

Program Status

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The Pilot Climate Data System has a new home within the National Space Science Data Center (NSSDC). The NSSDC has recently reorganized and now incorporates the Data Management Systems Facility (Dr. Paul Smith, Head) as one of two major branches. Dr. Joseph King heads the Central Data Services Facility (the other branch), and Dr. James Green now directs both branches as head of NSSDC. The new structure resulting from the reorganization promises to be extremely effective, with many unique opportunities to incorporate new techniques and technology.

The PCDS has been designed to support a variety of users that have been arbitrarily categorized into four groups: researchers, data producers, occasional users, and management. The expanding capabilities of the system are attracting the attention of both academic and other scientific institutions worldwide. Highlighted by progress in networking capabilities, hardware acquisitions, software developments, data set additions, and tutorial developments, exciting advances have taken place since the First PCDS Workshop.

In the plans for the 1986 fiscal year, recommendations from an ad hoc users' group meeting in May 1985 and from the First PCDS Workshop are apparent. This year's plans are listed, along with comments made at the users' group meeting.

Although the PCDS is presently considered to be in a developmental phase, plans for making the transition to an operational phase are being implemented. The transition at Headquarters affects Dr. Tilford's Code EE, the Earth Science and Applications Division, and Dr. McCoy's Code EI, the Information Systems Office. At the conclusion of the transition period, the PCDS will become the NASA Climate Data System and will henceforth be referred to as the NCDS.

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PILOT CLIMATE DATA SYSTEM

PROGRAM STATUS

JANUARY 29, 1986
PAUL H. SMITH

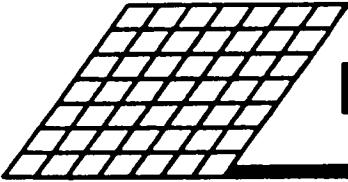
PILOT CLIMATE DATA SYSTEM

GOAL

DEVELOP SYSTEM FOR LOCATING, OBTAINING,
MANIPULATING AND DISPLAYING CLIMATE
DATA OF INTEREST TO NASA'S RESEARCH
COMMUNITY.

OBJECTIVES

- o DEVELOP TECHNICALLY ADVANCED SYSTEM
- o OBTAIN AND INCORPORATE MOST
IMPORTANT DATA SETS
- o SUPPORT BROAD RANGE OF USERS

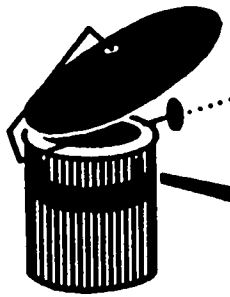


PILOT CLIMATE DATA SYSTEM (PCDS)

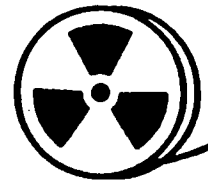
DATA SOURCES

CLIMATE DATA SETS

DATA SYSTEM

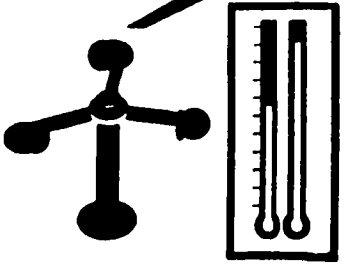


ENVIRONMENTAL SATELLITES



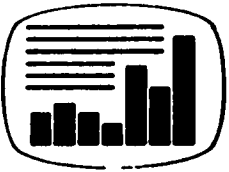
**OZONE
AEROSOLS
RADIATION**

**SURFACE TEMPERATURE
RAINFALL**

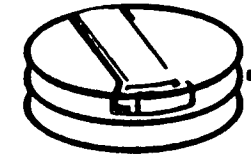
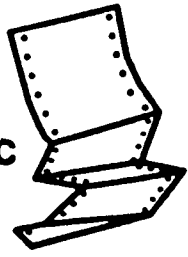


SURFACE STATIONS

GRAPHICS DISPLAY



ALPHANUMERIC DISPLAY

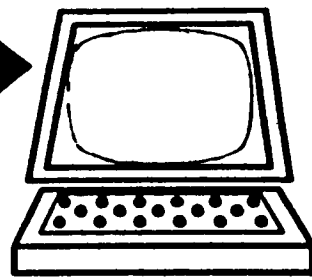


CLIMATE DATA

**CATALOGS &
INVENTORIES**

DATA BASES

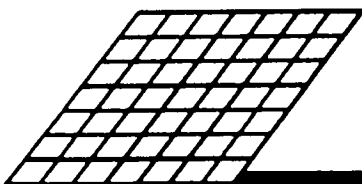
USER SERVICES



**BROWSE
SELECT
DISPLAY
MANIPULATE
COPY**

OUTPUTS

NASA/GSFC



PCDS DESIGNED TO SUPPORT A VARIED GROUP OF USERS

- **Researchers**
 - **Browse Data for Significant Features**
 - **Graphically Display a Variety of Parameters**
 - **Determine What Data to Select**
 - **Intensively Analyze Small Portions of a Data Set**
- **Data Producers**
 - **Quality Check/Validation**
 - **Inventory of Archives**
 - **Accounting of Processing and Distribution**
- **Occasional Users**
 - **Quick Response**
 - **Remote Access**
 - **Low Volume University Support**
- **Management Information for Planning**
 - **Data Coverage**



PCDS MAJOR RECENT ACTIVITIES

- O NETWORKED THROUGHOUT U.S.
 - SPAN TO 32 SITES -
 - DIRECT 9.6K BAUD LINE TO PENN STATE UNIVERSITY
 - LINK TO UNIVERSITY OF MICHIGAN THROUGH SPAN
 - SESNET TO ALL LABS
 - ARPANET
 - TELENET

- O UNIVERSITY SUPPORT AT CLASSROOM AS WELL AS RESEARCH LEVEL

- O UPGRADED AVAILABLE HARDWARE
 - NEW MEMORY (8M BYTES, 2 CONTROLLERS) - INSTALLED
 - OPTICAL DISKS - (TEST & INTEGRATION)
 - DATA BASE MACHINE (IDM 500) - ACCEPTANCE TEST
 - VAX 8600 - ORDERED

PCDS MAJOR RECENT ACTIVITIES (CONT'D)

- O DEVELOPED LEARNING SYSTEM ON IBM-PC
 - FLOPPY DISK DISTRIBUTION

- O SYSTEM SOFTWARE DEVELOPMENT AND IMPROVEMENT
 - DATA SET INDEPENDENT FORMAT
 - DEVICE INDEPENDENT DISPLAY SOFTWARE

- O DATA SET ADDITIONS
 - HIGH INTEREST DATA SETS

PCDS UNIVERSITY AND INTERNATIONAL INTERESTS

O CULTIVATING UNIDATA AND NSF INTERCONNECTION

-PENN STATE UNIVERSITY

-UCAR

-NSF

O GROWING UNIVERSITY INTEREST

-UCSD

-SAN JOSE STATE

-CSU

-WASHINGTON UNIVERSITY

-UNIV OF COLORADO

-UNIV OF MARYLAND

-OTHERS

PCDS UNIVERSITY AND INTERNATIONAL INTERESTS (CONT'D)

O RECEIVED INTERNATIONAL REQUESTS

-IMPERIAL COLLEGE, LONDON

-RESEARCH INSTITUTION FOR TRANSPORTATION, PERU

-UNIV OF BUENOS AIRES, ARGENTINA

-UNIV OF EAST ANGLIA, GREAT BRITAIN

-AKADEMIE DER WISSENSCHAFTEN, DDR

INTERESTS FROM OTHER INSTITUTIONS

- O JPL
- O LaRC
- O NCAR
- O NOAA
- O USDA
- O USGS
- O INSTITUTE FOR DEFENSE ANALYSIS
- O U.S. ARMY CORP OF ENGINEERS

PCDS FY86 PLANS AND APPROACHES

- O ADD ABOUT SIX NEW DATA SETS INCLUDING ISCCP LEVEL C DATA
- O CREATE USER SUPPORT OFFICE
- O MAINTAIN COMMUNICATIONS LINES WITH UNIVERSITIES AND ESTABLISH ADDITIONAL CONNECTIONS
- O CONDUCT PCDS WORKSHOP II IN JANUARY 1986
- O HOLD ADDITIONAL DATA USER'S GROUP MEETINGS
- O UPDATE AVAILABLE USER DOCUMENTATION (USER'S GUIDE, CATALOG)
- O MAINTAIN SOFTWARE AND DATA BASES INCLUDING UPDATING DATA BASES TO REFLECT ADDITIONS TO DATA SETS AND OTHERS UPDATED TO SUPPORT DATA SETS

PCDS FY86 PLANS AND APPROACHES (CONT'D)

- O ADD ADDITIONAL DISK DRIVES IN ORDER TO PROVIDE MORE ON-LINE ACCESS TO DATA
- O ADD ADDITIONAL INEXPENSIVE GRAPHICS TERMINAL/WORKSTATIONS FOR USERS
- O CONTINUE MAINTENANCE AND OPERATIONS OF COMPUTER FACILITY
- O CONVERT DATA BASE MANAGEMENT SOFTWARE TO DATA BASE MACHINE

PCDS TRANSITION PLAN

The Transition Plan for the Pilot Climate Data System (PCDS) from the pilot system development phase to the operational research support phase specific:

The PCDS remains in the Information Systems Office, Code EI, and is managed and operated as a NASA institutional capability. The Earth Science and Applications Division, Code EE, supports all science-unique activities. The name is changed to the NASA Climate Data System (NCDS).

It is expected that the transition may be completed by the end of 1987.

DETAILS OF TRANSITION

Code EE is responsible for:

- 0 Providing resources for all science-unique activities (e.g. data sets acquisition and integration, user institution support including communication links and capabilities for remote user access.
- 0 Establishing any needed science user or science steering groups
- 0 Assigning a Program Scientist from Code EE and identifying an appropriate project scientist for guiding the operations of the PCDS.

Code EI is responsible for:

- 0 Providing resources for all system operations and maintenance.
- 0 Providing appropriate computer resources, including on-line data set storage.
- 0 Continuing to provide a Program Manager from Code EI and identifying, with GSFC's Code 630, an appropriate manager for the NCDS
- 0 Developing technology for enhancing the usefulness of the NCDS.

SCIENCE USERS' GROUP

COMMENTS (MAY 1985)

- 0 PCDS CONCEPT IS EXCELLENT. IT IS MATURE AND USEFUL. EVERY EFFORT SHOULD BE MADE TO ATTRACT USERS. "USER HELPER PERSON" SHOULD BE IDENTIFIED AND BETTER DOCUMENTATION PROVIDED.
- 0 USERS OF PCDS SHOULD REPRESENT AN INTERDISCIPLINARY CROSS-SECTION OF RESEARCH PROJECTS SUPPORTED BY NASA. COMPOSITION OF USER COMMUNITY SHOULD BE OPEN AND LIMITED ONLY BY HARDWARE CONSIDERATIONS.
- 0 DERIVED SATELLITE DATA SETS SHOULD BE PART OF PCDS. OTHER NEEDED DATA SETS SHOULD BE IDENTIFIED BY THE SCIENCE USERS' GROUP.
- 0 PRESENT ANALYSIS CAPABILITIES ARE ADEQUATE. NEW ANALYSIS TOOLS SHOULD BE OF GENERAL USE TO ALL USERS AND APPLICABLE TO ALL DATA SETS ON THE PCDS.
- 0 SYSTEM SHOULD BE EXPANDED AS NECESSARY TO PROVIDE ADEQUATE SUPPORT TO USERS.

**PILOT CLIMATE DATA SYSTEM
CANDIDATE DATA USER'S GROUPS**

RESEARCH GROUPS

- O ISCCP**
- O TOVS DATA SETS**
- O EARTH RADIATION BUDGET STUDIES**
- O GLOBAL SOLAR DATA BASE**
- O PRECIPITATION DATA SETS**
- O CLASSROOM STUDIES**

LEAD CONTACT

- ROSSOW**
- SUSSKIND/CHAHINE**
- BARKSTROM/VONDER HAAR**
- SOFIA**
- NORTH/SHORT**
- WEBSTER/ABREU**

PCDS PUBLICATIONS (RECENT)

- Reph, M. G., Treinish, L. A., Noll, Carey E., Hunt, Thomas D., Chen, Shue-When, "Pilot Climate Data System User's Guide." NASA TM 86084. NASA/GSFC, Greenbelt, Maryland. January 1986.
- Reph, M. G., Fowler, Rita M., "NASA Climate Data Catalog." NASA TM 86085. NASA/GSFC, Greenbelt, Maryland. December 1985.
- PCDS Team, "Pilot Climate Data System: NSSDC Common Data Format." NASA/GSFC, Greenbelt, Maryland. December 1985.
- Chatterjee, L. C., "Redesign for the Content and Structure of the PCDS Climate Data File." Internal Publication. NASA/GSFC, Greenbelt, Maryland. April 1985.
- Treinish, L. A., Ray, S. N., "An Interactive Information System to Support Climate Research." Proceedings on the International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography, and Hydrology. Los Angeles, California. January 1985.
- Smith, P. H., Treinish, L. A., Reph, M. G., "Advances in Scientific Data Management." Proceedings of the Workshop on Advances in Sensing Retrieval Methods. Williamsburg, Virginia. November 1984.
- Data Management Systems Facility, "Pilot Climate Data System." Internal Publication. NASA/GSFC, Greenbelt, Maryland. October 1984.
- Reph, M. G., Treinish, L. A., Smith, P. H., "Pilot Climate Data System." Proceedings of the Ninth William T. Pecora Memorial Remote Sensing Symposium. Sioux Falls, South Dakota. October 1984.

PCDS USER INSTITUTIONS

G LABORATORY FOR ATMOSPHERES (610)
G LABORATORY FOR TERRESTRIAL PHYSICS (620)
G SPACE DATA AND COMPUTING DIVISION (630)
G GODDARD INSTITUTE FOR SPACE STUDIES (640)
G LABORATORY FOR OCEANS (670)
G LAB FOR EXTRATERRESTRIAL PHYSICS (690)

G CITY COLLEGE OF NEW YORK
G COLORADO STATE UNIVERSITY
G IOWA STATE UNIVERSITY
G MASSACHUSETTS INSTITUTE OF TECHNOLOGY
G PENNSYLVANIA STATE UNIVERSITY
G STATE UNIVERSITY OF NEW YORK
G UNIVERSITY OF MARYLAND
G UNIVERSITY OF MICHIGAN
G WASHINGTON UNIVERSITY
G YALE UNIVERSITY

G JET PROPULSION LABORATORY
G LANGLEY RESEARCH CENTER
G NASA HEADQUARTERS
G NATIONAL CENTER FOR ATMOSPHERIC RESEARCH
G NATIONAL SCIENCE FOUNDATION
G NOAA AGENCIES
G UNITED STATES GEOLOGICAL SURVEY

PCDS SUMMARY

FY85 HAS BEEN A TRANSITION YEAR FOR PCDS

- o SUPPORT OF MORE USERS
- o SUPPORT OF A WIDER USER COMMUNITY
(PCDS IN THE UNIVERSITY CLASSROOM)
- o REDESIGN FROM PROTOTYPE TO OPERATIONAL
STAGE

AND IT IS READY FOR OPERATIONAL PHASES

- o MORE USER INVOLVEMENT
- o WIDER AVAILABILITY
- o SUPPORT OF EVEN MORE USERS