Recommendations and suggestions from the Member States

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ECMWF

30 November 1988

Recommendations and suggestions from the Member States for enhancements to MAGICS

- Recommendations received from 3 Member States

- Includes ECMWF recommendations

- Problem reports not included

MAGICS Enhancement Proposals
Shading/Masking/Blanking

- Land/Sea shading
  (Sweden)

- Land/Sea masking of surface parameters
  (United Kingdom)

- Blanking of Text/Legend
  (Sweden)

- Thicker contour highs/lows and labels
  (Sweden)

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MAGICS Enhancement Proposals
Projections/Mapping

- Projected field plotted on polar stereographic with true map scale (Sweden)

- Rotated lat/long projection (Sweden and The Netherlands)

- Transverse Mercator projection (United Kingdom)

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MAGICS Enhancement Proposals

Observation Plotting

- **BUFR code**

  (The Netherlands)

- **Observation type METAR**

  (The Netherlands)

- **Rotation of observations with longitude**

  (The Netherlands)

- **Plotting of ship observations on side of map to prevent overplotting**

  (The Netherlands)

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MAGICS Enhancement Proposals

New Features

- Thermodynamic diagrams (Sweden)

- X/Y Graph drawing (Sweden)

- Plotting of gridpoint markers (The Netherlands)

- Plotting of digits/letters/markers at selected positions (Sweden)

- Array cell shading and/or imaging

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MAGICS Enhancement Proposals

Other

- Appropriate internal documentation of MAGICS to enable the substitution of other contouring packages
  (United Kingdom)

- Support for GKS level 2B and CGM Addendum 1.
  (United Kingdom)

- Documentation of font interfaces
  (United Kingdom)

MAGICS Enhancement Proposals

Other

- Description of format of coastline database and description of how to change to another data set (Sweden)

- GKS 'CELL ARRAY' not to be used for image plotting (United Kingdom)

European Centre for Medium-Range Weather Forecasts

Centre européen pour les
prévisions météorologiques à moyen terme

Europees Centrum voor
weervoorspellingen op middellange termijn

Europäisches Zentrum für
mittelfristige Wettervorhersage

Centro europeo per le
previsioni meteorologiche a medio termine

OD/187/JD/1222

Please address all correspondence to
THE DIRECTOR

16 September 1988

MAGICS   QUESTIONNAIRE

As agreed during the thirteenth session of the ECMWF Technical Advisory
Committee, a questionnaire regarding further extensions to MAGICS is
attached. If you have any suggestions for MAGICS extensions, please fill
in and return the questionnaire to ECMWF to arrive not later than 1
November 1988. Possible extensions to MAGICS (and MicroMAGICS) will be
discussed in the workshop on Graphics in Meteorology, 30 November - 2
December.

Below follows an account of the immediate plans for MAGICS development
at ECMWF and a list of possible extensions.

1 PLAN FOR DEVELOPMENT OF MAGICS AT ECMWF

The modules most recently added to the Disspla version of MAGICS are
currently being implemented in the GKS version (streamline/isotachs,
axes plotting, linear contouring). Then MAGICS/GKS will be made
available on the Cray. Timing tests and further tuning on Cray and VAX
will follow. After completion of these tasks it is planned to implement
MAGICS/GKS on NOS/VE. When these tasks are completed MAGICS manual
updates for the GKS version will be produced.

1.1 Instruction string facility in MAGICS/GKS

The instruction string concept is not part of GKS but a modified
instruction string facility has been added to MAGICS/GKS. The main usage
of instruction strings is to write simple mathematical formulae
(including the degrees symbol) in the title of the plot.

1.2 Implementation of CONICON 3

ECMWF has the right to replace CONICON 2 with CONICON 3 in MAGICS for use in the Member States. The main benefit of using CONICON 3 will be a more efficient and better shading. However, many parts of CONICON have been modified and it is envisaged to be a non-trivial task to update MAGICS to use the latest CONICON version.

2 POSSIBLE EXTENSIONS TO MAGICS

2.1 X/Y graph plotting facilities in MAGICS

With the axes (for cross sections) and legend facility available in MAGICS, the next step could be to add simple curve plotting. However, many other advanced graph plotting facilities could be envisaged. Instead of developing a graph plotting module, an alternative could be to use a proprietary GKS based graph plotting package embedded into MAGICS.

Once curve plotting is available, the plotting of the trace of orography for cross sections could be added.

2.2 Observation interface for BUFR data

The BUFR standard has now be defined and experimental decoding software exists. The interface to MAGICS has to be developed.

2.3 Scattered data points on maps

A Disspla based application has been developed to plot scattered data points on maps. The values for the data points are indicated with coloured symbols. This application has not been implemented in MAGICS/Disspla but could be implemented in MAGICS/GKS and extended to plot the values as coloured symbols, numbers or text.

2.4 Relief plots

This visualization technique has been used in some of the animation sequences produced. The value at every grid point in the model output is displayed as a coloured rectangle. The implementation has been prepared for MAGICS/Disspla but can be moved to MAGICS/GKS by using the GKS Cell-array primitive.

2.5 Thermodynamic diagrams

Currently no thermodynamic diagrams have been made available in MAGICS/GKS. If required, several types of diagrams to be supported may be considered.

2.6 Blanking of text and legend blocks in MAGICS/GKS

In the Disspla based version of MAGICS the plotting area for text blocks (PTEXT) and legend blocks can be protected against further plotting. The main use of this feature has been to position the legend or text block

inside the map area. GKS has no general support for blanking. A similar
feature in MAGICS/GKS will have to be developed on top of GKS which is a
non-trivial task. Alternatively an erasure technique could be used,
which is more efficient but only supported in GKS for raster based
devices and not for pen plotters.

Q U E S T I O N N A I R E

Proposals for extensions/modifications to MAGICS

1. Name   ....

2. Institution   ....

3. Address   ....

                    ....

                    ....

                    ....

4. Technical description of proposal, in order of priority
   (please include examples of output if you have any)

5. Would you have any software available or do you know any software
   that can be used to implement these proposals into MAGICS

Please return to ECMWF, Att. J. Daabeck, Shinfield Park, Reading, RG2 9AX,
before 1 November 1988

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