



ADDRESSING 3D

Tricking our (binocular) brain into interpreting a 2D image into one with depth is the objective of various 3D technologies. The pivotal phrase in this is "various technologies." Technically speaking, Anaglyphic, Polarization, AFS (Alternative Frame Sequencing), and Autostereoscopic (a/k/a Auto3D) are the four main categories with multiple sub-categories under these. While no consensus has been reached on a 3D standard, every manufacturer insists their standard is better than the other. The problem - these various technologies do NOT "play well" with one another; and from a technical standpoint - never will.

The most cost effective way to achieve 3D images is stereoscopically, which is in basic translation, showing a slightly different image to each eye which the brain merges together into a 3D image. For highlights on the history and evolution of 3D's, see the *Evolution of 3D* article on the next page.

The wide acceptance of High Definition Television has brought about changes in 3D technologies with the newest technology categories; AFS and Auto3D. Merging polarization with interlace and progressive scan technologies has opened up a new set of technologies for 3D imaging through the use of LCD shutter glasses or parallax barriers with lenticular lenses.



AFS relies solely on the use of these new 3D glasses (costing upwards of \$100) containing liquid crystals and polarizing filters which rapidly block vision alternately in each eye in sync with the refresh rate on the display. The idea is that the one display can be firing two separate images alternately for each eye as the other eye is covered up. The glasses must be powered and have a means of receiving control information.

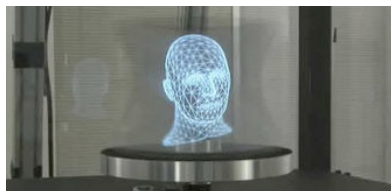


The challenge here is that there are multiple competing AFS technologies including; RealID, Dolby 3D, XpanD, and MasterImage 3D. Think of BluRay, with competing GreenRay, PurpleRay, and OrangeRay technologies. One uses alternating filters, another circulating filters, or how about color wheel filters. The image may be placed (using interlace or progressive scan rates) side-by-side, over/under, or merged in various geometric orders. Technically, these competing technologies don't integrate well with one another!

This leads us to the final competing technology, Auto3D (no glasses required).

The principal is based similar to optical illusion posters whereby one takes two static images, puts them side by side and either looks at them enough into the distance until they merge into one or go cross-eyed in front of them until you get the same effect. Very narrowly define viewing area and increased probability of viewer distress limits wider acceptance of this category.

Although our discussion has focused primarily about 2D images on a flat screen, the other side is creating images in real 3D - like watching TV in a box. The Graphics



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Lab at the University of Southern California has developed a spinning mirror called a light-field display. Basically high speed video is projected onto a quickly spinning mirror, which then reflects a different and accurate image to each potential viewer. The Japanese are developing plasma/laser holographic devices.

If you were the proud purchaser of a laser-disk player, a Beta video machine, or a quadraphonic receiver, this may be your next adventure. For everyone else, wait for the technology to come a little further or for the industry to establish some standards on which we can rely.



APPLE *Mac Mini Server*

How a Mac Mini Server can work for your home:

Home servers are on 24/7 and generally have a secure way for you to get

access to your data, including your media, while you are on the road. This comes in handy if you've ever been traveling and forgotten a file, only to realize it is on your home computer, which is off or otherwise unavailable.

The Apple Mac Mini Server is a relatively inexpensive way to set up your home to share media files with other computers and devices, such as multiple Apple TV's, from one central location. Families can coordinate schedules with Snow Leopard's calendaring features, set up personal email services, create personal websites, and even share music and pictures with family members not only in your home, but to anywhere there is an internet connec-

tion. The server can offer increased security against losing important files by being set up as a Time Capsule and allowing it to function as an automatic back up for any other Apple computers in your home via the Time Machine function built into Snow Leopard. Since the server has two mirrored hard drives, it makes a back up of it's own hard drive, safeguarding itself against a crash.

Since the Server is essentially a computer, it can be connected to any TV via an HDMI cable and then used to stream internet media content from

services like iTunes, NetFlix and Pandora right to your TV. Add a Bluetooth keyboard with a mouse and you have a full blown computer for surfing the internet and doing virtually anything you would normally do from a computer.



More than likely, your first introduction to 3D was with the use of paper

EVOLUTION OF 3D



glasses having two different colored lenses (one eye viewed through a blue lens, the other eye through a red lens). This is anaglyph imaging.



Disney, IMAX (and others) utilized polarized imaging which allowed for full color. Working the same as anaglyphic imaging two synchronous projectors throw up simultaneous images with slightly different perspectives, but at different polarizations versus colors. There have been other attempts, the most notable was the use of glasses having a darker lens over one eye attempting to create a side-to-side motion (Pulfrich imaging) which the brain interprets as

depth. Then there is ChromaDepth imaging utilizing prisms to manipulate color in an attempt to create depth.



Up until recently, many of 3D imaging attempts met with limited success because the technology derogated the quality of the screen image (specifically in the areas of, Dynamic Range; Color Saturation; Color Accuracy & Colorimetry; and Detail & Resolution).



AUDIO REFERENCE LEVEL

In reality, there is NO standardized audio reference level.

If used seriously (rare) and accurately (even more rare) reference is a standard. It could be a standard of voltage that produces a desired output, such as a signal to noise ratio might be reference to 2 volts that would cause an amp to put out full power, or the point on the preamps volume control that provides zero gain.

One practice we use is the THX refer-

ence level to set the correct volume of your surround sound media system. 75db at the primary seated position is the standard. This allows for 30db of head room to account for the demands of the louder passages. Why 75db? Well 75db level plus the 30db peak is 105db. Sustained volumes above 104db cause hearing loss, the occasional peak over 104 is fine. So, our goal is to find that reference level and then inform you the homeowner not to turn it up past that mark— at least not for very long ;-)

Ok, so if on your system the correct reference level is say; -10 on your receiver and you come home to the house rocking and the kids listening to your beloved system at 0, you can scold them for hurting their ears! Gone are the days of turning your amp up to "11"

On a side *Spinal Tap* note... Tufnel, in showing his guitar collection to DiBergi, reveals an amplifier that has a volume knob that goes to eleven; when DiBergi asks, "Why not just make ten louder and make that the top?" Tufnel's only reply, "These go to eleven."

EVOLVING ACCESS CONTROL



Access Control has been some what isolated as a technology for many years but no more...

Today smart card technology (access control data) combined with IP convergence, as more applications are converged over a network, is explosive. The fingerprint, biometrics, fob or card scan for access is now a time clock, logs you on to a computer, gives you rights to access equipment, interacts with other

systems such as lighting, heating and cooling controls, etcetera... As further standardization of data protocols evolve more systems will become automated. The benefits a business realizes is immediate: greater efficiencies of time and physical resources thus adding to the bottom line.

As with other technologies the move of convergence has brought remarkable change. One of the first advancements in this related discipline was security and (IT) or information-technology made especially evident as a result of (IP) internet protocol video surveillance solutions. Access control systems are evolving quickly due to the convergence of security systems, the data infrastructure and the internet protocols which provide a database of readily available information. This data is now being



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Wild Dunes Access Control Gate Installation.

tapped for other disciplines simultaneously improving management while using fewer resources.

The potential is endless. Flash Gordon move over. George Jetson has been surpassed. In the not to distant future look for smart card technology (or some form of access control) to be standardized into a one source solution to life as we know today. One instrument will provide (i) physical access our homes, business, and vehicles; (ii) a facility for accessing our financial and health information; (iii) new ways to reduce energy use and costs while cutting operational expenses.



SEASONAL SAFETY TIPS American Red Cross

The American Red Cross posted three areas of safety concerns for the month of July (and summer season) - Water safety at the pool, lake and beach; Firework Safety; and Safe Grilling. Highlights from each area were:

Water Safety: Swim in designated safe areas and NEVER swim alone; enter the water feet first; take frequent breaks; watch

out for the "too's" (too tired; too cold; too much sun, etc.); and keep children and weak swimmers within an arms reach.

Firework Safety: Follow instructions; never give fireworks to small children; keep water (extinguisher) nearby; wear eye protection; light fireworks one at a time; and leave any area immediately where untrained amateurs are using fireworks.

Safe Grilling: Grill outdoors ONLY; Position grills far from siding, deck railings, overhanging branches and house eaves; keep children and pets at least three feet away from the grill area; never add charcoal starter fluid when coals have already been ignited; always follow the manufacturer's instructions when using grills; and always supervise a grill when in use.

Find out where Red Cross swimming lessons are offered or to enroll in a CPR/AED or first aid course, contact your local Red Cross.

BIG BANKS FLOATING YOUR \$\$

It has become so frustrating to deal with banks. They put themselves in the hole, we dig them out and then they stick it to us once again.

They tout the praises of free online banking, why mail a check when you can do everything on-line and let the bank take care of mailing a check for you.

What they don't tell you, is, it could take up to two weeks for your bill to be paid. Prime example: I called a customer in reference to an open invoice, the customer advised that they proc-

essed the payment through their on-line banking system the day the service was completed, and I trust the customer. I said "Great, thanks for the update". Ten days later I received the check. This has been documented on several occasions with different customers.

After researching how this works with my own account, if the check is being sent to someone other than a giant corporation, it could take up to a week for the bank to process you request. While it is taking this week to process, you believe the bill is paid, but actually is it sitting in limbo land and the bank is making money on your



money.

So just a cautionary note, read the fine print when you pay a bill on-line.



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About lifespaces®

We are electronic systems contractors. Providing contracting, security and audio visual services over two decades, the company directors and technical practitioners hold multiple licenses and certifications in the construction, low voltage cabling, electronic, security (both fire & burglar), and electrical contracting fields. As design & installation contractors, our goal is to make the technology in your lifespaces - intuitive, invisible, and incredible. Whether it's Video Conferencing, THX Home Theater construction, ISF® Video Calibration, HAA® acoustic calibration, CCTV systems, or any number of other specialized requirements, let our team of Industry Certified Professional Designers and Installers address your system needs.

Product Lines include Apple computers, Polycom Video Teleconferencing, McIntosh Audio, Integra, Genelec, totem acoustics, Sonance, Stealth Acoustics, Jamo, Samsung, Digital Projections, Screen Research, Lite-Touch, Centralite, Vantage, Russound,

Crestron, Ashly, Panamax, EquiTech, and many others.

We are also members of International Communications Industries Association, Custom Electronic Design & Installation Association, the National Association of Home Builders, Consumer Electronics Association, National Burglar & Fire Alarm Association, South Carolina Alarm Association, Home Acoustics Alliance, American Institute of Architects, America Institute of Building Designers, American Society of Interior Designers, Charleston Metro Chamber of Commerce and the Better Business Bureau of SC. We hold many industry awards, the most recent of which was Winner in the Consumer Electronics Associations 2010 Mark of Excellence in multiple categories.



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