PRAKLA-SEISMOS INFORMATION No. 45

Computer-Aided Seismic Interpretation System

PRAKLA-SEISMOS

comsets

COMSEIS

GRAPHIC WORK STATION

Display Generator (Fig. 2)

Graphic Processing System

Colour Monitor 1 | Colour Hardcopy | Colour Monitor 2

Control Terminal | Pen Plotter | Digitizer

Tape Units

VAX-11/780 Central Processor and Memory

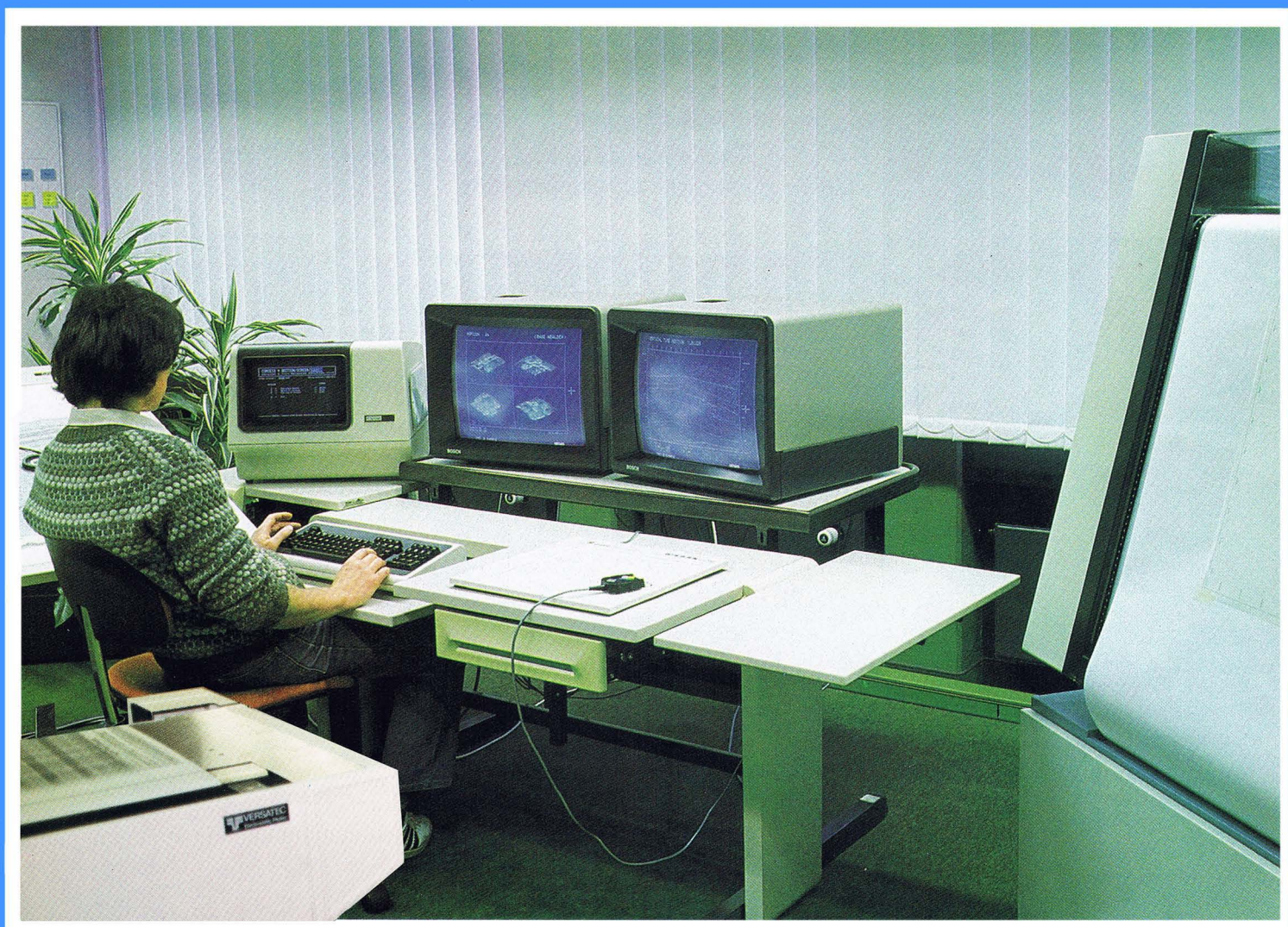Disc Storage

Tape

Rasterizer

Colour Raster Plotter
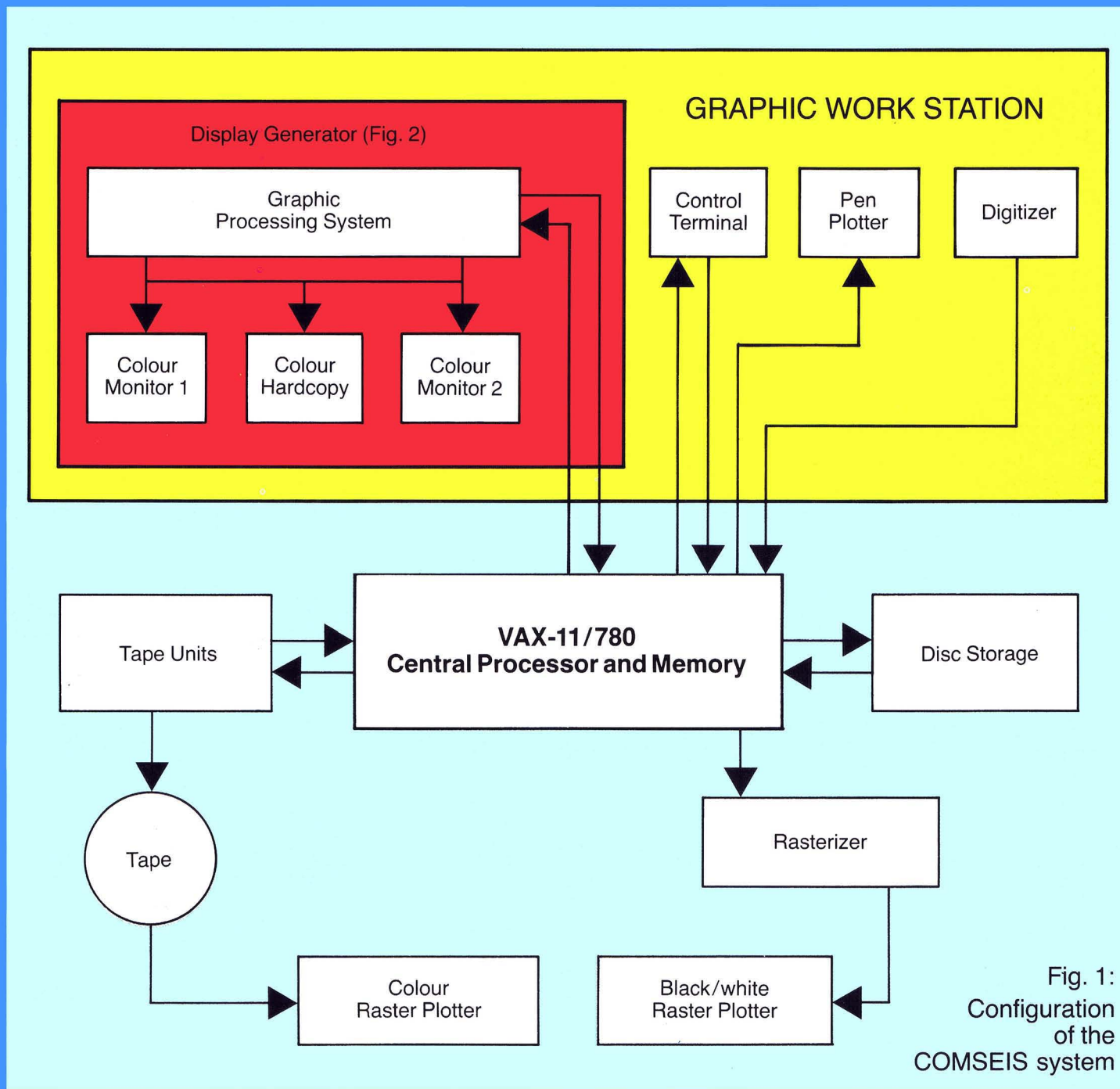
Black/white Raster Plotter

Fig. 1: Configuration of the COMSEIS system

Figure 1 shows the hardware configuration. The central computer of the system is a VAX-11/780. Magnetic tape units are available for reading in the processed profiles, whilst a disc storage with 475 Megabyte capacity is used for storing and keeping ready the lines and slices to be interpreted. The output units used are colour raster plotters and b/w raster plotters as well as pen plotters. The 'real' interpretation of the profiles, however, takes place at the graphic work station (Fig. 2).

Data transfer is made via a 16-bit host interface, which is connected to the VAX Unibus. The 16-bit display processor MC 68000 analyses the commands received, processes them and coordinates the data distribution among the three graphic processors (AMD 2901). A peripheral processor Z 80 controls, the graphic tablet.

The 240 kB (Kilobyte) display list memory is available for storing graphic data and command sequences. Vectors and instructions stored here are processed without involving the host computer.
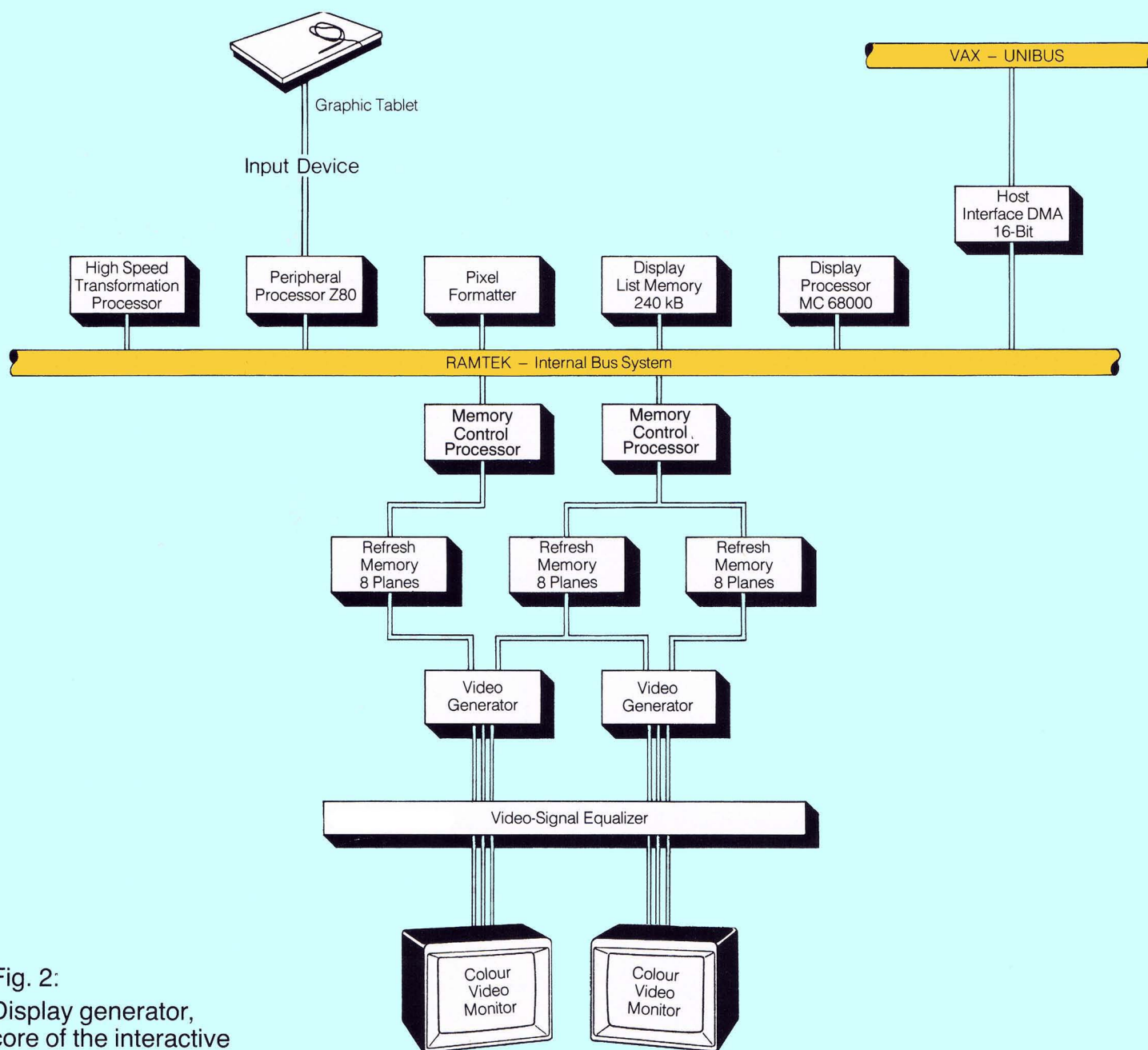
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Fig. 2:
Display generator,
core of the interactive
graphic work station

The graphic processors control 24 'image planes', each with 1280 x 1024 image points or 'pixels', arranged in 3 refresh memories each with eight planes. Graphic information is stored here. Up to ten image planes can be combined and presented simultaneously on one of the colour monitors.
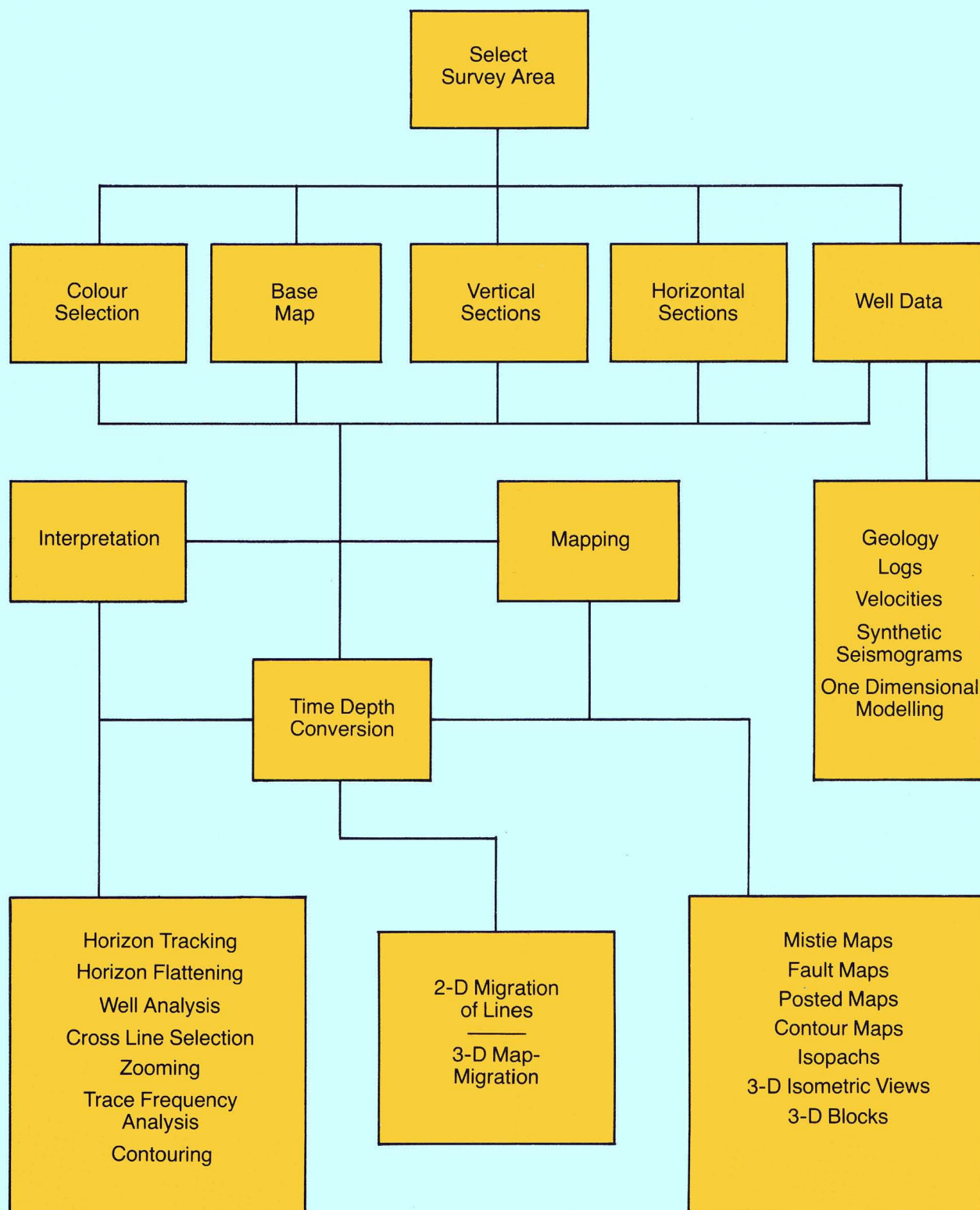
Two video generators are used to create the colour signals on the two monitors; each generator can produce up to 1024 colours from a palette of 16 million.

The vertical and horizontal seismic sections can be displayed and interpreted at the graphic work station. Of course, only short VAR sections or parts of sections can be worked upon with the 19 inch colour monitor. It was therefore necessary to enable the conversion of interesting horizons and faults, gained by interpretation of conventional sections, into numerical values. This is realized by a high-resolution digitizer, which is part of the COMSEIS work station.

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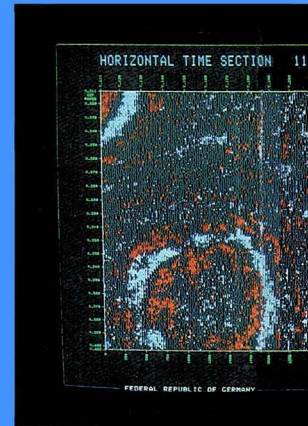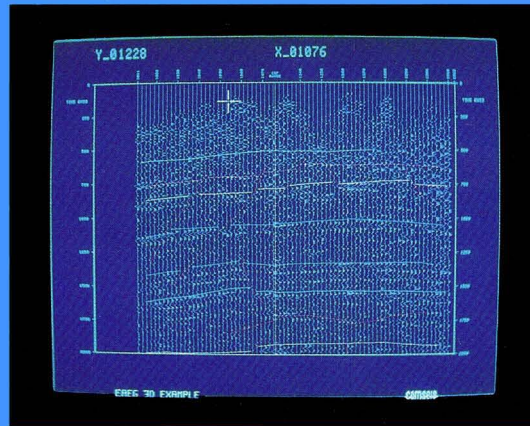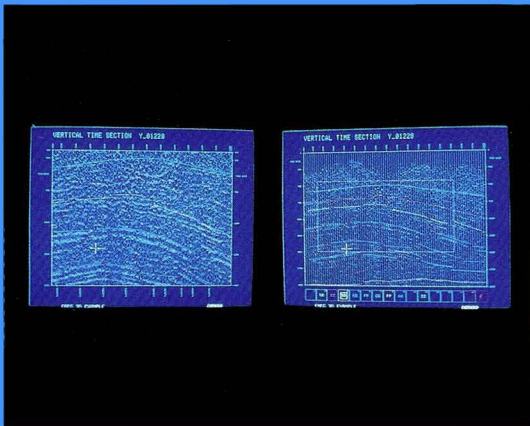
SOFTWARE COMPONENTS

```
                        Select
                      Survey Area


    Colour        Base        Vertical      Horizontal      Well Data
   Selection      Map         Sections       Sections


 Interpretation              Mapping                       Geology
                                                           Logs
                                                           Velocities
                                                           Synthetic
                                                           Seismograms
                 Time Depth                                One Dimensional
                 Conversion                                Modelling


 Horizon Tracking                              Mistie Maps
 Horizon Flattening       2-D Migration        Fault Maps
 Well Analysis            of Lines             Posted Maps
 Cross Line Selection     ———                  Contour Maps
 Zooming                  3-D Map-             Isopachs
 Trace Frequency          Migration            3-D Isometric Views
 Analysis                                      3-D Blocks
 Contouring
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Picking of Horizons

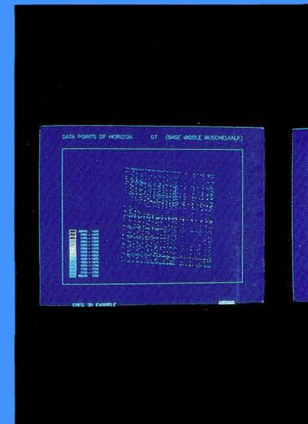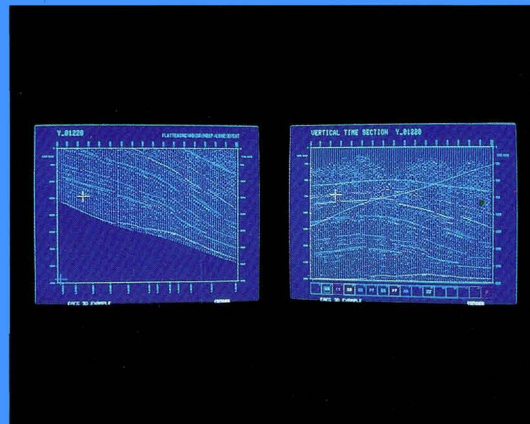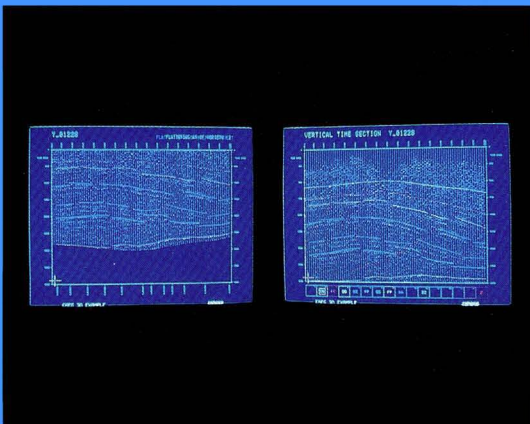| Line	Line/Crossline	Slice

Horizon Flattening

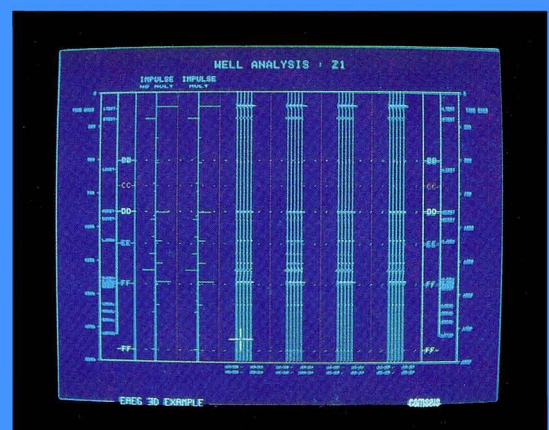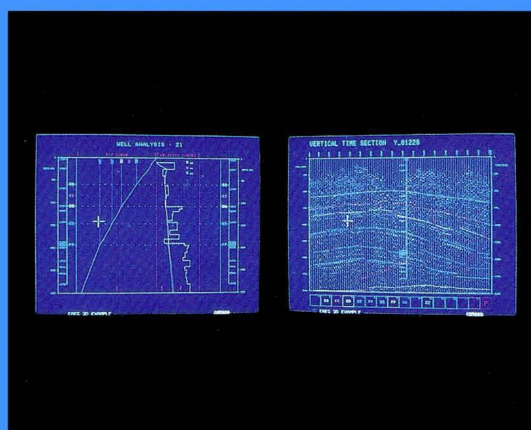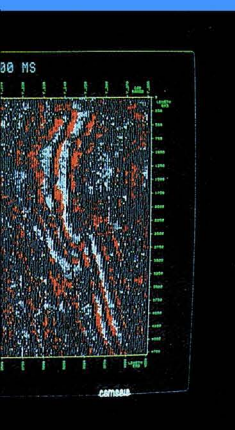| Reference Horizon	Reference Help Line	Colour Coded C

Integration of Well Data

Geology/Velocities/Depths	Synthetic Seismograms

Mapping

ontour Map	Isometric View	Zoomed Isometric View

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