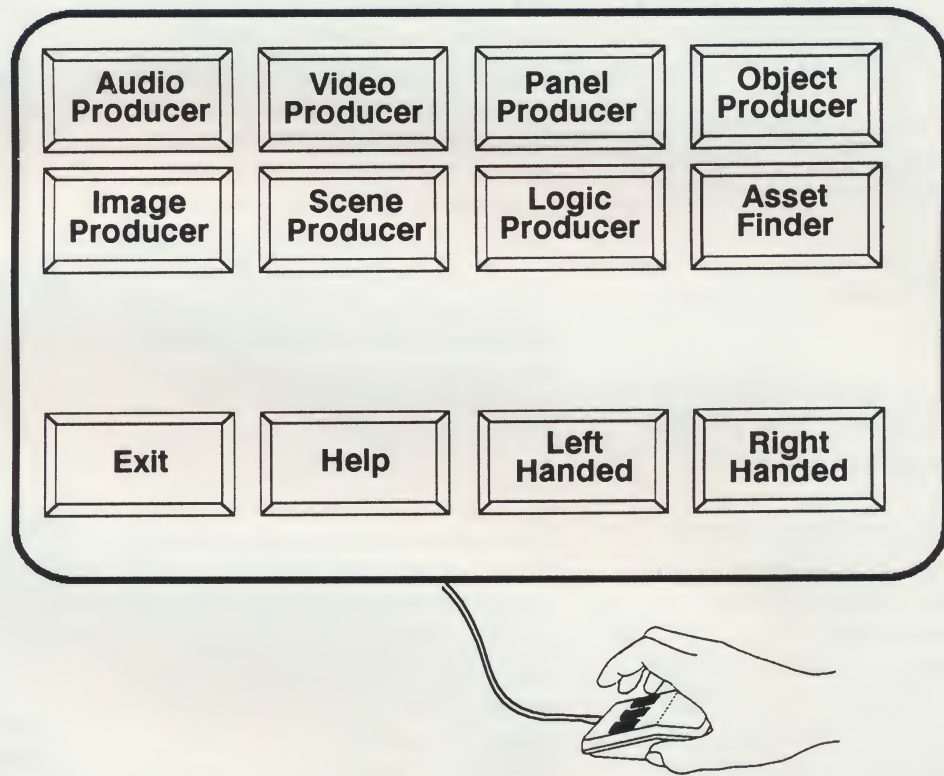


Script Systems

Designers Work Bench



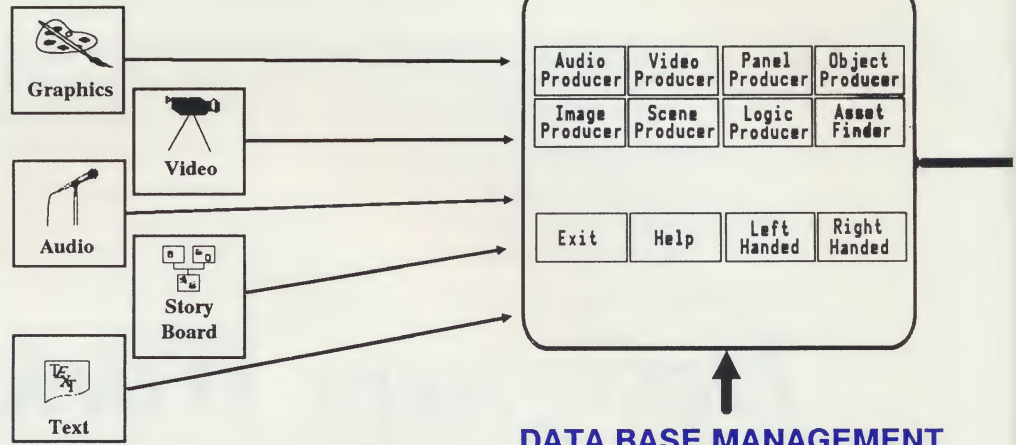
CD-I Title Authoring System

A successful CDI title begins life as a well thought out title story board with high quality content material. The Designers Work Bench (aka DWB) is then used to develop the story board and content material into a finished and working CDI title disc.

Input to the Designers Work Bench Authoring System would include some, or all, of the following:

- *A Story board created by you, the interactive title designer, fully describing the structure, content, flow and other characteristics of the title.*
- *Video display material in digitized graphics rendering or, captured video material files.*
- *Audio presentation material in digitized audio sound track files.*
- *Text and data in either ASCII compatible text files or title compatible data files.*
- *Motion or animated video material in multiple digitized graphics renderings or captured video files. Broadcast quality motion video material can be used. Animation material using full, or sub-screen run length or contemporary cell animation techniques can be used. Frame rates up to 30 FPS can be used.*

Production of the above mentioned materials is accomplished using facilities or equipment of choice. DWB supports a wide range of input file formats including those from Macintosh, PC, Sun and other audio/video production systems.

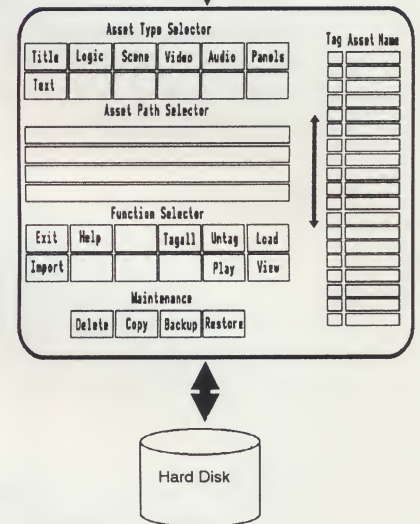


A CDI Title Authoring System should be easy to use. It should not require the developer to have a pre-requisite of engineering or a programming background; nor should it expect the developer to have mastered the Green Book CDI specifications.

Function Selector provides a point and click interface, like all other interaction panels of DWB, to the other facilities and tools of DWB. Over 25 interaction panels, each providing an interface to one or more tools, are accessible from Function Selector. One or more point and click dialogs may be associated with each interaction panel, reducing panel clutter and clarifying tool usage. Automatic help messages in conjunction with dialogs reduce the need to consult user manuals during title development. Operation of all DWB facilities is accomplished using consistent point and click interaction panels with clearly labeled buttons and dialogs. Use of engineering terminology and acronyms has been minimized.

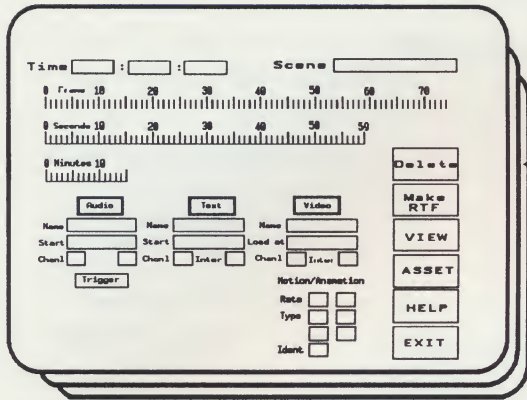
Typical CDI titles will have hundreds and possibly thousands of title asset files (content material files). DWB includes a full data base management system to avoid a potential accounting and tracking problem.

DATA BASE MANAGEMENT



Data Base Asset Management System is a complete data base system specifically designed to address the needs of CDI Title developers. Multiple concurrent title data bases and as many as 15 million asset files per title are supported. Unique methods of asset file selection reduce substantially the number of required accesses to asset finder. Single button data base maintenance facilities are used to perform archive back up, restoration and reclamation. Material sensitive selection combined with instant view facilities simplify and assure access to desired asset files. Up to 8G bytes of on line disk storage can be attached to this system.

SCENE PRODUCER



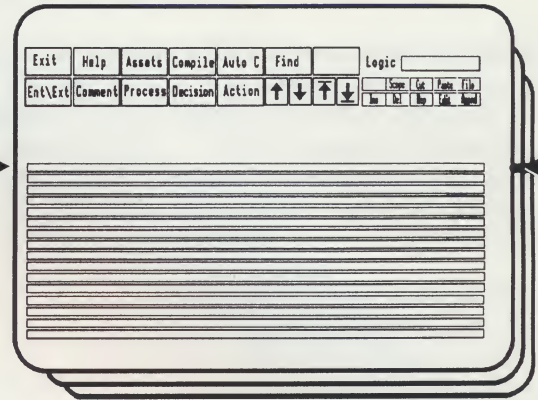
The CDI Green Book standard fully specifies the format and storage requirements for title content material. DWB productivity tools fully support all aspects of title material preparation to the CDI Green Book standards.

Scene Producer, pictured above, is one such example. Using the time line based Scene Producer the developer constructs synchronized audio/video scenes for a CDI title. The developer can preview scenes during construction, "What You See (and hear) Is What You Get". Text, data and video material can be incorporated into scenes and then assigned to multiple interleaved retrieval channels. A total solution to bilingual title requirements is made possible by intermixing text and audio material of the same language on the same retrieval channel. One button construction of Motion Video, Screen and Cell animation scenes is provided.

Other Producer Tools Included In Designers Work Bench Are:

- **Audio Producer** - Converts audio material to CDI standards.

LOGIC PRODUCER

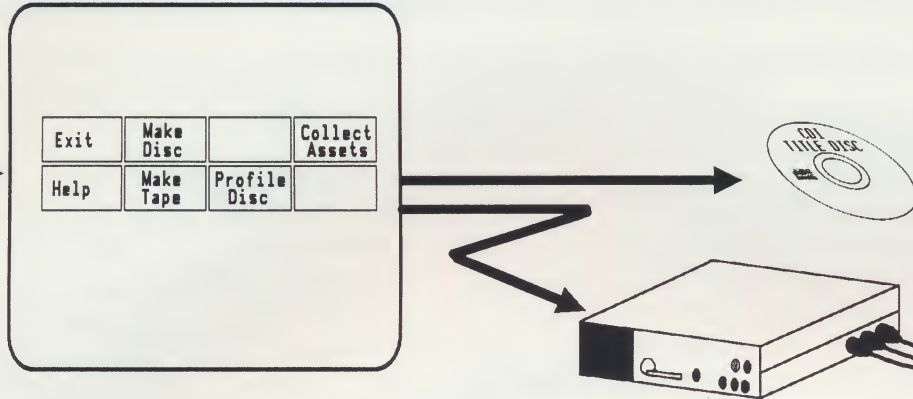


- **Video Producer** - Converts video and graphics material to CDI standards. Includes preparation and encoding of animation and full motion video material.
- **Panel Producer** - Creates title interaction panels in HyperCard fashion and also creates and edits title navigation mechanisms.
- **Hot Spot Editor** - Creates and edits interaction panel hot spots.
- **CLUT Editor** - Creates and edits Color Look Up Table values. A must when using CLUT cycled animation or 3D button effects using CLUT cycle approach.
- **Window Editor** - Creates and edits windows (view ports).
- **Pointer Editor** - Creates and edits pointer styles.
- **Text Editor** - Creates and edits ASCII text presentation control objects.
- **Font Editor** - Imports and edits ASCII text presentation fonts.
- **Sound Map Editor** - Creates and edits sound maps used to present audio material from memory as opposed to disc.

- **Cell Editor** - Creates and edits video cells which are used for cell animation and full motion video presentations.
- **Movie Editor** - Creates and edits movies, a unique facility of DWB used to define how and in what order scenes are presented.
- **Audio Editor** - Used to edit and preview CDI ADPCM audio files.

Verification and Constraint Analysis are required features of any CDI Title Authoring System. All productivity tools mentioned above provide instant preview verification, thus assuring the material being prepared meets all of your needs. Automatic constraint analysis is also incorporated, thus preventing the possibility of creating material which can not be presented on CDI (material which exceeds the capability of CDI).

DISC IMAGE PRODUCER



A presentation control program writer tool is a must. Developers who have no C programming experience must be able to fully develop CDI titles; likewise, those with C experience must have tools that automate the C programming process.

Logic Producer, pictured above, and its companion run time library, address these needs by use of a high level, tailored for CDI, scripting language. Logic Producer creates and edits script files using a bouncing ball approach eliminating the possibility of programming errors. Auto C facilities convert scripts to error free annotated C program source files that are compiled by using the Compile button. A high level, full function CDI run time library that can be user extended is included. Library functions are directly accessible from script, as are system functions and user written C functions. This high level, open architecture approach assures the developer that DWB can be used to implement any CDI title.

The **Scripting Language** is rich and full featured. The following highlight some of these features:

- **Animation Presentation** - Screen, sub-screen or cell

- **Full Motion Video** - To Green Book UVLO standards. Full screen (MPEG) motion video will be added when it becomes part of the Green Book standard.
- **Subroutine Calls** - To script, library, C or system functions
- **I/O Support** - Read and random read CD, CD real time file play with random access and also read/write disk.
- **Variables** - Unlimited number, integer, character, string and lists
- **Conditionals** - If, If/Then, If/Then/Else, Case and While with nesting.
- **Computations** - Add, subtract, multiply and divide with remainder.
- **Graphics** - Draw outline or fill - polygon, rectangle/square, circle, elliptical, rounded rectangle and others.
- **Pointers** - Pointer manipulation, style change, color change, resolution change, location determination and more.
- **Panels** - Activate in either hierarchical or browsing, dynamic and static hot spots and more.

- **Text** - Presentation from memory or CD, any font and color of choice, smooth scroll in all 4 directions
- **Partial Screen Updates** - Sub-screen, high speed copy of CLUT and DYUV image types.
- **Timer** - Clock or display refresh based - Wait until, repeat every, wait until pointer move or button and others
- **Effects** - Video (over 400 available), audio, pointer and text
- **Sound Map** - Load from CD play from memory with loop back settings
- **Scene Play** - Audio, video and text retrieval, random access, channel selection, single or multiple scenes in sequential or random order with linkages (HyperMedia)

Building real time files and disc images is a complex (engineering oriented) task. Doing so with the added requirement of title optimization is even more difficult. The unified smart tools approach of DWB, however, can and does reduce this to a fully automatic single button task.

Disc Image Producer, pictured above, addresses these very important needs. Touching the Make Disc button will initiate system activities that result in construction of a CDI compatible disc image. During construction the disc image is fully optimized to deliver best possible access and retrieval at title run time. The CD Emulation facilities of DWB which perform 100% emulation of a CD disc drive is then used to test the disc image. Following successful testing, the Make Tape button is touched to automatically create a master plant compatible pre-master tape.

Non-Technical Approach

Designers Work Bench is a revolutionary CDI Authoring System used to create interactive multimedia CDI application titles. It's easy to learn and use "non-engineering" approach to title development allows non-technical interactive and subject matter experts to develop and implement CDI application titles. Aide and assistance from engineering or programming staffs are reduced or, in most cases, eliminated altogether. Its extensive use of the unique concept of "smart tools" allows non-technical personnel to fully exploit the presentation facilities of CDI without reference to the extremely complex and lengthy CDI Green Book specifications.

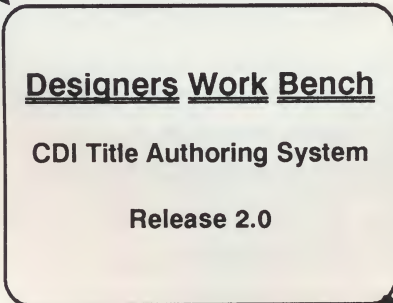


Immediate Results

Designers Work Bench's non-technical environment allows you to focus your efforts and attention on the design and content of your title rather than on its mechanics. Built in productivity aids, smart tools and high level run time library make authoring a simple, efficient and pleasurable task, greatly reducing development time, costs, headaches and risk. By using the DWB approach, immediate results are realized. You literally see your title come to life using the "What You See (and hear) Is What You Get" approach of DWB.

Harness The Power Of CDI

With Designers Work Bench you can harness the true power of CDI and your title design ideas. The successful combining of text, graphics, sound, animation, video and motion video with your interactive design ideas is assured when using the Designers Work Bench. You can create CDI multimedia titles for learning, reference, simulation, merchandising and entertainment.



Real Time Presentation

Your title users will also enjoy the benefits of Designers Work Bench in the form of very quick (and unsurpassed) access, retrieval and presentation of real time content information and material.



Designer Work Bench Product Content

DWB is delivered as a user installed software product that includes the following components:

- Over 400 separate program and data files which collectively make up the sum of Designers Work Bench. These files are divided for use on PC DOS and OS9/CDRTOS.
- 2 printed circuit cards designed for use in an IBM AT compatible personal computer. Bus slot requirements include one 16 bit slot and one 8 bit slot.
- A 200+ page technical users manual that fully describe the product at an engineering level.
- A 200+ page DWB user manual that fully describes all aspects of DWB at the developer (non-technical) level.
- A 100+ page DWB Tutorial manual which shows many different examples of title presentation methods with Logic Producer scripts.
- A complete installation and check out guide with step by step instructions on how to install, test and maintain DWB.

(Fully assembled and integrated systems based on Compaq Personal Computers are also available.)

Host system requirements

- The host system into which DWB will be installed must include: a Personal Computer; a Philips CDI player; and a high capacity SCSI hard disk drive.
- A Personal Computer of the AT type, preferably either 386 or 486 high performance models, with at least 2 Mb of memory, 4 Mb preferred.
- At least 20 Mb of available hard disk space on the Personal Computer system disk, drive c:.
- 2 available card slots, one being of the 16 bit type.
- The Personal Computer must be running either Microsoft Windows 3.0 or QuarterDeck DesqView windowing systems.
- A SCSI (CDC/Seagate WREN compatible) hard disk must be available for attachment to the system. The SCSI bus interface controller is included with DWB. There should be at least 800 Mb of SCSI hard disk and ideally as much as 2 Gb.
- A Philips professional CDI player Model 180 or 602 type.

Complimentary Products

- Video: Truvision ATVista, Targa+ or NuVista cards with related software, PC Paintbrush, Corel DRAW, Windows Paint, Micrografx Designer and others
- Audio: MicroSound 16 for PC's or DigiDesign for Macintosh and others
- Animation: Autodesk Animator, Macromind and others.

If you have any question contact Script Systems Inc. @ Tel (315) 866-7197 / Fax (315) 866-7206

Script Systems Inc.
Ferncliff Road
P.O. Box 39
Mohawk, N.Y. 13407