

NAVIGATOR

COLLABORATORS

	<i>TITLE :</i> NAVIGATOR		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		January 28, 2023	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

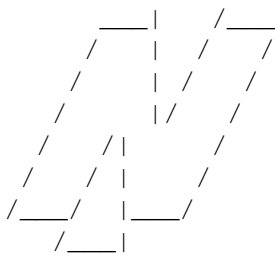
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Chapter 1

NAVIGATOR

1.1 NAVIGATOR User Guide



NAVIGATOR WORLDVIEWER

a virtual reality presentation system for the Amiga

Introduction
Design and Coding by :
Distribution

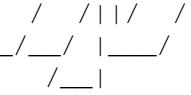
System requirements
Michiel den Outer
Installing
Populierenlaan 59
Loading
2925 CP Krimpen a/d IJssel
Control
The Netherlands
WorldCreator

Contacts
This WorldViewer can be
freely distributed.

1.2 NAVIGATOR Introduction



NAVIGATOR INTRODUCTION



NAVIGATOR is a virtual reality system for the Amiga computer. It allows you to walk/drive and fly around a computer generated world in realtime.

Applications include :

- architectural walkaround systems
- 3D titling
- 3D computer games
- Flight simulators
- Racing games
- virtual art gallery
- prototyping
- music video's
- product presentation

The NAVIGATOR WORLDVIEWER can be used in the following ways :

- live at your presentation
- to make a videopresentation
- to make colourprints
- for design and analysis purposes

Since computer power is limited a realtime 3D computer model is always a compromise between graphic detail and animation speed. Therefore pictures generated by this program can't be compared to photorealistic images produced by 3D modelling software like Lightwave.

However a realtime interactive model has a lot of advantadges over a precalculated animation :

Precalculated Animation	Virtual Reality Model

Immersion

Looking at an non interactive animation is like looking through a window : the world looks convincing through a door. You can walk around, but you are no part of it.	Entering a realtime interactive computer model is like stepping through a door. You can walk around, look around and get the feeling of actually being there.
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Interactivity

The animation is fixed and cannot be changed.	At any time you control the position and orientation of the viewpoint.
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Animation

Artificial, mathematical movements like perfect lines, circles etc	Since the animation is interactive all movements are as natural as they can be
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Cost

Rendering a single photorealistic	No computing costs, everything is
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frame takes hours even on the fastest computers. Considering that an animation must be at least 25 frames a second, this kind of computer animation is very expensive.

Hardware requirements

-a fast processor -a fast processor
 -megabytes of memory
 -gigabytes of disk space

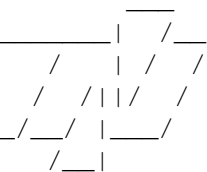
Completeness

You see what the animator wants you to see. This means that you get a complete and objective impression. By looking around you can see the object from it's best but also from its worst side. This means that you get a complete and objective impression.

I hope you agree that a realtime interactive model gives you the best impression at the lowest cost !

1.3 NAVIGATOR System Requirements

NAVIGATOR SYSTEM REQUIREMENTS



This version requires: - a 68020 CPU or higher
 - Amiga DOS 2.04 or higher
 - a 15 mhz monitor

AGA users will enjoy 24 bit colours, a 128 colour copper background and 256 colours in all resolutions. Older machines are limited to 32 colours.

You can make your animation more smooth by installing :

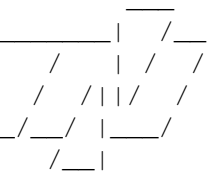
-fast ram
 -32 bit ram
 -a faster/newer processor

-NAVIGATOR is not very memory hungry, but be sure to have some fast ram because it's twice as fast.

-Since this program uses integer maths the use of a FPU will not effect performance at all.

1.4 NAVIGATOR Installing

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NAVIGATOR INSTALLING
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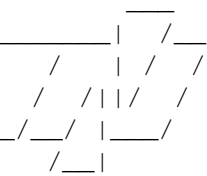


To install NAVIGATOR simply drag the NAVIGATOR icon to the desired place on your harddisk.

The workbench file you need is :
-asl.library in the libs directory

1.5 NAVIGATOR Loading

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NAVIGATOR LOADING
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Double click it's icon from the workbench to run the program. A filerequester will be presented allowing you to select and load a world from disk.

You can also start the program from the Shell and use the worldfile as an argument.

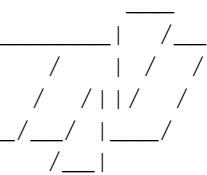
Example : NAVIGATOR worlds:games/jaguar.NAV

It's possible to immediately start a recording file

Example : NAVIGATOR worlds:games/jaguar.NAV worlds:games/jaguar.REC

1.6 NAVIGATOR WorldCreator

```
NAVIGATOR WORLDCREATOR
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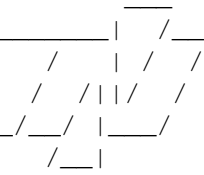


The NAVIGATOR WORLDCREATOR and fileformat are currently not published and will not be in the near future.

All NAVIGATOR applications are developed in-house.

1.7 NAVIGATOR Control

NAVIGATOR CONTROL



<F1> WALK MODE

- use mouse up/down to walk forward/backwards
- use mouse left/right to change direction
- use mouse left/right with right button pressed to step to the left/right
- use mouse up/down with left button pressed to look up/down
- use mouse up/down with both buttons pressed to control height

<F2> DRIVE MODE

- use mouse left/right to steer
- use +,- keys to control speed

<F3> FLY MODE

- use mouse left/right to roll
- use mouse up/down to climb/dive
- use +,- keys to control speed

<F4> ROTATION MODE

By pressing this key you start rotating around your current position.

- use mouse up/down with both buttons pressed to control the radius.
- use mouse with right button pressed to control the angles.

<F5> SHADED HORIZON

Uses Amiga's famous Copper chip to produce a shaded horizon.

<F6> DRAW MODE

1 SOLID

Most realistic mode

2 WIREFRAME

Perfect for understanding constructions

3 SOLID, B&W

Perfect for b&w printing

4 WIREFRAME, B&W

<F7> SURFACE DETAIL

<F8> GRAPHICS ENGINE (What code is used for graphic operations)

1 ROM (AmigaDOS graphics library functions)

Since these functions are part of the operating system they should always work. But for maximum performance you have to hit the hardware more directly.

2 CPU (Motorola 020 code)

The fastest method for the fastest Amiga's. Fasten your seatbelts for the 68040 !!!

<F9> SYSTEM STATE

1 KILLSYSTEM

-128 colour custom copperlist

-multitasking is turned off

-interrupts are still working, so playing a Protracker module in the background is possible.

2 OPERATING SYSTEM FRIENDLY

-multitasking is ON

-uses 2 intuition-screens for screen swapping.

-press p to pause.

<F10> RESOLUTION

1 LOW

320*256 pixels (PAL: Low Res, No Laced)

2 HIGH

640*512 pixels (PAL: High Res, Laced)

o OVERSCAN

The Amiga is capable of filling the entire screen which is perfectly suitable for video applications. Use this screen mode if you want to prevent the boxed computer look.

1 INTERLACE

Use this for video applications

<,> VIEWANGLE

Using a higher Viewangle rises the perspective and gives the suggestion of a wider and bigger world. Use this variable the same way a photographer uses his zoom lens.

z,x DETAIL LEVEL

Use a low level to simplify the model or to increase animation speed.

(,) ROTATION SPEED (1/16 Degrees / 1/50 sec)

-,+ TRANSLATION SPEED (unit / 1/50 sec)

-> Please note that these variables are completely independent of the animation speed : it is possible to walk very slowly in 50 frames a second and fly at mach2 in 1 frame a second.

8 WINDOW SIZE

4 6 Use your numeric keyboard to adjust the window.

2

g GREY/COLOURS

Left Blank Key 24 BITS/12 BITS COLOURS

If you have an Amiga 1200 you can force NAVIGATOR to use 12 bit colours.

i INTENSITY COLOURS

The Amiga is capable of producing 'illegal' colours. These colors look fine on a monitor but when they are put on video tape the results can mean a terrible picture. This option tries to prevent this effect by keeping the colour values below 200

<Spacebar> NORMALIZE Viewpoint and Viewdirection

-height=170 (normal human eye height)

-no banking (horizon is horizontal)

<Help> INFO SCREENS

cycles through the info screens

-> NAVIGATOR uses the same font as your workbench. NAVIGATOR assumes the font to be 8 pixels wide.

Please note that by displaying this screen, the animation speed will slow down.

<Esc> QUILTS PROGRAM

<1> Start recording

<2> Stop recording/stop playing

<3> Play once

<4> Play loop

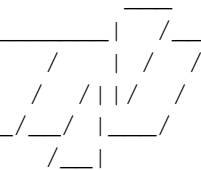
<5> Load record

<6> Save record

- b SHOW BOUNDING BOXES
- e STEP TROUGH ELEMENTS
- c STEP TROUGH CONVEX OBJECTS

1.8 NAVIGATOR contacts

NAVIGATOR CONTACTS



If want a NAVIGATOR model of your design, please contact me at the following address :

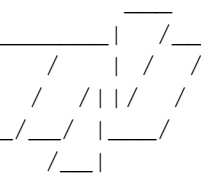
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2925 CP Krimpen a/d IJssel
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After 10/95 : +31(0)180-520798

1.9 NAVIGATOR Distribution

NAVIGATOR DISTRIBUTION



The NAVIGATOR VR system is copyrighted (C) 1994-1995 by Michiel den Outer.

All Rights Reserved.

The NAVIGATOR WORLDVIEWER is freeware.
