NOAA POES Engineering Network Prototype Status

Arthur T McClinton Jr.

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Outline

- System Overview
- Purpose of the Prototype
- Lessons Learned
- Sample of the system
Introduction

Overview

- Engineering Network Prototype will provide greater access to satellite engineering housekeeping data (more clients, more data manipulation capabilities), and allow analysis activities to be moved off the operational system.

Purpose

- Determine requirements for operational system
- Establish core capabilities for user evaluation
- Evaluate design alternatives: database, graphics, etc.
- Expose risks of development in target system
Description

- NOAA 14 polar weather spacecraft telemetry houskeeping data extracted from Global Area Coverage files and stored on server.

- Data accessed via client Windows PC using web browser for downloading and plotting
  - Netscape Navigator
  - Microsoft Explorer

- Tools provided to visualize and manipulate the data
  - PV Wave
  - Excel
Functional Diagram

**SOCC Operations**

- PACS
- Segment files
- ENP Ingest (FORTRAN)
- Transfer files
- DECnet

**ENP Decom**

**ENP Server**

**ENP Clients**

- PV-Wave
- Web browser (off-the-shelf)
- TCP/IP
- HTTPD (off-the-shelf)
- Web pages (HTML, Java script)
- CGI (Perl)
- Data Manager (off-the-shelf, C)
- Data Archive
- TCP/IP
Ad Hoc Query Default Page

Click here for Ad Hoc query page

- URL site
- End date entry field
- End time entry field
- Frequency
- Duration
- Filter expression
- Click to Reset

- Start date entry field
- Start time entry field
- Plot/table selection
- Parameter selection
- Click to submit
PV-Wave Plot: NBAT1V

• All plots are in color on same axes
• Plots up to 5 parameters on one graph to compare
• Click on area of graph to enlarge
Excel Plot: NBAT1V

- Up to 8 parameters can be plotted on the same time scale.
- Scale and plot type can be altered dynamically by the user.
ENP Navigation Page

- Click to reach Navigation Page
- Setup desired plot ranges and style
- Click to select parameters by subsystem or assembly

Note: Filters not available in the Navigation mode
Navigation Subsystem Pages

Click title to select desired subsystem

Example: Locate battery voltage parameter NBAT1V

Begin by going to Electrical Power subsystem
Go to Batteries to find individual battery parameters
Navigation Subsystem Pages (concluded)

Check appropriate boxes and Submit Query or Add to generate a pick list of parameters to plot

Click on Reset to create a new list of parameters
Conclusions

- WEB Technology made for easy client server integration
- Quicker development (9 staff months)
  - Rapid development using pieces of existing COTS or PACS system code
  - Easy to add/swap in new COTS products
  - Users were able to pick it up with minimal training
  - Familiarity breeds consent
- Use of COTS may require modifying some requirements
  - General look and feel of plot
  - EXCEL and PV-Wave date format is one such example
  - Point limitations in EXCEL
- Provided new methods of performing same task