NPIC/R/141-66

12 JUL 1966

MEMORANDUM FOR: Director of Central Intelligence

THROUGH: Executive Director-Comptroller
Director, Office of Planning, Programming,
and Budgeting
Deputy Director for Intelligence

SUBJECT: Request For Approval of the Electrocolor System Study Project [redacted] 25X1 25X1

REFERENCE: Chief, Administrative Staff, O/DCI Memorandum of 4 February 1964 on: "Approval of Research and Development Activities."

1. The Electrocolor Systems Study Project is prepared for DCI approval in order to carry out contract negotiations early in FY 1967. The effort consists of a one-year impartial study-in-depth covering application to photo interpretation as well as reproduction of color photographic prints.

2. The attached staff study, tabs, and contract proposal present the complete schedule, plans, and justification for the project.

3. It is recommended that this project be approved at a funding level [redacted] from FY 1967 funds. 25X1

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SECRET

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25X1 NPIC/P&DS/DB [redacted] (11 July 1966)

14 April 1966

ELECTROCOLOR SYSTEM STUDY

1. PROBLEM:

To increase the NPIC capability to exploit color photography inputs.

2. FACTS BEARING ON THE PROBLEM:

a. Exploitation of color photography's increased information content is hampered by the long and intricate processing required.

b. The use of color photography is rapidly increasing at the same time that new uses, such as camouflage detection and foliage penetration, are being developed.

c. The Electrocolor process is an automatic process for making photographic color prints. It shows promise of greater speed to match the increasing volume and of control over contrast and color to meet the new demands for versatility.

d. An in-house test of the Electrocolor processor by the Production Services Division in 1965 was terminated, as explained in Tab C, with a recommendation for further analysis of the system.

3. DISCUSSION:

a. Current Procedure. The limited number of color prints now used by the NPIC are produced by the Ektacolor process. The volume is small, and requirements are straightforward. However, new color collection systems are being put into operation which will greatly increase the volume of input for exploitation. It is therefore incumbent upon the NPIC to be prepared to handle this volume and to explore methods for obtaining the maximum information from this medium.

In its present stage of development the Electrocolor process cannot compete with the Ektacolor process for day-to-day operation. Nevertheless, the versatility of the process and the speed with which it can produce a single print show enough promise to justify an impartial, complete evaluation of its potential.

b. Origin of Concept. The Electrocolor technique is based on the same principle as electroplating of metals. The process electrically charges the emulsion, which is then "plated" with any desired color. Thus, the colors can be faithfully reproduced or varied at will to facilitate interpretation.

c. Proposed Program. The proposed evaluation consists of a one-year impartial study in depth of the Electrocolor technique. This study will determine the possibilities of using this process for producing multiple prints more rapidly, increasing the size and resolution of prints, and producing transparencies. Results of the study will be applicable to photo interpretation as well as to the reproduction of color photographic prints.

d. Selection of Contractor. [redacted] submitted an unsolicited proposal to conduct this evaluation. Acceptance of the proposal is recommended because of [redacted] previous experience with this system. [redacted] performed tests on the system for the Air Force and built a prototype color negative analyzer for the [redacted] to use in conjunction with the Electrocolor system. Approximately 33% of the expenditure for this project will be subcontracted to the [redacted] for experimental work necessary to the evaluation.

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e. Program Phasing. The contractor will submit monthly reports on expenditures, work performed, and results obtained. After four months there will be a major review to determine whether results warrant continuation of the study. At the end of a year, the contractor will present a report supported by laboratory models, spelling out all possible improvements of the system. The report will include design concepts for optimized equipment. If findings are favorable, the final evaluation will outline a program for fabrication of test models and a prototype.

f. Coordination. This project has been closely coordinated with the Production Services Division. Coordination with other Center components will be established through the Technical Development Board. Care is being taken to avoid duplication of efforts by other Government activities. Particular attention was given to the [redacted] evaluation carried out for the Air Force. None of that evaluation will be repeated, but the results will be used in this study. All studies will be coordinated with DDS&T, and formal community-wide coordination will be maintained through the Committee on Photographic Exploitation.

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g. Alternatives. This process has unique features which deserve careful, impartial investigation. The Center does not have the space, equipment, or personnel for such a study and sufficient impartiality cannot be expected from the manufacturer.

4. CONCLUSIONS:

The increasing use of color in reconnaissance photography makes it necessary for the NPIC to expand its knowledge and capability in the field of color exploitation. The Electrocolor process offers significant promise for more speed and versatility in this field. An objective study is required to determine whether its advantages can be applied to Center tasks.

5. RECOMMENDATIONS:

It is recommended that approval be granted to contract with the [redacted]

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6. REFERENCES AND ATTACHMENTS:

Tab A. Catalog form
Tab B. Technical specifications
Tab C. Memorandum on in-house test
Tab D. Program phasing
Attachment: [redacted]

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