

SRAS Overview


Presented to: NOAA NESDIS OSO Lunch Time Seminar

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Agenda

- History
- Overview of SRAS
- Demonstration



History of SRAS (Secure Remote Access Server)

Background

- Anomaly investigations need to have key people gaining quick access to the data
- The SOCC is a closed system and requires the people to come to the SOCC to receive the data
- NOAA/NESDIS has the responsibilities to correctly operate the nations weather satellite fleet
- SRAS is primarily a means of providing telemetry data to remote analysts so that spacecraft and instrument health and safety can be remotely monitored

Background (Continued)

- Following the NOAA-13 spacecraft anomaly that resulted in the loss of the spacecraft, OSD and Noblis developed the Engineering Network Prototype that showed the ability to deliver satellite data via a web server
- Although the users liked the concept, the security issues needed to be addressed.
- Noblis developed the requirements for the commercially developed follow on system.
- Aerospace developed the concept of operations
- Based on the requirements and concept of operations 4 separate architectures were developed and costed.

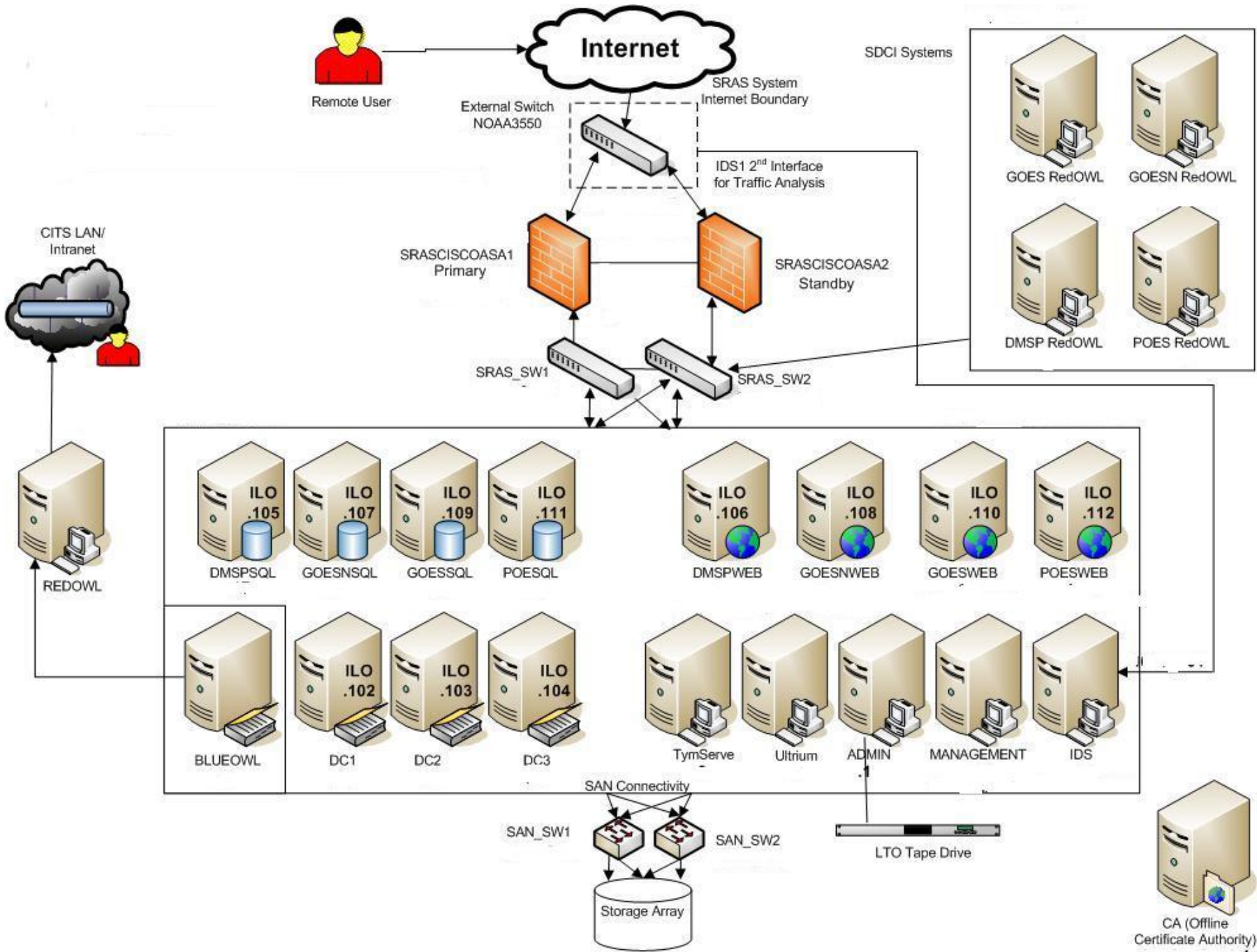
Background (Concluded)

- Final selection was to flow history and trends data via a One Way Fiber Link (OWL)
 - isolates the operational systems from the SRAS
 - No way for SRAS user to send data to OPS
- Several requirements were shown to not be cost effective and were dropped.
 - Make SRAS look identical to the CWS interface.
- The SDCI interface was split off from the contract at OSO/OSD decision to use the PSS contractor.
 - Resulted in fairer competition for the SRAS to not have a vendor that had increased knowledge of operational systems

Developers and Maintainers

- SRAS Data Collector Interface (SDCI)
 - Development - NGS / ISI (PSS contractors)
 - PM - Alva Barnett
 - Maintenance - PSS2 (Zhenping Li)
- SRAS
 - Development - Pragmatics/Harris/BTI
 - WEBTLM - BTI
 - PM - OSD (Keith McKenzie)
 - Maintenance - Pragmatics (Cliff Ziarno)
- System Administration
 - Greg Mundy

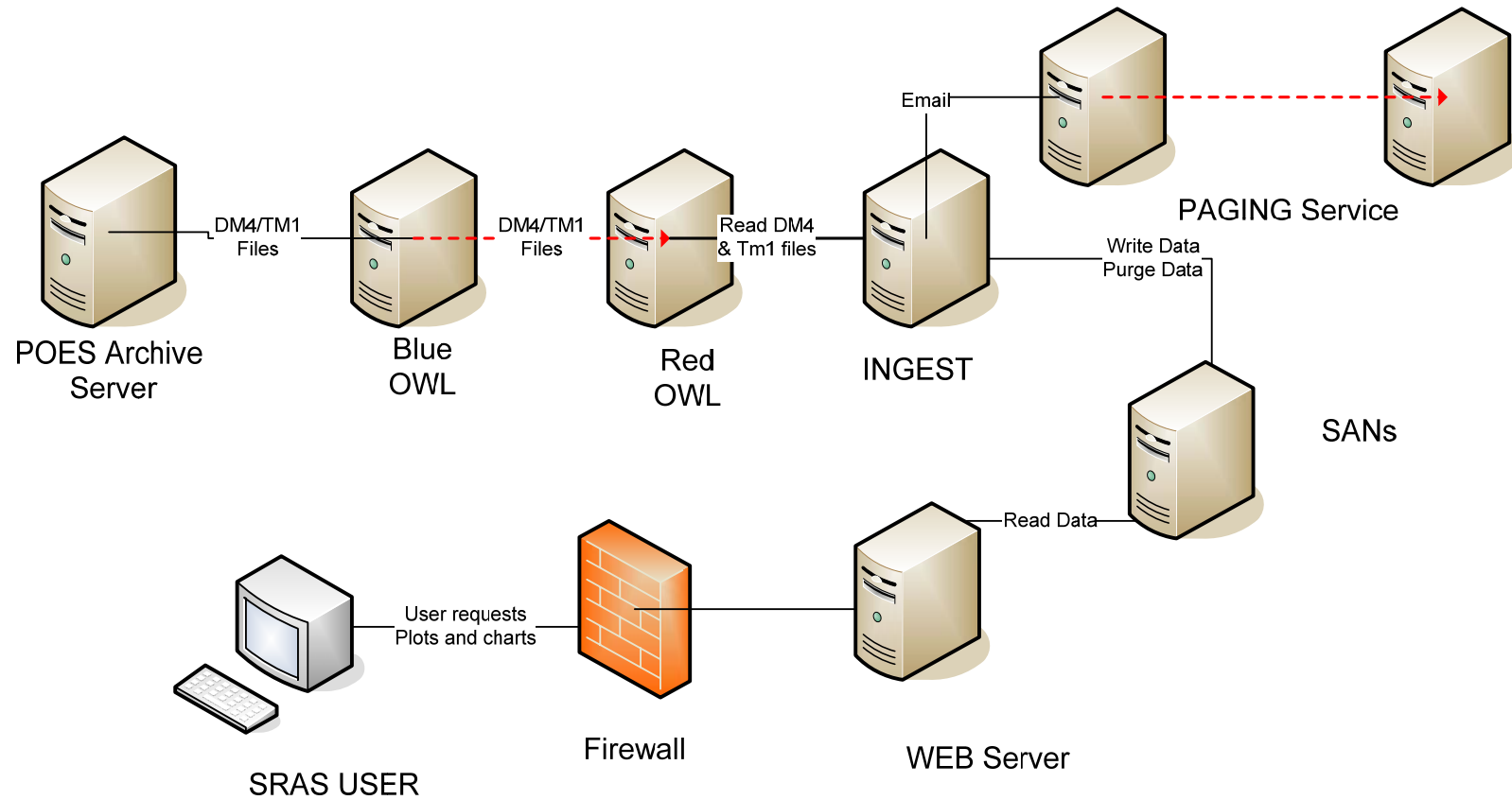
Overview of SRAS



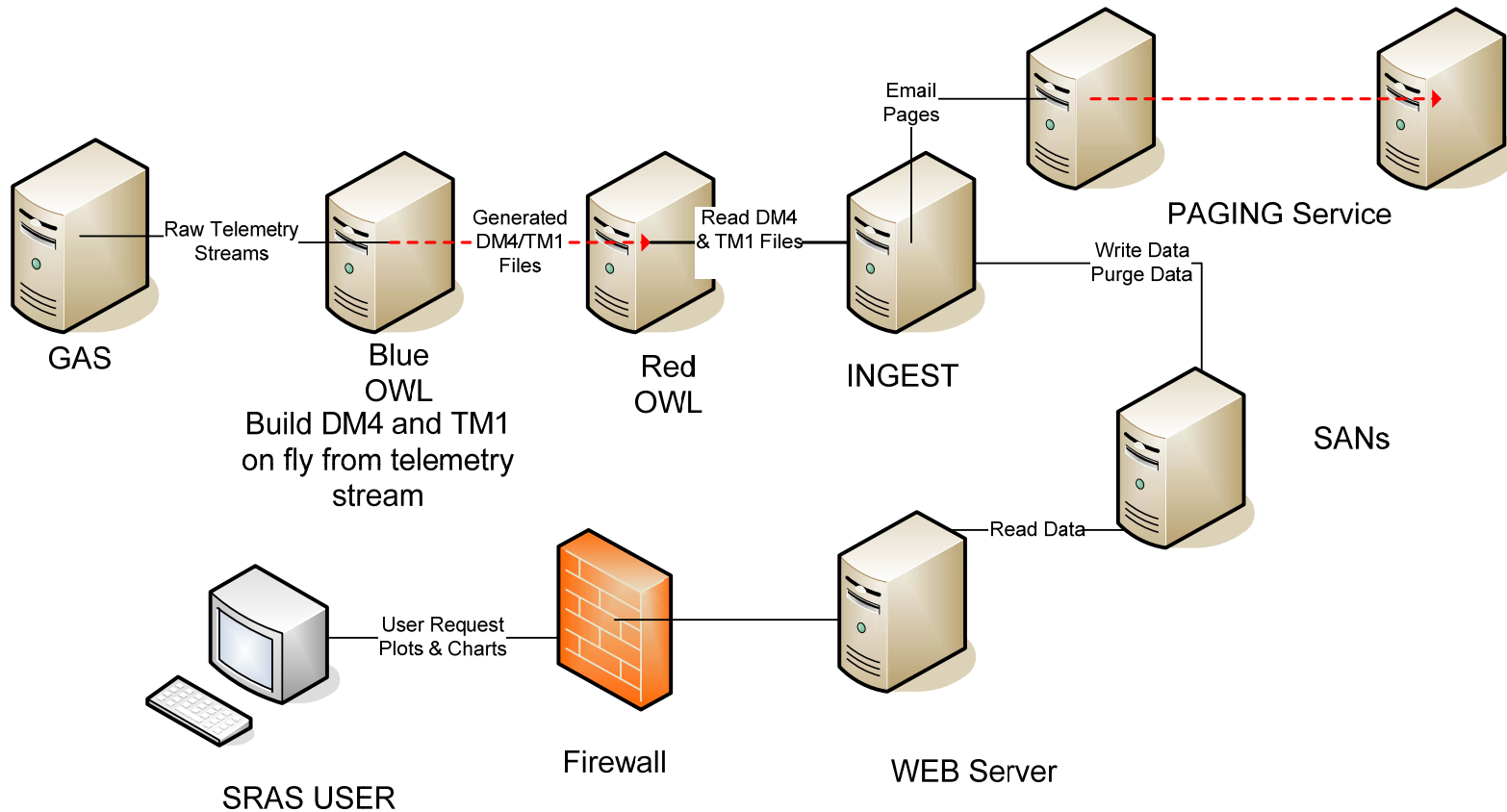
Overview

- SRAS contains 23 computers and a SAN disk farm to hold the data.
 - Blade technology
- Standard ABE history (DM4) and Trends (TM1) files are received on the Red OWL's
- Data is loaded into the SRAS SQL database
- Received data is checked against the user requests for paging and pages sent via OWL to internet mail server
- 14 days of GOES and 2 days of POES and DMSP history data retained. No purging of Trends data.
- Users use Web interface and smart card to access the data.

POES and DMSP Data Flow



GOES I-M and N-P Data Flow



USER Access Requirements

- Following authorization for access
- User loads software and certificates onto Laptop or Desktop unit that is authorized
- Using IE 6 (or 7 with some restrictions) user accesses the website
- Website and IE will ask user to insert smart card
- And enter Password
- Access SRAS data



Notification of Limit Violations

	ID	Spacecraft Name	
Select	DMSP_45	DMSP_45	Edit Pager Requests
Select	DMSP_47	DMSP_47	Edit Pager Requests
Select	DMSP_48	DMSP_48	Edit Pager Requests
Select	DMSP_49	DMSP_49	Edit Pager Requests
Select	DMSP_51	DMSP_51	Edit Pager Requests
Select	DMSP_54	DMSP_54	Edit Pager Requests

- Select “Edit Pager Requests”
- The user can have 5 pager requests per satellite
- Requested text message sent when limit is violated for given number of counts (value not sent)
- Sends for each DM4 file in which violation occurs
- Email address may be a text message address

Sample Pager request

PGMGR - DMSP_49 DMSP_49

Update Paging Requests - 4 more requests may be defined

	Mnemonic	Value	Page if >=	Page if <=	# Samples	Page Text	Status
Delete	ABAT1V	V ▾		22.299999	0004	DMSP 49 Low Battery voltage	Active

To add a request, select a mnemonic

Add mnemonics starting with

(or supply whole name)

Select from favorites list

1 names

Select from all mnemonics

1438 names

Email addresses

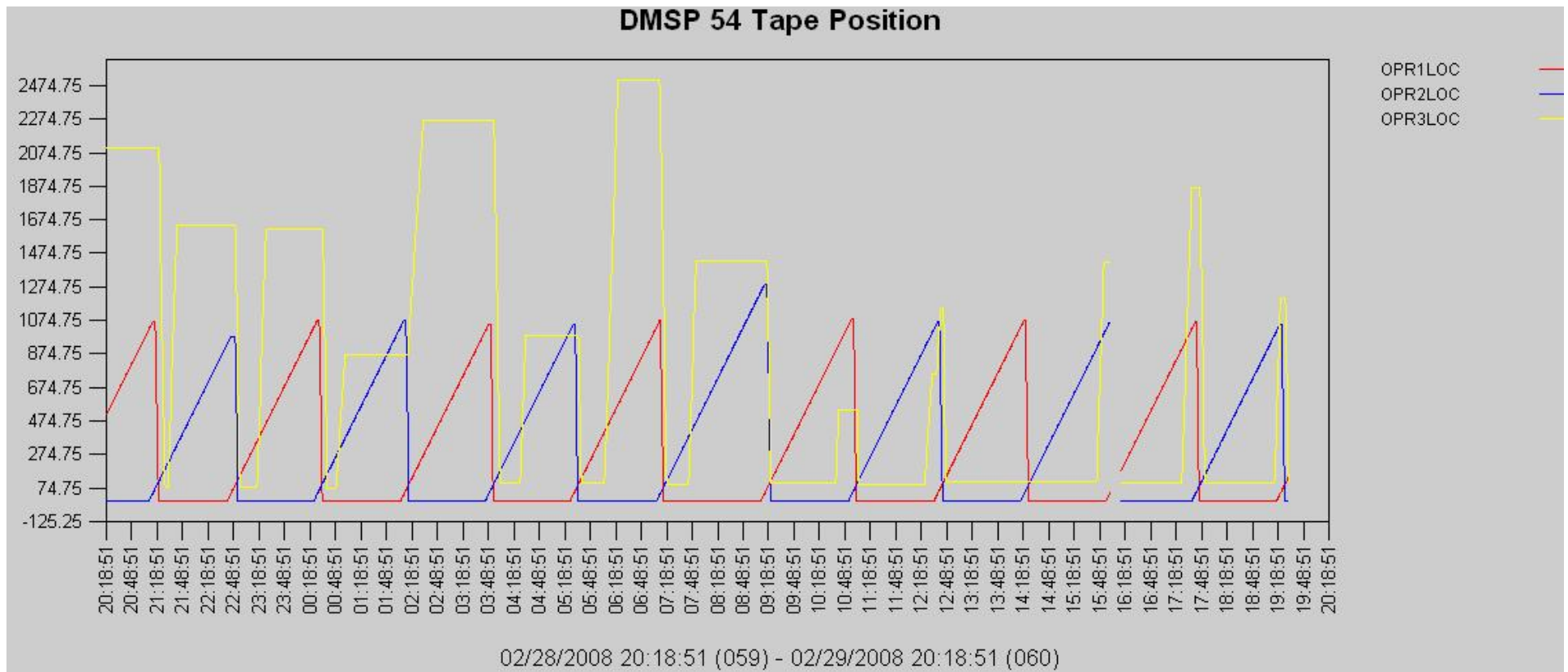
art.mcclinton@noaa.gov

Logoff

Select Vehicle

Commit Changes

Sample Plot of Tape Position

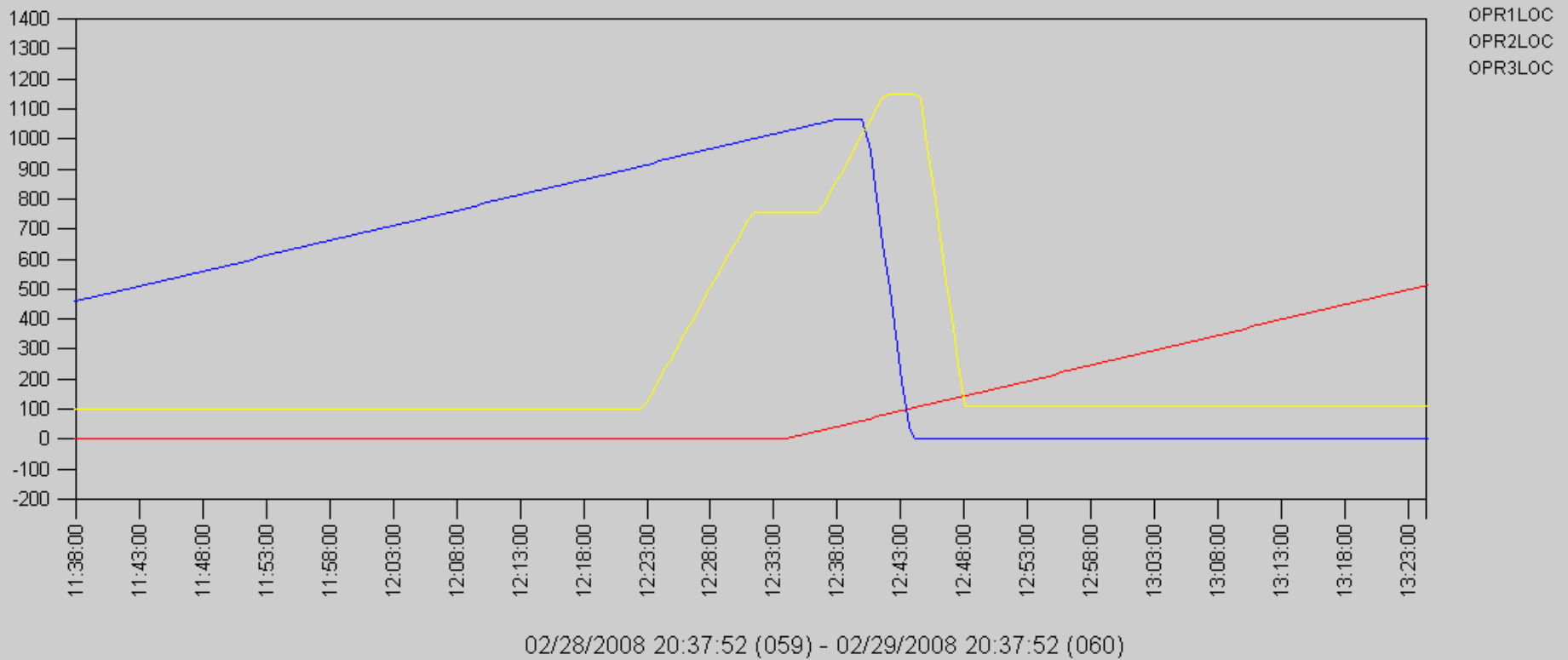


Plot Manipulation

- The plots can be manipulated on your machine without going back to SRAS
- Left Click on the plot surface to enable
- Zoom by selecting box – can start from any corner
- Dwelling (no click over point will list value)
- Right click to unzoom, export to excel, or jpg
- Warnings
 - Can not directly print the page
 - Can accidentally drag a point to new location

ZOOM

DMSP 54 Tape Position



Filtering Data

- Filter expression is used to select data. Here only Trends values are shown where number of points in trend is greater than 570.

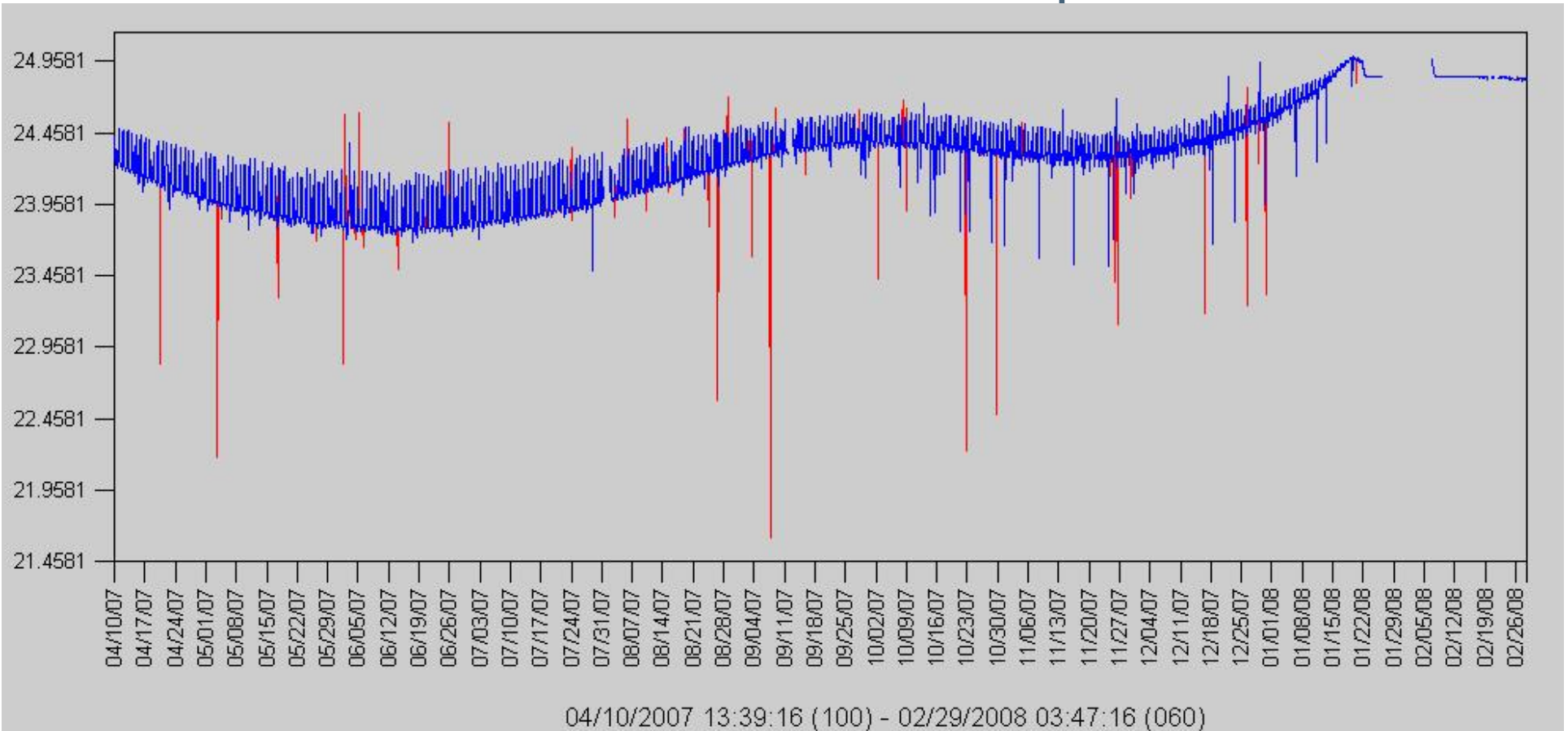
Mnemonics Selected									
	Mnemonic	Units	Use Value	Frequency	N	Filter Expression	Symbol	Color	Move
Delete	ABAT1V		AMN	All			none	Red	↕
Delete	ABAT1V		AMN	All		ABAT1V/NDP > 570	none	Blue	↕

- Can also Scale which discards data out of range

Graph: Y Value Range Min Max Title

Trends Data

- Red shows values where number points less 570



Charts

- Chart up to 10
- Time tagged
- Export to Excel

TABLE - DMSP_54 DMSP_54

Display Table - from template Tape Position

Date/TimeA	OPR1LOC KB/30 seconds	OPR2LOC KB/30 seconds	OPR3LOC KB/30 seconds
2008 060 18:41:41.750	0		
2008 060 18:41:42.000		652.000	
2008 060 18:41:42.250			106.000
2008 060 18:42:11.750	0		
2008 060 18:42:12.000		657.000	
2008 060 18:42:12.250			106.000
2008 060 18:42:41.750	0		
2008 060 18:42:42.000		662.000	
2008 060 18:42:42.250			106.000
2008 060 18:43:11.750	0		
2008 060 18:43:12.000		667.000	
2008 060 18:43:12.250			106.000
2008 060 18:43:41.750	0		
2008 060 18:43:42.000		672.000	

Templates

- A user can create as many templates as desired holding information for plots.
- Once you have plot or chart as you would like then press “save Template” to store
- Can not save the absolute times
 - Can save “Now” and delta time in hours or minutes
 - Default is from 00:00 on today to current time today
- Templates may be promoted to Global so that can be used by anyone
- Can save template name and description

Sample Save Template Page

- Name
- Description
- Where to go next
- Overwrite
- Buttons to exit

Save Current Graph Parameters as Template

Spacecraft: POES_18 - POES_18
Data Type: History
Display Type: Graph
Start Time: Last 48 hours
End Time: Now

Mnemonics Selected					
Mnemonic	Use Value	Frequency	N	Filter Expression	Trace
NBAT1V	VOL	Every N Secs	60		Red / line
NBAT2V	VOL	Every N Secs	60		Blue / line
NBAT3V	VOL	Every N Secs	60		Yellow / line

New Template Name:

Description:

After saving go to: ▼

Display Template screen

- Check box to delete or rename template

Select a display template

Rename or delete the selected template (personal templates only - not Global)

Owner	Type	Name	Description	
	Graph	NBAT1V		Select
	Graph	NBAT trends		Select
	Graph	Battery Voltages	NOAA 18 battery voltages over the past 48 hours	Select

Logoff Select Vehicle Empty Table Empty Graph



Demonstration