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4 February 1971Copy 1

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting with Dr. John Martin Regarding Zaman/KH-8
Comparison Study, 28 January 1971

1. On 28 January, [redacted] Hayden Peake, [redacted] of NPIC and Ed Nowinski of OSP/DDS&T met with Dr. John Martin to discuss in detail various techniques regarding objective image quality measures -- more specifically power spectrum analysis -- that Dr. Martin proposed during a previous meeting on 15 January.
2. We explained the method of using a microdensitometer trace and the subsequent computer manipulation needed to determine the power spectrum, and we outlined previous work in this area, especially at Eastman Kodak. We stated that the microdensitometer traces and, after some program changes, the computer manipulation of the data could be accomplished at NPIC. As an alternative, we stated that the computer work could be done immediately at Kodak, to which Dr. Martin expressed his desire that as much of the work as possible be done at NPIC.
3. We also familiarized Dr. Martin with NPIC's initially successful R&D effort in applying power spectrum data generated optically to predict relative image quality of operational imagery which was in agreement with PI judgement. We stated that the contract for this present effort had come to an end, but a follow-on that would quantify the quality measures was anticipated. Dr. Martin was enthusiastic over this method and asked that it be included in the follow-on to extent permitted by the contract. He was particularly anxious to keep abreast of the efforts using this optical power spectrum technique, since it might be applied successfully to evaluate Zaman imagery.
4. We also pointed out that once the power spectra were obtained, regardless of the method used, psychophysical experiments and statistical analysis would be necessary to determine if a quantitative predictive relationship between the power spectra and image quality exists.
5. At the conclusion of the meeting, Dr. Martin proposed that NPIC explore both digital and optical power spectrum techniques to objectively measure the imagery that we had previously ranked subjectively in our report,

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The Exploitation Potential of Zaman Imagery Compared with KH-8 Photography (BYE-3173/70) and then attempt to correlate the objective and subjective results. Dr. Martin suggested that he would write a letter to Mr. Lundahl with such a request, but then he asked if we would like to draft such a letter for him. We stated that we would prepare such a draft and hoped to have it to Dr. Martin by next week.

[REDACTED]

Planning, Programming, & Budgeting Staff
NPIC

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