THRESH 6405 has been modified so that an "abstract" of the BCD output may be available for the physicists, namely the part relative to the errors and anomalies detected by the program during the reconstruction of an event.

Any experimental group interested in getting this special output (referred to as "statistics") should contact Mr. Bernasconi.

It is obvious that this new facility will provide a powerful means of control in the way the IEP measurements are performed.

I. Output Format

For each event:

1. First line, made up of
   a) Event identification (Exp., frame, measurement, operator, IEP, autolabel class, BCD information).
   b) Number of measured points, number of measured tracks
      "n_1" P, "n_2" T. ) or,
      if the whole event has been rejected, the cause of the reject:
      (- ERRORMARK. FOR THIS EVENT, or
      - REAP REJECT "n_1" "AB" VIEW "n_2" ENTRY "n_3" or
      - THRESH REJECT "m_1", "m_2"..."m_n") See II.

2. When the event is not rejected, there may be other lines, one for each item (point or track) for which an error has been detected. Each line has the following structure:

   "Label" "Fault" "Iteration" "Test" "View 1 fault" "View 2 fault"...

   only for tracks

II. Error Code

1. REAP REJECT

   "n_1" "AB" Comment
   1 MS Measurement Sequence (punching anomaly when recording a coordinate sequence)
   2 UL Unacceptable Label
   3 UC Unacceptable Camera number
   4 NA No entry Autolabel class (Autolabel class not described in Title 1)
   5 OA Overflow Autolabel list (too many labels (>30) in an autolabel class, or not enough (less than measured items))
"n_1"  "AB"  Comment
6    OL  Overflow initial list (maximum 160 labels on all views)
7    ON  Overflow number store (maximum 1500 coordinate pairs)
8    OP  Overflow points (maximum 10 points)
9    OT  Overflow tracks (maximum 20 tracks)
10   OF  Overflow fiducials (maximum 10 fiducials)
11   DL  Duplication of label (two times the same label in one view)
12   DC  Duplication of camera number (two times the same view)
13   NN  No entry number store (no coordinate pairs)
14   NE  No entry initial list (no measured items)
15   EI  Event identification (warning sequence for the first measured view not found at its normal location)

"n_i" is the view number where the error has been detected.
"n_j" is the number giving the position of the label for which the error has been detected.

2. THRESH REJECT

"m_1" for the view i, is
0  normal
1  less than 3 measured fiducials
2  fiducial wrongly labelled

3. Faults

a) Points :

"Fault" 0  normal
3  not enough measurements for that point
4  errors too large ($\Delta X + \Delta Y + \Delta Z$)

"View i-fault" 0  normal
1 ) as in Thresh reject
2 )
3  not measured on that view
4  view not used, because giving too large errors ($\Delta X + \Delta Y + \Delta Z$)
b) Tracks:

"Fault" 0 normal
4 not enough points reconstructed in space
8 for finding a good first approximation
9 less than 2 good views available for that track

"View i-fault" 0 normal, 1 and 2 as in THRESH REJECT
9 more than 50 points measured on the tracks
0 less than 3 " " " "
5 apex too far from the circle fitted to the track
9 2 points rejected when fitting the circle
11 (or too few points for a too large length)
12 less than 2 points after going through ARRNAN
9 negative radius of the circle
111 1 point rejected when fitting the circle
(warning only)

"Iteration"

normally small integer, or
-1 for straight tracks reconstructed by using
0 end points
0 when no convergence in LSHELX

"Test"
(cumulative)
0 normal
1 end point far from the track more than
9 the tolerance
2 apex (as fitted with the track) far from
the apex (fitted as a point) more than
0 the tolerance
4 apex fixed during the iteration process (LSHELX)

III. Technical Details

For a production-run, the "statistics" are output on unit A4 (12) loaded
with an allocated tape which will be printed from time to time. The normal
BCD output facility is not suppressed.

For a test-run, the "statistics" are output on A3.

In both cases one needs to read in from the card reader a STAT card
(same format as the LIST card).