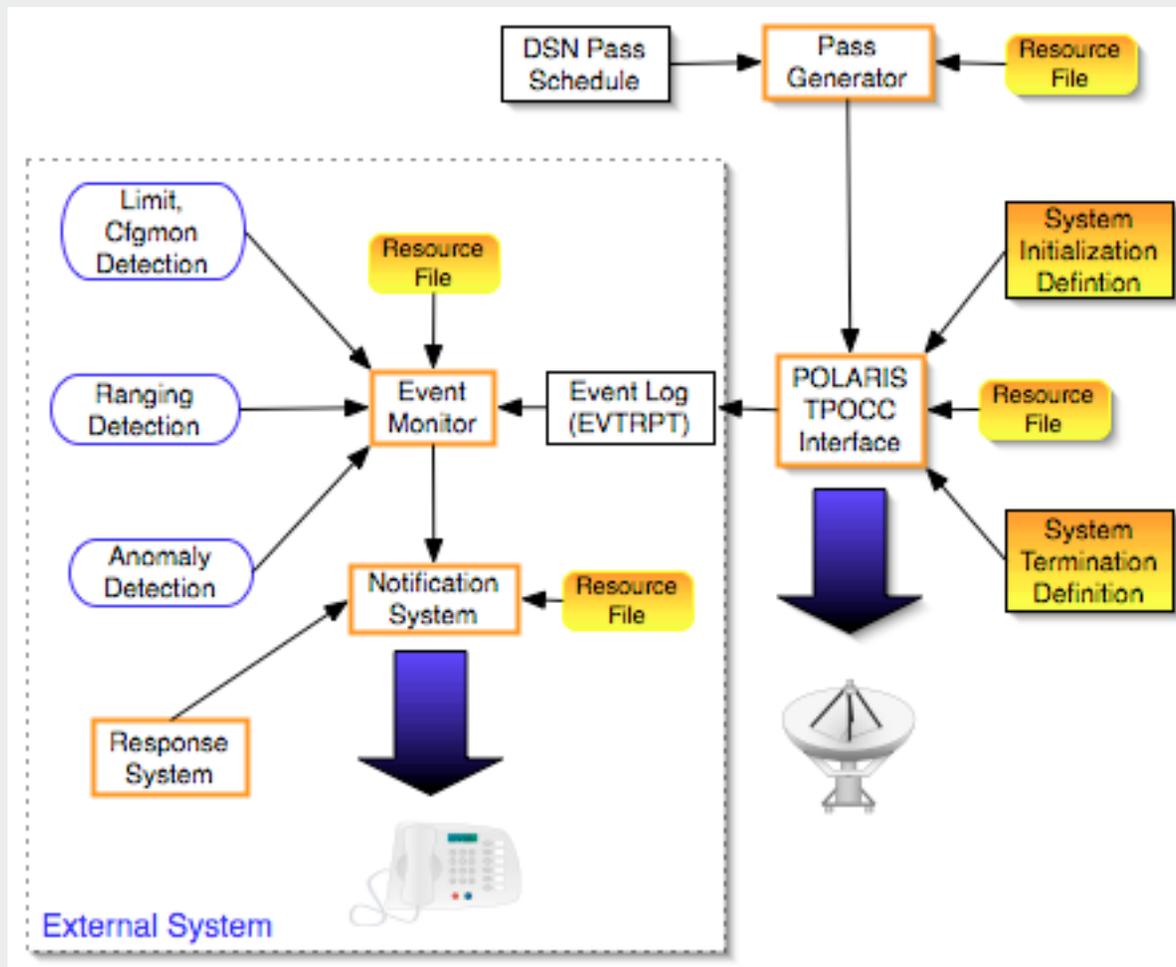


SOHO Automation Test Readiness Review

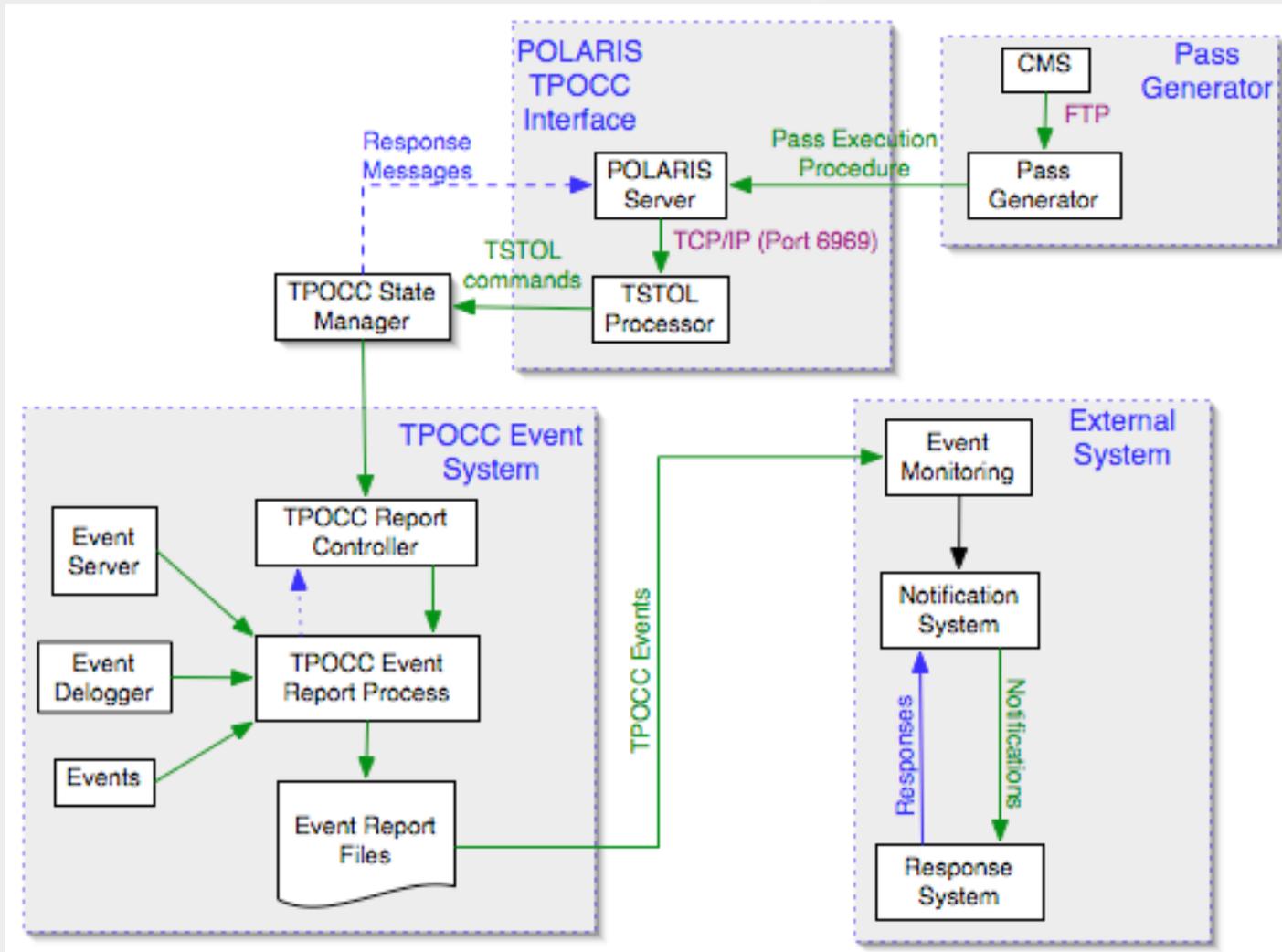
Agenda

- Automation Design Overview
- Onboard Software Patches
- Operations Concept
- Procedure Status
- System Testing Summary
- Acceptance Test Plan Summary

Overview



Network Layout



TPOCC Interface

- Comparable to TPOCC xtpdsp
- Runs concurrently with current software
- Two components
 - Server
 - communicates with TSTOL server
 - provides forwarding service for clients
 - performs any special processing needed
 - command-line client
- Working server prototype implemented in Perl

Pass Generator

- Tasks
 - Retrieve DSN Schedule
 - Build skeleton pass activity schedule
 - Verify DHSS and MDI transitions
 - Verify procedure arguments
 - Add temporary limit changes
 - Build Pass Execution Procedure

Attention!

- Attention! Alarm Manager
 - Alarm configuration, filtering, reporting
- Attention! Notification System
 - Real-time alerts
- Attention! Contact Center
 - Information distribution, response center

Onboard Software Patches

- COBS RW Speed Limits Update patch
 - Automate daily update of reaction wheel speed (uplinked 17 Apr)
- COBS TCM in Macros patch
 - Ability to put software/OBDH commands in macros (uplinked 17 Apr)

Spacecraft Changes

- Optimize current macros memory space used
 - Zero out current macros
 - Update macro offset table
 - Define new macros
 - Redefine standard monitoring channels
 - 9 empty standard monitoring channels

Spacecraft Changes

- Change corrective action for std mon 30
 - RCVR1 noncoho, DHSS and SSR to record, enable std mon 31, 4 MDI commands, clear CA flags
- Define new std mon channel 31
 - Watch for RCVR1 to LOCK
 - CA: RCVR1 coho, enable std mon 30, clear CA flags

Spacecraft Changes

- Define new std mon channel 32
 - Watch for RCVR2 to UNLOCK
 - CA: DHSS and SSR to record, 4 MDI commands, clear CA flags

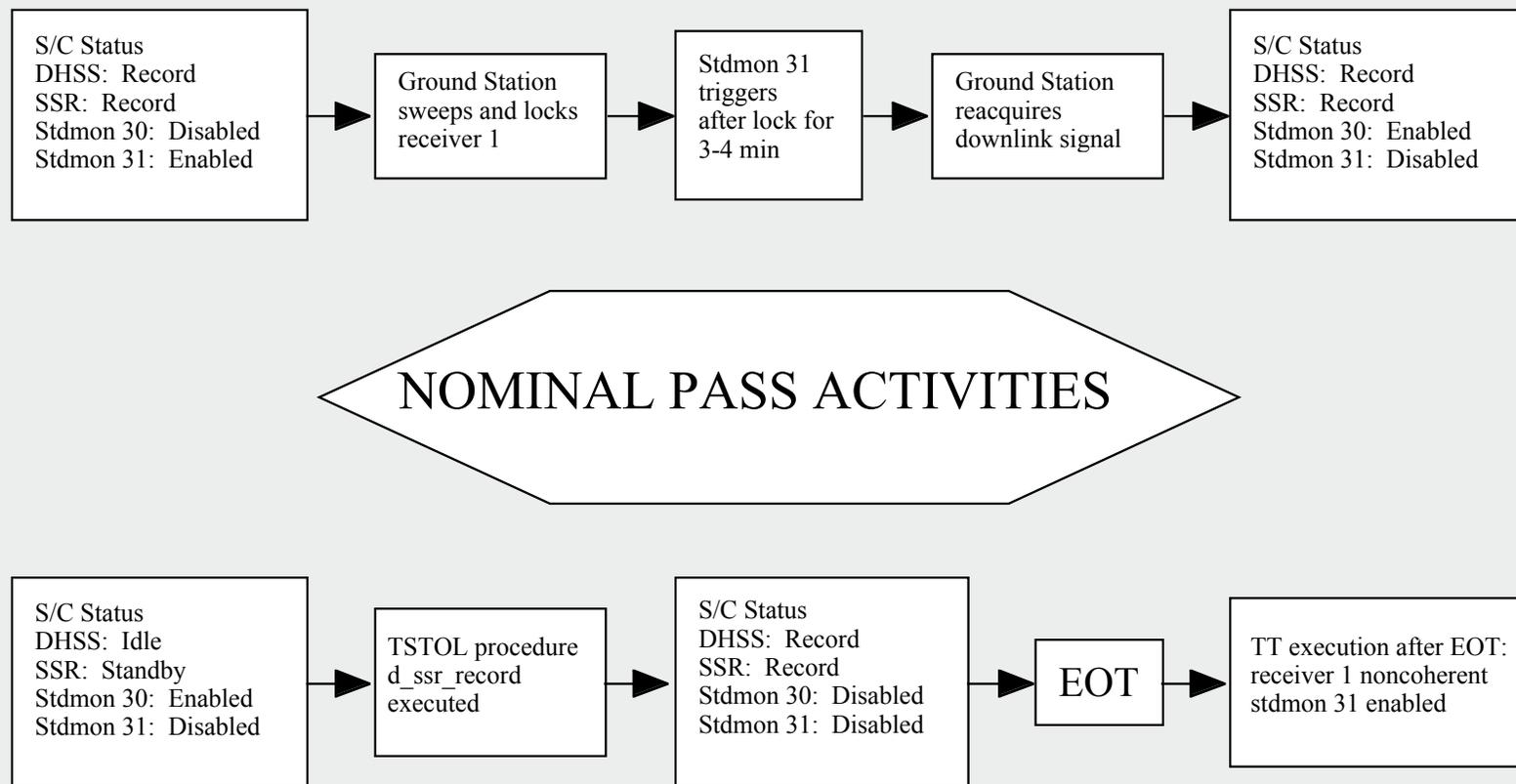
Pass Scenario

- Start Pass Procedure with a Unix *cron* job
- DSN configures and acquires downlink without briefing
- DSN sweeps into receiver at BOT
- Pass Execution Procedure runs pass activities
- DSN brings carrier down at EOT

Operations Changes

- Receiver 1 non-coherency load to add commands to enable std mon 31
- Use standard monitoring during pass to ensure transition to record if problems occur
- Onboard response to EIT sector wheel motor hang (TBD)

Automated Pass Scenario



DSN Changes

- No prepass briefing
- Station must confirm lock on receiver 1 by observing downlink frequency shift
 - 1-4 mins after sweep complete
 - Self-initiate resweep
- Station must confirm lock on receiver 2 by receipt of commands from POCC
 - 1-4 mins after sweep complete
 - Self-initiate resweep

DSN Changes

- Initiate resweeps based on specified criteria
- DSN should automatically look for LR TM signature if there are problems acquiring the downlink
 - Provide limited list of phone numbers for station to call in case of LR
 - Station acquire and put TM online, event monitor make contacts for LR event

Procedure Status

System Testing Summary

- PTI
- Attention!
- Pass Generator

PTI Testing

- PTI can send TPOCC directives, including critical commands and loads
- PTI can be paused and resumed
- PTI executes startup directives
- PTI can set TPOCC access privileges (FC, CC, MC)
- PTI outputs error when TSTOL procedure “asks” a question
- PTI can run a script when proc has syntax error
- TPOCC successfully started via script
- PTI on both strings can send heartbeat to Attention!

Attention! Testing

- Strings 5 and 6 can send event messages to the Attention! server via the generic collector
- The SQL/Attention! monitor detects failure in either the primary or backup Attention! server
- Attention! triggers if string heartbeat stops unexpectedly
- User can trigger notifications manually via the UI
- TPOCC events trigger actions/notifications
- Notifications made via email and modem
- User can respond to notifications via the web (locally tested) or via email (remotely tested (CNE))

Pass Generator Testing

- All subroutines tested
 - Test plan for 30 subroutines
 - Each test documented on paper with expected results, actual results, date and time
 - Log files for each test saved on string 6

Acceptance Test Plan Summary

- Test cases defined
 - Requirements mapped to test cases
 - Test case detail needs completed
- Test scenarios conducted on string 6 with string 4 in hot backup
- Detailed testing logs
- Report status weekly at Programme Office status meeting

Testing Timeline

- System testing
 - Nov 06 - Apr 07
 - Rob Jacobson (PTI, Attention!), Jamal Leyba (pass generator), Steve Hall (Attention!)
- Acceptance testing
 - May 07 - July 07
 - Nick Piston, Rob Jacobson, Jamal Leyba, Steve Hall, Bud Benefield, test conductor (TBC), console crew members
 - Test case dates not specified at this time

Issues

- Pager coverage inside Bldg 3
- Goddard email transition
- Delivery of automation software to library
- Confirm test conductor