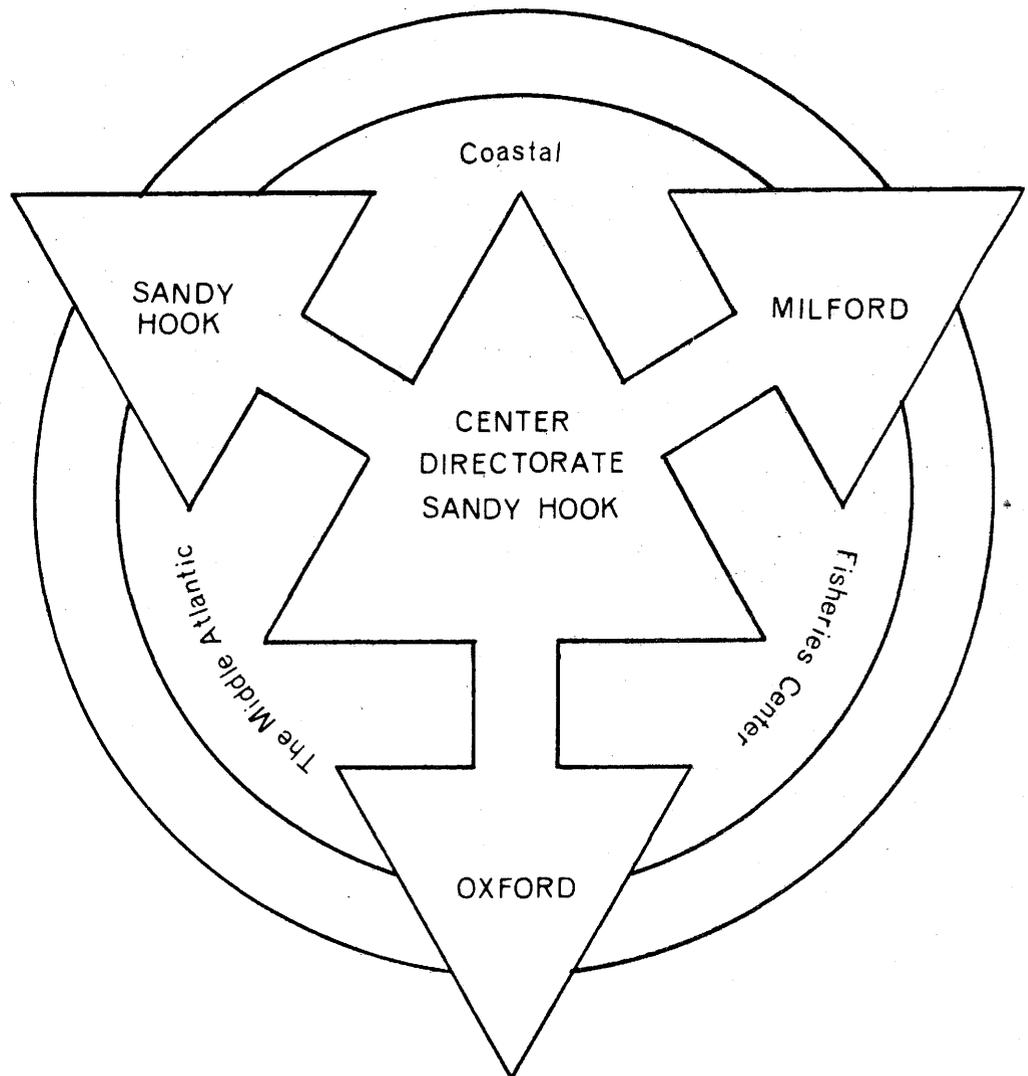




PROPOSAL FOR FY 1976 MESA-NYB FUNDING:
"INSTALLATION AND TESTING OF MULTI-FILE DATA
RETRIEVAL SYSTEM (SELGEM) "

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Region

MIDDLE ATLANTIC COASTAL FISHERIES CENTER



Informal Report No. 85

October, 1975

Research Proposal

Submitted by

Middle Atlantic Coastal Fisheries Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

to

MESA-New York Bight Program Manager
Marine Ecosystems Analysis Program
Environmental Research Laboratories
National Oceanic and Atmospheric Administration

for support of studies on:

INSTALLATION AND TESTING OF MULTI-FILE DATA RETRIEVAL SYSTEM (SELGEM)

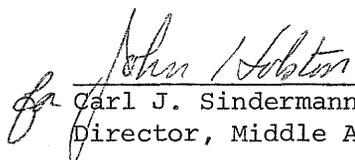
Amount Requested: Phase I: (1 January 1976 to 30 June 1976): \$32,100.00
Phase II: To be funded from fiscal '77 funds

Date: October, 1975

Approved by:



Principal Investigator
(201)872-0200



Carl J. Sindermann
Director, Middle Atlantic Coastal Fisheries Center

WORK UNIT TITLE:

INSTALLATION AND TESTING OF MULTI-FILE DATA RETRIEVAL SYSTEM (SELGEM)
(PHASE I)

A PROPOSAL TO MESA-NEW YORK BIGHT PROJECT OFFICE

Background:

The Middle Atlantic Coastal Fisheries Center's ADP unit which, in itself, is currently being improved as to scope and timeliness of service is nevertheless geared to be responsive to the needs of individual biological researchers for specialized processing, analysis and archiving of large, discrete discipline-oriented data sets. Each individual data set has the ultimate objective of utilizing time-series data as a basis for recommendations as to resource utilization and habitat improvement. These individualized data sets have previously been adequate to our needs. With a large base of banked data, acquired over the past decade, and with the completion, to a large extent, of the environmental sampling and biological data-acquisition phase of the MESA-NYB-Apex project, a necessary holistic view of the MESA-NYB ecosystem impels us to the installation of a generalized, data storage, retrieval and analysis system. Such a system should be capable of interrogating all data bank files, of intercalating related data from foreign data banks and of rendering the multidisciplinary, computer-engendered information necessary for management decisions.

Such a system is the marine-oriented SELGEM system, developed by the Smithsonian Institution for NMFS (at a cost thus far of about \$160K) for use in MARMAP operations. This retrieval system is now being utilized for MARMAP I and II operations. It is vital for our timely responses to MESA Project Office needs that the capability inherent in SELGEM for multi-file retrieval, intercalation, compression, mapping, etc., be extended to permit evaluation of the responses of components of the NYB ecosystem to adverse environmental impacts. The adopted SELGEM system would provide for unrestricted entry to the present MACFC data bank, would provide for inclusion of alien data sets and would provide for Center-level program analysis and coordination. With the supercompression and interpretation of data we could provide timely, tailored responses to policy questions posed by NMFS, MESA/ERL, NOAA and the State Department and other Federal and State agencies.

The MACFC facilities presently consist of a remote-access batch terminal (COPE 1200) linked to the computational power of a large digital computer (IBM 360/65) located at Fort Monmouth, N.J. The terminal components include a card reader (150 CPM), a line printer (300 LPM), a card puncher (20 cpm) and a keyboard control console and, in its basic system, a communication interface capability (4K memory and 6 I/O channels). A sophisticated "three-dimensional" plotting system is under consideration.

The purpose of this proposal is to request the financial assistance of MESA, in a two-phase operation extending over one year, expanding the SELGEM system to include retrieval of data on mutagenesis, on benthic organisms, on seabed oxygen consumption rates, on heavy metals data, etc., such that every item of research survey data from the New York Bight can be recovered, compared, analyzed, interpreted, and converted to MESA formats for ultimate NODC archiving. To achieve this latter capability, two approaches are possible. The first, involving the laborious retrieval, recoding and reformatting of existing individual data sets, is expensive and time-consuming. To all intents and purposes, the MACFC ADP would be rendered unproductive for a considerable period of time. The second approach exploits the capabilities of the SELGEM system to operate with multi-file data sets. This could, without undue delay or cost, permit us to amalgamate the assorted data sets and to establish a restructured Center data bank, while at the same time, we could remain responsive to needs for retrieval and analysis of MESA-related data sets.

Activities Plan:

Phase I (6 mo)

1. Introduction and orientation of systems-and program personnel to the MESA program, to the SELGEM system and to existing computer facilities. 2 weeks
2. Install and test basic SELGEM system in Fort Monmouth computer. 6 weeks
3. Develop, define and document a Center-wide hierarchy of SELGEM-coded data categories. Test effectiveness and efficiency of coding system. 7-10 weeks
4. Prepare conversion program assigning SELGEM (hierarchical) codes to all data categories in existing data bank. 3-4 weeks

Phase II (6 mo)

1. Transform all existing data formats to hierarchical formats. 25 weeks
2. Prepare and distribute comprehensive "User Guide" for ADP operations and for SELGEM storage and retrieval. 7 weeks

Work Products:

Phase I

1. Publication on effective and efficient SELGEM-coding system for environmentally-oriented marine data banks.

Phase II

1. Comprehensive "User Guide" for SELGEM operations with environmentally-oriented marine data.
2. Continuing and timely provision of customized data necessary for official reports to the MESA Project Office.

BUDGET SUMMARY FY 76
December 1, 1975 thru June 30, 1976

Work Unit Title: Installation and Testing of Multi-file Data
Retrieval System (SELGEM)

Personal Service:

<u>Name and/or Position</u>	<u>Grade</u>	<u>%Time</u>	<u>Man Months</u>	<u>Cost</u>	
Systems Analyst	GS-11	100	6.0	9.1	
Computer Programmer	GS-07	100	6.0	<u>6.0</u>	
Total Personnel Service					15.1K

Operations

Travel	2.0	
Computer	5.0	
Supplies and Expendables	<u>2.0</u>	
		<u>9.0</u>
Total Direct Funds		24.1
Total Support Funds (33.3% of Total Direct Funds)		<u>8.0</u>
Total Funds		<u><u>32.1K</u></u>