T77-11234MF

JSC-12582

8.0-10264

NASA CR.

160643

"AS-BUILT" DESIGN SPECIFICATION FOR THE INDIA MONTHLY DATA BASE

Job Order 74-963

AD 63-1347-4963-04

(E80-10264) AS-BUILT DESIGN SPECIFICATION FOR THE INDIA MONTHLY DATA BASE (Lockheed Electronics Co.) 20 p HC A02/MF A01 N80-29811

CSCL 05B Unclas

G3/43 00264

Prepared By

Lockheed Electronics Company, Inc.

Aerospace Systems Divisions

Houston, Texas

Contract NAS 9-15200

For

EARTH OBSERVATIONS DIVISION

SCIENCE AND APPLICATIONS DIRECTORATE

National Aeronautics and Space Administration

LYNDON B. JOHNSON SPACE CENTER

Houston, Texas

February 1977

LEC-10253

JSC-12582

CR-160643

"AS-BUILT" DESIGN SPECIFICATION FOR THE INDIA MONTHLY DATA BASE

Job Order 74-963

AD 63-1347-4963-04

Prepared By

K. Williams

APPROVED BY

Philip L. Krumm

Philip L. Krumm, Supervisor
Applications Software Section

Prepared By

Lockheed Electronics Company, Inc.

For

Earth Observations Division

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
HOUSTON, TEXAS

February 1977

LEC-10253

CONTENTS

1. SCOPE

This document specifies design of the monthly weather and yield data base for India, following the same design as those previously documented for Australia, Canada, the U.S., and the U.S.S.R. in the "As Built Design Specification for the Yield Estimation Subsystem (YES) Monthly Yield Data Base and Supporting Programs" (JSC-12537/LEC-10034).

2. APPLICABLE DOCUMENTS

AD 63-1347-4963-01

AD 63-1347-4963-04

This documentation completes AD-04.

3. SYSTEM DESCRIPTION

3.1 HARDWARE DESCRIPTION

These data, and supporting programs previously documented in "As-Built Design Specification" (JSC-12537/LEC-10034), are resident on the IBM 360/195 complex at Suitland, Maryland. They should be transferable to any IBM 360-370 series machine with sufficient disk to handle the data base and main memory to support the PL/I optimizing compiler.

3.2 DATA BASE STRUCTURE

The monthly weather and yield data base is a tree structure, with nodes, or levels, being the country, region, state and subdivision. Respectively, these levels refer to India, the wheat areas, Indian political states, and subdivisions within the states. The number of subdivisions per state varies from one (the state itself) to four.

3.2.1 DATA BASE STORAGE REQUIREMENTS

The data set for India occupies 114 6440-byte blocks.

3.2.2 CONTROL AND DIRECTORY BLOCKS

See "As-Build Design Specification" (JSC-12537/LEC-10034) for definitions and structures.

3.2.3 DATA DESCRIPTORS AND DATA BLOCKS

The format for the data descriptors and data blocks follows that previously defined in "As-Build Design Specification".

At the present time, yield variables and mean monthly temperature are stored at the state level; the state mean monthly temperature and subdivision monthly precipitation are stored at the subdivision level. Space has been reserved at the subdivision level for yield variable data, in the event that this data becomes available in the future.

3.2.4 MODEL DEFINITION BLOCK

At this time, no model definition block for India exists; no CCEA-type model for India has yet been developed.

4. OPERATION

4.1 DATA BASE INITIALIZATION AND DEFINITION

Data base initialization and definition were accomplished using the supporting programs documented in "As-Build Design Specification". (JSC-12537/LEC-10034).

4.2 DATA BASE LOADING

The data base was loaded using the updating program UPDDATA, documented in "As-Built Design Specification."

4.3 DATA BASE LISTING

The control block and directories may be listed using YESLS02 and YESLS04 respectively, from "As-Built Design Specification." To list data, LISTJOB (also from "As-Built Design Specification") will have to be modified to accomodate data for India.

APPENDIX A

STRUCTURE

INDIA DATA YEAR ENTRY

There is a maximum of 60 years following the data descriptor entry in a data block for each Indian state and subdivision; each year entry is 100 bytes long.

```
DCL 1 INDIA,
    2 YEAR                  FIXED BIN(15,0),
    2 NXTYRREC              FIXED BIN(15,0),
    2 NXTYRDISP             FIXED BIN(15,0),
    2 FILLER(13)            FIXED BIN(15,0),
    2 MEANTEMP(12)          FIXED BIN(15,0),
    2 PRECIP(12)            FIXED BIN(15,0),
    2 IRRIGATED(2)          FIXED BIN(15,0),
    2 HARVESTED(2)          FIXED BIN(31,0),
    2 PRODUCTION(2)         FIXED BIN(31,0);
```

APPENDIX B

VARIABLE CODES

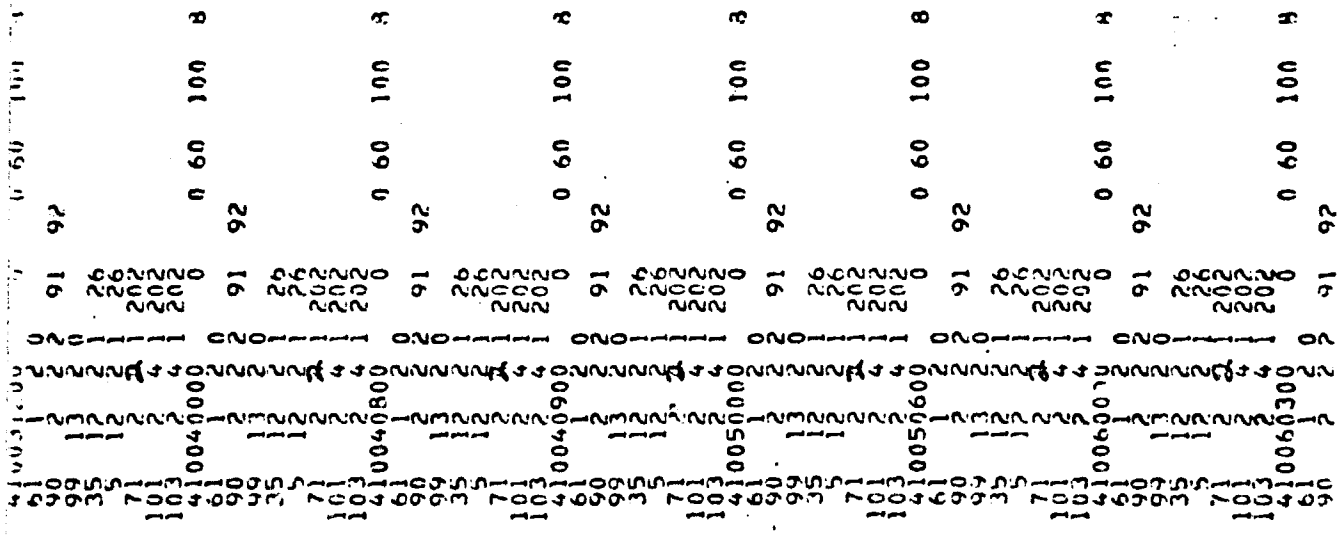
APPENDIX C

LISTING OF CONTROL BLOCK, DIRECTORIES AND DATA DESCRIPTORS

ORIGINAL PAGE IS
OF POOR QUALITY

```
  4  15  3300-7690 JAMMU AND KASHMIR          44   -1   -1              410161600
  3  17  2860-7720 DELHI                        2   -1   -7              410170000
  4  13  2860-7720 NEW DELHI                   46   -1   -1              410171300
++END OF COMMAND
++COMMAND=DEFINE        ++OPERAND=DESCRIPTOR
  410010000        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
 101   2   4  1  202
 103   2   4  1  202
  410011400        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
 101   2   4  1  202
 103   2   4  1  202
  410020000        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
 101   2   4  1  202
 103   2   4  1  202
  410021300        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
 101   2   4  1  202
 103   2   4  1  202
  410030000        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
 101   2   4  1  202
 103   2   4  1  202
  410031000        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
 101   2   4  1  202
 103   2   4  1  202
  410031100        0      0 60   100   8
  61   1   2  0
  90   2   2  2   91   92
  99  13   2  0
  35  12   2  1   26
   5  12   2  1   26
  71   2   2  1  202
```

C-2



```
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410092000           0        0  60    100    8
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410100000           0        0  60    100    9
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410100700           0        0  60    100    8
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410110000           0        0  60    100    8
 61     1    2  0
 90     2    2  2    91    92
 94    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410112300           0        0  60    100    8
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410112400           0        0  60    100    8
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
 35    12    2  1    26
  5    12    2  1    26
 71     2    2  1   202
101     2    4  1   202
103     2    4  1   202
 410112500           0        0  60    100    8
 61     1    2  0
 90     2    2  2    91    92
 99    13    2  0
```

C-5

```
[illegible]                92
99   13   2  0
35   12   2  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410132900         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   2  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410150000         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   2  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410151500         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   2  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410160000         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   2  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410161600         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   2  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410170000         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   [illegible]  1   26
 5   12   2  1   26
71    2   2  1  202
101   2   4  1  202
103   2   4  1  202
410171300         0      0 60   100   8
61    1   2  0
90    2   2  2   91   92
99   13   2  0
35   12   2  1   26
```

C-7

```
101   2 4 1 202
103   2 4 1 202
**END OF COMMAND
```