Purpose

Command DEFINE USER is used to define or redefine general user
parameters.

The parameters are used for the following purposes:

    o provide values for checking user input
    o provide default values to be used when defining other parametric
       data
    o   provide parametric data for the Preprocessors

There are three types of general use parameters that can be defined:

    o general (UGNL)
    o river, reservoir and snow (URRS)
    o state boundaries (STBN)

UGNL parameters must be defined.

URRS parameters need only be defined if default values are to be used
when defining the RRS parameters for a station.

STBN parameters need only be defined if MDR data are to be used by
the MAP Preprocessor and a map is to be printed.

Input Data

The general format of the DEFINE command is described on page
VI.3.3B-DEFINE. The input described here immediately follows the
DEFINE command.

Card	Field	Required/ Optional 1/	Format	Description
1	1	R	A or A(A)	'UGNL' OR 'UGNL(units)' 2/
	2	R #	A8	User name
	3	R #	R	Northern latitude limit 3/
	4	R #	R	Southern latitude limit 3/
	5	R #	R	Eastern longitude limit 3/
	6	R #	R	Western longitude limit 3/
	7	R #	R	Maximum elevation limit in FT (feet) or M (meters) 3/
	8	R #	R	Minimum elevation limit in

Card	Field	Required/ Optional 1/	Format	Description
				FT (feet) or M (meters) 3/
	9	R	I	Western most MDR column 4/
	10	R	I	Number of columns 4/
	11	R	I	Southern most MDR row 4/
	12	R	I	Number of rows 4/
	13	R #	R	Default exponent in 1/d**power for determining PCPN weighting station for MAP areas 5/
	14	R #	R	Default exponent in 1/d**power for determining TEMP weighting station for MAT areas 5/
	15	R #	R	Default exponent in 1/d**power for determining PE weighting station for MAPE areas 5/
	16	R #	I	Beginning month of summer season 6/
	17	R #	I	Beginning month of winter season 6/
	18	R #	I	Blend period for MAT computations 7/
	19	R #	I	Blend period for MAPE computations 8/
	20	R #	R	Minimum daily precipitation at less than 24-hour stations for estimating time distribution in inches or millimeters 9/
	21	R #	R	Minimum weight of stations to be kept when NETWORK computes station weights for MAP, MAT and MAPE areas
	22	R #	A	Indicator for how station information is to be sorted by NETWORK for alphabetical order lists: 10/

				'ID' = by identifier (default)
				'DESC' = by description
	23	O #	A(4*I)	Definition of the portion of the national HRAP grid to be used to process NEXRAD precipitation estimates 15/ 'HRAP (col,#col,row,#row)' where:
				col = western most column
				#col = number of columns
				row = southern most row
				#row = number of rows

Card 2 is required only if the default user RRS parameters are to be defined 11/

2	1	R	A	'URRS'
	2	R #	A4	RRS data type code
	3	R #	I	Default minimum days of data to be retained on the Preprocessor Data Base 12/
	4	R #	I	Default typical number of observations to be held on the Preprocessor Data Base 12/

Repeat fields 2, 3 and 4 for additional data types.

3	1	R	A	'STBN' 13/
	2	R	I	Western most MDR column
	3	R	I	Number of columns
	4	R	I	Southern most MDR row
	5	R	I	Number of rows
4	1	R #	I	MDR row number 14/
	2	R #	A42	State boundary points: 14/
				blank = no state boundary in MDR box
				single quote = state boundary in upper half of MDR box
				decimal point = state boundary in lower half

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                   Required/
 Card    Field   Optional 1/    Format    Description

                                           or both upper and
                                           lower half of MDR box

     Repeat card 4 to define all basin boundary points.


Notes:


1/  A '#' indicates that the parameter value can be changed when
    parameters are being redefined.

2/  The units in which the data are being input can be specified in
    this field.  If the parameters are being input in English units,
    the unit code ENGL can be entered.  If the parameters are being
    input in metric units, the unit code METR must be entered.  The
    default unit code is ENGL.

3/  Latitude, longitude and elevation limits are used for checking
    input for other DEFINE commands.  If no values are input, the
    following defaults are used:

        northern latitude =    75 degrees
        southern latitude =    24 degrees
        eastern longitude =    65 degrees
        western longitude =   172 degrees
        maximum elevation = 20000 feet
        minimum elevation =  -380 feet


    Latitude and longitude values are input as decimal degrees.

    If 'UGNL(ENGL)' has been specified, the units of elevation must
    be in feet (FT).  If 'UGNL(METR)' has been specified, the units
    of elevation must be in meters (M).

4/  Defines the subset of the MDR grid to be used for the user.  The
    subset must be defined if MDR data are to ever be used.  The MDR
    subset must fall within the following limits:

                                    Minimum  Maximum
                                    Value    Value
        western most column (WC)      1      113
        number of columns             1      smaller of 42 or (113-WC+1)
        southern most row (SR)        1      89
        number of rows                1      (89-SR+1)

    The MDR grid is numbered with the point (1,1) in the southwest
    corner and the point (113,89) in the northeast corner.  A
    description of the MDR grid can be found in section VI.3.3C.

5/  Does not need to be defined if 1/d**power is not to be used at
    all or if the value of power is always input whenever 1/d**power
    is used.  Default is 0.5.

6/  Does not need to be defined if seasonal correction factors or
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seasonal weights are not to be used when computing MAP or if
default values are to be used. The beginning month of summer
must start before the beginning month of winter. The beginning
month of winter must be less than or equal to 12. The default
beginning month of the summer season is 5 (May) and the winter
season is 10 (October).

7/   The blend factor is the number of days to be used to blend from
     the last forecast temperature value to the mean monthly
     temperatures. The default is 3 days.

8/   The blend factor is the number of days to be used to blend from
     the last computed potential evaporation value to the 16th of the
     month potential evaporation value. The default is 3 days.

9/   This value is used by the MAP Preprocessor when estimating time
     distribution. If the total daily precipitation for a station is
     less than this value, then 6-hour data at the station is
     considered missing and the normalized time distribution for the
     station will be estimated. If 'UGNL(ENGL)' has been specified,
     the data units must be in inches (IN). If 'UGNL(METR)' has been
     specified, the data units must be in millimeters (MM). The
     default value is .05 inches.

10/ The sort indicator controls the order in which stations are
     displayed by the following Forecast Program Functions:

         Function   Type of Stations Displayed
         MAP   PCPN
         MAT   TEMP
         MAPE   PE
         RRS   RRS

     This indicator is used by the NETWORK command which generates the
     alphabetical order parameters.

11/ The default RRS parameters must be defined if the minimum days to
     be retained on the Preprocessor Data Base (PPDB) and the typical
     number of observations to be held on the PPDB are not specified
     when an RRS data type is defined for a station that has RRS data
     (see DEFINE STATION command).

12/ The minimum number of days of data to be held on the PPDB defines
     the period to be retained even of more than the typical number of
     observations specified is exceeded. The typical number of
     observations is used to size the primary storage area. If this
     space is too small to store all the observations for the minimum
     number of days specified, an overflow area used to store the
     data. It is important to pick a reasonable estimate for the
     typical number of values to be observed during the period to be
     retained in order to minimize the use of the overflow area, but
     also not allocate a lot of space that will never be used.

13/ The state boundary points define where state boundaries lie on
     the subset of the MDR grid. The points are used during the
     display of MDR information by the MAP Preprocessor.

The MDR subset values must be the same as those defined when the
'DEFINE USER UGNL' command was executed.

14/ The state boundary points are decoded according to the following
rules:

     o the first field is the row number
     o one column is skipped
     o the next NUMCOL columns are used as the state boundary
        points

NUMCOL is the number of MDR columns specified in field 3 of card
3.

The state boundary point cards can be entered in any order. To
have the card listing look like a map, they should be entered
from north to south (largest row numbers first).

15/ When redefining the general parameters, the new HRAP subset must
include all of the HRAP grid points that are used by MAPX areas.

Sample Input

To define values for the following user parameters:

   User name = OFSTEST
   Latitude/longitude limits:
      northern latitude = 42.0
      southern latitude = 39.0
      western longitude = 109.7
      eastern longitude = 106.7
   Elevation limits:
      maximum = 15000.0 feet
      minimum = 0.0 feet
   MDR subset:
      western most column = 32
      number of columns = 6
      southern most row = 42
      number of rows = 9
   Blend factor for MAPE = 4 days
   HRAP subset:
      western most column = 311
      number of columns = 59
      southern most row = 410
      number of rows = 83
   Default for RRS:
      data type = STG
      minimum days to be retained = 7
      typical number of observations = 29

The following input would be used:

   @DEFINE USER
   $ DEFINE GENERAL USER PARAMETERS
   UGNL OFSTEST 42.0 39.0 106.7 109.3 15000 0.0

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      32 6 42 9
   6*',,' 4
   HRAP(311 59 410 83)
$ DEFINE GENERAL RRS PARAMETERS
URRS  STG 7 29
$ DEFINE STATE BOUNDARY POINTS
STBN 94 5 53 5
57  .' '
56 .
55 '''
54    .
53     .
```