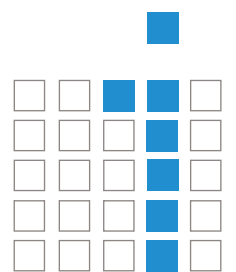


Introducing IRIDAS

The Future of Uncompressed Playback Solutions.



IRIDAS

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Introducing IRIDAS

Founded in 2000, IRIDAS Digital Interaction Design is quickly becoming a recognized leader in the digital media and digital content creation industries. IRIDAS products provide a range of software-based solutions for a wide variety of playback needs: from the digital artist working out of her home right up to advanced stereoscopic digital projection with multi-channel sound.

IRIDAS' FrameCycler applications have become the standard for uncompressed playback in the filmmaking industry. In the rapidly developing field of dynamic media, IRIDAS' products have found uses in areas as diverse as scientific research, theme park rides, and game developers. And the list keeps growing...

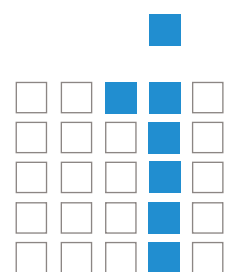
IRIDAS has its origins in providing easy-to-use playback tools for film and broadcast post-production work. The secret to FrameCycler's success has been its development in close collaboration with real users doing real work. An extensive beta program involving leading post-production artists and facilities ensured that the products were usable and reliable. Product development has always been driven by the needs of users, rather than the schemes of developers. New features were added at the request of people working in industry, not because a software engineer thought that a capability would be cool.

Today, as then, IRIDAS values the close relationship with its user community and continues to base its product development around its customers' needs.

IRIDAS playback systems are robust, efficient and highly user-friendly. The applications are easy to learn because they work the way people do. FrameCycler Professional puts uncompressed film resolution playback capability on the digital artist's desktop. FrameCycler DDS provides facilities with uncompressed direct-from-disk playback at resolutions of 2K and higher. FrameCycler 3D and DDS Bichannel are sister products that allow for stereoscopic playback while retaining the same functionality and ease-of-use that made the original FrameCycler so popular. IRIDAS DCPS – the only uncompressed digital playback technology available today for Electronic Cinema – opens to the door to a whole new range of possibilities from digital projection systems to complex 3-dimensional sound- and visual simulations.

IRIDAS is based in Munich, Germany. Its customers include major Hollywood production houses such as ESC Entertainment, Digital Domain and Warner Bros. Feature Animation, major European post-production houses such as Jim Henson's Creature Shop, broadcasting and CG companies around the world, and many, many individual artists.

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IRIDAS

Thinking Outside the Box

The FrameCycler Family

The FrameCycler family encompasses three core products as well as numerous custom solutions for various VFX and CG facilities. FrameCycler breaks with the past where playback was done through proprietary “black box” systems. Such closed systems forced artists to rely on inferior playback quality and wasted time because they required users to convert frame sequences to a video format before they could be reviewed.

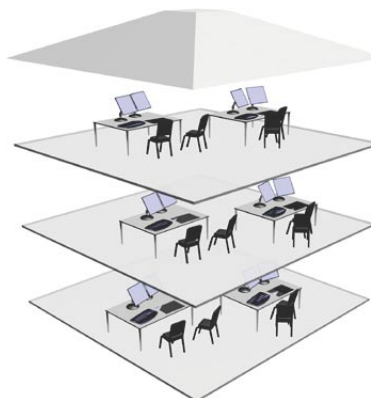
By creating a software-based playback system that can read (and write) all standard industry formats and runs on commodity hardware, FrameCycler allows artists to do all their work in the same place, on the same machine. And most importantly, with FrameCycler digital content creators can now view their work in full resolution and at full speed.

Digital Cinema Playback System

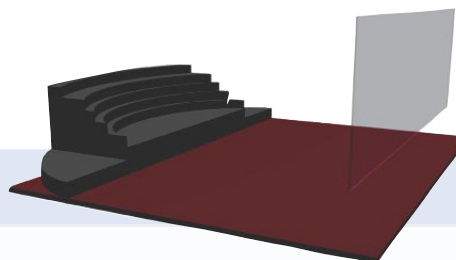
The Digital Cinema Playback System (DCPS) is the latest addition to the IRIDAS product line. DCPS technology makes it possible to present high-resolution digital projection – including stereoscopic projection – together with multiple sound channels. Unlike other digital cinema systems, DCPS is optimized to allow for uncompressed playback greatly enhancing image quality. Besides digital film projection, DCPS technology opens new horizons for theme park rides, visual simulations, and professional presentations.








Personal playback tools for freelance digital content creators.



Complete playback and digital dailies infrastructure for post production houses.



Digital movie Playback for Electronic Cinema, product presentation and theme park attractions.

Product	Description	Key Features	Typical Users
	Total playback control on your desktop simplifies review process and speeds up workflow	<ul style="list-style-type: none"> • Uncompressed, film-resolution playback • ILAP (Intelligent Look-Ahead Playback) technology • Full sequence analysis tool set 	Individual artists; workstation playback tool for larger facilities
	Stereoscopic playback for digital artists and animators	<ul style="list-style-type: none"> • Uncompressed, film-resolution Stereoscopic playback • Sound and overlay support • Stereoscopic color picker 	Individual artists; workstation playback tool for larger facilities
	Instant access to unlimited playback for studios and post-production houses	<ul style="list-style-type: none"> • Uncompressed, film-resolution playback at 2K and above • IHSS (IRIDAS High Speed Stream) format • Direct-from-disk playback 	Digital content studios and post-production facilities
	Unlimited stereoscopic playback and review system	<ul style="list-style-type: none"> • Enhances FrameCycler DDS with bichannel IHSS and stereoscopic capabilities 	Content creators for ride films and large format 3D movies
	The digital cinema technology of the future	<ul style="list-style-type: none"> • Unlimited direct-from-disk playback • Uncompressed file format • Multiple sound channels • 3D projection 	Cinemas, theme parks, presentations and visual simulations

Review Tools That Rule

The Playback System for Control Freaks

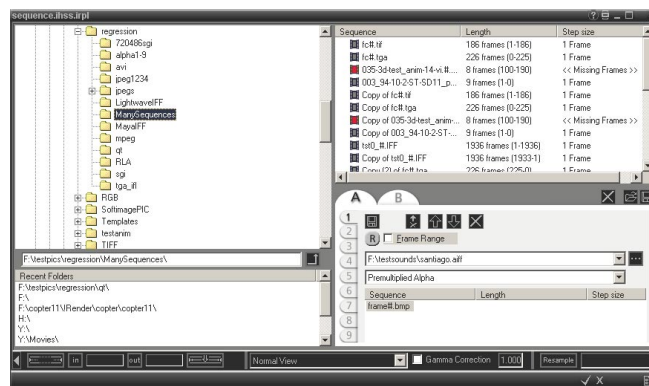
FrameCycler products provide artists with total playback control. These playback systems work in tandem with content-creation applications giving artists instant access to their projects at every stage of the pipeline.

A rich set of viewing options, include the ability to set in/out points anywhere in a sequence, and do ping-pong, loop, or single-run playbacks. Users can scrub sequences, mirror in real time, crop, and resample and adjust frame rates. FrameCycler provides zoom and panning tools as well as horizontal and vertical mirroring options. A/B channels enable artists to do live comparisons of sequences during simultaneous playback.

Quick Compositing

This handy tool allows animators to easily experiment with different backgrounds behind characters. FrameCycler supports up to nine compositing layers, enabling

artists to preview complex sequences, or show mock-ups of material in development to clients:



A powerful sequence browser with playlist, quick compositing and A/B channel support.

Sounds Good to Me

FrameCycler can read .wav and .aiff as well as QuickTime, AVI and MPEG sound files allowing artists, for example, to use the sound track from one sequence with the visuals of another. Sound support includes the ability to slide sound back and forth interactively through hotkeys, allowing the user to quickly match sound to an existing sequence.

When scrubbing with matched sound playback, FrameCycler Professional even adjusts sound frequency to match playback speeds and plays sound backwards when the playback direction is reversed – a novelty on PC-based systems.

"For recent films such as Panic Room and SpyKids II, we have been using FrameCycler extensively to preview film resolution image sequences in real time.

This has been a most valuable tool and easily accessible on all our artists' workstations."

*David Ebner
Digital Effects Supervisor/President
Computercafe*

Backwards playback of sound is especially useful for editors and animators doing lip-sync work.

A Full Spectrum of Color Spaces

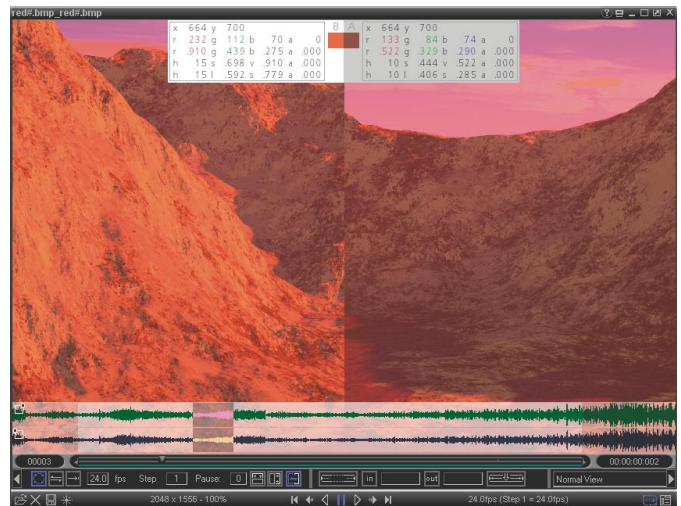
In addition to the standard RGB view, FrameCycler supports a variety of color modes for detailed sequence analysis. Every color channel can be viewed independently. Alpha channels can be viewed separately or as red "Quick Mask" overlay. Advanced channel views, include, HSV, HLS, XYZ, CIE L*a*b, YUV, YIQ as well as NTSC and PAL invalid color check modes. The advanced color-space modes are a great help for compositors trying to find artifacts in their composites.

A User Interface Built for Users

FrameCycler applications feature a highly optimized user interface including a full-screen Directors Mode and complete hotkey navigation. The entire FrameCycler tool set is placed at the bottom of the screen, out of the way but within easy reach when needed. Drop-down menus, begone!

Command Line Interface

The command line interface helps artists and technology supervisors integrate FrameCycler Professional into their existing infrastructures. Users can access files, do quick composites, or have a series of A/B sequences launch automatically – all from the command line.



A/B channels enable the artist to do live comparisons of two sequences during simultaneous playback.

Versatility is its Middle Name

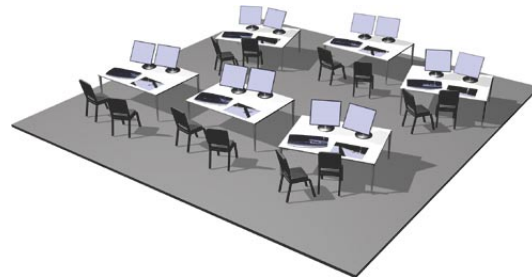
Nothing stumps FrameCycler! In addition to frame sequence playback, FrameCycler supports playback of QuickTime, AVI and MPEG-1/2 files and is able to save sequences to AVI, TGA, PIC, TIFF, IFF, Cineon, DPX, MPEG-1, and QuickTime, including full sound support for digital movie formats. (Now say that fast three times!)

A History of Innovation

FrameCycler was, born like so many great ideas, almost by accident when IRIDAS founder and CEO Lin Sebastian Kayser was searching the Internet for a viewer to open an uncommon file format. He found a freeware program that seemed to do the trick. At some point Lin happened to load a numbered sequence of files into the application.

To his surprise, the viewer opened them in rapid succession, creating the flipbook effect that children (and some adults) use to create simple animations. This intrigued Lin and he soon developed his own flipbook application and posted it on the Web as a free download. FrameCycler 1.0 was born. 15,000 people downloaded the application. Praise, suggestions, and requests for features and new file formats began to flow in. As the back-and-forth dialogue grew, a committed beta group emerged and development work on FrameCycler began in earnest.

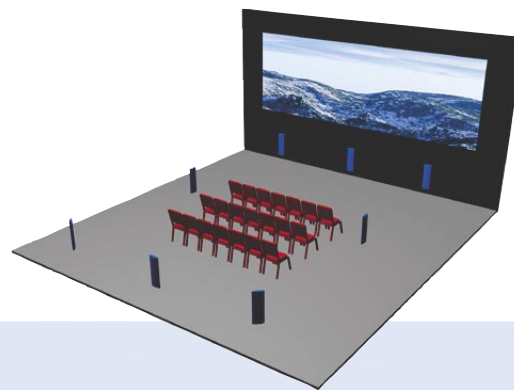
FrameCycler 2.0 Studio Edition, the first for-sale version of the application, was released in April 2001. By this point major film studios were becoming involved and a distinguishing hallmark of IRIDAS was quickly established: customers are partners in product development. Sometimes this meant adding to the FrameCycler tool set, sometimes it meant providing customized solutions for individual studios' unique needs, and sometimes it meant the birth of a whole new product. FrameCycler Digital Daily System (DDS) is one example. Here's how it happened...



The original RAM-buffered review tools bring film resolution playback to every desktop in a post-production house.

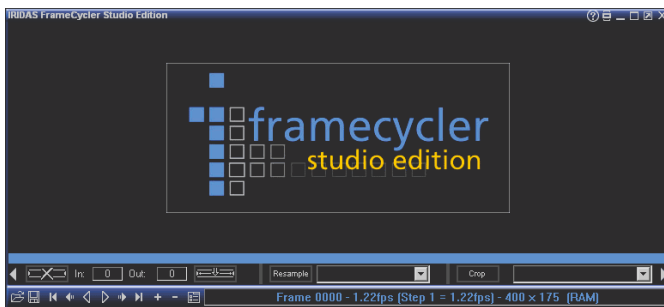


FrameCycler DDS brings unlimited length playback for client sessions and full movie reviews.



The IRIDAS Digital Cinema Playback System provides playback with surround sound support to screening rooms, Electronic Cinemas and theme park attractions.

FrameCycler Studio Edition performed its magic by preloading uncompressed frames into memory so that these could be played back in real time at full resolution. "This was a godsend for digital artists," says IRIDAS VP Research & Development Michael Gallo. "Before this they wasted a lot of time converting their renders into low res video formats, or sending files off to be put on film." Everyone in the business has war stories to tell about the problems that these review methods brought with them.



The original FrameCycler 2.0 Studio Edition's user-centric design made it a great success with digital artists.

FrameCycler solved most of these problems immediately, but as a RAM player it still had one limitation: the length of playback sequences was restricted by the amount of RAM available. This problem gave birth to FrameCycler DDS.

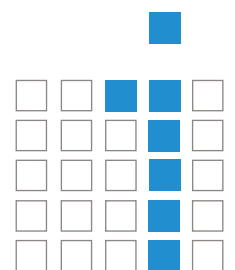
At SIGGRAPH 2002 in Los Angeles a VFX supervisor from a leading VFX company approached Lin and asked if

IRIDAS could create a direct-from-disk player that would allow (theoretically) unlimited playback. Lin carelessly replied that it wouldn't be a problem and committed himself on the spot to delivering such a system. Once the IRIDAS team set to work, however, this "simple conversion" turned out to be quite difficult. In the end the problem was solved through the invention of a new file format: IRIDAS High Speed Stream (IHSS). The new FrameCycler Digital Daily System was able to read and write virtually all industry standard file formats and convert these on the fly to and from IHSS. FrameCycler DDS was able to play sequences from a RAID subsystem so that a facility could review an entire film while still in post-production.

Today DDS Infinite, the most recent addition to the DDS line-up, can play all 8, 10 and 16 bit industry formats, including Cineon, direct-from-disk at full speed without having to convert the file at all.

The FrameCycler family is a mature and highly reliable product group which will soon be available for all major operating systems creating true cross-platform compatibility and a complete playback infrastructure for any facility doing digital content creation. IRIDAS playback technology is now finding sophisticated new uses in areas such as stereoscopic projection, visual simulations, and digital cinema.

Contact: +49 (89) 330 40 982 email: info@iridas.com



IRIDAS

Uncompressed Playback for Workstations



FrameCycler Professional is the fastest playback system for PC workstations available.

Because it does not need to compress files in order to play them, the risk of new artifacts appearing in the artist's work is eliminated. FrameCycler Professional simply plays frame sequences directly (without first converting them to a video format) saving time and maintaining the integrity of the original images. In addition to frame sequences, FrameCycler Professional plays digital video files such as AVI, QuickTime and MPEG.

"Like a missing jigsaw puzzle piece, FrameCycler stepped into our pipeline and filled in the spaces where our system was weak. Our animators now have a tool that provides fast and flexible playback for frame checking, testing render compositions, and client approval meetings.

*Micheal Hardison
CG Supervisor at Pixel Magic*

A rich set of viewing options and a full complement of powerful sequence analysis tools provide digital artists with total playback control.

ILAP Laps the Competition

FrameCycler Professional speeds up workflow by loading and playing uncompressed frame sequences at more than twice the speed of conventional playback software. The secret is IRIDAS' innovative Intelligent Look-Ahead Playback (ILAP) system. ILAP is a unique RAM buffering technology which pre-loads upcoming frames in the background while a sequence is playing. ILAP even reads ahead predicatively for both forward and reverse playback.

Besides accelerating playback, ILAP also dramatically reduces the time lag which occurs whenever the file size of a sequence exceeds available RAM.

Analyze This (Sequence)

Sophisticated playback controls allow the user to set in and out points, slowdown or speed up playback in 1fps increments, reverse playback, zoom, crop, mirror and resample on the fly. It is also easy to check for artifacts or defects in frame sequences using analysis tools such as the color picker.

Meet the The Playback Powerhouse

FrameCycler DDS

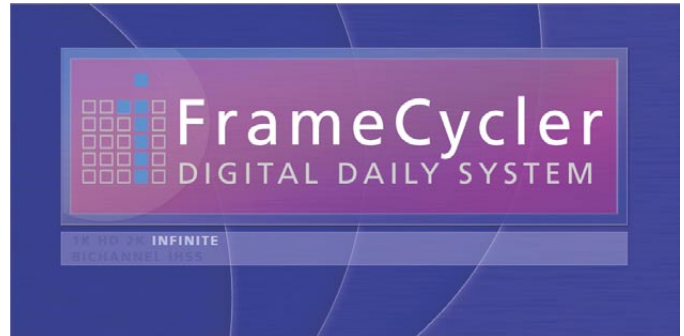
The FrameCycler Digital Daily System is one of the most powerful digital playback applications on the market today. Developed in close cooperation with some of the world's leading VFX houses, FrameCycler DDS enables users to review and analyze any length of uncompressed digital film sequences in real time and in full resolution.

Turning Over a New Leaf

Breaking with the old habit of proprietary "black box" video players, FrameCycler DDS uses a PC workstation connected to a powerful RAID subsystem to stream film sequences direct-from-disk to a high-resolution display or a digital projector. This, coupled with full sound playback capabilities, enables facilities to screen entire movies digitally while they are still in post-production.

Get Integrated

Full command line functionality and a powerful conversion application for batch processes, make it simple to



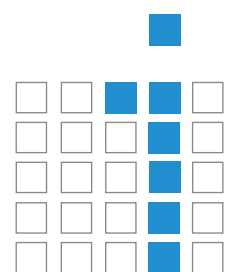
integrate FrameCycler DDS into existing post-production pipelines.

FrameCycler DDS also integrates seamlessly with FrameCycler Professional providing a complete playback and review infrastructure across the whole post-production facility.

FrameCycler DDS Infinite, the newest member of the DDS line, even allows for full speed direct-from-disk playback of uncompressed 8, 10 and 16 bit industry formats, including Cineon.

"With FrameCycler DDS's we have the ability to play back hours of full resolution digital film material, load cut lists from our Avids and then play these on the fly. With the ability to pre-view 2K dailies before they are sent to film, FrameCycler has dramatically improved our Post-Production workflow"

*Kim Libreri
Visual Effects Supervisor at
ESC Entertainment*



IRIDAS

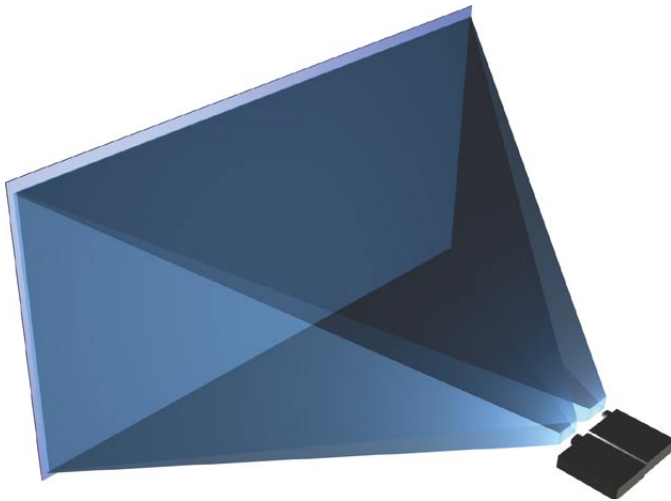
Watch with Both Eyes

FrameCycler 3D

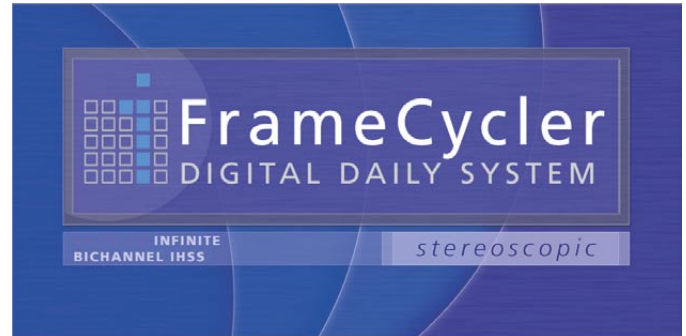
FrameCycler 3D is built on IRIDAS' robust FrameCycler Professional technology. Developed for creators of 3D movies, rides, and other high-resolution applications, this workstation player delivers total control over stereoscopic sequence playback and a full complement of tools allowing digital artists to analyze uncompressed sequences at the click of a mouse.

Stereoscopic Playback Options

With FrameCycler 3D artists can play back stereoscopic content in real time using active stereoscopic glasses,



The stereoscopic versions of FrameCycler support active shutter glasses as well as dual head projection setups.



red/cyan glasses, or side-by-side stereo display across dual head setups for polarized digital projection:

FrameCycler DDS Bichannel

FrameCycler DDS Bichannel adds stereo playback functionality to the powerful DDS direct-from-disk playback system. Together with a RAID subsystem, a FrameCycler DDS Bichannel equipped review station can play back two-channel sequences of virtually any length.

"At times it felt we were really pushing FrameCycler DDS Bi-Channel into unknown territory. Our project was a large format 3D presentation with some verrrry long shots! Being able to review material in stereo film resolution at 30fps on high-end commodity hardware has been a lifesaver ..."

*Steve MacPherson
Systems Architect at Jim Henson's
Creature Shop™.*

The Future of Digital Cinema

Uncompressed Playback, Unlimited Sound

IRIDAS' exciting new Digital Cinema Playback System first debuted on March 13, 2003 as part of a touring Broadway stage production. In this first public appearance, DCPS was used to project uncompressed 1600 x 1200 stereoscopic movies with 8-channel surround sound.

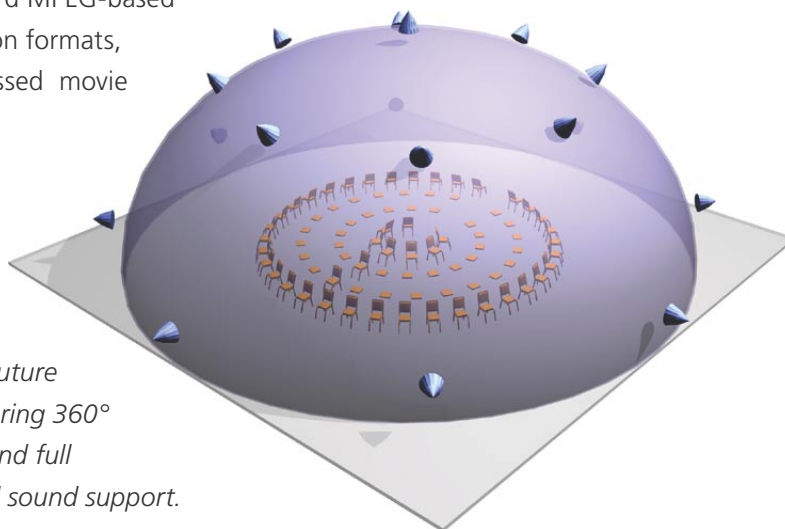
Now the System is already able to handle 2K material and an unlimited number of sound channels making it ideal for theme park rides or other visual simulation uses which require three dimensional sound and multiple speaker placements. Remember when we thought laser light shows with quadraphonic sound were cool?

Unparalleled Picture Quality

In addition to the standard MPEG-based Digital Cinema distribution formats, DCPS streams uncompressed movie

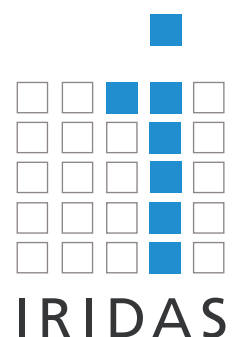


formats direct-from-disk. The advantage of uncompressed formats is plain to see: unparalleled picture clarity. But wait, there's more! The advanced architecture of DCPS does not require any hardware decoders. DCPS simply uses the processor to work its magic. This really is the future of Digital Cinema.



Artist's conception of a future ride park attraction featuring 360° stereoscopic projection and full three-dimensional spatial sound support.

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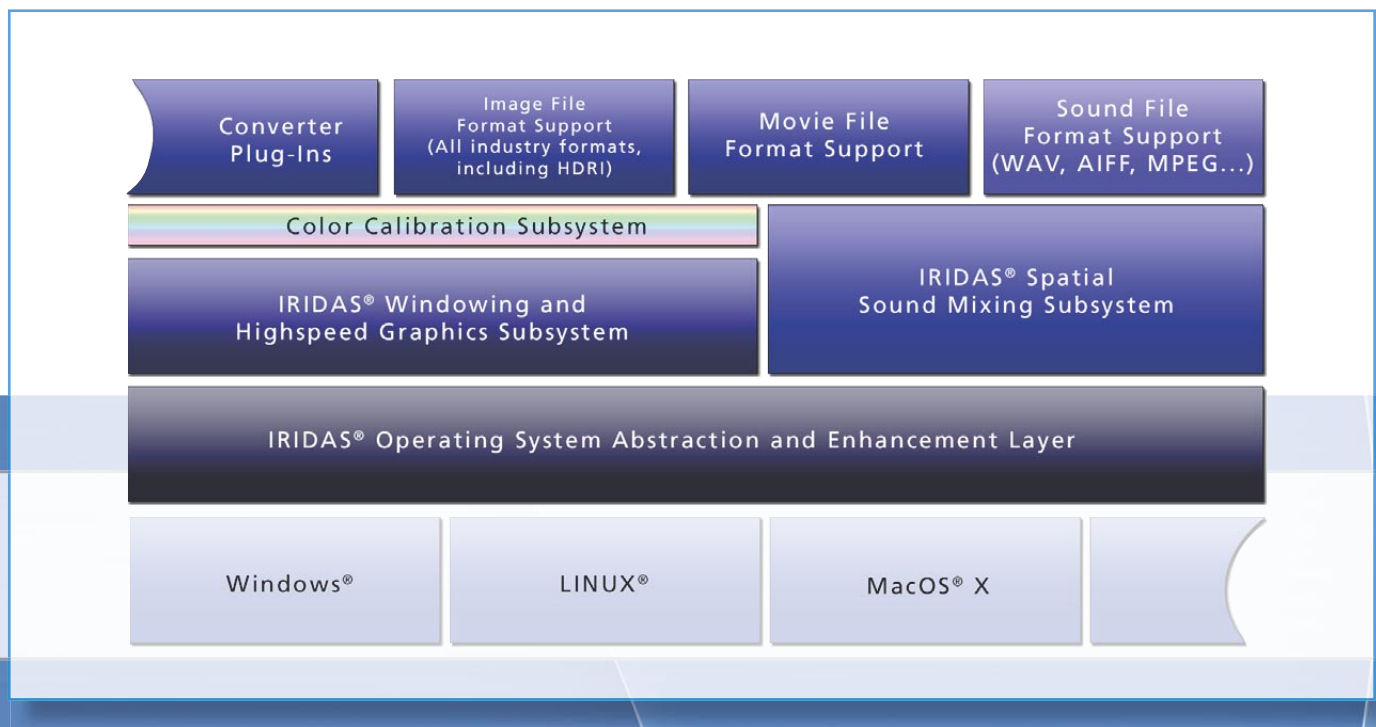
IRIDAS Today and Tomorrow

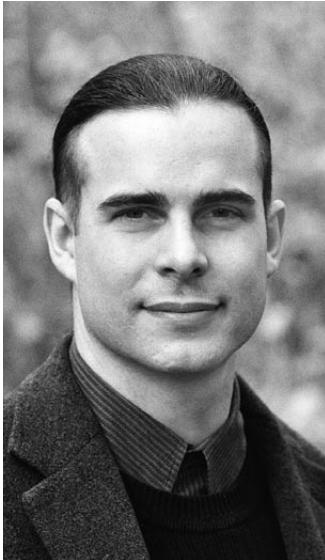
IRIDAS is a company in motion, responsive to the developing needs of its customers and always on the leading edge of development. The April, 2003 release of FrameCycler for Linux® provides a first look at the next generation of FrameCycler products.

The application was completely rebuilt from the ground up in order to optimize every aspect of its performance. "Rewriting the code was a lot of work, but it was an investment in the future of FrameCycler," says IRIDAS VP Research & Development Michael Gallo. "Not only is the application lean and very fast, but we were able to create a core architecture which is platform-independent." The next series of FrameCycler releases, scheduled for the summer of 2003, will run on all the main platforms taking FrameCycler's already impressive integration capabilities to a new level.

The other exciting development, of course, is IRIDAS Digital Cinema Playback System, the world's first Digital Cinema technology capable of handling uncompressed playback. "We are only just beginning to see the potential of this remarkable technology," according to Patrick Palmer, VP of Corporate Strategy, "the possibilities this creates for three dimensional sound and visual environments is limited only by the imagination of the people who create them. I don't think it will be long before sophisticated stereoscopic projections are considered a normal component of theme park rides, museum displays, role-playing games, training scenarios, stage productions, corporate presentations ... "

With the broadcasting industry standardizing on digital HD formats and the transition to digital projection equipment in movie theatres already beginning, it is clear that new opportunities for IRIDAS playback technologies will continue to appear. The future is digital. IRIDAS is there.





I hope you have enjoyed learning a bit about our company and our growing family of digital playback systems.

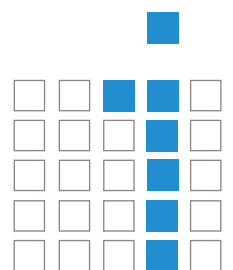
When I first began playing around with the FrameCycler concept, I had no idea that it would lead to all this. It's been a fun ride so far and I am happy to say that there is no end in sight. We'd love to have you come aboard and join us.

We invite you to learn more by visiting our Web site or giving us a call. We'd like to hear about the work you are doing and learn about your digital playback needs.

*The future is an open book for IRIDAS.
Join us on the adventure!*

Sincerely, Lin

Lin Sebastian Kayser
IRIDAS President and CEO





IRIDAS
Adalbertstr. 32
D-80799 Munich Germany

Tel: +49 (89) 330 40 982
Fax: +49 (89) 330 40 983

<http://www.irdas.com>
email: info@irdas.com

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