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MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Department of Physics

MEMORANDUM

To: Mr. N. McL. Sage
From: Professor Philip M. Morse
Date: November 29, 1951
Subject: Contract N5ori 06001, Task Order I;
Proposal for extension beyond current expiration
date for the period 1 July 1953 through 30 June 1954

We propose to continue work on the subject contract as restated in Amendment 13 for an additional year covering the period 1 July 1953 through 30 June 1954. The work will consist of a coordinated research program in applied mathematics utilizing facilities in the Center for Machine Computation including the Whirlwind Computer in the Digital Computer Laboratory. The work will include but not necessarily be limited to the following:

- (1) research in methods of numerical analysis and the formulation of scientific problems for machine solution, together with the training of personnel in these methods;
- (2) support of the scientific and engineering applications group of Project Whirlwind so as to make the computer useful and available for the above research and
- (3) partial support of the maintenance of the Whirlwind Computer and research into digital computing machine components including a continuation of research being carried on in magnetic memory devices.

The Air Force is making a large contribution to the support and extension of facilities of the Whirlwind Computer. Its use will be shared by the Air Force and ONR. It is understood that details of the program here proposed will be worked out from time to time with the technical officer.

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There follows a breakdown for the possible expenditure of \$300,000 for one year on the above three items. Unless otherwise stated, salaries are for full time work. Overhead rates are provisional.

ITEM 1. Research and Training in Numerical Analysis

Technical Supervision; 1/3 Prof. salary	\$ 3,200
16 research associates (some part time) @ average salary \$3,000	48,000
Other salaries and wages (secretarial and administrative)	7,000
	<u>\$58,200</u>
Provisional MIT overhead @ 42%	24,400
	<u>\$82,600</u>
Service charges for computing equipment other than Whirlwind	10,000
Travel	2,400
Materials and services including publications	5,000
	<u>\$100,000</u>

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ITEM 2. Support of Scientific and Engineering Application Group of Whirlwind

5 engineers or mathematicians @ \$5,200	\$ 26,000
2 research associates @ \$3,600	7,200
4 research assistants @ \$2,400	9,600
10 part-time students, average \$1,200	12,000
2 computers @ \$3,000	6,000
2 secretaries @ \$2,200	4,400
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	\$ 65,200
Provisional MIT overhead @ 42%	27,400
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	\$ 92,600
Travel	2,500
Materials and services including printing, equipment for program preparation, record and library maintenance	4,900
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	\$100,000

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ITEM 3. Partial Support of Maintenance of Computer and Research into Components

5 engineers @ \$5,200	\$ 26,000
4 research assistants @ \$2,400	9,600
6 technicians @ \$3,500	21,000
2 clerks @ \$2,500	5,000
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	\$ 61,600
Provisional MIT overhead @ 42%	25,900
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	\$ 87,500

Replacement parts for computer, materials for research and keeping of records	12,500
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	\$100,000

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