

NGU Rapport 92.223

IMPATLAS
Geographic database and
map-generating system

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Sammendrag: IMPATLAS is a PC based database management system which handles approximately 3 Mbyte of geographic vector-data (X-Y data), including the Norwegian coast-line, islands, rivers, lakes, roads, country-boundaries and petrophysical sampling sites in Norway. The program generate detailed UTM maps or data-subsets which are integrated with IMP modelling programs or marine-geological sytems. The report describes how to use IMPATLAS.				
Emneord:		Geografiske data		
Geofysikk				
Database		Brukerdokumentasjon		

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1. INTRODUCTION

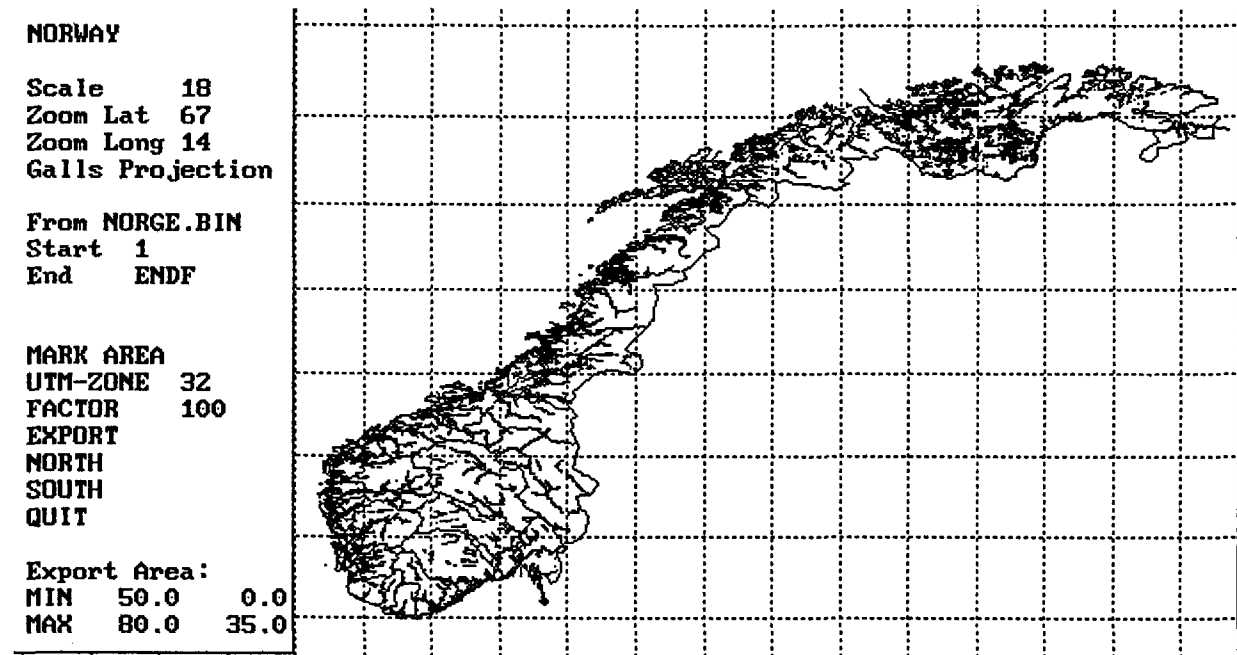
IMPATLAS is a PC based database management system which handles geographic data, approximately 3 Mbyte of vector-data, such as the Norwegian coast-line, rivers, lakes and petrophysical sampling sites. The program aims to generate detailed UTM maps or data-subsets which are integrated with other programs in the IMP system or marine-geological acquisition and archive systems.

2. MAIN MENU

IMPATLAS uses five different EGA images (Figs. 1-5), and during startup an image file named NORWAY (Fig. 1) is displayed on the screen. The top-left corner of the screen provide the name of the current image and some information concerning how this grid was created using a GALLS projection. Latitude and longitude lines for the images are generated with a spacing of 2 degrees.

FIGURE 1

Main menu with display of a map of Norway



The main menu (Fig. 1) have 7 different options and an option is selected by using the UP & DOWN arrow cursor followed by <ENTER> or by typing directly the first character of the selected option. The options are:

OPTION	EFFECT
MARK AREA	MARK AN AREA FOR DATA SEARCH
UTM-ZONE	SET OUTPUT UTM ZONE DURING MAP GENERATION
FACTOR	SET UTM FACTOR
EXPORT	EXPORT DATA TO UTM FILE
NORTH	LOAD A NORTHERLY IMAGE
SOUTH	LOAD A SOUTHERLY IMAGE
QUIT	QUIT/END PROGRAM

FIGURE 2
 Display of South Norway Ega image

SOUTH NORWAY

Scale 70
 Zoom Lat 60
 Zoom Long 7
 Galls Projection

From KYST.BIN
 Start 1
 End 30000

MARK AREA
 UTM-ZONE 32
 FACTOR 100
 EXPORT
 NORTH
 SOUTH
 QUIT

Export Area:
 MIN 50.0 0.0
 MAX 80.0 35.0

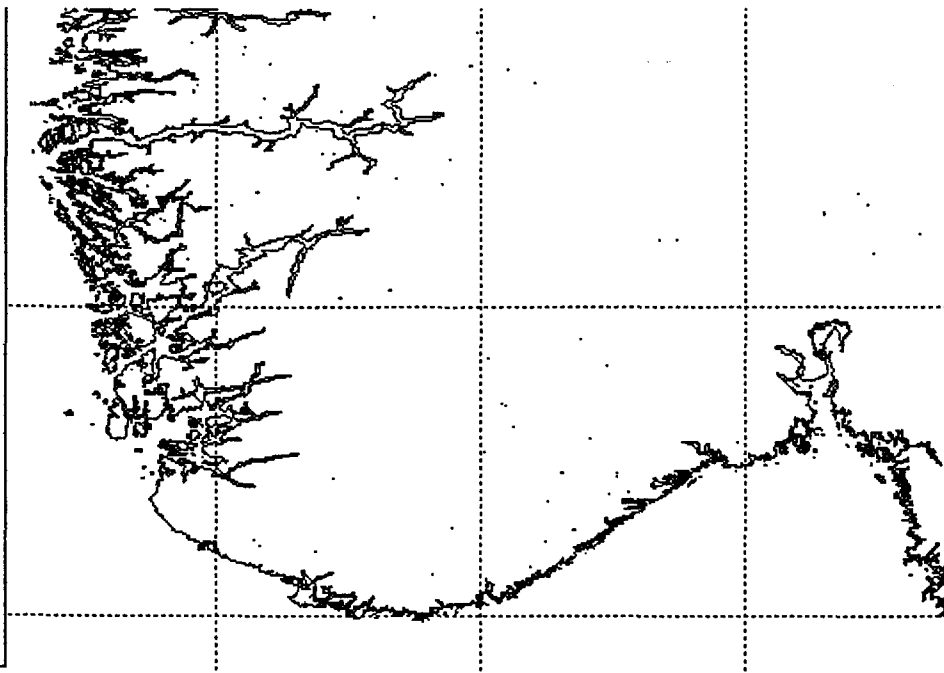


FIGURE 3
 Display of Central Norway Ega image and example of defining an export area by marking a block

MARK AREA
 UTM-ZONE 32
 FACTOR 100
 EXPORT
 NORTH
 SOUTH
 QUIT

Export Area:
 MIN 63.0 7.5
 MAX 63.9 10.1

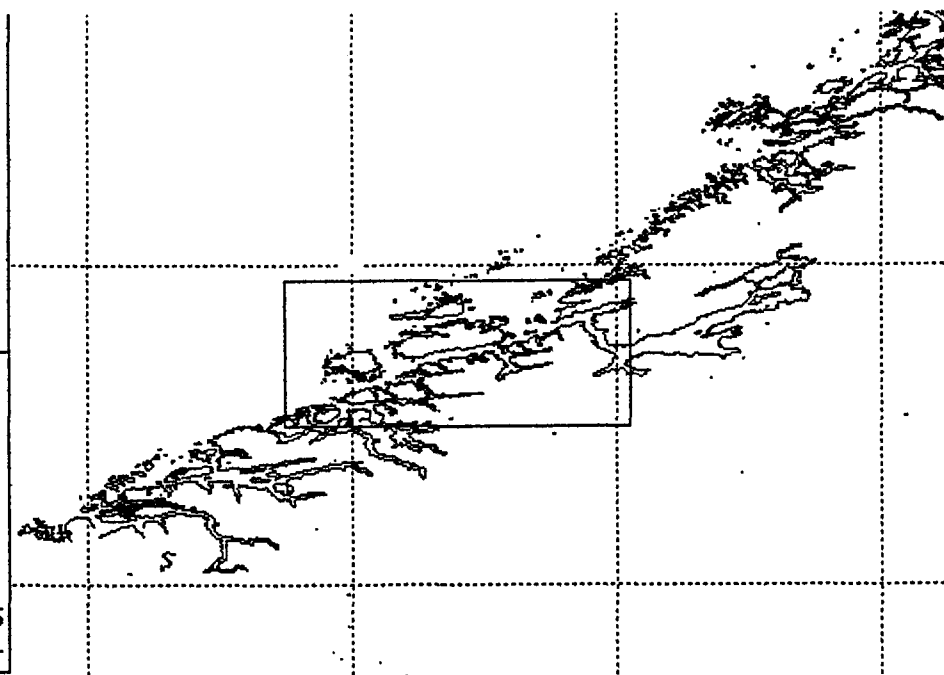


FIGURE 4

Display of North Norway 1 Ega image

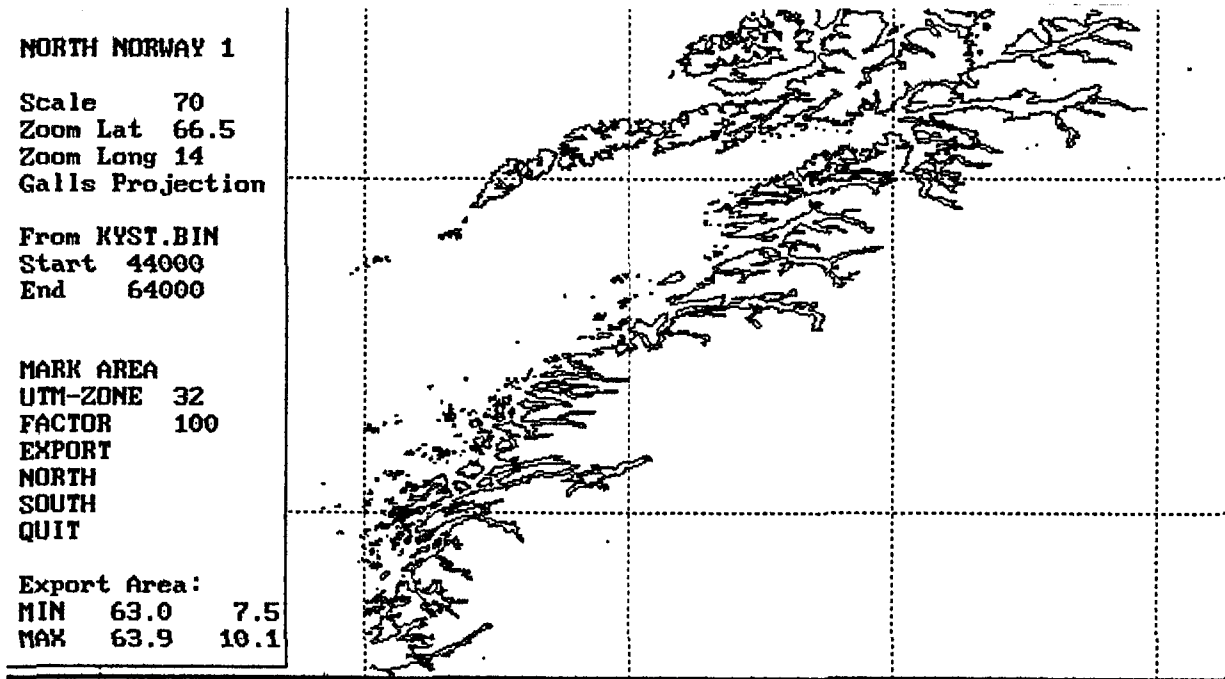
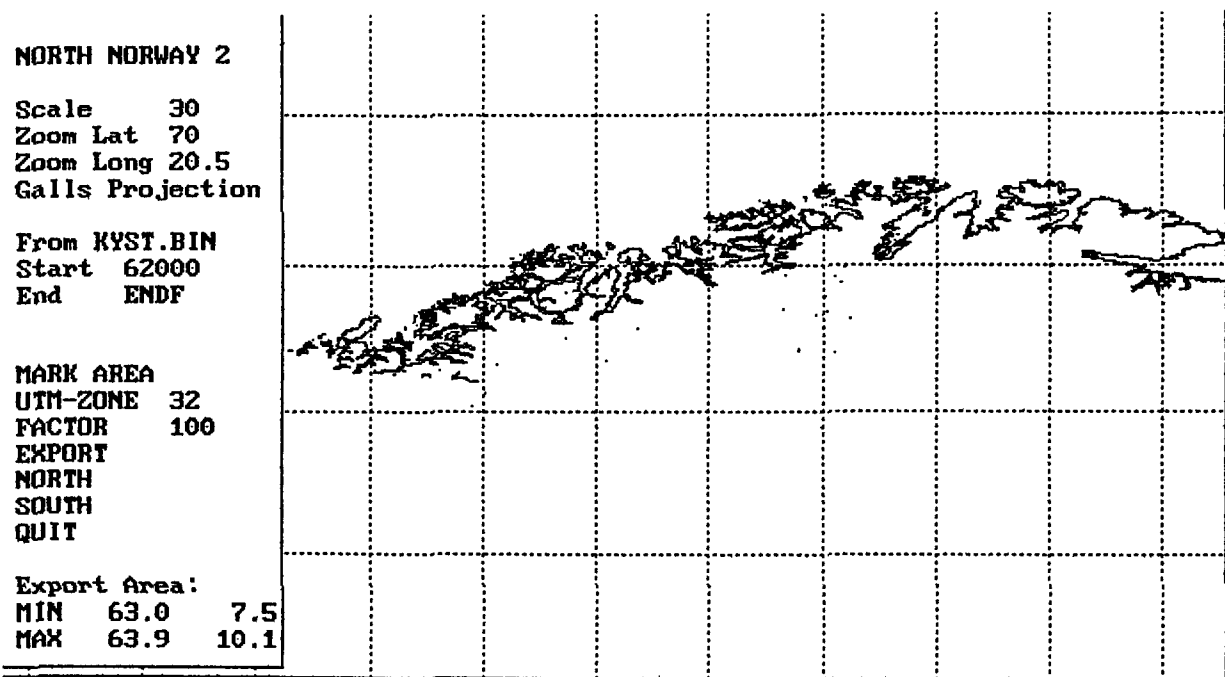


FIGURE 5

Display of North Norway 2 Ega image



2.1 MARK AREA

After having selected the appropriate map of Norway the user can use this option to define the area of EXPORT. In this mode the user uses the cursor arrows to move around in the map. The current Latitude & Longitude and UTM X (EAST) & Y (NORTH) are displayed in the top-left part of the screen. To mark an EXPORT area type <m> and draw a box enclosing the area of interest (Fig. 3). End this option by pressing the <ENTER>/<RETURN> key. In the bottom-left part of the screen the selected area will be displayed in latitude and longitudes.

2.2 UTM ZONE

This option sets the appropriate UTM zone for the exported file. UTM zones 30 to 36 can be selected, and for each time this option is used, one UTM zone is added until it restarts at zone 30.

2.3 FACTOR

This option sets the format or factor of exported data as follows:

FACTOR	Exported UTM co-ordinates in
1	kilometres (Y has 4 digits)
10	100 meters
100	10 meters
1000	meters (Y has 8 digits)

Factor 100 (default) should normally be used since this factor is used in most of the other IMP related programs. Never use factor 1000 for creating a UTM file since the output format only excepts 7 digits.

2.4 EXPORT

This option allows the user to generate data-subset or UTM maps (Fig. 6). The export area is displayed in the top box, and a menu of export options is displayed below. Use the UP & DOWN arrow cursor to edit the various fields in the menu. Seven different data-sets can be included in the EXPORT file, i.e. coast-line, main rivers, county boundaries, side rivers, lakes, roads and petrophysical sampling points. Each of these files could be set to on if they are to be included in the EXPORT file. The output file-name is set to TEST by default, and the user should type the appropriate file name. EXPORT is initiated by typing y (yes) in the bottom field-entry.

NOTE Always display the correct EGA image file before EXPORTING. If EGA image is set to SOUTH NORWAY the program will e.g. not be able to generate a UTM map from a part of Northern Norway.

FIGURE 6

The Export menu. Use UP & Down arrows to edit field-entries.

```
Export to UTM file after selection from CNORWAY
MinLat 63.1 MinLong 7.5
MaxLat 64.0 MaxLong 9.9
```

```
UTM Zone :32
UTM Factor (1=km,10,100,1000=m) :100
Norwegian Coastline :on At Rec 35999 Found 3335
Main Rivers :off
County Boundaries :off
Side Rivers :off
Lakes :off
Roads :off
Petrophysical Sites :off
..... :
UTM Export Filename :test
Start Exporting (y/n) :y
```

```
TEST EXPORTED UTM-FILE (y/n):n
```

During exporting the user can interrupt the process by typing a (abort process). After finishing the EXPORT process (Fig. 7) the user can test the EXPORT process by typing y (yes). The UTM map is loaded and the user can examine the UTM map in detail (Fig. 8). When examining the UTM map you can move the UTM map around with arrow cursor and also set the scale (e.g. 1:50000)

Note A maximum of 7000 co-ordinates are handled in this routine

FIGURE 7

Display of UTM map generated by the EXPORT option

1: 344202



2.5 NORTH and SOUTH

This option controls the displayed EGA image. During start-up a complete map of Norway is displayed with coastline & islands (yellow colour), rivers (green colour), county-boundaries (blue colour) and petrophysical sampling sites (grey colour). Latitude and longitudes shown with 2 degrees spacing. The NORTH (forward) option will take you through all the EGA images, starting with South Norway, Central Norway, North Norway 1, North Norway 2 and finally the complete Norwegian map is displayed. Option SOUTH (backward) reverses this process.

2.6 QUIT

End program.

3. SYSTEM REQUIREMENT

IMPATLAS is developed for IBM compatible computers operated under MS-DOS (version 3 or later). The program and system-files require approximately 3.2 Mbyte. The following hardware is required:

- IBM compatible AT (80286, 80386 or 80486)
- Mathematical co-processor (80287,80387 or 80487)
- EGA (or VGA) graphic monitor
- Minimum 1Mbyte RAM
- Minimum 20MByte Harddisk

IMPATLAS is exclusively run in EGA graphic mode since all images are stored in that format. No printer or plotter support is required since this program only aims to generate UTM maps used in other systems where output facilities are provided.

4. OVERVIEW OF PROGRAM AND SYSTEM FILES

FILE	CONTENT	SIZE (Kb)
IMPATLAS.EXE	MAIN PROGRAM	107
KYST.BIN	COASTLINE	650
ELVA.BIN	MAIN RIVERS	24
FGRENSE.BIN	COUNTY BOUNDARIES	10
ELVSIDE.BIN	SIDE RIVERS	53
LAKES.BIN	LAKES	813
VEIER.BIN	ROADS	288
PET.SOR	PETROPHYSICAL SITES	620
NORWAY.BLU NORWAY.GRN NORWAY.RED NORWAY.INT	NORWAY EGA IMAGES	112
SNORWAY.BLU SNORWAY.GRN SNORWAY.RED SNORWAY.INT	SOUTH NORWAY IMAGES	112
CNORWAY.BLU CNORWAY.GRN CNORWAY.RED CNORWAY.INT	CENTRAL NORWAY IMAGES	112
NNORWAY1.BLU NNORWAY1.GRN NNORWAY1.RED NNORWAY1.INT	NORTH NORWAY IMAGES 1	112
NNORWAY2.BLU NNORWAY2.RED NNORWAY2.GRN NNORWAY2.INT	NORTH NORWAY IMAGES 2	112

5. UTM EXPORT DATA FORMAT

UTM maps are generated as ordinary ASCII files with an X and Y UTM co-ordinate at each line with format F10.2. The exact format is : `__#####.##_#####.##` (`_` = blank). The first line in the file contain `-9999` in the X column followed by a number which is UTM zone multiplied by factor. For example UTM zone 32 and factor 100 gives `3200` in the Y column. The beginning of a data-sequence is marked with `-9999` and `-9999` in the X and Y columns.

6. INSTALLING THE SYSTEM

- a. Create a sub-directory named ATLAS on the harddisk
(MS-DOS command: `MD ATLAS`)
- b. Copy floppy disks (3) to sub-directory ATLAS
(MS-DOS command: `COPY *.* C:\ATLAS`)
- c. Add sub-directory ATLAS to the path-command in the AUTOEXEC.BAT file.
- d. Execute IMPATLAS
(MS-DOS command: `IMPATLAS`)