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MEMORANDUM FOR THE RECORD

SUBJECT: Mensuration on Electro-Optical Imagery

1. Informal discussions with Mr. Ed Nowniski, OSP/DDS&T, indicate that measurements most probably will be made in the traditional manner during the Electro-Optical Imagery era; that is, on hard copy imagery with traditional measuring equipment.

2. There is some talk of measuring from the digital record, but the many unknowns associated with such a technique give it a low probability of implementation. For example, the digital record might be displayed on a cathode-ray-tube-type viewer with an operator directing a computer to measure any object lying between certain points specified by him. These points would not necessarily be the precise end points of the object in question. The computer would then scan the digital data between the two points and, through preprogrammed criteria, precisely determine the end points of the object and compute the distance. This would eliminate the human error associated with precisely describing and pointing at object edges.

3. One difficulty with such a technique lies in the establishment of the preprogrammed criteria. Nor does the technique necessarily insure greater accuracy for any given measurement; it would mean, however, the results of repeated measurements would not vary as is possible with human measurement results. An additional complication is the fact that most objects represent a complex composition of scene reflectance values, which the human often rapidly recognizes and ignores; the degree of difficulty in developing a computer program to perform this sort of discrimination is unknown. OSP plans to initiate studies into this field in the near future.

4. In summary, one can reasonably predict that measurements will be made in the EOI era much the same as they are today.

[redacted]
Plans & Programs Division/PPBS
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