

7. STACK or see PDSCMS 2.1.0 for  
COMBINE effects of each.

Two sets of control cards are punched for each segment; one set for data scanned in the density mode, one set for data scanned in the transmission mode. The labels on the READ cards will match the identification label on the microdensitometer tape only if those identification labels are in the following form:

col 1: 'C', 'R', 'G', or 'b' corresponding to the filter in use.  
col 2-5: segment number  
col 6-8: first three characters of state name  
col 9-11: julian date of photography  
col 12-14: 'DEN' or 'TRA' corresponding to scanning mode  
col 15-40: any other information desired by the user

Input: The first data card is the same for both versions. It must be in the following form:

col 1: blank  
col 2-23: &NUMBER OFSEGS=**xx**,&END

where **xx** - the number of segments to be processed.  
For each segment, the following cards are required:

VERSION 1:

1. State, segment number, and STACK or COMBINE

Col. 1-12: state name, left justified.

The first three characters are used to create label information for READ cards for PDSCMS. The state name is also output as the SCENE identifier for PDSCMS.

Col. 15-18: segment number.

Used for label information for READ cards, and output as PISECT identifier.

Col. 21-28: STACK or COMBINE (See PDSCMS 2.1.0 for effect of each).

2. Scanning information in the following form:

Col 1: blank  
Col 2-54: &INFO PHOTO=**www**,DELTA**X**=**xxx**,DELTA**Y**=**yyy**,NOFLDS=**zzz** &END

where www - julian date of photography  
 xxx - delta x for scanning  
 yyy - y step for scanning  
 zzz - number of fields in this segment to be processed. This must equal the number of FID cards for the segment.

3. FID cards: corner coordinates, tract, field and crop identifiers.

col 1-3: FID

col 5-11:  $x_1$

col 12-18:  $y_1$

col 19-25:  $x_2$

col 26-32:  $y_2$

col 33-39:  $x_3$

col 40-46:  $y_3$

col 47-53:  $x_4$

col 54-60:  $y_4$

where  $(x_1, y_1)$  = N.E. corner of field  
 $(x_2, y_2)$  = N.W. corner of field  
 $(x_3, y_3)$  = S.E. corner of field  
 $(x_4, y_4)$  = S.W. corner of field

col 61-62: two digit integer corresponding to tract identification.

col 63-64: two digit integer corresponding to field identification.

col 65-72: 8 character crop identifier.

col 73-80: 8 character crop identifier

The effect of each FID card is to create a SAS program statement which will append tract, field, and crop identifiers to most data points within the quadrangle specified by the corner coordinates on the FID card. Not all points will be identified since boundary points are deleted and the program operates only on rectangular areas parallel to the scanning axes which are contained within the specified quadrangle. The assumptions are also made:

1.  $|\min(x_2, x_4)| \quad |\max(x_1, x_3)|$
2.  $|\min(y_3, y_4)| \quad |\max(y_1, y_2)|$
3.  $(x_i, y_i) \quad i = 1, 2, 3, 4$ , are measured in microns.
4. No origin offset will be used in PDSCMS.

Restriction number 3 on the preceding page can be bypassed. If  $(x_i, y_i)$  are in pixel coordinates as produced by PDSCMS, then specify

DELTA $x$ =1, DELTA $y$ =1, on the scanning information card, rather than their true values. Irregular fields (non-rectangular) may be split by the user into two or more rectangular fields parallel to the scanning axes in order for the maximum number of points in the field to be identified.

Version 2:

1. State, segment number, and STACK or COMBINE in same format as Version 1.

2. Scanning information in the following form:

col 1: blank

col 2-64: &INFO PHOTO= $www$ , DELTA $x$ = $xxx$ , DELTA $y$ = $yyy$ , NOFLDS= $zzz$ ,  
NOPNTS= $ttt$ , &END

where  $www$ ,  $xxx$ ,  $yyy$ ,  $zzz$  are as defined in Version 1,  
and  $ttt$  is the number of corner points in the segment.

3. Coordinates for each field corner point in the segment.

col 4-10:  $x_i$

col 14-20:  $y_i$

col 24-27:  $i$

where  $(x_i, y_i)$  is the  $i$ th corner point in the segment. These

cards must be in order from the smallest to largest  $i$ , where  $i = 1, 2, 3, \dots, n$

4. SFID cards: subscript of corner points, tract, field and crop identifiers.

col 1-4: SFID

col 11-13:  $i$

col 16-18:  $j$

col 21-23:  $k$

col 26-28:  $l$

col 31-32: integer tract identifier

col 35-36: integer field identifier

col 39-46: eight character crop identifier

col 49-56: eight character crop identifier

where  $(x_i, y_i)$  = N.W. corner  
 $(x_j, y_j)$  = N.E. corner  
 $(x_k, y_k)$  = S.W. corner  
 $(x_l, y_l)$  = S.E. corner

Implementation of Version 2 considerably reduces setup time for scanning, and time required to record field identification for key-punching. By entering the E command on the microdensitometer, then positioning the stage at a field corner point and depressing the PROG INIT button, the coordinates of that point are printed out on the teletype. Field corner point coordinates can then be keypunched directly from the teletype printout. On the sketch of the segment, it is no longer necessary to record the coordinates for that point, merely record the subscript for that point. Then on the SFID key-punch form, it is only necessary to record the subscript for each corner point, not the full set of coordinates. This should reduce the man-hours required for each of these steps by better than 50%.