

**U.S. Department of Commerce
NOAA**



**Privacy Threshold Analysis
for the
NOAA Research & Development High Performance Computing
System (R&D HPCS) – NOAA0500**

U.S. Department of Commerce Privacy Threshold Analysis
NOAA Research and Development High Performance Computer
System (R&D HPCS)

Unique Project Identifier: NOAA0500

Introduction: This Privacy Threshold Analysis (PTA) is a questionnaire to assist with determining if a Privacy Impact Assessment (PIA) is necessary for this IT system. This PTA is primarily based from the Office of Management and Budget (OMB) privacy guidance and the Department of Commerce (DOC) IT security/privacy policy. If questions arise or further guidance is needed in order to complete this PTA, please contact your Bureau Chief Privacy Officer (BCPO).

Description of the information system and its purpose: NOAA0500 system is a considered to be a General Support System which provides research and development weather models in support of NOAA's operational mission. The R&D HPCS operates large scale, extreme computing environments that encompass multiple geographic sites, and heterogeneous supercomputing architectures. This system supports NOAA's mission by providing cutting edge technology for weather and climate model developers. These models eventually form the basis for NOAA's daily weather forecasts, storm warnings, and climate change forecasts. System users include scientists from multiple NOAA Line Offices, and their research collaborators, including some foreign nationals.

NOAA's R&D HPC system (R&D HPCS) provides four fundamental HPC functions:

1. Large-scale computing provides computing for development, testing, and production integrations of NOAA environmental models. The workload that runs on this subsystem is characterized by compute-intensive codes with I/O characterized by regular snapshots of diagnostic fields.
2. Analysis and interactive computing provides computing for the post-processing of data from production runs and the analysis of post-processed data, code development, and debugging. The workload that runs on this subsystem is characterized by data-intensive codes requiring high I/O bandwidth.
3. Data archiving provides long-term storage of post-processed model runs and analyses.
4. Networking links these subsystems together.

The users of the system are primarily, but not exclusively, NOAA employees who represent the following offices:

1. NOAA/ESRL Global Systems Division, Boulder, Colorado
2. NOAA National Weather Service (NWS), National Centers for Environmental Prediction (NCEP), Environmental Modeling Center (EMC), Camp Springs, Maryland

3. NOAA Geophysical Fluid Dynamics Laboratory (GFDL), Princeton, New Jersey

These users access the system and submit weather or climate modeling application program runs via job scheduling software. These models contain parallelized code to take advantage of the large scale, highly parallelized environment offered by the HPCS. This is necessary to support the science. Modeling jobs can be extremely large (e.g., 1200 processors required), because they incorporate different local, regional, or global atmospheric and ocean models to create an ensemble model program. The scheduling software automatically identifies and collects the necessary processors to run the job, and controls its execution. Therefore, the user never has any direct interaction with the compute nodes of the system.

Weather and climate data is collected from a variety of sources and fed into the system by the user community. All of this data is vetted by the NOAA scientific community through processes outside of this system, to guarantee its authenticity and integrity. Once entered into the R&D HPCS, the system security controls are designed to guarantee the integrity of this data.

The current configuration of the R&D HPCS is architected along organizational lines. Large-scale computing, analysis computing, and storage are located at the following locations:

1. NOAA Earth System Research Laboratory (ESRL), David Skaggs Research Center (DSRC325 N. Broadway Street, Boulder, Colorado 80305
2. NOAA Geophysical Fluid Dynamics Laboratory (GFDL), Princeton University Forrestal Campus, 201 Forrestal Road, Princeton, New Jersey 08450
3. NOAA Environmental, Security Computing Center (NESCC), 1000 Galliher Drive, Fairmont, WV 26554

The R&D HPCS system boundary encompasses these locations. Interconnection Security Agreements with ORNL, N-Wave, NCEP, GFDL, and ESRL provide general support and services such a LAN/WAN connectivity, authentication and identification controls, DNS, WEB and other IT infrastructure support.

Questionnaire:

1. What is the status of this information system?

_____ This is a new information system. *Continue to answer questions and complete certification.*

_____ This is an existing information system with changes that create new privacy risks.

Complete chart below, continue to answer questions, and complete certification.

Changes That Create New Privacy Risks (CTCNPR)					
a. Conversions		d. Significant Merging		g. New Interagency Uses	
b. Anonymous to Non-Anonymous		e. New Public Access		h. Internal Flow or Collection	
c. Significant System Management Changes		f. Commercial Sources		i. Alteration in Character of Data	
j. Other changes that create new privacy risks (specify):					

This is an existing information system in which changes do not create new privacy risks, and there is not a SAOP approved Privacy Impact Assessment. *Continue to answer questions and complete certification.*

This is an existing information system in which changes do not create new privacy risks, and there is a SAOP approved Privacy Impact Assessment (version 01-2015 or later). *Skip questions and complete certification.*

2. Is the IT system or its information used to support any activity which may raise privacy concerns?

NIST Special Publication 800-53 Revision 4, Appendix J, states "Organizations may also engage in activities that do not involve the collection and use of PII, but may nevertheless raise privacy concerns and associated risk. The privacy controls are equally applicable to those activities and can be used to analyze the privacy risk and mitigate such risk when necessary." Examples include, but are not limited to, audio recordings, video surveillance, building entry readers, and electronic purchase transactions.

Yes. *Please describe the activities which may raise privacy concerns.*

No

3. Does the IT system collect, maintain, or disseminate business identifiable information (BII)?

As per DOC Privacy Policy: "For the purpose of this policy, business identifiable information consists of (a) information that is defined in the Freedom of Information Act (FOIA) as "trade secrets and commercial or financial information obtained from a person [that is] privileged or confidential." (5 U.S.C.552(b)(4)). This information is exempt from automatic release under the (b)(4) FOIA exemption. "Commercial" is not confined to records that reveal basic commercial operations" but includes any records [or information] in which the submitter has a commercial interest" and can include information submitted by a nonprofit entity, or (b) commercial or other information that, although it may not be exempt from release under FOIA, is exempt from disclosure by law (e.g., 13 U.S.C.)."

Yes, the IT system collects, maintains, or disseminates BII about: *(Check all that apply.)*

Companies

Other business entities

No, this IT system does not collect any BII.

4. Personally Identifiable Information

4a. Does the IT system collect, maintain, or disseminate personally identifiable information (PII)?

As per OMB 07-16, Footnote 1: "The term 'personally identifiable information' refers to information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, etc... alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden

name, etc...”

Yes, the IT system collects, maintains, or disseminates PII about: *(Check all that apply.)*

DOC employees

Contractors working on behalf of DOC

Members of the public

No, this IT system does not collect any PII.

If the answer is “yes” to question 4a, please respond to the following questions.

4b. Does the IT system collect, maintain, or disseminate PII other than user ID?

Yes, the IT system collects, maintains, or disseminates PII other than user ID.

No, the user ID is the only PII collected, maintained, or disseminated by the IT system.

4c. Will the purpose for which the PII is collected, stored, used, processed, disclosed, or disseminated (context of use) cause the assignment of a higher PII confidentiality impact level?

Examples of context of use include, but are not limited to, law enforcement investigations, administration of benefits, contagious disease treatments, etc.

Yes, the context of use will cause the assignment of a higher PII confidentiality impact level.

No, the context of use will not cause the assignment of a higher PII confidentiality impact level.

If any of the answers to questions 2, 3, 4b, and/or 4c are “Yes,” a Privacy Impact Assessment (PIA) must be completed for the IT system. This PTA and the approved PIA must be a part of the IT system’s Assessment and Authorization Package.

