

The logo features a large, blue, slanted parallelogram shape on the left side of the slide. Inside this shape, the text "THE VALUE OF PERFORMANCE." is written in a small, white, sans-serif font. Below it, the words "NORTHROP GRUMMAN" are written in a larger, white, sans-serif font, with a thin white curved line underneath.

THE VALUE OF PERFORMANCE.
NORTHROP GRUMMAN

Parts Management

Sector/Corporate Standardization

23 Apr 13

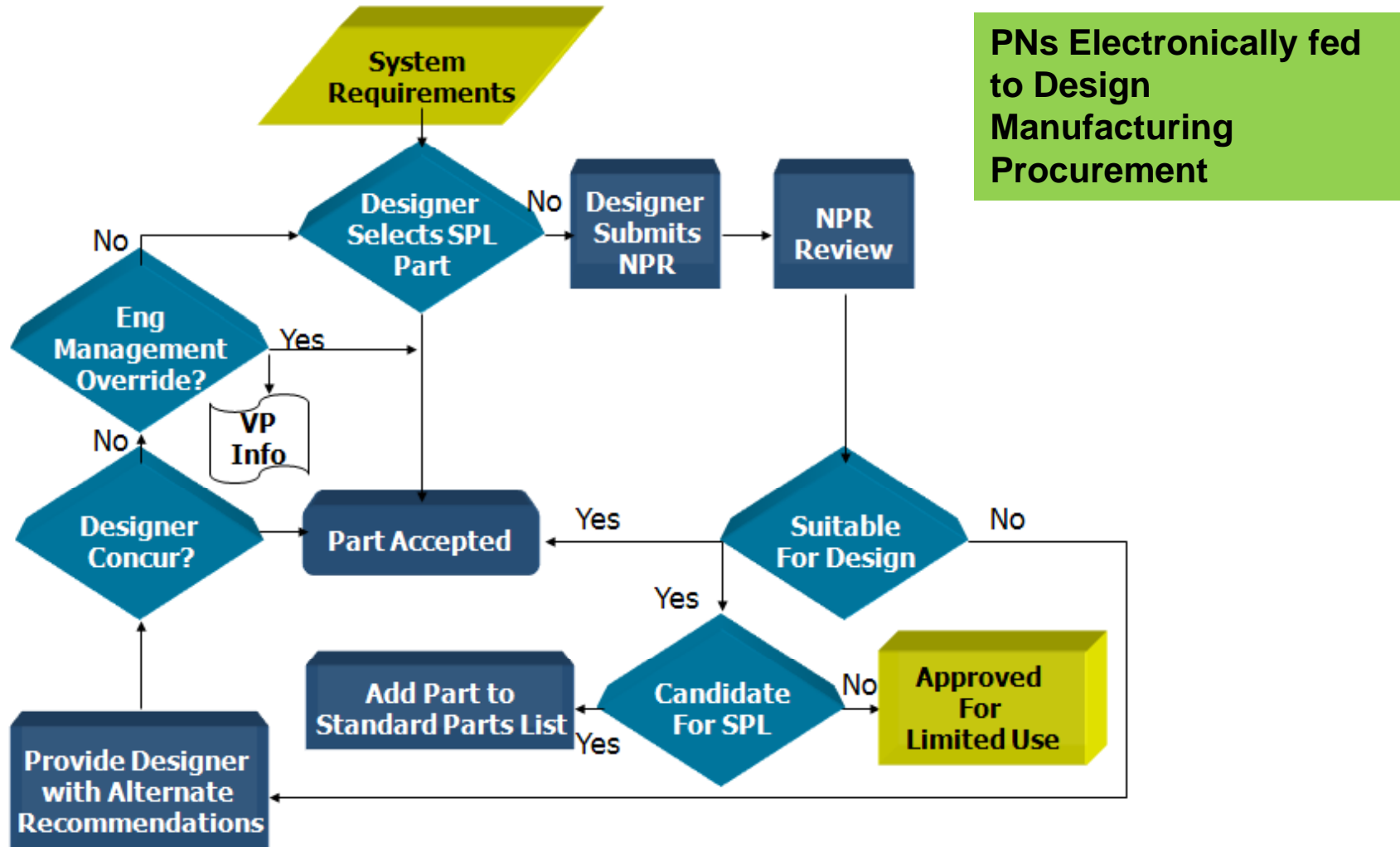
Rich Rhyne
Consulting Engineer

SPLs/Preferred Supplier Listings

- The objective is to reduce cost and risk by standardizing designs
- The Industry average cost for introducing a new part into inventory is \$9400
 - Ref- Coopers & Lybrand – 1991 dollars
 - In 2008 DSCC estimated the cost at >\$27K for gov't programs
 - Saving a few cents/dollars on a part can be expensive if it introduces a new part or supplier into the system
- Standardization reduces the overhead required to:
 - Select and review new parts and suppliers
 - Certify and track new parts and suppliers
 - Create design libraries (schematic symbol and footprints)
 - Procure, kit, store and manage parts
 - Resolve part/supplier issues
 - Program manufacturing machines
 - Develop manufacturing processes
 -

Standardization Matters

Integrated Electronic New Part Request Workflow



Minimize new part introductions and obsolescence problems

New Part Request Integrated to CAD Model Requests



Request has been submitted for signoff.
If you would like to add this part to the QPaRTS Library click the following link: [QPaRTS Library](#)

Request ID: 200521 End Edit Search Request Status: IN REVIEW
Request Justification: Testing Mil part Created: 1/30/2006 1:38:03 PM
Site: BMW - BMW Modified: 1/30/2006 1:49:54 PM
Program: JSFSD2 Submitted: 1/30/2006 1:49:55 PM
Charge No: 123GO Final:
Required By (Date): 2/4/2006 Original User: JASKA, KEITH A
Controlling User: JASKAKE Search JASKA, KEITH A Last Modify User: JASKA, KEITH A
Requesting User: IRANICA Search IRANI, CATALINA

File Name: Browse... Attach

File Description:

| File Name | Description |
|---------------------------------------|-------------|
| View gr_145k145_-.tif | tif file |

First Part Number: M24308/4-326F Description: CONNECTOR,ELEC,RECT,MIN,POLARIZED SHELL,PLUG,PIN
Part Count: 1

Provides early visibility into what designers are considering

New Part Approval Electronic Routing

Home Help Logoff HelpDesk

NPR Approval

NPR Number **IN REVIEW**

| Action | Seq. No. | Name | Details |
|--------|----------|--|--|
| | 20 | Commodity Design Team By Part Technology | IMPM Approved 2/8/2006 7:35:50 PM |
| | 25 | | DTRVW Approved 2/8/2006 NOTES: Preferred Supplier. |
| | 30 | | CERVW |
| | 30 | | ENGRG |
| | 30 | | MANFC |
| | 40 | | PURCH |
| | 40 | | ENGRG |
| | 50 | | CHAIR |

Approval Actions
[Reverse NPR](#)
[Add Signer](#)
[Refresh](#)

NPR Request
[View This Request](#)

Links
[NPR Request](#)
[History](#)
[Signoff Queue](#)

Notes can be entered on a per signer basis, and are listed below the approval state

Audit Trail and Metrics with Notes and Attachments

SmartFind Search Tool - PaRTS

- PaRTS Search Engine (Convergence Data Services SmartFind)
 - GUI front end - flexible UI that can show many columns of attributes
 - **Key word search**
 - **Parametric Searches**
 - **Standard Parts List Visibility**
 - **Inventory Visibility**
 - **Cost Visibility**
 - **Obsolescence Visibility**
- Design For Retrieval (Convergence Data Services DFR)
 - Underlying database in Oracle.
 - Data maintenance tool suite
 - LiveUpdate – see DFR changes real-time

Make Finding and Using Standard Parts Easy

PaRTS Search Engine

- PaRTS provides key word search and parametric search capability along with Standard Parts List, Program Parts Selection Lists, Cost, Inventory and Obsolescence data.

The screenshot shows the PaRTS Search Engine interface. At the top, there are navigation links: Home, View Configuration, Release Notes, Help. Below that, it says 'Logged in as: rhyneri' with a Logout button. There are buttons for 'Parts Universe', 'Google', 'Cadstar', 'IHS', and 'IRC'. The search bar contains 'connector circular'. The search type is set to 'Standard'. The sort field is 'Relevance'. There are links for 'Add Filter(s)', 'Add Key Attribute(s)', and 'Clear Filter(s)'. The attribute filter table is as follows:

| Attribute | Operation | Filter | UOM |
|--|-----------|--------|-----|
| <input checked="" type="checkbox"/> Body/Shell Style | Ignore | | |
| <input checked="" type="checkbox"/> Connector Style | Ignore | | |
| <input checked="" type="checkbox"/> Contact Gender | Ignore | | |
| <input checked="" type="checkbox"/> Total Number of Contacts | Ignore | | |

Below the search results, there is a breadcrumb trail: Root\Corporate Catalog\Northrop Grumman Part\Interconnects\Connector\Circular Connector\MIL Circular Connector. The search results are displayed in a table with columns: Item Number (Corporate Part Number), Qualifier, and Item Description. The first two items are:

| Item Number (Corporate Part Number) | Qualifier | Item Description |
|-------------------------------------|-----------|---|
| MS3456KT28-21S | Part.0 | CONNECTOR, PLUG, CABLE, CIRCULAR, 5015, SHELL SIZE 28, 37 #8 CONTACTS |
| MS3456LS22-2SW | Part.0 | CONNECTOR, PLUG, CABLE, CIRCULAR, 5015 SERIES, SHELL SIZE 22, 3 #8 CONTACTS |

- Punch out to IHS catalog data

- Refine by Key Attributes

- Links to external data
- Information Handling Services
- XSB

- Key word search:

Standard Parts List flags also integrated into CAD tool menus

Standard Parts List Parametric and Inventory Search

Parts Management Process Baseline

- **Standard Parts List (SPL) – based on ten year history**
 - 7458 NHAs/per year used SPL parts. Multiple SPL applications on each
 - Assume that 50% of the NHAs would have generated at least one functional duplicate were it not for the SPL.
 - 3729 new part introductions avoided annually due to the SPL usage.
- **\$35M/year Cost avoidance over all part types**
- **New Part Request workflow**
 - Electronic New Part Request (NPR) workflow
 - Metrics generated directly by the workflow.
 - Rejected 613 NPRs and corrected part numbers on an additional 770 NPRs
- **\$6.4M/Year cost avoidance due to NPR process in 2012**

Parts Management reduces new part introductions

Parts Management

- **Release computer based training for**
 - PARTs Search Engine – required for all designers
 - New Part Request workflow – onboarding
 - Standard Parts List – onboarding
- **Enterprise Material Authenticity Team**
 - Standardize processes and procedures across the corporation
- **DMSMS Pilot Tool released**
 - Real time DMS analysis
 - Shared DMS solutions tracking
- **One Vault**
 - Migrate to single data source model across sector/then corporate
 - Share data and CAD Models

Standardization and Cost Control requires continued diligence

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