 1, 100

See application file for complete search history.

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(57) **ABSTRACT**

Disclosed herein is an adaptive Internet-based product control system that utilizes web technology to gather and present asset control data in an environment with constantly changing requirements due to various third party demands and/or funding restrictions. The present system tracks third party assets, provides real-time data regarding current status, and assists in returning the assets to the customer in a more timely fashion. The system can adapt to constantly changing user requirements by use of a Cold Fusion database interface to a set of data files that can be constructed and reconstructed on-the-fly. Multiple third party structures are supported with one central data file that handles the security logs and one central tasking data bank for tracking specific third party funding/tasking. The system also interfaces with bar code readers to gather of asset data and to upload it at a later time.

4 Claims, 46 Drawing Sheets

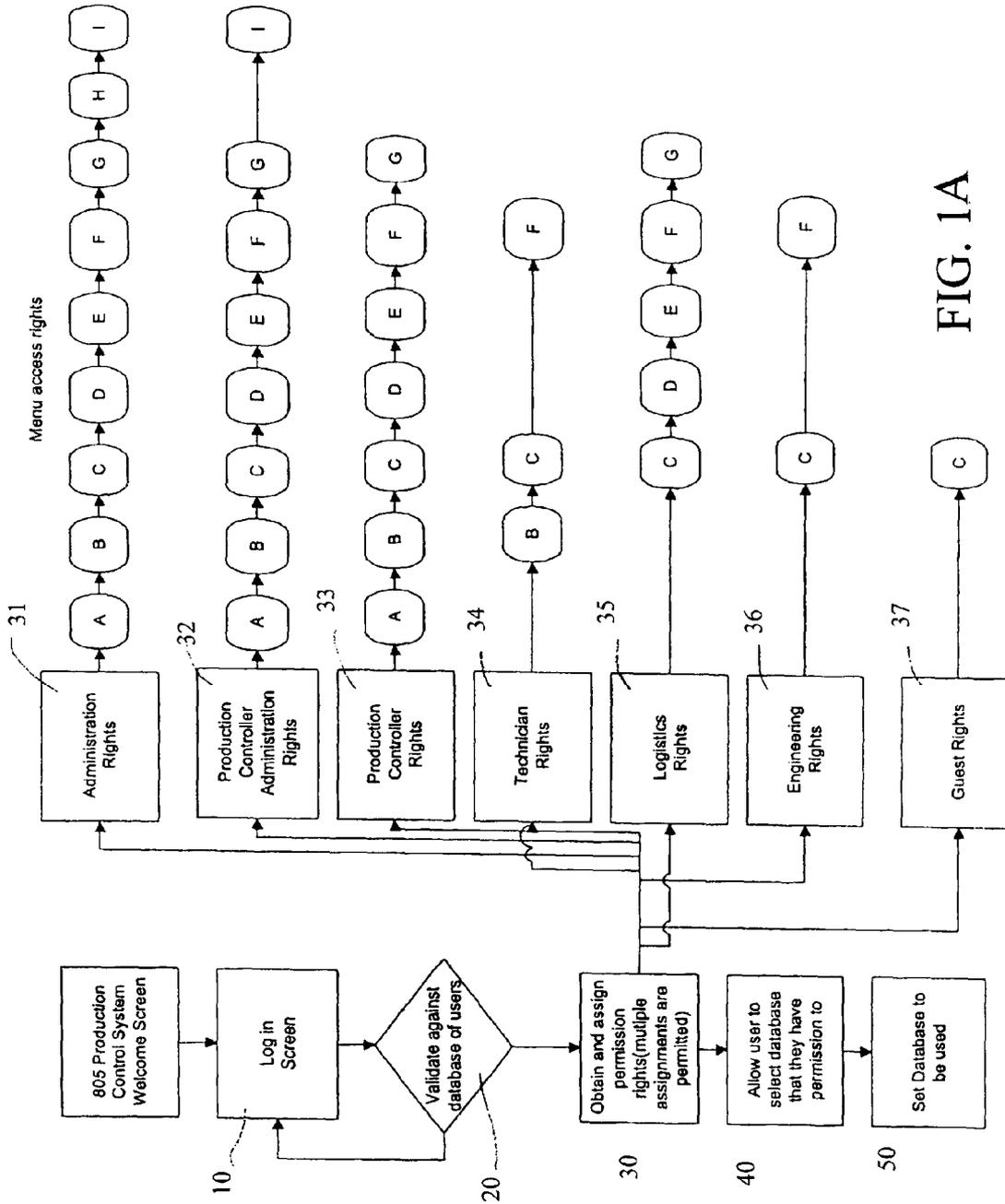


FIG. 1A

805 Production Control System, *Rev 3.1*

Log In Screen For Production Control System

Log In (User ID): 12

Password 13

14

New User 15

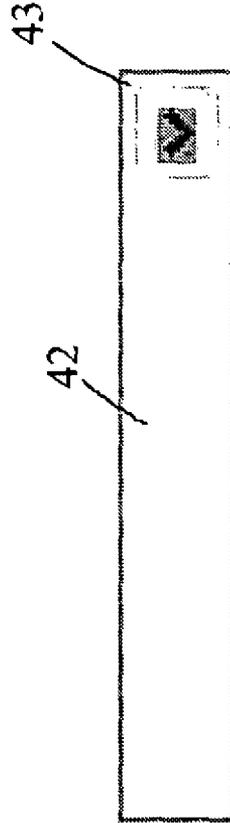
Send Comments To Webmaster
16

FIG. 1B

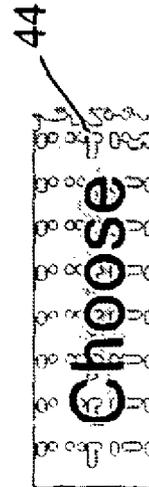
805 Production Control System, Rev 3.1
Database In Use: NSW

Database Selection Menu

Select Database:



A rectangular input field with a cursor icon at the top right corner. The field is labeled with '42' and the cursor icon is labeled with '43'.



A button labeled "Choose" with a decorative border. The button is labeled with '44'.

FIG. 1C



805 Production Control System, Rev 3.1

Database In Use:

Welcome

PC Menu 71

Tech Menu 72

Report Menu 73

Task Menu 74

Options Menu 75

Logistics Menu 76

Change Database (DB Sel) 77

Admin Menu 78

Calibration 80

Asset Tracking 81

Change Password 82

Request Changes To PCS Software 83

For First Time Users: Right Click On Barcode Font
And Save This File To The Windows Font Folder 84

Main Menu 85

FIG. 2A



805 Production Control System, Rev 3.1
Database In Use:

PCS Change Proposal Request Form

Change Proposal Against: 99 86

Describe request:

Date: 88

Requested By:

FIG. 2B

62

 Home
  PC
  Tech
  Reports
  Tasks
  Options
  DB Sel
  Logistics
  Admin

805 Production Control System, Rev 3.1
 Database In Use: 79

- New Work**
-  Add New Job 90
- Close Out Jobs**
-  Close Out Old Job (Search) 91
-  Close Out Old Job (List Of Completed Jobs) 92
-  Show G Condition Jobs 93
- Close Out Jobs And Ship**
-  Ship/Close Equipment - Sorted By Equipment And Serial Number 94
-  Ship/Close Equipment - Sorted By NSN And Serial Number 95
- Check To See If Items Need To Be Shipped** 96
-  Select Jobs For Shipment
-  List Jobs To Be Shipped 97
- Edit Old Jobs**
-  Edit Old Job, Print Out Traveler Or Close Out Record 98

FIG. 3



805 Production Control System, Rev 3.1
 Database In Use:

Entry Form For New Job (Serial Number)

Today's Date: 09/07/2002 222

Select either NSN: All 505 or Equipment: All 501 226

Task Request Number 503

Purpose Code 230 S 504

Requested Task 224 Acceptance 506

Serial Number 507

Select either Owner: 509 or UIC: 515
 ?????? 509 ?????? 508

Transfer Date In 09/07/2002 510

ICN 511

Schedule Control Number 512

Incoming Document Number 513

Comments 514

FIG. 4



805 Production Control System, Rev 3.1

Database In Use:

Change Page For Job Control Number 273

Basic Information

Last Transaction Date: 05/16/2000 521

Today's Transaction Date: 03/31/2003 537

Job Status: M to A 224

Requested Task: Repair 506

Edit either MSN: 5860-01-412-4533 227 or Equipment: AN/PEQ-1A 501

Serial number: 1148 507

Production Controller Comments: ARMY - IN ILSMIS AS H PURPOSE 514

Receiving Information

Transfer Date In: 01/13/2000 510

Item came in from: 5 SFG 538

ICN: 2030053 511

Incoming Document Number: 513

Schedule Number: N0002400WR1427 006 512

Shipping Information

Item to be shipped to: 5 SFG 539

TICN: 6580097 534

Outgoing Document Number: W36Q2K00250 535

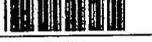
Transfer Date Out: 01/25/2000 536

FIG. 5

805 Shop Traveler - Printed by
Please use charge number: 385E096

for
This task is Urgent

Requested Task: Repair
Task is for: Canada
Located at (UIC): CCCCC

Assigned Job Number:	3221		101
Equipment:		Canadian LTM-91	
NSN:	N/A		103
Serial Number:	011		102
Date received on dock:		02/14/2003	
Traveler Date:		02/27/2003	
Task Request Number:	2394		
Schedule Number:			
Original Purpose Code:		J	
ICN:	NOSR		
Incoming Document:		NONE	

Comments:
Return to: VALCOM Limited, 175 Southgate Drive, Guelph, Ontario, Canada N1G 3M5

This block is for recording technician data when not using Production Control System for data

104

If acceptance: Pass _____ Fail _____
Date of Acceptance or Repair: _____
Describe any failures:

Total Hours worked: _____
Final Status Code: _____

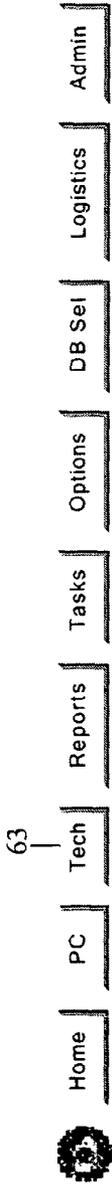
Describe any repairs:

List any parts used:

Technician comments:

Procedure Number:

FIG. 6



805 Production Control System, Rev 3.1

Database In Use: 79

Entry Forms

- ⌘ Acceptance Testing 110
- ⌘ Acceptance Testing (Batch Jobs) 111
- ⌘ I2 Tube Testing 112
- ⌘ Create/Edit Repair Job 113
- ⌘ Create/Edit Repair Job With Sub Tasks 114

⌘ Calibration 115

Reports/Datasheets

⌘ View Tube Datasheet 116

FIG. 7A

805 Production Control System, Rev 3.1
Database In Use:

Edit Ongoing Repair Job For AN/PVS-15 With Serial Number 02075

Assigned Job number: 3723 Accepted by: Helms, Bill

Job start Date: 08/23/2002 541 Job completion Date: 08/26/2002 547

Job Status: M_to_L 537 Job Description: Move item to L condition code 548

Select Failure Description

- Beyond economical repair
- Boresight Alignment
- Consumable 553

Failures for this job

Tube failure 544

Select Repair Description

- Align Optics
- Cleaned 549
- N/A

Repairs for this job

Repairs: 555

Repair Comments

Right tube bad goes dim in subdued lighting 551

Parts Used

542 546 \$ 0.00

545 +0.5 +0.1 +1.0 -1.0 -0.1

552

556

FIG. 7B

Home PC Tech Reports Tasks Options DB Sel Logistics Admin

805 Production Control System, Rev 3.1

Database In Use:

Image Intensifier Test Data Sheet

NSN: 5855-01-151-4191 Serial Number: 56497BB Job Number: 1802

AIMS File Name: 561 AIMS MTF @ 36 lp/mm: 562

Photometric Tests

Table with columns: Actual, Minimum, Maximum. Rows include R1, EBI, Maximum Gain (R3), Minimum Gain, Input current, Signal to Noise Ratio, Center Resolution.

Visual Quality

Table with columns: Spot Size, Zone 1, Zone 2, Zone 3. Rows include .015 in. or greater, .012 - .015 in, .009 - .012, .006 - .009, .003 - .006, Bright Spots.

Notes:

Reason For Failure

- Dead, Shaded, Edge Glow, Bright Spot, Emission Point, EBI, Shear Distortion, Oversized Spots, Honey Comb, Gross Distortion, Excessive Spots, Input Current, Chicken Wire, EMI Failure, 30% Contrast, Housing Damage, Distraction Defect, Signal to Noise, Shorted, Flickers, Arcing, Resolution, Gain, Halo.

QA Result: Pass Date: 09/07/2002 Technician: Helms, Bill

Labor hours: 0.7 +0.5 +0.1 +1.0 -1.0 -0.1

Comments: 590

591

FIG. 8

805 Production Control System, Rev 3.1

Database In Use:

Image Intensifier Test Data Sheet

NSN: 5855-01-151-4191 Serial Number: SMD00186 Job Number: 120

AIMS File Name: AIMS MTF @ 36 lp/mm:

Photometric Tests

	Actual	Minimum	Maximum
$R1 = \sqrt{1.78^{-4}}$ $EBI = \sqrt{3.2}$ x10 ⁻¹¹			3.0 x 10 ⁻¹¹
Maximum Gain (R3)	48.7 K	20 K	35 K
Minimum Gain	6.1 K	3.5 K	10.5 K
Input current	26.1 ma		45 ma
Signal to Noise Ratio	27 :1	16.2 :1	
Center Resolution	45 lp/mm	36 lp/mm	

Visual Quality

Spot Size	Zone 1	Zone 2	Zone 3
.015 in. or greater	(0)	(0)	(0)
.012 - .015 in	(0)	(1)	(2)
.009 - .012	(0)	(3)	(3)
.006 - .009	(1)	(6)	(9)
.003 - .006	(3)	(10)	(14)
Bright Spots	(0)	(0)	(0)

Notes:

Reason For Failure:

- | | | | |
|----------------|------------------|--------------------|------------|
| Dead | Shear Distortion | Chicken Wire | Shorted |
| Shaded | Oversized Spots | EMI Failure | Flickers |
| Edge Glow | Honey Comb | 30% Contrast | Arcing |
| Bright Spot | Gross Distortion | Housing Damage | Resolution |
| Emission Point | Excessive Spots | Distraction Defect | Gain |
| X EBI | Input Current | Signal to Noise | Halo |

QA Result: M_to_H

Date: 06/24/2002

Technician:

Cundiff, John

Labor hours: 1.00

Comments:

FIG. 9

64



805 Production Control System, Rev 3.1

Database In Use: 79

Step 1: Select Date Range For History Reports As Needed

Date Bound Reports Are Currently Set At:

10/01/2001 To 10/01/2002 136

Step 2: Select From The Following To View Reports Within That Category

<u>131</u>	<u>132</u>	<u>133</u>	<u>134</u>	<u>135</u>
History Reports	Current Event Reports	General Reports	Job/Task Reports	Graphs

FIG. 10



805 Production Control System, Rev 3.1

Database In Use: 79

140 Select Equipment(s) 141 Select Status Code 142 Select work type 143 Chart Scale

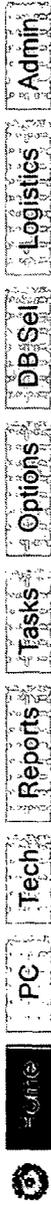
All
 AN/AVS-6
 AN/AVS-6(V)1B
 AN/AVS-9(V)G

All Data 050 200
 Non-Acceptance 100 500
 Acceptance 150 1000

226 Update:Chart

To Save Chart as a graphic - Right Click on Chart and Save Picture

FIG. 11



805 Production Control System, Rev 3.1

Database In Use: 79

Report Range: 10/01/2001 To 10/01/2002 For NAVAIR

Select Equipment: 145

Select Work Type: All Data Non-Acceptance Acceptance 146

Select Chart Type: Pie Bar Line 147

Chart Scale 50 100 150 200 500 1000 148

Job Status Work Volume

M_to_A	705
M_to_E	12
M_to_F	54
M_to_H	529 <u>149</u>
M_to_L	17

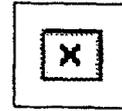


FIG. 12



805 Production Control System, Rev 3.1

Database In Use: 79

1 Job(S) (Out Of 1) Against Task Request 1604 For 185

Author: Johann, Carrie

Status: *Open* 150

Description: 01/805/064 Acceptance Test Procedures ANV-126 Night Vision Device Test Set

ANV-126-001(6625-01-374-9681)Serial Number 10456

Deliverables Desired At Completion Of Work: Report All Findings To

PC Job Detail	Tech Job Detail	Shop Traveler	Equipment	Serial Number	Date Created	Days In Shop	Job Status	Last Transaction
<u>1612</u>	<u>1612</u>	<u>1612</u>	ANV -126-001	10456	06/11/2002	Closed: 49	M_to_A	07/30/2002
<u>151</u>	<u>152</u>	<u>153</u>	<u>154</u>	<u>155</u>	<u>156</u>	<u>157</u>	<u>158</u>	<u>159</u>

FIG. 13



805 Production Control System, Rev 3.1

Database In Use: 79

Items That Are In G Condition 160

18 Records Found In The NSW Database 161

Job Number	ICN	Equipment	Serial Number	Repairer	Job Status	Date Transfer In	Day(s) in Shop
<u>3700</u>	NOSR	AN/PVS-21	0955		M_to_G	19-Aug-02	19
<u>3699</u>	NOSR	AN/PVS-21	0953		M_to_G	19-Aug-02	19
<u>3701</u>	NOSR	AN/PVS-21	0956		M_to_G	19-Aug-02	19
<u>3702</u>	NOSR	AN/PVS-21	0957		M_to_G	19-Aug-02	19
<u>3703</u>	NOSR	AN/PVS-21	0959		M_to_G	19-Aug-02	19
<u>3704</u>	NOSR	AN/PVS-21	0960		M_to_G	19-Aug-02	19
<u>3705</u>	NOSR	AN/PVS-21	0961		M_to_G	19-Aug-02	19
<u>3706</u>	NOSR	AN/PVS-21	1002		M_to_G	19-Aug-02	19
<u>3707</u>	NOSR	AN/PVS-21	1005		M_to_G	19-Aug-02	19
<u>3710</u>	NOSR	AN/PVS-21	1008		M_to_G	19-Aug-02	19
<u>3711</u>	NOSR	AN/PVS-21	1009		M_to_G	19-Aug-02	19
<u>3712</u>	NOSR	AN/PVS-21	1010		M_to_G	19-Aug-02	19
<u>3714</u>	NOSR	AN/PVS-21	1012		M_to_G	19-Aug-02	19
<u>3715</u>	NOSR	AN/PVS-21	1013		M_to_G	19-Aug-02	19
<u>3716</u>	NOSR	AN/PVS-21	1014		M_to_G	19-Aug-02	19
<u>3717</u>	NOSR	AN/PVS-21	1015		M_to_G	19-Aug-02	19
<u>3718</u>	NOSR	AN/PVS-21	1016		M_to_G	19-Aug-02	19
<u>3722</u>	NOSR	AN/PVS-21	1004		M_to_G	23-Aug-02	15
<u>162</u>	<u>163</u>	<u>164</u>	<u>165</u>		<u>167</u>	<u>168</u>	<u>169</u>

FIG. 14










805 Production Control System, Rev 3.1

Database In Use: 79

Admin

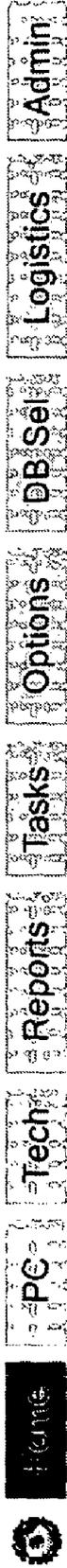
Items That Are Available From The Shop On 09/07/2002 170
Technician Data Has Been Enter And Awaits PC Action

20 Records Found 171

181   182

	Job Number	Equipment	Serial Number	Repairer	Job Status	Date in Shop	Date completed by shop	Ship?
<u>History</u>	3729	AN/PVS-21	0695		M_to_A	08/28/2002	09/05/2002	<input type="checkbox"/>
<u>History</u>	3700	AN/PVS-21	0955		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3699	AN/PVS-21	0953		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3701	AN/PVS-21	0956		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3702	AN/PVS-21	0957		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3703	AN/PVS-21	0959		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3704	AN/PVS-21	0960		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3705	AN/PVS-21	0961		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3706	AN/PVS-21	1002		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3707	AN/PVS-21	1005		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3710	AN/PVS-21	1008		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3711	AN/PVS-21	1009		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3712	AN/PVS-21	1010		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3714	AN/PVS-21	1012		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3715	AN/PVS-21	1013		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3716	AN/PVS-21	1014		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3717	AN/PVS-21	1015		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3718	AN/PVS-21	1016		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3722	AN/PVS-21	1004		M_to_G	08/27/2002	08/27/2002	<input type="checkbox"/>
<u>History</u>	3723	AN/PVS-15	02075		M_to_L	08/23/2002	08/26/2002	<input type="checkbox"/>
<u>172</u>	<u>173</u>	<u>174</u>	<u>175</u>	<u>176</u>	<u>177</u>	<u>178</u>	<u>179</u>	<u>180</u>

FIG. 15A



805 Production Control System, Rev 3.1

Database In Use: 79

Log Report

1 Transactions For

Job Number	Log Date	Transaction Date	Job Status	Enter by	Comments
3217	02/26/2003	02/26/2003	OPEN		
<u>183</u>	<u>184</u>	<u>186</u>	<u>187</u>	<u>188</u>	<u>189</u>

FIG. 15B

[Home](#) |
 [PC](#) |
 [Tech](#) |
 [Reports](#) |
 [Tasks](#) |
 [Options](#) |
 [DB Sol](#) |
 [Logistics](#) |
 [Admin](#)

805 Production Control System, Rev 3.1

Database In Use: 79

Report - Parts For

Sorted By Equipment 190

Parts For: AN/AVS-6 191

<u>Edit</u>	*Part Number	Common Name	NSN	Cost	On hand	Available to Tech	Location	Ref No.
<u>Edit</u>	1-1/2SC	EYEPIECE LENS CAP (15MM)	5340-01-058-5930	\$0.00	0	Visible		NA
<u>Edit</u>	268465	POWER PACK ASSY, LOW PROFILE	5855-01-440-1765	\$114.00	0	Visible		NA
<u>Edit</u>	300680-G3	POWER PACK	5855-01-149-4104	\$153.00	0	Visible		NA
<u>Edit</u>	5002530	HELMET MOUNT (V1)	5855-01-151-4229	\$178.00	0	Visible		NA
<u>Edit</u>	5002550	OBJECTIVE LENS ASSY	5855-01-149-4101	\$232.00	0	Visible		NA
<u>Edit</u>	5002567	SLOTTED ADAPTER	5855-01-211-2437	\$5.00	0	Visible		NA
<u>Edit</u>	5002569	TUBE RETAINER RING	5855-01-151-4226	\$3.00	0	Visible		NA
<u>Edit</u>	5002583	OBJECTIVE LOCK RING	5365-01-149-4102	\$4.00	0	Visible		NA
<u>Edit</u>	5002601	NECK CORD ASSY	4020-01-023-6271	\$1.00	-5	Visible		NA
<u>Edit</u>	5002760	IMAGE TUBE	5855-01-151-4191	\$1,965.00	0	Visible		NA
<u>Edit</u>	5006831	OBJECTIVE LENS CAP	5855-01-152-5849	\$0.00	0	Visible		NA
<u>Edit</u>	5008902	AA BATTERY CARTRIDGE	6160-01-372-5994	\$2.00	-3	Visible		NA
<u>Edit</u>	5009493	OBJECTIVE LENS CAP (W/LIF)	5340-00-558-4692	\$0.00	0	Visible		NA
<u>Edit</u>	5009545	EYEPIECE LENS ASSY	5855-01-380-5102	\$345.00	0	Visible		NA
<u>Edit</u>	5009555	V1 PIVOT ADJUSTMENT SHELF	5855-01-381-6036	\$240.00	0	Visible		NA
<u>Edit</u>	EC-23	PURGE O-RING	5330-01-066-1920	\$0.00	0	Visible		NA
<u>Edit</u>	EC-23	OBJECTIVE LENS PROTECTIVE CAP	5340-00-558-4692	\$0.00	0	Visible		NA
<u>Edit</u>	MS9021-021	PREFORMED PACKING	5330-00-822-3691	\$0.00	0	Visible		NA
<u>Edit</u>	MS9021-028	PREFORMED PACKING	5330-00-551-8251	\$0.00	0	Visible		NA
	<u>192</u>	<u>193</u>	<u>194</u>	<u>195</u>	<u>196</u>	<u>197</u>	<u>198</u>	<u>199</u>
							<u>199</u>	<u>200</u>

FIG. 16A

805 Production Control System, Rev 3.1
 Database In Use: 79
Edit Record

Equipment:
 *Part Number: 370
 Part Name: 371
 Part NSN: 372
 Part Cost: 373
 Inventory count: 374
 Inventory Trip Point: 375
 COG: 376
 Ref no: 377
 Display Part on Tech Screen? No Yes 378
 Location Code: 379
 Location Code: 380

*Part Number is used for inventory counting. They are required and must be unique.

381

FIG. 16B



805 Production Control System, Rev 3.1

Database In Use: 79

Task Request

65 [New Task Request](#) 210

65 [Edit Task Request Information](#) 211

Task Request Reports

65 [Task Request Information](#) 212

65 [Job Status Information](#) 213

Request For Issue

65 [Request For Issue](#) 214

65 [Request For Issue Viewer](#) 215

65 [Request For Issue List](#) 216

FIG. 17



805 Production Control System, Rev 3.1

Database In Use: 79

Task Request Page

Step 1: Requester Information

From: Helms, Bill 220

Code: 805 621 221

Date: 222

Step 2: Tasking Requested

Urgent, Please Service 223

Select desired task: Acceptance 506 224

Description: 225

FIG. 18A

Step 3: Equipment Information

Step 3a: Enter in equipment stock number(s) or name(s)

Equipment	NSN
All <u>226</u>	All <u>227</u>
AN/AVS-6	5855-01-138-4749
AN/AVS-6(V)1B	5855-01-439-1744
AN/AVS-9(V)G	5855-01-433-3157
AN/AVS-9(V)R	5855-01-473-2904

This task request is for

228

Step 3b: Enter in condition code of item(s) (present status of item)

628 A Issue without qualifications 229 629

Step 3c: Enter in purpose code of item(s)

504 A NICP 230 630

Step 3d: Enter quantity of item to be work: 1 231

Step 3e: Provide additional comments and desired results for this item(s)

Deliverables desired at completion of work:

232

FIG. 18B

Step 4: Financial Information		
Please fill either WBS or Charge Number		
Production Controller Labor:	WBS#: <input type="text" value="233"/>	Charge#: <input type="text" value="234"/>
Technician Labor:	<input type="text" value="235"/>	<input type="text" value="236"/>
Material:	<input type="text" value="237"/>	<input type="text" value="238"/>
Supply Support:	<input type="text" value="239"/>	<input type="text" value="240"/>

Step 5: Information related to New Assets	
Contract Number: <input type="text" value="241"/>	Requisition #: <input type="text" value="242"/>
Contract CLIN#: <input type="text" value="243"/>	Quantity Ordered: <input type="text" value="244"/>
What project or group is material being ordered for? <input type="text" value="245"/>	From which company? <input type="text" value="246"/>

Step 6: EMAIL Information
Forward To: <input type="text" value="247"/> 
From: <input type="text" value="248"/>

FIG. 18C

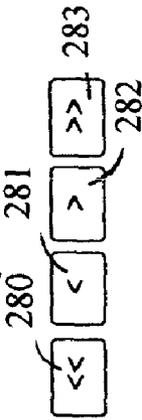
Task Request Is For 250**Step 1: Requester Information**Requested by: 251From Code: **805** 252Date of request: **08/13/2002** 253**Step 2: Tasking Requested****This item is urgent** 254Action requested for this item is **Acceptance** 255**Description:Warranty return,SN001665A. Unit has not been posted to records as of 13AUG02 but will be posted to D-condition, E-purpose** 256**Step 3: Equipment Information**Supply condition code for this item is **D** 257Purpose code for this item is **E** 258This request is for **1** items 259**This request is for AN/PVS-17A(5855-01-474-8904)** 260**Deliverables desired at completion of work: Return acceptable units A-condition and rejects units L-condition.** 261**Step 4: Financial Information**Money for the Production Controller is via WBS or Charge number: **248FZ22** 262Money for the Technician is via WBS or Charge number: **248FZ22** 263Money for Material Support is via WBS or Charge number: **248FZ22** 264Money for Supply support is via WBS or Charge number: **248FZ22** 265**Step 5: Information related to New Assets** 266

The Contract Number for this task is N001264-98-D-0042, CLIN 0005

The **Requisition Number** for this task was **not** entered. 267The Contract or Requisition **quantity** was not entered. 268**New items are being bought for SOPMOD from LITTON** 270Task Request Number Assigned: 1747 For 271- 269

FIG. 19

Task Request Number Lookup



Select 284

Task Request number: 965

Requester:

Request date: 08/30/2001

Urgent Task?:

Requested Task: Testing

Description: Warranty repair Vipers coming in from Ashbury International need to be tested to confirm that the unit is now "A" condition. The PC will be notified if a unit is a warranty repair.

Equipment: VIPER LASER RANG(5855-LL-L99-7478)

Supply Code: L

Purpose Code: S

Quantity: 25

Desc: VIPER LASER RANG(5855-LL-L99-7478)

Contract Num:

CLIN:

FIG. 20

805 Production Control System, Rev 3.1

Database In Use: 79

Request For Issue

Entry Form

NSN	5855-01-423-1497	290
Equipment	OMNI_IV_Image_Tube	227
Qty	1	226
Activity	CODE 805J	292
UIC	00164	293
Date Julian	2250	508
Request For Issue Number	4950	295
Date Requested	09/07/02	296
Remarks		298

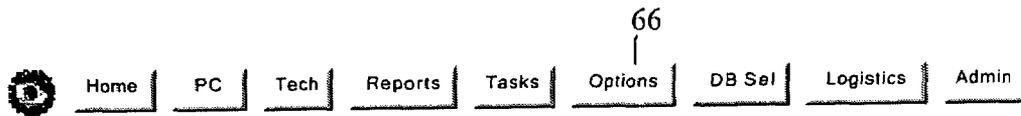
For Local Issue

Charge Number

Building location

Insert Data 301

FIG. 21



805 Production Control System, Rev 3.1

Database In Use: 79

Maintenance Menu

Local To The Database Selected

- ⌘ Equipment Edit/Add/Delete Page 310
- ⌘ Activity Edit/Add/Delete Page 311
- ⌘ Failure Code Edit/Add/ Page 312
- ⌘ Repair Code Edit/Add/ Page 313
- ⌘ Parts Edit/Add/ Page 314

Global To All Databases (Advise Caution When Making Changes)

- ⌘ Status Codes Edit/Add/Delete Page 315
- ⌘ Request Task Edit/Add/ Page 316
- ⌘ Condition Code Edit/Add/ Page 317
- ⌘ Purpose Code Edit/Add/ Page 318
- ⌘ Help Information Edit/Add/ Page 319
- ⌘ I2 Tube Datasheets Edit/Add/ Page 320

FIG. 22



805 Production Control System, Rev 3.1

Database In Use: 79

Repair Codes Descriptions For Drop Down List Boxes 324

<u>Edit</u>	Repair Code	*Description	<u>Add</u> <u>325</u>
<u>Edit</u>	108	Align Optics	<u>Delete</u>
<u>Edit</u>	105	Cleaned	<u>Delete</u>
<u>Edit</u>	999	N/A	<u>Delete</u>
<u>Edit</u>	106	Nitrogen Purged Device	<u>Delete</u>
<u>Edit</u>	109	No repair needed	<u>Delete</u>
<u>Edit</u>	110	Non-Repairable	<u>Delete</u>
<u>Edit</u>	102	Repaired	<u>Delete</u>
<u>Edit</u>	104	Replace missing parts	<u>Delete</u>
<u>Edit</u>	103	Replaced	<u>Delete</u>
<u>Edit</u>	107	Set Infinity Focus	<u>Delete</u>
<u>326</u>	<u>327</u>	<u>328</u>	<u>329</u>

FIG. 23



805 Production Control System, Rev 3.1

Database In Use: 79

Database Selection Menu

Select Database:

42

43

331

Choose

FIG. 24



805 Production Control System, Rev 3.1

Database In Use: 79

Warranty/QDR Menu

Warranty Programs

⌘ Add New Warranty Data 340

⌘ Edit Warranty Data 341

Warranty Reports

⌘ Report - Warranty Data - Sorted By Equipment 342

⌘ Report - Warranty Data - Sorted By Contract Number 343

⌘ Report - Warranty Data - Sorted By DD250 344

⌘ Report - Warranty Data - Sorted By Requisition Number 345

QDR Programs

⌘ QDR Form 346

⌘ Code 11 (Supply) DR Entry Form 347

FIG. 25

Home PC Tech Reports Tasks Options DB Sel Logistics Admin

805 Production Control System, Rev 3.1

Database In Use: NSW 79

Add New Warranty Equipment For

Step 1: Select either Equipment or NSN

EQUIPMENT: All 350 ²²⁶ NSN: All 351 ²²⁷

Step 2: Either enter the range of serial numbers
(Any Prefix + First Serial number + Last Serial number + Any postscript)

Prefix: First SN: Last SN: Postscript: 352

or enter the Serial number(s) that are separated with commas

Step 3: Enter your DD250 or contract information

Warranty End Date (Req'd) 354
Contract number 355
Contract CLIN 356
Requisition Number 357
Delivery Order Number 358
DD250 359
DD250 Date 09/07/2002 360

Add Items 361

FIG. 26



805 Production Control System, Rev 3.1

Database In Use: 79

Step 1: Select either Equipment or NSN, Serial number then click on search

EQUIPMENT: 365 226 **NSN:** 366 227

Serial number: 368

Step 2: Perform the necessary QDR action(s) listed below

FIG. 27

 [Home](#) [PC](#) [Tech](#) [Reports](#) [Tasks](#) [Options](#) [DB Sel](#) [Logistics](#) [Admin](#)

805 Production Control System, Rev 3.1
Database In Use: [79](#)

Administrator Tools

- [Add New User](#) [335](#)
- [Edit/Delete User](#) [336](#)
- [Who's On Line](#) [337](#)

FIG. 28

Table ACTIVITY				
Fieldname	Fieldtype	Length	Precision	Scale
UIC	nvarchar	30	0	0
UIC_DESC	nvarchar	160	0	0
UNIT	nvarchar	60	0	0
telephone	nvarchar	60	0	0
fax	nvarchar	40	0	0
DSN	int	4	10	0
POC	nvarchar	100	0	0
ID	int	4	10	0
Table Equip				
Fieldname	Fieldtype	Length	Precision	Scale
EQUIPMENT	nvarchar	100	0	0
NOMEN	nvarchar	70	0	0
NSN	nvarchar	32	0	0
Type	nvarchar	100	0	0
DataSheet	nvarchar	100	0	0
ID	int	4	10	0
Table Equip_Task				
Fieldname	Fieldtype	Length	Precision	Scale
Equipment	nvarchar	100	0	0
Task	nvarchar	160	0	0
IDKEY	int	4	10	0
SubEquipment	nvarchar	100	0	0
Step	int	4	10	0
Table Equip_Type				
Fieldname	Fieldtype	Length	Precision	Scale
ID	int	4	10	0
Type	nvarchar	100	0	0
Table Failure_Code				
Fieldname	Fieldtype	Length	Precision	Scale
FAILCODE	nvarchar	10	0	0
Fail_DESC	nvarchar	100	0	0
ID	int	4	10	0
Table History				
Fieldname	Fieldtype	Length	Precision	Scale
JobStatus	nvarchar	100	0	0
comments	nvarchar	510	0	0
name	nvarchar	100	0	0
LogDate	smalldatetime	4	16	0
Transdate	smalldatetime	4	16	0
Jobnum	int	4	10	0
IDKey	int	4	10	0

FIG. 29A

Table PCS						
	Fieldname	Fieldtype	Length	Precision	Scale	
408	WORNUM	int	4	10	0	503'
	Type	nvarchar	100	0	0	
	EQUIPMENT	nvarchar	100	0	0	226', 227'
	SERIALNUM	nvarchar	100	0	0	507'
	INUNIT	nvarchar	100	0	0	509', 515'
533'	OUTUNIT	nvarchar	100	0	0	
	DATERCD	smalldatetime	4	16	0	510'
	DATEReturn	smalldatetime	4	16	0	536'
	JOBSTATUS	nvarchar	32	0	0	522'
	LABORCOST	float	8	53	0	
	PARTSCOST	float	8	53	0	
	TOTALCOST	float	8	53	0	
409	IDKey	int	4	10	0	
	ICN	nvarchar	24	0	0	
	RequestTask	nvarchar	100	0	0	511'
	INDocument	nvarchar	100	0	0	224'
	ScheduleNumber	nvarchar	100	0	0	513'
	OutDocument	nvarchar	100	0	0	512'
	Comments	nvarchar	510	0	0	535'
	TICN	nvarchar	100	0	0	514'
222'	TransDate	smalldatetime	4	16	0	534'
	OutgoingStatus	nvarchar	100	0	0	521'
	JobClosed	bit	1	1	0	
	Shipdate	smalldatetime	4	16	0	
	Shipmode	nvarchar	100	0	0	
	Trackingnum	nvarchar	100	0	0	
	RDD	smalldatetime	4	16	0	
	RequestShipment	bit	1	1	0	
	Work_Level	int	4	10	0	
	Step	int	4	10	0	
	Purposecode	nvarchar	20	0	0	230'
Table PCS_PARTS						
	Fieldname	Fieldtype	Length	Precision	Scale	
410	IDkey	int	4	10	0	370'
	EQUIPMENT	nvarchar	100	0	0	371'
	PARTNUM	nvarchar	510	0	0	372'
	PARTNAME	nvarchar	510	0	0	373'
	PARTNSN	nvarchar	510	0	0	374'
	PARTCOST	float	8	53	0	375'
	Inventcount	smallint	2	5	0	376'
	Inventtrippoint	smallint	2	5	0	377'
	COG	nvarchar	100	0	0	378'
	Refno	nvarchar	100	0	0	379'
	Hide	bit	1	1	0	
	LastAccess	smalldatetime	4	16	0	
	Location	char	20	0	0	380'

FIG. 29B

Table PCS_Repair					
Fieldname	Fieldtype	Length	Precision	Scale	
LABORHRS	float	8	53	0	545'
REPAIRER	nvarchar	60	0	0	
REPAIRDATEIN	smalldatetime	4	16	0	541'
REPAIRDATEOUT	smalldatetime	4	16	0	547'
comments	nvarchar	500	0	0	551'
411 IDKey	int	4	10	0	
412 JobNum	int	4	10	0	
Failcode	nvarchar	510	0	0	544'
Repcode	nvarchar	510	0	0	555'
Partnum	nvarchar	510	0	0	552'
Partqty	int	4	10	0	
Partstotalcost	int	4	10	0	546'
JobStatus	nvarchar	32	0	0	542'
Equipment	nvarchar	100	0	0	
Serialnum	nvarchar	100	0	0	
JobClosed	bit	1	1	0	
Task	nvarchar	100	0	0	
Work_Level	int	4	10	0	
Step	int	4	10	0	
Table PCS_Repair_Sub					
Fieldname	Fieldtype	Length	Precision	Scale	
LABORHRS	float	8	53	0	
REPAIRER	nvarchar	60	0	0	
REPAIRDATEIN	smalldatetime	4	16	0	
REPAIRDATEOUT	smalldatetime	4	16	0	
comments	nvarchar	500	0	0	
413 IDKey	int	4	10	0	
414 JobNum	int	4	10	0	
Failcode	nvarchar	510	0	0	
Repcode	nvarchar	510	0	0	
Partnum	nvarchar	510	0	0	
Partqty	int	4	10	0	
Partstotalcost	int	4	10	0	
JobStatus	nvarchar	32	0	0	
Equipment	nvarchar	100	0	0	
Serialnum	nvarchar	100	0	0	
JobClosed	bit	1	1	0	
Work_Level	int	4	10	0	
Step	int	4	10	0	
Task	nvarchar	100	0	0	
Table Repair_Code					
Fieldname	Fieldtype	Length	Precision	Scale	
REPAIRCODE	nvarchar	100	0	0	549'
Repair_DESC	nvarchar	100	0	0	
415 ID	int	4	10	0	

FIG. 29C

Table Conditon_Code				
Fieldname	Fieldtype	Length	Precision	Scale
416 ID	int	4	10	0
Code	nvarchar	100	0	0
Task_Desc	nvarchar	100	0	0
Color	nvarchar	100	0	0
Table Data_users				
Fieldname	Fieldtype	Length	Precision	Scale
417 ID	int	4	10	0
Name	char	50	0	0
LogDate	datetime	8	0	0
Table PCS_Database_List				
Fieldname	Fieldtype	Length	Precision	Scale
Name	nvarchar	100	0	0
418 PCS_ID	int	4	10	0
IDKEY	int	4	10	0
Table PCS_Name_List				
Fieldname	Fieldtype	Length	Precision	Scale
419 Person	nvarchar	100	0	0
IDKey	int	4	10	0
Payscale	nvarchar	16	0	0
Password	nvarchar	100	0	0
Database	nvarchar	500	0	0
email	nvarchar	100	0	0
Permission	nvarchar	240	0	0
PersonID	nvarchar	100	0	0
Org	nvarchar	40	0	0
Table PCS_Name_List_temp				
Fieldname	Fieldtype	Length	Precision	Scale
420 Person	nvarchar	100	0	0
IDKey	int	4	10	0
Payscale	nvarchar	16	0	0
Password	nvarchar	100	0	0
Database	nvarchar	500	0	0
email	nvarchar	100	0	0
Permission	nvarchar	240	0	0
PersonID	nvarchar	100	0	0
Table Permission				
Fieldname	Fieldtype	Length	Precision	Scale
421 Permission_ID	int	4	10	0
Permission_name	nvarchar	100	0	0

628'
629'

43'

13'
42'
248'

12'

FIG. 29D

Tabl Purpose_Code				
Fieldname	Fieldtype	Length	Precision	Scale
422 ID	int	4	10	0
Sponsor	nvarchar	100	0	0
PurposeCode	nvarchar	100	0	0
ILSMgrCode	nvarchar	100	0	0
ILSMMgr	nvarchar	100	0	0
Databasename	nvarchar	100	0	0
Table Request_Task				
Fieldname	Fieldtype	Length	Precision	Scale
Request_task	nvarchar	100	0	0
423 ID	int	4	10	0
Table Status				
Fieldname	Fieldtype	Length	Precision	Scale
Status	nvarchar	100	0	0
Status_Desc	nvarchar	100	0	0
424 ID	int	4	10	0
Table WOR				
Fieldname	Fieldtype	Length	Precision	Scale
425 ID	int	4	10	0
Requester_name	nvarchar	100	0	0
Code	nvarchar	100	0	0
Requestdate	smalldatetime	4	16	0
Urgent_Task	nvarchar	100	0	0
Request_Task	nvarchar	100	0	0
Description	nvarchar	510	0	0
itemequipstockequipment	ntext	16	0	0
itemsupplycode	nvarchar	160	0	0
itempurposecode	nvarchar	160	0	0
quantity	int	4	10	0
otherdesc	ntext	16	0	0
deliverables	ntext	16	0	0
pc_wbs	nvarchar	100	0	0
pc_charge	nvarchar	100	0	0
tech_wbs	nvarchar	100	0	0
tech_charge	nvarchar	100	0	0
material_wbs	nvarchar	100	0	0
material_charge	nvarchar	100	0	0
WOR_approve	bit	1	1	0
ContractNum	nvarchar	100	0	0
CLIN	nvarchar	100	0	0
Requisition	nvarchar	510	0	0
NewQty	int	4	10	0
ProjectOwner	nvarchar	100	0	0
Company	nvarchar	240	0	0
PC_reject	nvarchar	100	0	0
Databasename	nvarchar	80	0	0

FIG. 29E

Table 805_RFI_Num				
Fieldname	Fieldtype	Length	Precision	Scale
<u>426</u> ID	int	4	10	0
RFINum	nvarchar	100	0	0
Table Activity				
Fieldname	Fieldtype	Length	Precision	Scale
<u>427</u> ID	int	4	10	0
Activity	nvarchar	100	0	0
Table RFI Assignments				
Fieldname	Fieldtype	Length	Precision	Scale
<u>428</u> IDRFIAssignment	int	4	10	0
NSN	nvarchar	100	0	0
Equipment	nvarchar	100	0	0
Qty	int	4	10	0
Activity	nvarchar	100	0	0
UIC	nvarchar	100	0	0
DtdJulian	nvarchar	100	0	0
RFINum	nvarchar	100	0	0
DtdRequested	smalldatetime	4	16	0
Remarks	ntext	16	0	0
ChargeNumber	nvarchar	100	0	0
Name	nvarchar	100	0	0
Building	nvarchar	100	0	0
Customer	nvarchar	100	0	0

290'
291'
292'
293'
294'
295'
296'
297'
298'
299'
300'

FIG. 29F

Table Tube_data					
Fieldname	Fieldtype	Length	Precision	Scale	
429 Tube_ID	int	4	10	0	
Customer	nvarchar	80	0	0	
NSN	nvarchar	40	0	0	
Serialnum	nvarchar	100	0	0	
430 Jobnum	int	4	10	0	
Aimsfile	nvarchar	100	0	0	561'
AIMSMTF	nvarchar	20	0	0	562'
EBI	nvarchar	20	0	0	564'
MaxGain	nvarchar	20	0	0	565'
MinGain	nvarchar	20	0	0	566'
Icurrent	nvarchar	20	0	0	567'
SN	nvarchar	20	0	0	568'
Cres	nvarchar	20	0	0	569'
Z1S1	nvarchar	20	0	0	570'
Z1S2	nvarchar	20	0	0	571'
Z1S3	nvarchar	20	0	0	572'
Z1S4	nvarchar	20	0	0	573'
Z1S5	nvarchar	20	0	0	574'
Z1S6	nvarchar	20	0	0	575'
Z2S1	nvarchar	20	0	0	576'
Z2S2	nvarchar	20	0	0	577'
Z2S3	nvarchar	20	0	0	578'
Z2S4	nvarchar	20	0	0	579'
Z2S5	nvarchar	20	0	0	580'
Z2S6	nvarchar	20	0	0	581'
Z3S1	nvarchar	20	0	0	582"
Z3S2	nvarchar	20	0	0	583'
Z3S3	nvarchar	20	0	0	584'
Z3S4	nvarchar	20	0	0	585'
Z3S5	nvarchar	20	0	0	586'
Z3S6	nvarchar	20	0	0	587'
FailCode	ntext	16	0	0	588'
JobStatus	nvarchar	20	0	0	589'
TravelerDate	smalldatetime	4	16	0	590'
laborhrs	nvarchar	20	0	0	591'
Comments	nvarchar	510	0	0	
Repairer	nvarchar	320	0	0	
R1	nvarchar	20	0	0	563'

FIG. 29G

431

Table Tube_spec				
Fieldname	Fieldtype	Length	Precision	Scale
ID	int	4	10	0
Disp_NSN	nvarchar	40	0	0
Disp_CenRes	nvarchar	20	0	0
Disp_EBIMax	nvarchar	20	0	0
Disp_MaxGain_Min	nvarchar	20	0	0
Disp_MaxGain_Max	nvarchar	20	0	0
Disp_MinGain_Min	nvarchar	20	0	0
Disp_MinGain_Max	nvarchar	20	0	0
Disp_ICurrent	nvarchar	20	0	0
Disp_SNR	nvarchar	20	0	0
Disp_Z1S1	nvarchar	20	0	0
Disp_Z1S2	nvarchar	20	0	0
Disp_Z1S3	nvarchar	20	0	0
Disp_Z1S4	nvarchar	20	0	0
Disp_Z1S5	nvarchar	20	0	0
Disp_Z1S6	nvarchar	20	0	0
Disp_Z2S1	nvarchar	20	0	0
Disp_Z2S2	nvarchar	20	0	0
Disp_Z2S3	nvarchar	20	0	0
Disp_Z2S4	nvarchar	20	0	0
Disp_Z2S5	nvarchar	20	0	0
Disp_Z2S6	nvarchar	20	0	0
Disp_Z3S1	nvarchar	20	0	0
Disp_Z3S2	nvarchar	20	0	0
Disp_Z3S3	nvarchar	20	0	0
Disp_Z3S4	nvarchar	20	0	0
Disp_Z3S5	nvarchar	20	0	0
Disp_Z3S6	nvarchar	20	0	0
Disp_notes	nvarchar	510	0	0

FIG. 29H

Table QDR					
Fieldname	Fieldtype	Length	Precision	Scale	
Equipment	char	100	0	0	365'
Serial_num	char	100	0	0	367'
QDR_num	char	100	0	0	
QDRdate	datetime	8	0	0	
Replacement_Serialnum	char	100	0	0	
Reported_Failure	nchar	510	0	0	
QDR_status	char	50	0	0	
RMA	char	100	0	0	
Results	char	255	0	0	
Final_disposition	char	255	0	0	
MFG	char	100	0	0	
Closing_letter	char	100	0	0	
Closing_letterdate	datetime	8	0	0	
OC	bit	1	1	0	
Notes	nchar	510	0	0	
Joblink	int	4	10	0	
Return_joblink	int	4	10	0	
Warranty_link	int	4	10	0	
432 QDR_ID	int	4	10	0	
Customer	char	100	0	0	
Activity	char	100	0	0	
Return_mfg	bit	1	1	0	
RMAdate	datetime	8	0	0	
Finaldate	datetime	8	0	0	
Table Warranty					
Fieldname	Fieldtype	Length	Precision	Scale	
Equipment	char	100	0	0	350'
Serial_num	char	100	0	0	353'
Warranty_Enddate	datetime	8	0	0	354'
Customer	char	100	0	0	
Contract	char	100	0	0	355'
CLIN	char	100	0	0	356'
Delivery_ordernum	char	100	0	0	358'
DD250	char	100	0	0	359'
DD250Date	datetime	8	0	0	360'
433 Warranty_ID	int	4	10	0	
Req_num	char	100	0	0	357'

FIG. 29I

Table ECP				
Fieldname	Fieldtype	Length	Precision	Scale
ECP_name	nvarchar	100	0	0
ECP_desc	ntext	16	0	0
434 ECPID	int	4	10	0
ECP_date	smalldatetime	4	16	0
ECP_requester	nvarchar	100	0	0

99'
87'
88'
89'

Table Help				
Fieldname	Fieldtype	Length	Precision	Scale
435 IDKey	int	4	10	0
Pagename	nvarchar	100	0	0
RefPage	nvarchar	100	0	0
HelpInfo	ntext	16	0	0

FIG. 29J

ADAPTIVE WEB-BASED ASSET CONTROL SYSTEM

STATEMENT OF GOVERNMENT INTEREST

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without payment of any royalties thereon or therefor.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to database technology and, more particularly, to adaptive data management systems that may be accessed via the world wide web and, even more particularly, asset control systems utilized to manipulate, organize, and display product and/or component data, in a military repair/storage depot environment, despite constantly changing requirements due to various third party (i.e. customer) demands and/or funding restrictions.

2. Description of the Background

A military repair/storage depot is an extremely dynamic environment. At any given moment, any number of high- and low-tech systems/components ("assets") may be in the process of being transferred (i.e. shipped) into, or out of, the facility. As the name "repair/storage" depot implies, the incoming and outgoing assets generally belong to third parties and are present at the facility to take advantage of either the technical skills/knowledge of the personnel stationed there, or the warehouse space that is available on-site. Assets present for either reason must be carefully tracked to ensure that they are readily available to their owners. In this regard, the assets and any allocation of the depot's resources (e.g. repair personnel, storage space) must be matched in the most efficient manner possible.

Inefficiencies in the tracking of assets and the allocation of resources can result in significant asset unavailability and increased labor costs. Therefore, it is particularly important with large scale repair/storage contracting to provide a database system capable of proper and timely asset control despite widely varying third party needs.

Four examples of widely varying third party requirements are as follows: Customer A has simple assets but requires (1) any shipment of those assets, into or out of a repair/storage facility, to be accompanied by specified shipping documents and (2) any database containing information about those assets to be secure and to provide limited access for certain viewers. Customer B has simple assets, although quite different from those of Customer A, requiring only minimal database security (i.e. allowing the data to be shared by many individuals) and utilizes a traditional supply support system (e.g. applying integrated logistics support "ILS" management techniques as described within DEF STAN 00-60 during the project life cycle). Customer C is a governmental entity, such as a Navy or Army base, dealing with complex products that contain sub-products. Customer D requires paper movement only (i.e. a typical support role for inventory management). In the context of an asset control system, each of these hypothetical third parties will require a different customer profile. Moreover, as time passes, an existing customer's profile (e.g. data access requirements, shipping procedures) may change, funding sources may change, and new third party accounts will need to be established. Each of these changes will necessitate one or more changes to the database system tracking the various assets.

There is commercially available software that may be utilized for asset control (i.e. to establish job plans and work plans). One such job planning software package is MAXIMO®, a program developed and available from PSDI, Inc. MAXIMO® is designed to help organizations reduce equipment downtime, closely control and track maintenance expenses, cut spare parts inventories and costs, improve safety, increase purchasing efficiency, and more effectively deploy productive assets, personnel, and other resources. MAXIMO® is an advanced materials management solution that offers web-based storeroom management. Customers can use their Internet browser to create and send material requisitions directly via MAXIMO®, where they are filled from storeroom inventory or by purchase from a manufacturer or complementary supplier. Orders can be executed electronically. Unfortunately, while MAXIMO®, as supplied by PSDI, could be used to address some aspects of the present need (i.e. asset control in a military repair/storage depot environment), it possesses only limited flexibility and, therefore, would require the expenditure of a significant amount of capital to complete the customization/reprogramming effort needed to render it fully functional.

Other commercially available software programs that are useful in resource planning are job standards programs. These programs are used to create, maintain, and manipulate standards for maintenance work (i.e. detailing the steps to be taken and man-hours/trades needed to complete a task), allowing a user to construct new standards using information retained in a database. An example of this type of software is AutoMOST® available from H.B. Maynard and Company, Inc.

There are also a number of patents that are illustrative of "adaptive data management" software applications. For example, U.S. Pat. Nos. 5,970,475 to Barnes et al. (see reference numeral 14 in FIG. 2) and 6,157,928 to Sprenger et al. (See reference numeral 272 in FIG. 5) disclose data access via Internet or web-based applications. Additionally, the Barnes et al. patent provides an example of customer/user-definable data formats/templates.

Thus, dynamic scalable web-enabled databases with customer/user-definable data formats/templates are fairly well-known. However, none of the foregoing examples are capable of gathering data from customers in real time, and then constructing data files on-the-fly. It would be greatly advantageous to provide an adaptive web-based asset control system that utilizes web technology to gather and present asset control data despite constantly changing requirements due to various third party demands and/or funding restrictions.

SUMMARY OF THE INVENTION

It is, therefore, the primary object of the present invention to provide an improved asset control system for use in a military repair/supply depot environment.

It is another object of the present invention to provide an improved asset control system that is Internet or web accessible.

Yet another object of the present invention is to provide an improved asset control system that accommodates constantly changing requirements due to various user demands and/or funding restrictions.

It is another object of the present invention to provide an improved asset control system that is capable of gathering data from users in real time and constructing data files on-the-fly.

It is still another object of the present invention to provide an improved asset control system that is simple and straightforward for new users to learn and use.

These and other objects are accomplished by an adaptive, web-based asset control system that utilizes web technology to gather and present asset control data in an environment with constantly changing requirements due to various third party (e.g. customer) demands and/or funding restrictions. The present system tracks third party assets, provides real-time data regarding current status, and assists in returning the assets to the customer in a more timely fashion. Moreover, the system is adaptable and relatively non-complex so that it can easily be learned and utilized by all users.

The present invention possesses the means to adapt to constantly changing user requirements through its use of a Cold Fusion database interface to a set of data files that can be constructed and reconstructed on-the-fly. Multiple third party structures are supported with one central data file that handles the security logs and one central tasking data bank for tracking specific third party funding/tasking. The present invention incorporates log in security and limits data accessibility based on the assigned rights and/or specific duties of the logged in user. The present invention includes, as will be discussed in detail below, "Home", "PC", "Tech", "Reports", "Tasks", "Options", "DB Sel", "Logistics", and "Admin" modules/interfaces. The present invention also interfaces with bar code readers to provide for the gathering of asset data and to allow users to enter data as it happens (e.g. technicians entering repair data) for uploading at a later time.

As mentioned above, the present invention utilizes a Cold Fusion server interface. MacroMedia® Cold Fusion MX is a server platform that allows developers to easily integrate Internet applications with databases, XML, web services, etc. Specifically, Cold Fusion Studio and Cold Fusion Server 4.01 were used.

In use, the collected data is stored in Microsoft SQL 7.0 server database tables and is made accessible with existing Microsoft products (e.g. Internet Explorer 4.0/5.0, Access 97).

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, features, and advantages of the present invention will become more apparent from the following detailed description of the preferred embodiment and certain modifications thereof when taken together with the accompanying drawings in which:

FIG. 1A is a flow chart outlining the log in process for a preferred embodiment of the present invention.

FIG. 1B is a screen print of the log in screen utilized at step 10 of FIG. 1A.

FIG. 1C is a screen print of the database selection screen utilized at steps 40 and 50 of FIG. 1A.

FIG. 2A is a screen print of the information shown when a user clicks on the "Home" button 61.

FIG. 2B is a screen print of the request changes to PCS software screen accessed via hyperlink 83 of FIG. 2A.

FIG. 3 is a screen print of the information shown when a user clicks on the "PC" button 62.

FIG. 4 shows a screen layout for the entry form for a new job.

FIG. 5 shows a screen layout for editing the information associated with an old job.

FIG. 6 shows an example of a shop traveler printout.

FIG. 7A is a screen print of the information shown when a user clicks on the "Tech" button 63.

FIG. 7B shows a screen layout for editing the information associated with an in-process job.

FIG. 8 shows an example of a unique third party requirement a screen layout of an Image Intensifier Test Data Sheet prior to its completion by a repair technician.

FIG. 9 shows a screen layout for an Image Intensifier Test Data Sheet after it has been completed by a repair technician.

FIG. 10 is a screen print of the information shown when a user clicks on the "Reports" button 64.

FIG. 11 is a screen print showing the report configuration parameters that are made available to a user to generate a report in chart form.

FIG. 12 is a screen print showing the report configuration parameters that are made available to a user to generate a report in graph form.

FIG. 13 shows an example of a "Jobs Open" report structure.

FIG. 14 shows an example of a report structure listing the in-house items that are in a user-selected condition.

FIG. 15A shows an example of an "Equipment Ready for Shipment" report structure.

FIG. 15B is an example of the information accessed via a "History" hyperlink 172 of FIG. 15A.

FIG. 16A shows an example of an "Parts for . . ." report structure as sorted by equipment type.

FIG. 16B is an example of the information accessed via an "Edit" hyperlink 192 of FIG. 16A.

FIG. 17 is a screen print of the information shown when a user clicks on the "Tasks" button 65.

FIGS. 18A-C show a screen layout of a Task Request Page prior to its completion by a user.

FIG. 19 shows a screen print of a completed Task Request Page.

FIG. 20 shows a screen print of a Task Request Number Lookup.

FIG. 21 shows a screen layout of a Request for Issue Entry Form partially completed by a user.

FIG. 22 is a screen print of the information shown when a user clicks on the "Options" button 66.

FIG. 23 shows a screen print of the Repair Codes Descriptions.

FIG. 24 is a screen print of the information shown when a user clicks on the "DB Sel" button 67.

FIG. 25 is a screen print of the information shown when a user clicks on the "Logistics" button 68.

FIG. 26 shows a layout of an "Add New Warranty Equipment" screen prior to its completion by a user.

FIG. 27 is a screen print showing the report configuration parameters that are made available to a user to generate a warranty report.

FIG. 28 is a screen print of the information shown when a user clicks on the "Admin" button 69.

FIGS. 29A-J show the data tables and associated field definitions for a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

A number of acronyms are found in the instant specification and FIGS. 1A-29J. The acronyms are defined as follows: CLIN—Contract Line Item Number
COG—Cognizance Code
DD250—a form for accepting or rejecting a purchased item/asset
ECP—Engineering Change Proposal

ILSMS—Integrated Logistics Supply Maintenance System

ICN—Induction Control Number

NSN—National Stock Number

QDR—Quality Deficiency Report

RMA—Return Material Authorization

UIC—Unit Identification Code

WBS—Work Breakdown Structure

The present invention is an adaptive web-based product control system that utilizes web technology to gather and present product control data in an environment with constantly changing requirements due to various customer demands and/or funding restrictions. The present system tracks customer assets, provides real-time data of current status, and helps to return the assets to the customer in a more timely fashion. Moreover, the system is adaptable and relatively non-complex so that it can easily be learned by all users.

The adaptive web-based product control system according to the present invention utilizes a Cold Fusion server interface. MacroMedia® Cold Fusion MX is a server platform that allows developers to easily integrate Internet applications with databases, XML, web services, etc. Specifically, Cold Fusion Studio and Cold Fusion Server 4.01 were used. Cold Fusion Studio and Cold Fusion Server 4.01 provide the dynamic interface to the gathered data. In addition, common web software (e.g. Cascading Style Sheets, Java-script and ASP) adds enhancements and speed to improve the user interactions with the data.

The collected data is stored in Microsoft SQL 7.0 server database tables and is made accessible with existing Microsoft products (i.e. Internet Explorer 4.0/5.0, Access 97).

The concept for this invention is the utilization of a Cold Fusion database interface with a set of data files that can be constructed and re-constructed on the fly (i.e. DHMTL concepts), allowing the software to adapt to needs of different customers. Due to their changing environments, customers may change profiles at any time. The present invention provides for the creation of customer accounts (i.e. unique databases—concept proof is provided in Access 97, but could be any web accessible database) by gathering minimum baseline data then populating data tables that change the presentation of information so that unique data can be gathered/displayed for that customer (i.e. trends may be based on different hardware repair procedures and parts). Above this customer layer, lies a control system that gathers typical and common product control data (i.e. cost center numbers, status codes, tasking that directs work).

The invention is structured to be separate data files with its unique data tables that address the needs of each customer. At present there are eleven different customer structures with one central data file that handles the security logs and a central tasking data bank for tracking funding and specific tasking to the repair shop. The invention utilizes log on security and assigns permission rights and limits the accessibility of the site to specific duties of the log-in user.

Software Architecture

The software includes a multi-step Log In procedure with various levels of user rights, a “Home” module/interface, a “PC” (i.e. product control) module/interface, a “Tech” (i.e. technical data input) module/interface, a “Reports” module/interface, a “Tasks” module/interface, an “Options” module/interface, a “DB Sel” (i.e. database selection) module/interface, a “Logistics” module/interface, and an “Admin” (i.e. system administration) module/interface. Each of the modules/interfaces is described in greater detail below.

Log in Procedure/User Rights

The flowchart of FIG. 1A shows the steps required to log in to the production control system of the present invention. After validating, at step 20, the information entered by the user on the log in screen (see FIG. 1B) at step 10, the user is provided, at step 30, with the menu access rights commensurate with his/her status as defined in 31 through 37.

The log in screen of FIG. 1B provides a user with a field 12 in which his/her name is entered and a second field 13 in which a password is entered. Once the appropriate information has been entered into the two fields 12, 13, the user clicks on button 14 to proceed to the screen shown in FIG. 2A (see discussion below). Hyperlink 15 is provided to allow a user to set up a new account. Hyperlink 16 provides any user with the opportunity to forward information to the individual in charge of maintaining the software application of the present invention (e.g. to report a “bug”).

The menu access rights, as indicated by “A” through “I”, are defined as follows; “A” refers to production controller links or the “PC” button 62 at the top of a typical screen layout (see FIG. 2A), “B” refers to technician/technical data links or the “Tech” button 63, “C” refers to report links or the “Reports” button 64, “D” refers to job task links or the “Tasks” button 65, “E” refers to program options or the “Options” button 66, “F” refers to database selection or the “DB Sel” button 67, “G” refers to logistics links or the “Logistics” button 68, “H” refers to administration links or the “Admin” button 69, and “I” refers to production controller administration rights or a sub-menu item associated with the “PC” button. Each of the buttons controls access to a specific module/interface.

Once the appropriate menu access right has been provided, the user is allowed to select and set, at steps 40 and 50, respectively, the database in which he/she will operate. This is accomplished via the database selection screen shown in FIG. 1C. At the database selection screen, the user is provided with the means to select one of the databases to which he/she has access rights via the choices shown on the drop down menu at 43, which then appears in field 42, prior to clicking on the “Choose” button 44.

The following table shows the correlation between the data entered via the screens shown in FIGS. 1B and 1C and the data tables of FIGS. 29A-J:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
1B	12	29D	12'
1B	13	29D	13'
1C	42	29D	42'
1C	43	29D	43'

“Home” Module/Interface

A software application is typically provided with a home screen that is made available to a logged in user. FIG. 2A is a screen print of the information shown when a user clicks on the “Home” button 61. In addition to indicating, at 70 and 79, respectively, the user’s name/ID and the database into which the named user is logged in, a series of hyperlinks 71-85 is provided.

Hyperlinks 71-78 replicate the functionality associated with buttons 62-69. This replicated functionality is provided because some users prefer to navigate via hyperlinks while others prefer buttons. Hyperlinks 80-85 provide access to additional functional areas of the present invention. For example, hyperlink 82 provides for the changing of the user’s

password and hyperlink **84** allows a user to download the true type font required for the printing of bar codes (i.e. a set up step required prior to the use of a barcode reader for technical data input). Additionally, hyperlink **83** provides access to the screen shown in FIG. **2B** where users may request/propose changes to the software application of the present invention by indicating the appropriate software sub-section via the choices shown on the drop down menu at **86**, which then appears in field **99**, and entering (1) a description of the request/proposal at **87**, (2) the date of the request/proposal at **88**, and (3) his/her name at **89**.

The following table shows the correlation between the data entered via the screen shown in FIG. **2B** and the data tables of FIGS. **29A-J**:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
2B	87	29J	87'
2B	88	29J	88'
2B	89	29J	89'
2B	99	29J	99'

“PC” Module/Interface

Asset control software must include the means for creating new data records or editing previously entered information. FIG. **3** is a screen print of the information shown when a user clicks on the “PC” button **62**. In addition to indicating, at **79**, the database into which the user is logged in, a series of hyperlinks **90-98** is provided.

Hyperlink **90** provides access to the screen shown in FIG. **4** into which data is entered by the user to create a new job and associated serial number. The data entered includes “Today’s Date” in field **222**, the “NSN” via drop down menu **227** which then appears in field **505** or the “Equipment” via drop down menu **226** which then appears in field **501**, the “Task Request Number” in field **503**, the “Purpose Code” via drop down menu **504** which then appears in field **230**, the “Requested Task” via drop down menu **506** which then appears in field **224**, the “Serial Number” in field **507**, the “Owner” via drop down menu **502** which then appears in field **509** or the “UIC” via drop down menu **508** which then appears in field **515**, the “Transfer Date In” in field **510**, the “ICN” in field **511**, the “Schedule Control Number” in field **512**, the “Incoming Document Number” in field **513**, and “Comments” in field **514**.

Hyperlinks **91-93** provide access to data input screens (not shown in the Figures) where existing jobs may be closed out or queried as to condition. Hyperlinks **94, 95** provide access to data input screens (not shown in the Figures) where information on closed out/shipped jobs may be sorted and displayed by serial number and equipment description, or by serial number and national stock number (NSN). Hyperlinks **96, 97** provide access to data input screens (not shown in the Figures) where existing jobs may be selected and/or listed for shipment.

Finally, hyperlink **98** provides access to the screen shown in FIG. **5** into which data is entered by the user to edit the information associated with a specific old job. The data that may be edited includes “Today’s Transaction Date” in field **521**, the “Job Status” via drop down menu **537** which then appears in field **522**, the “Requested Task” via drop down menu **506** which then appears in field **224**, the “NSN” via drop down menu **227** which then appears in field **505** or the “Equipment” via drop down menu **226** which then appears in field **501**, the “Serial Number” in field **507**, the “Production

Controller Comments” in field **514**, the “Transfer Date In” in field **510**, the “Item came in from” via drop down menu **538** which then appears in field **529**, the “ICN” in field **511**, the “Incoming Document Number” in field **513**, the “Schedule Number” in field **512**, the “Item to be shipped to” via drop down menu **539** which then appears in field **533**, the “TICN” in field **534**, the “Outgoing Document Number” in field **535**, and the “Transfer Date Out” in field **536**.

Hyperlink **98** also allows the user to generate a hard copy shop traveler such as that shown in FIG. **6**. A shop traveler, showing information such as job number **101**, serial number **102**, and/or NSN **103**, generally accompanies the equipment as it proceeds through the various repair steps/shops. The traveler also includes space **104** where technicians may hand-write additional information that may be added to the present invention’s computer data record at a later time. In general, the space **104** will only be utilized when, for some reason, a technician’s computer workstation is down.

The following table shows the correlation between the data entered via the screens shown in FIGS. **4** and **5** and the data tables of FIGS. **29A-J**:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
4	222	29B	222'
4, 5	224	29B	224'
4, 5	226	29B	226'
4, 5	227	29B	227'
4	230	29B	230'
4, 5	501	29A	501'
4	502	29A	502'
4	503	29B	503'
4	504	29E	504'
4, 5	505	29A	505'
4, 5	506	29E	506'
4, 5	507	29B	507'
4	508	29A	508'
4	509	29B	509'
4, 5	510	29B	510'
4, 5	511	29B	511'
4, 5	512	29B	512'
4, 5	513	29B	513'
4, 5	514	29B	514'
4	515	29B	515'
5	521	29B	521'
5	522	29B	522'
5	529	29B	515'
5	533	29B	533'
5	534	29B	534'
5	535	29B	535'
5	536	29B	536'
5	537	29E	537'
5	538	29A	508'
5	539	29A	508'

“Tech” Module/Interface

An asset control system must provide for the inputting and monitoring of technical information associated with each asset. FIG. **7A** is a screen print of the information shown when a user, typically a repair technician as opposed to a customer, clicks on the “Tech” button **63**. In addition to indicating, at **79**, the database into which the user is logged in, a series of hyperlinks **110-116** is provided.

Hyperlinks **110-115** provide access to data input screens (those associated with hyperlinks **110, 111, 114, and 115** are not shown in the Figures) typically utilized by repair technicians to enter information associated with a specific job or type of equipment. In particular, hyperlink **113** provides the technician with access to the screen shown in FIG. **7B** in order to edit the information associated with a specific in-process

job. The information that may be edited includes the “Job Start Date” in field 541, the “Job Status” via drop down menu 537 which then appears in field 542, the “Failure Description” via drop down menu 553 which then appears in field 544, the “Total Labor” in field 545, the “Repair (Parts) Total” in field 546, the “Job Completion Date” in field 547, the “Job Description” via drop down menu 556 which then appears in field 548, the “Repair Description” via drop down menu 549 which then appears in field 555, the “Repair Comments” in field 551, and the “Parts Used” in field 552.

Hyperlink 112 provides a technician with access to the data entry screen of FIG. 8. FIG. 8 shows an example of a unique third party requirement—a screen layout of an Image Intensifier Test Data Sheet prior to its completion by a repair technician. The data that is entered includes the “AIMS File Name” in field 561, the “AIMS MTF” in field 562, the “R1” in field 563, the “EBI” in field 564, the “Maximum Gain” in field 565, the “Minimum Gain” in field 566, the “Input Current” in field 567, the “Signal to Noise Ratio” in field 568, the “Center Resolution” in field 569, “Visual Quality” information in fields 570-587, the “Reason for Failure” in field 588, the “QA Result” in field 589, the “Labor Hours” in field 590, “Comments” in field 591, and the “Date” in field 592.

Hyperlink 116 provides a technician with access to previously entered data such as that shown in the screen print of FIG. 9. As one can see, image intensifiers have many data points that must be tracked to, for example, provide an engineering trend analysis. This module/interface accommodates the entry and reporting of such data. This module also may be used as a source of historical asset information by a technician, such that proper repair decisions may be made or that repeat failures are identified.

The following table shows the correlation between the data entered via the screens shown in FIGS. 7B and 8 and the data tables of FIGS. 29A-J:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
7B	537	29E	537'
7B	541	29C	541'
7B	542	29C	542'
7B	544	29C	544'
7B	545	29C	545'
7B	546	29C	546'
7B	547	29C	547'
7B	548	29C	542'
7B	549	29C	549'
7B	551	29C	551'
7B	552	29C	552'
7B	553	29A	553'
7B	555	29C	555'
7B	556	29E	556'
8	561	29G	561'
8	562	29G	562'
8	563	29G	563'
8	564	29G	564'
8	565	29G	565'
8	566	29G	566'
8	567	29G	567'
8	568	29G	568'
8	569	29G	569'
8	570	29G	570'
8	571	29G	571'
8	572	29G	572'
8	573	29G	573'
8	574	29G	574'
8	575	29G	575'
8	576	29G	576'
8	577	29G	577'
8	578	29G	578'

-continued

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
8	579	29G	579'
8	580	29G	580'
8	581	29G	581'
8	582	29G	582'
8	583	29G	583'
8	584	29G	584'
8	585	29G	585'
8	586	29G	586'
8	587	29G	587'
8	588	29G	588'
8	589	29G	589'
8	590	29G	590'
8	591	29G	591'
8	592	29G	592'

“Reports” Module/Interface

To provide for the efficient interpretation of available data, it must be presented in an appropriate format. In general, the most appropriate format is one that is user-defined or user-selected from a plurality of configuration parameters. This module provides a series of user-definable report structures and graphs to display asset information for a variety of users and/or purposes (e.g. an overall look at workload issues).

FIG. 10 is a screen print of the information shown when a user clicks on the “Reports” button 64. In addition to indicating, at 79, the database into which the user is logged in, means for defining two key report parameters are provided by the drop down menu 130 and a series of buttons 131-135. The drop down menu 130 allows the user to select the time period from which the data will be drawn, while the buttons 131-135 provide for a choice among several report types/formats. The currently set time period is displayed at line 136 such that the user may determine if the use of the drop down menu 130 is required. The drop down menu 130 may be programmed to contain any user-desired period of time (e.g. specific weeks, months, years).

FIGS. 11 and 12 are screen prints of information that may be accessed by clicking on the “Graphs” button 135 of FIG. 10. In FIG. 11, in addition to indicating, at 79, the database into which the user is logged in, means for defining several chart report parameters are provided by the drop down menus 140, 141 for “equipment” and “status code” designations, and the two groupings 142, 143 of “work type” and “chart scale” choices. In FIG. 12, in addition to indicating, at 79, the database into which the user is logged in, means for defining several graphic report parameters are provided by the drop down menu 145 for the “equipment” designations, and the three groupings 146, 147, 148 of “work type”, “chart type”, and “chart scale” choices. Additionally, in the lower, left hand section 149 of the screen, a table relating a number of “Job Status” conditions with the number of projects (i.e. “Work Volume”) currently in that condition is provided.

FIGS. 13-16B provide examples of text-style report structures that are available via this module/interface. FIG. 13 shows a “Jobs Open” report, as indicated on the “Status” line 150, providing a number of details regarding a piece of equipment designated as an “AVN-126-001” possessing serial no. 10456. The project information includes “PC Job Detail” 151, “Tech Job Detail” 152, “Shop Traveler” 153, “Equipment” 154, “Serial Number” 155, “Date Created” 156, Days in Shop” 157, “Job Status” 158, and “Last Transaction” 159. As with each of the previous Figures, the database into which the user is logged in is indicated at 79. The “Jobs Open” report

typically provides a user with real-time data as to a specific task request number (see line 185) and any associated jobs (i.e. column 151).

FIG. 14 shows, as indicated at line 160, an "Items that are in G Condition" report. Line 161 shows the number of records found to match the report parameters. The "Job Number" 162, "ICN" 163, "Equipment" 164, "Serial Number" 165, "Repairer" 166, "Job Status" 167, "Date Transfer In" 168, and "Day(s) in Shop" 169 are listed for each record in the report's eight columns. The database into which the user is logged in is indicated at 79. The "Items that are in G Condition" report typically provides a user with real-time data as any jobs (i.e. column 162) that are on hold awaiting the arrival of one or more parts.

FIG. 15A shows, as indicated at line 170, an "Items that are available from the shop on . . ." report. The database into which the user is logged in is indicated at 79. Line 171 shows the number of records found to match the report parameters. The "Job Number" 173, "Equipment" 174, "Serial Number" 175, "Repairer" 176, "Job Status" 177, "Date in Shop" 178, and "Date completed by shop" 179 are listed for each record in seven of the report's nine columns. Column 172 provides a hyperlink to the complete history (i.e. a journal of data entry edits) for the associated job number shown in column 173. FIG. 15B provides an example of the information accessed via a "History" hyperlink 172 including "Job Number" 183, "Log Date" 184, "Transaction Date" 186, "Job Status" 187, "Enter by" 188 (i.e. name of individual that entered the job data), and "Comments" 189.

Column 180 provides a user with the ability to indicate, by clicking on the appropriate box, which jobs are ready to be shipped (i.e. in the case of a repair, ready to be returned to the owner). After indicating, in column 180, the jobs that are ready for shipment, button 181 is clicked to "tag", within the database, those jobs for the manual steps required to physically ship the item(s). Clicking on button 182 resets, or clears, any of the boxes in column 180 that may have been clicked on earlier in the user's work session.

FIG. 16A shows, as indicated at line 190, a "Parts for _____, sorted by equipment" report. The database into which the user is logged in is indicated at 79. Line 191 shows the model designation for the top level assembly of the individual parts listed in the report. The "Part Number" 193, "Common Name" 194, "NSN" 195, "Cost" 196, "On Hand" 197, "Available to Tech" 198, "Location" 199, and "Ref No." 200 are listed for each record in eight of the report's nine columns. Column 192 provides a hyperlink allowing the user to edit (i.e. update parts information) the information associated with the part number shown in column 193. FIG. 16B provides an example of the information accessed via an "Edit" hyperlink 192 including "Equipment" 370, "Part Number" 371, "Part Name" 372, "Part NSN" 373, "Part Cost" 374, "Inventory Count" 375, "Inventory Trip Point" 376, "COG" 377, "Ref no" 378, "Display Part on Tech Screen?" 379, and "Location Code" 380. Lines 371-380 represent job data that may be edited via hyperlink 192. A part record can be deleted by clicking on button 381.

The following table shows the correlation between the data entered via the screen shown in FIG. 16B and the data tables of FIGS. 29A-J:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
16B	370	29B	370'
16B	371	29B	371'
16B	372	29B	372'
16B	373	29B	373'

-continued

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
16B	374	29B	374'
16B	375	29B	375'
16B	376	29B	376'
16B	377	29B	377'
16B	378	29B	378'
16B	379	29B	379'
16B	380	29B	380'

"Tasks" Module/Interface

An asset control system must provide for the creation and maintenance of "task" information (i.e. directions given to a repair shop/warehouse to perform some action) associated with each asset. FIG. 17 is a screen print of the information shown when a user clicks on the "Tasks" button 65. In addition to indicating, at 79, the database into which the user is logged in, a series of hyperlinks 210-216 is provided.

Hyperlinks 210 and 211 provide access to data input screens (that associated with hyperlink 211 is not shown in the Figures) typically utilized by a user (e.g. customer with appropriate access rights) to enter, or modify, information associated with a specific job. Hyperlinks 212 and 213 provide access to screens (that associated with hyperlink 213 is not shown in the Figures) typically utilized by a user to generate reports containing information as to the status of a specific job. Hyperlinks 214-216 provide access to data input or captured data display screens (those associated with hyperlinks 215 and 216 are not shown in the Figures) that typically allow a user to either issue material (e.g. a specific NSN) from a supply center/warehouse to another user, or to display the results of the process. This process is also known as a "data push". The present invention possesses the flexibility to collect this data and to "push" the data to external, third party users.

Hyperlink 210 provides a user with access to a blank Task Request Page shown in FIGS. 18A-C. FIG. 19 provides a screen print example of a completed Task Request Page. As with many of the screen prints discussed above, the database into which the user is logged in is indicated at 79 on FIG. 18A.

At Step 1 in FIG. 18A, information about the user (i.e. "requester") is entered. The information that is entered includes a user name at 220, a user code via drop down menu 621 which then appears in field 221, and the date on which the request is generated at 222. The data entered at Step 1 appears in the completed Task Request Page of FIG. 19 at lines 251-253.

At Step 2 in FIG. 18A, information regarding the nature of the task is entered. The information that is entered includes an indication as to whether the task request is "Urgent" in nature at 223, the nature of the desired task via drop down menu 506 which then appears in field 224, and a user-specified description of the requested task at 225. The data entered at Step 2 appears in the completed Task Request Page of FIG. 19 at lines 254-256.

At Step 3 in FIG. 18B, information about the specific equipment is entered. The information that is entered includes either an equipment model designation via drop down menu 226 or an equipment NSN via drop down menu 227 which then appears in field 228, a condition code for the item via drop down menu 628 or 629 which then appears in field 229, a purpose code for the item via drop down menu 504 or 630 which then appears in field 230, the quantity of items to be processed at 231, and a user-specified description of the

desired deliverables at 232. The data entered at Step 3 appears in the completed Task Request Page of FIG. 19 at lines 257-261. The information contained in drop down menu 226 is linked via JavaScript to that contained in drop down menu 227 such that a user needs to make a selection from only one of the two menus (i.e. the non-selected menu then immediately correlates the information it displays to that chosen in the selected menu). This feature provides users knowing only the "Equipment" designation/model number or only the "NSN" with equivalent means for accessing database information.

At Step 4 in FIG. 18C, information regarding the means of payment for the services to be rendered is entered. The information that is entered includes a WBS or charge number for the Production Controller Labor at 233 or 234, respectively, a WBS or charge number for the Technician Labor at 235 or 236, respectively, a WBS or charge number for the Material at 237 or 238, respectively, and a WBS or charge number for the Supply Support at 239 or 240, respectively. The data entered at Step 4 appears in the completed Task Request Page of FIG. 19 at lines 262-265.

At Step 5 in FIG. 18C, information associated with new assets is entered. The information that is entered includes a contract number at 241, a requisition number at 242, a contract CLIN number at 243, the quantity being ordered at 244, a project/group for which the item is being ordered at 245, and a supplier company name at 246. The data entered at Step 5 appears in the completed Task Request Page of FIG. 19 at lines 266-270.

At Step 6 in FIG. 18C, e-mail information is entered. The information that is entered includes the name of the individual to which an e-mail message is to be forwarded at 247 and the name of the person sending the e-mail message at 248.

Line 250 on FIG. 19 displays the name of the customer database associated with the task request and line 271 repeats that name and includes the task number assigned to that request.

Hyperlink 212 on FIG. 17 provides the user with access to the screen shown in FIG. 20 that allows a synopsis of the information associated with a specific task request to be reviewed. The scroll buttons 281, 282 allow the user to move sequentially through the task request numbers. Scroll button 280 allows the user to jump to the first task request number while button 283 allows the user to jump to the last task request number. The "Select" button 284 allows the user to gain access to the complete record of information associated with the selected task request number.

Hyperlink 214 on FIG. 17 provides the user with access to the screen shown in FIG. 21 that allows a "Request for Issue" to be generated. This screen allows data to be inserted into a legacy military system. Once again, the database into which the user is logged in is indicated at 79. The information that is entered includes either an NSN via drop down menu 227 which then appears in field 290 or an equipment name/description via drop down menu 226 which then appears in field 291, a user-specified quantity at 292, an activity code/description via drop down menu 693 which then appears in field 293, a UIC via drop down menu 508 which then appears in field 294, a user-specified date Julian at 295, user-specified request for issue number at 296, a user-specified date requested at 297, and user-specified remarks at 298. If the request is for "Local Issue", a charge number is entered at 299 and a building location is specified at 300. To process the information entered in the form, the user clicks on the "Insert Data" button 301.

The following table shows the correlation between the data entered via the screens shown in FIGS. 18A-C and 21 and the data tables of FIGS. 29A-J:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
18A	220	29E	220'
18A	221	29E	221'
18A	222	29E	222'
18A	223	29E	223'
18A	224	29E	224'
18A	225	29E	225'
18B, 21	226	29A	226'
18B, 21	227	29A	227'
18B	228	29E	228'
18B	229	29E	229'
18B	230	29E	230'
18B	231	29E	231'
18B	232	29E	232'
18C	233	29E	233'
18C	234	29E	234'
18C	235	29E	235'
18C	236	29E	236'
18C	237	29E	237'
18C	238	29E	238'
18C	239	29F	239'
18C	240	29F	240'
18C	241	29E	241'
18C	242	29E	242'
18C	243	29E	243'
18C	244	29E	244'
18C	245	29E	245'
18C	246	29E	246'
18C	248	29D	248'
21	290	29F	290'
21	291	29F	291'
21	292	29F	292'
21	293	29F	293'
21	294	29F	294'
21	295	29F	295'
21	296	29F	296'
21	297	29F	297'
21	298	29F	298'
21	299	29F	299'
21	300	29F	300'
18B	504	29E	504'
18A	506	29E	506'
21	508	29A	508'
18B	628	29D	628'
18B	629	29D	629'
18B	630	29E	630'
21	693	29A	693'

"Options" Module/Interface

An asset control system must provide for the creation and maintenance of information (e.g. drop down menu selections) associated with each database. FIG. 22 is a screen print of the information shown when a user clicks on the "Options" button 66. In addition to indicating, at 79, the database into which the user is logged in, a series of hyperlinks 310-320 is provided.

Hyperlinks 310-314 provide access to data input screens (those associated with hyperlinks 310-312 and 314 are not shown in the Figures) typically utilized by a user (e.g. customer with appropriate access rights) to enter, delete, or modify, information associated with a specific database. Hyperlinks 315-320 provide access to screens (not shown in the Figures) typically utilized by a user to enter, delete, or modify, information associated with all of the databases associated with the present invention.

FIG. 23 shows, as indicated at line 324, the "Repair codes descriptions for drop down list boxes". The database into which the user is logged in is indicated at 79. The "Repair

Code” 327 and associated “Description” 328 are shown in two of the screen’s four columns. Column 326 provides a hyperlink allowing the user to edit the information on the associated line while the “Delete” hyperlink found in column 329 provides for the complete removal of the associated line. The “Add” hyperlink 325 provides a user with the ability to create a new repair code/description association—an example of total user control (i.e. data display configurability) to create and track appropriate trend data input unique to that user’s needs, inherent in the present invention.

“DB Sel” Module/Interface

An asset control system must provide a user possessing multiple database rights with the ability to switch back and forth among them. FIG. 24 is a screen print of the information shown when a user clicks on the “DB Sel” button 67 (note that FIG. 24 is nearly identical to FIG. 1C). In addition to indicating, at 79, the database into which the user is currently logged in, the user is provided with the means to access a different database by selecting of one of the choices shown on the drop down menu at 43, which then appears in field 42, prior to clicking on the “Choose” button 331.

The following table shows the correlation between the data entered via the screen shown in FIG. 24 and the data tables of FIGS. 29A-J:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
24	42	29D	42'
24	43	29D	43'

“Logistics” Module/Interface

Many third parties (e.g. government entities) require asset tracking that ensures the optimum utilization of all applicable warranties. This module/interface provides instant access to current warranty data to ensure that that important goal is accomplished. This module/interface also allows for the entry of warranty data and provides a real-time display of warranty status via various report structures. The present invention is integrated with the production/repair process to provide notification to a production controller, as an asset is received, that a warranty can be utilized.

An asset control system must also provide a means for tracking and returning warranty rejects back to the respective supplier/manufacturer. This module/interface allows for the inputting and tracking of information regarding rejected items as they are returned to, or received from, a third party.

FIG. 25 is a screen print of the information shown when a user clicks on the “Logistics” button 68. In addition to indicating, at 79, the database into which the user is logged in, a series of hyperlinks 340-347 is provided.

Hyperlinks 340 and 341 provide access to data input screens (that associated with hyperlink 341 is not shown in the Figures) typically utilized by a user (e.g. customer with appropriate access rights) to enter, or modify, information associated with a specific warranty. Hyperlinks 342-345 provide access to screens (those associated with hyperlinks 343-345 are not shown in the Figures) typically utilized by a user to generate reports containing warranty information. Hyperlinks 346 and 347 provide access to data input screens (not shown in the Figures) typically utilized by a user to enter, or modify, information associated with a specific QDR.

Hyperlink 340 on FIG. 25 provides the user with access to the screen shown in FIG. 26 that allows a new warranty record to be generated. Once again, the database into which the user

is logged in is indicated at 79. The information that is entered includes an equipment name/description via drop down menu 226 which then appears in field 350 or an NSN via drop down menu 227 which then appears in field 351, user-specified serial number information either in field 352 or field 353, a warranty end date at 354, a user-specified contract number at 355, a user-specified contract CLIN at 356, a user-specified requisition number at 357, a user-specified delivery order number at 358, user-specified DD250 information at 359, and a user-specified DD250 date at 360. To process the information entered in the form, the user clicks on the “Add Items” button 361. The information contained in drop down menu 350 is linked via JavaScript to that contained in drop down menu 351 such that a user needs to make a selection from only one of the two menus (i.e. the non-selected menu then immediately correlates the information it displays to that chosen in the selected menu). This feature provides users knowing only the “Equipment” designation/model number or only the “NSN” with equivalent means for accessing database information.

FIG. 27 is a screen print of information that may be accessed by clicking hyperlink 342 on FIG. 25. In addition to indicating, at 79, the database into which the user is logged in, means for defining a number of report parameters include an equipment name/description via drop down menu 226 which then appears in field 350 or an NSN via drop down menu 227 which then appears in field 351, and a user-specified serial number at 367. To process the report request per the parameters entered at 365-367, the user clicks on the “Search” button 368.

The following table shows the correlation between the data entered via the screens shown in FIGS. 26 and 27 and the data tables of FIGS. 29A-J:

FIG.	Data Entry Point Reference Numeral	FIG.	Data Table/Field Reference Numeral
26, 27	226	29A	226'
26, 27	227	29A	227'
26	350	29I	350'
26	351	29I	350'
26	352	29I	353'
26	353	29I	353'
26	354	29I	354'
26	355	29I	355'
26	356	29I	356'
26	357	29I	357'
26	358	29I	358'
26	359	29I	359'
26	360	29I	360'
27	365	29I	365'
27	366	29I	365'
27	367	29I	367'

“Admin” Module/Interface

An asset control system must provide for its own administration. FIG. 28 is a screen print of the information shown when a user clicks on the “Admin” button 69. In addition to indicating, at 79, the database into which the user is logged in, a series of hyperlinks 335-337 is provided. The hyperlinks 335-337, respectively, allow an administrator to add a new user, to delete or edit an existing user, and to determine which users are on-line (i.e. interacting with the present invention) at any given time.

Hardware Architecture

The system includes a conventional computer workstation, operating system, and the software-implemented process of the present invention. The computer workstation may be, for

example, a conventional personal computer with standard internal components (e.g. a microprocessor with peripheral chipset mounted on an appropriate motherboard). Of course, other more or less powerful computer systems can be used, but it is suggested that the computer system meet the minimum system requirements for Microsoft Access 97, or an equivalent database operating system. The user interface is preferably a conventional color monitor, a modem, and a standard input device such as a mouse. The operating system is preferably Windows 95, or a later revision. All data entry forms may be maintained on the Internet for user access, and a separate web server is required in this case.

The system software may be compressed onto a series of installation floppy diskettes, and may be loaded onto a computer system as described above using conventional installation macros such as provided with Windows 2000.

Bar Code Readers

SPT1700 "palm style" bar code readers are used to allow the gathering of inventory data and allow technicians to enter their repair data as it happens and then upload it at a later time.

FIGS. 29A through 29J show the data tables and associated field definitions for a preferred embodiment of the present invention. The named data tables include "ACTIVITY" (see FIG. 29A), "Equip" (see FIG. 29A), "Equip_Task" (see FIG. 29A), "Equip_Type" (see FIG. 29A), "Failure_Code" (see FIG. 29A), "History" (see FIG. 29A), "PCS" (see FIG. 29B), "PCS_Parts" (see FIG. 29B), "PCS_Repair" (see FIG. 29C), "PCS_Repair_Sub" (see FIG. 29C), "Repair_Code" (see FIG. 29C), "Condition_Code" (see FIG. 29D), "Data_users" (see FIG. 29D), "PCS_Database_List" (see FIG. 29D), "PCS_Name_List" (see FIG. 29D), "PCS_Name_List_temp" (see FIG. 29D), "Permission" (see FIG. 29D), "Purpose_Code" (see FIG. 29E), "Request_Task" (see FIG. 29E), "Status" (see FIG. 29E), "WOR" (see FIGS. 29E and 29F), "805_RFI_Num" (see FIG. 29F), "Activity" (see FIG. 29F), "RFI_Assignments" (see FIG. 29F), "Tube_data" (see FIG. 29G), "Tube_spec" (see FIG. 29H), "QDR" (see FIG. 29I), "Warranty" (see FIG. 29I), "ECP" (see FIG. 29J), and "Help" (see FIG. 29J).

The various data tables include a number of relational database linkages. These include fields named "ID" (see reference numerals 401, 402, 404, and 405 in FIG. 29A; 415 in FIG. 29C; 416 and 417 in FIG. 29D; 422-427 in FIGS. 29E and 29F; and 431 in FIG. 29H), "IDkey" (see reference numerals 403 and 407 in FIG. 29A; 409 and 410 in FIG. 29B; 411 and 413 in FIG. 29C; 418-420 in FIG. 29D; and 435 in FIG. 29J), "Jobnum" (see reference numeral 406 in FIG. 29A; 412 and 414 in FIG. 29C; and 430 in FIG. 29G), "WORnum" (see reference numeral 408 in FIG. 29B), "Permission_ID" (see reference numeral 421 in FIG. 29D), "IDRFIAssignment" (see reference numeral 428 in FIG. 29F), "Tube_ID" (see reference numeral 429 in FIG. 29G), "QDR_ID" (see reference numeral 432 in FIG. 29I), "Warranty_ID" (see reference numeral 433 in FIG. 29I), and "ECPID" (see reference numeral 434 in FIG. 29J).

Having now fully set forth the preferred embodiment and certain modifications of the concept underlying the present invention, various other embodiments as well as certain variations and modifications of the embodiments herein shown and described will obviously occur to those skilled in the art upon becoming familiar with said underlying concept. It is to be understood, therefore, that the invention may be practiced otherwise than as specifically set forth in the appended claims.

I claim:

1. A distributed access asset control system comprising:
 - A storage medium;
 - a first plurality of processing sequences and graphical user interfaces associated with a first customer group adapted to enable user interaction, access, data collection and data, retrieval, and display, said first plurality of processing sequences and graphical user interfaces comprising:
 - an access control section adapted to selectively authorize access to portions of said distributed asset control system;
 - a production control section, wherein said production control section is adapted to associate tasks with at least one federal appropriation related accounting code and an available federal appropriation amount;
 - a repair or acceptance technician section;
 - a system administration section;
 - a repair action section;
 - a asset warranty management section;
 - a report section;
 - an approved and funded task scheduler section, said scheduler section enables association of tasks with an asset owner, asset possessors or asset managers who fund tasks associated with one or more assets;
 - an acceptance action section;
 - a second plurality of processing sequences and graphical user interfaces associated with a second customer group comprising one or more processing sequences and graphical user interfaces associated with said first plurality of processing sequences including processing sequences and graphical user interfaces which has modifications associated with a customer within said second customer group, wherein said second plurality of processing sequences and graphical user interfaces is selected based on a plurality of customer related data including user login identification;
 - an interface section adapted to interface with at least one another asset control system adapted to identify data interface parameters associated with said at least one another asset control system, determine data associated with an asset related request to said at least one another asset control system and a section for sending said data associated with an asset related request to said at least one another asset control system; and
 - a plurality of data structures adapted to store data including:
 - a plurality of asset data, a plurality of entity data associated with said plurality of asset data including said asset owner, asset possessors or asset managers;
 - a plurality of task data including new, in-process, and completed tasks data;
 - a plurality of asset repair processes data;
 - a plurality of asset storage data;
 - a plurality of at least one federal appropriation related accounting code data;
 - a plurality of available federal appropriation amount data;
 - a plurality of repair cost data;
 - a plurality of first part identifier data;
 - a plurality of repair code data;
 - a plurality of failure code data adapted to be associated with repair or acceptance actions;
 - a plurality of labor cost data associated with repair or acceptance actions including hourly rate data and technician identifier data;
 - a plurality of repair and acceptance criteria data associated with specific repair and acceptance actions;
 - a plurality of quality assurance results data;

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a plurality of second part identifier data; and
a plurality of asset warranty data.

2. A system as in claim 1, further comprising a report section adapted to produce reports including at least one current event reports, at least one task reports, at least one production management control reports, wherein said production management control reports are based on data comprising equipment identification data, status data, inventory count data, part cost data, work type data, history data, repair code data, part number data, trend analysis data associated with said asset owner data, asset possessor data or asset manager data.

3. A distributed access asset control system comprising:

A storage medium;

a first plurality of processing sequences and graphical user interfaces associated with a first customer group adapted to enable user interaction, access, data collection and data, retrieval, and display, said first plurality of processing sequences and graphical user interfaces comprising:
an access control section adapted to selectively authorize access to portions of said distributed asset control system;

a production control section, wherein said production control section is adapted to associate tasks with at least one federal appropriation related accounting code and an available federal appropriation amount;

a repair or acceptance technician section;

a system administration section;

a repair action section;

a asset warranty management section;

a report section;

an approved and funded task scheduler section, said scheduler section enables association of tasks with an asset owner, asset possessors or asset managers who fund tasks associated with one or more assets;

an acceptance action section;

a second plurality of processing sequences and graphical user interfaces associated with a second customer group comprising one or more processing sequences and graphical user interfaces associated with said first plurality of processing sequences including processing sequences and graphical user interfaces which has modifications associated with a customer within said second customer group, wherein said second plurality of processing sequences and graphical user interfaces is

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selected based on a plurality of customer related data including user login identification;

an interface section adapted to interface with at least one another asset control system adapted to identify data interface parameters associated with said at least one another asset control system, determine data associated with an asset related request to said at least one another asset control system and a section for sending said data associated with an asset related request to said at least one another asset control system; and

a plurality of data structures adapted to store data including:

a plurality of asset data, a plurality of entity data associated with said plurality of asset data including said asset owner, asset possessors or asset managers;

a plurality of task data including new, in-process, and completed tasks data;

a plurality of asset repair processes data;

a plurality of asset storage data;

a plurality of at least one federal appropriation related accounting code data;

a plurality of available federal appropriation amount data;

a plurality of repair cost data;

a plurality of first part identifier data;

a plurality of repair code data;

a plurality of failure code data adapted to be associated with repair or acceptance actions;

a plurality of labor cost data associated with repair or acceptance actions including hourly rate data and technician identifier data;

a plurality of repair or acceptance criteria data associated with specific repair and acceptance actions;

a plurality of quality assurance results data;

a plurality of second part identifier data; and

a plurality of asset warranty data.

4. A system as in claim 3, further comprising a report section adapted to produce reports including at least one current event reports, at least one task reports, at least one production management control reports, wherein said production management control reports are based on data comprising equipment identification data, status data, inventory count data, part cost data, work type data, history data, repair code data, part number data, trend analysis data associated with said asset owner data, asset possessor data or asset manager data.

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