



UNITED STATES DEPARTMENT OF
COMMERCE National Oceanic and
Atmospheric Administration NATIONAL
ENVIRONMENTAL SATELLITE, DATA,
AND INFORMATION
SERVICES Washington, D.C.
20233

MEMORANDUM FOR: Distribution

FROM: Alfred Powell
SPSRB Co-Chair

Alfred M Powell 6/20/2013

Vanessa Griffin
SPSRB Co-Chair

Vanessa L Griffin 5/31/2013

SUBJECT: Standards/Best Practices for Application Deployment on
ESPC Systems

Because of the large and increasing number of applications supported by the ESPC, the importance of software standardization cannot be overemphasized. The standards in the attached document will simplify the analysis and resolution of the inevitable production anomalies that arise in the constantly evolving ESPC environment and, in addition, they will simplify the routine maintenance of ESPC software. These standards are a compilation of proven best practices, and they should already be familiar to most ESPC programmers and analysts. It is anticipated that the universal adoption of these standards within the ESPC operational product community will contribute substantially to the success of our shared mission.

All applications being transitioned to OSPO must meet these standards and will be audited as part of the research to operations process.

Distribution

All personnel in STAR and OSPO

cc: Data Centers Directors
OSD
SEID
GSD



Standards/Best practices for Application Deployment

1. The application shall have no source code on the production or Critical Infrastructure Protection (CIP) server.
2. The source codes, scripts and static files (coefficient files etc.) of the application shall be checked into configuration management (CM).
3. The application shall separate the static data from intermediate or dynamic data to enable system backups.
4. The application shall have a clear directory structure (separate source, script, data, logs and bin etc).
5. The application shall not regularly change files under bin and script directories on the production server. Changing files need to be moved under a data or log directory.
6. The application shall have a Makefile to compile the source codes (makefile should be able to remove the existing object files etc.). Makefile example will be attached.
7. The Man computer Interactive Data Access System (McIDAS) related application shall link to the correct library at the system level instead of a local library when compiling.
8. The application shall not have hard coded filenames, directory names, user account names or Internet Protocol (IP) address in the source codes. Use environmental variables such as \$ANCHOR or \$HOME.
9. The application shall have clean up scripts, unless the data is managed by enterprise applications on the Shared File System. Explain any need to keep input data or products longer than 24 hours.
10. The application shall not require recompilation when it is promoted to production or to CIP, nor be recompiled as part of regular processing.
11. The application products shall have descriptive filenames that are understandable once the product no longer resides under the application directories (no products like today.dat).
12. If the output of the application is not McIDAS format, products to support operational users shall be distributed from the Data Distribution System (DDS) [to be replaced by Product Distribution and Access (PDA)].
13. The application shall recompile and run at 64 bit. Explain any exception.
14. The application shall have error handling: generate an error message (write into a log file) when an anomaly has occurred.
15. The application shall have capability for Environment Satellite Processing Center (ESPC) operational monitoring. If the application is being run under the enterprise scheduler, please justify the need for any separate operator monitoring.
16. Can the application run using the enterprise dist_file function? If not, the application ftp/sftp scripts shall:
 - a. Fail without hanging (time out gracefully)
 - b. Trap errors
 - c. Re-try transfers automatically

Procedures for Applications to Go Operational on VM (Virtual Machine) Ware

All applications should follow the standards/best practices listed above when moving to VM. The programmer should verify the application against the standards above and document the results including any exceptions and associated explanations. The results should be submitted to the Product Area Lead (PAL), security, CM, and the Distribution and Scheduling Team for review. Before an application goes operational, the following sign-off process needs to be completed: PAL review and approve; Security review and approve; CM review and approve; Distribution and Scheduler review and approve (See following sample form). Disapproval at any step will necessitate that the programmer addresses the issue and then go through the approval process again. The final approved form is a required attachment for the related configuration change request (CCR).

Approval Form for an Application to Go Operational on VM Ware

PAL Review—Reviewer: PAL

Approved: Yes No

If no, please identify the issue:

Comments/Recommendations:

Security Review— Reviewer: Application Security

Approved: Yes No

If no, please identify the issue:

Comments/Recommendations:

CM Review— Reviewer: QA Lead

Approved: Yes No

If no, please identify the issue:

Comments/Recommendations:

System Review (MOD)— Reviewer: System Team (MOD)

Approved: Yes No

If no, please identify the issue:

Comments/Recommendations:



Office of Satellite and Product

Operations

*Standards/Best practices for Application
Deployment in ESPC*

Zhaohui Cheng and Donna McNamara

January 28, 2013



Objective

- **Provide standards/best practices for the application deployment in the EPC environment**
- **Set up an approval procedure to audit the application deployment in the EPC environment**

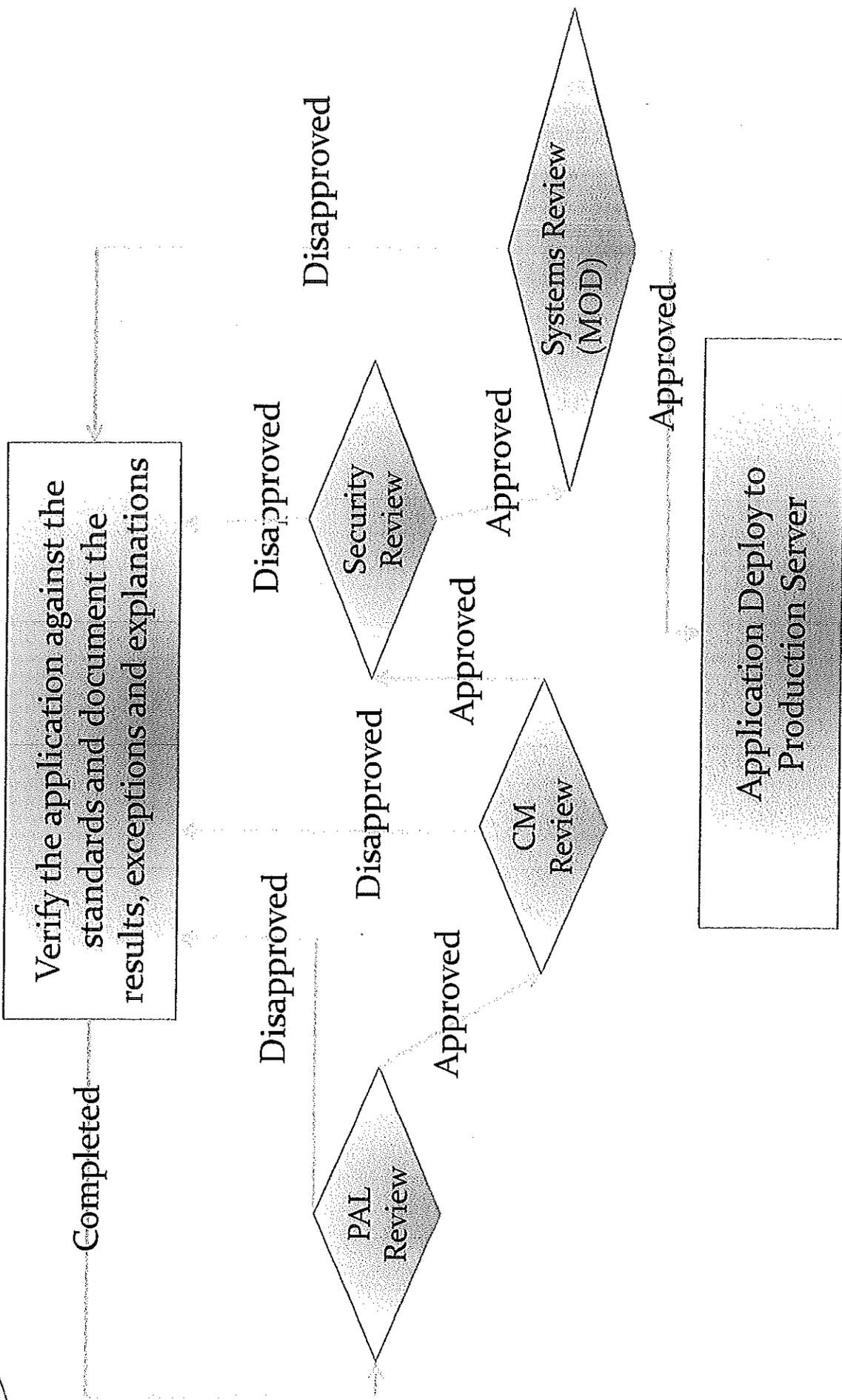


Standards/Best Practices

- **16 Standards/Best Practices:**
 - Directory structure
 - Software CM
 - Output naming convention
 - Hard code
 - Operational monitoring
 - Distribution
 - Error handling etc.....
- **Consistent with the SPSRB Coding Standards**



Procedures





Approval

- **This document has been discussed and approved by OSPO Executive Review Board (ERB)**
- **All applications that will be implemented and deployed in ESPC environments shall follow the standards and procedures defined in this document**