CR-136296

PROGRESS REPORT 10

AUTOMATIC PHOTOINTERPRETATION FOR LAND USE MANAGEMENT IN MINNESOTA

ERTS

Proposal Number MMC 257

Principal Investigator Number PR 202

Contract Number NAS 5-21742

December 1973

Prepared by: L. Kirvida
M. Cheung

Approved by: George Swanlund
G. D. Swanlund

Honeywell, Inc.
Systems and Research Division
2600 Ridgway Parkway
Minneapolis, Minnesota 55413

Progress Report Number 10

We have trained and tested an automatic classifier on extractive-forest areas in Northern Minnesota. Training weights obtained over the Pineville, Minnesota area were used in a test area at Virginia about 20 miles west of the training area.

The digital data was extracted from image 1057-16311, a September 18, 1972 coverage. With six classes, a classification accuracy of 86.5 to 89% was obtained. This image contained banding in MSS-4 and MSS-6. Channel 2 in MSS-4 and Channel 5 in MSS-6 produced data lower than their remaining five channels. To compensate for this, separate training weights were obtained for channel 2, channel 5 and channels 1, 3, 4 and 6.

A typical confusion matrix for the Pineville area is shown below.

GROUND TRUTH	K-Class Assignments					
Hardwood	89.9	4.3	.6	5.2	0	0
Conifer	3.0	89.7	0	.4	.4	6.5
Residential	0	0	95.7	3.2	1.1	0
Open	33.7	1.2	9.3	55.8	0	0
Extractive 1	0	.9	6.5	.9	89.8	1.9
Extractive 2	0	7.5	0	0	2.5	89.9