

## May 2000

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I just wanted to pull together the discussion that Tomonori, Rane and I had in class tonight.

Tomonori, Rane and I all agree that the four of us would work well together (anyone, please correct me if I misquote you).

We like the idea of shared perception via a mobile computing device. We all agree that a web page is a far off secondary concern (used mainly for documenting our project), and that the primary concern is how and why we are collecting video/audio to be shared with others.

I think what we all have in common is the concept of telepresence.

Rane suggested looking into the idea of relationships as a theme for the project. Relationships as in how does a person speak with a computer and how do people speak through computers to one another. I like this idea because it delves into some fairly solid communication theory with which I've always been intrigued. Also, communication theory has so many facets, choosing it as an overarching theme doesn't limit us too much.

Communication theory works for me. The relationship that I was referring to was the relationship between people/people, people/machine, people/machine/people. We discussed the reason for a portable computing device. I don't like the idea of creating something where the viewer is stuck in front of a computer. I likened this to using the telephone over the technological advances with the phone. You could go all the way back to party lines... but, changes happened in how we lived with the advent of the telephone. Cordless phones gave people freedom to move about while talking (so did long cords). People began speaking to others in their yard, or on their porch. Wireless phones are resulting in people being interrupted in the middle of a class and walking out to have the conversation. The ringing interrupts everyone, but we are learning to ignore it. People walk around with phones talking to others. This also happens in the middle of a dinner conversation, where all of a sudden a third person enters for one of the dinner guests.

So, this is what I meant in terms of relationships between people/people, people/machines, and people/machines/people. There is a relationship of sorts that exists with a device that you keep with you.

Tomonori had some wonderful ideas regarding "why" and posed the important questions of how will our project affect people on an emotional, psychological, and logical level? For example, what happens when you invert video? should we do that? if so, why? He also raised the question of our skill sets and if the four of us have what it takes. We agreed that video, audio and text is managed by our current skill sets and that graphics/images could be dealt with by combining our efforts.

I offered the idea of trying to "digitize attitude", that is to say, OK we can transmit the visuals and sound of a persons experience, but how do we than digitize and transmit that persons personality. POV telepresence is as much about the literal senses as it is about the emotions triggered by those perceptions. For example, I suggested the recorder could alter the video by saturating certain colors to signify emotion. Strong blue saturation = depression, light green saturation = contentment, etc.

I think the idea of digitizing attitude is interesting and worth investigating. My general interpretation of all of our concerns is that we need to come up with a strong reason to put together a mobile video/audio POV recording device. We need to focus our efforts on pushing the technology beyond KinoEye into an interactive, artistic (and potentially commercially viable) experience that takes, as Rane said, our ideas to the next level. And so I think it is safe to say

that the three of us left tonight's meeting with relationships/comm theory as a spark of inspiration to come up with some content for this project.

I also think that we need to keep bouncing ideas of one another both on the hardware end of things (thanks for the VIC link) as well as the theoretical end of things. Basically we talked for a couple hours about a vast wealth of ideas and potential for the project. I have recounted only a few ideas here and I've included everyone in this email in the hopes that you correct and augment my interpretation of the evening's conversation.

And to formalize the group I am assuming that Siggie, Me, Rane, and Tomonori are, as of tonight, in this project group till the end of next year. Please let us know if there is any apprehension on anyone's part... I like all of your guys' ideas, I've enjoyed working with all of you in class and feel very comfortable saying that I am in a group with the three of you. I hope to here similar reactions from all of you... and if not... no hard feelings... I just want to dive into the project. I am excited about the possibilities of this group. I also want to dive into the project.

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Description of the project:

Our goal is to use technology to explore time space, relationships, and communication theory through computer-aided communication tools utilizing sensors, video, audio, and streaming technologies.

Relationships:

How do we use audio and video to impact the user of this technology? What is that impact? This is a study in terms of time and space. Changes that occur with time, and augmenting reality with virtual space...

We won't know what is ideal for this medium until we actually have a working prototype.

Our initial educated guesses for the content are:

1. Boundaries in relationships -- boundaries between person/machine, person/person, person/machine/person.

- A. Intimacy
- B. Privacy
- C. Organic environment created by the technology.
- D. Mixture of person/machine. Humans are imperfect and will alter the control of the digital world.
- E. Layers of interactivity, reflection of interactivity... reflexivity... incorporating the process of what is going on while you're doing it, so you become aware of it. The metaphor of the mouse... you don't see what is going to happen with a mouse, but after you use it, you get the idea of what is happening and what is possible.

The immersion of the user enables the user to enter into a virtual space. User to machine, user through the machine to the other person, and the relationship of the receiver. What are the boundaries of intimacy and privacy? There are a lot of levels of interactivity and intimacy in the relationships.

Level of interactivity. Our intent is to make this technology interactive via wireless LAN, (full duplex, multi-channel communication).

Time and Space: Technology alters or augments the perception of time and space. It should happen on both ends -- for the viewer and recorder. The viewer will have an awareness of the space of the viewer. Time issue: real time, live broadcast which means there will be lulls and boredom... perhaps an altered interpretation of time.

Content and research: Time/Space, Relationships, Wireless LAN, Prototype building, Communication theory, email/chat as a media for communication and how that limited space of ... synchronous communication in a chat versus asynchronous communication in email. Visual Communications

Communication theory: How do you digitize personality and attitude? Is color a viable venue for this? Video conferencing, human factors issues.

Email com theory

Technology -- 4:3 format.

Effectors -- (mood, attitude, personality)...

Theremin is a proximity sensor to a pitch converter... how do you represent the proximity to the receiver end? Possible to control music, sound, virtual, or real object (like virtual chess)... by using 3 theremins... for the 3D positioning.

Links: <http://www.muse3d.com>

<http://www.fufme.com>

[http://www2.ncsu.edu/eos/service/ece/project/succeed\\_info/larettin/thesis/ch1.html#1.2](http://www2.ncsu.edu/eos/service/ece/project/succeed_info/larettin/thesis/ch1.html#1.2)

<http://www-ict.its.tudelft.nl/~moritz/>

<http://www-ict.its.tudelft.nl/html/research/c/>

[http://www.supercircuits.com/start\\_color.html](http://www.supercircuits.com/start_color.html)

<http://www.endoscopes.net/cams.shtml>

Computers we want:

Part I.

Technology reflects mobile camera eyewear – hardware data recording, wireless streaming via LAN, and using netware software to create an interactive environment.

Research methods:

Online research, prototype testing, email interviews/exchanges, journal/library research, field trips, listserves, newnet, We will have weekly and bi-weekly meetings during the summer.

Production methods research: list technologies we're using and whatever we don't have competency in, we research.

The innovative aspects of the project are wireless mobility, first person point of view video. This is an innovative perspective used for personal experience. The 3D audio is innovative, except for NASA.

This project enhances the current body of knowledge by producing a prototype that will allow real time video streaming, and the sociological investigation of the impact of that technology.

There aren't many people who are doing realtime interactive audio, let alone 3D immersive realtime audio. The feedback loop, and reflexivity will alter our social interactions.

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Here's a hardware and software list based on Siggis suggestions. Obviously specific hardware is interchangeable and prices are ballpark. Add to this list the audio software requirements.

Cisco Aironet Wireless LAN Access Point (AIR-AP342E2C) - \$1300

Cisco Aironet Wireless LAN PC Card (AIR-PC342) - \$250

Streaming Media Server (based on Real Networks Requirements)

Microsoft Windows NT 4.0 Server, Dual Intel Pentium III 500+, 256RAM, standard  
harddrive (4+ gig), keyboard, monitor & mouse. - \$3000

Workstations (based on group memeber requests)

2 Windows NT Workstation, Pentium III 500+,128RAM. - 2 \* \$1900

2 Apple G3/G4 128RAM. - 2 \* \$2400

Access to Bandwidth

120kpbs stream with 10 streams = at least 1.2 Mbps

Wearable Computers (based on VIAIIPC and Wearables)

Windows NT 4.0, Cyrix or Celeron 166-230, 64-128RAM, 3.2GB Harddrive, Interface,  
Display. \$3500-8000

Software:

Streaming Media Server - Real or Windows Media.

Web Server Software - Apache, UNIX, Netscape.

Visual Content Creation - Photoshop, Fireworks, Dreamweaver, Premiere,  
RealNetworks/Windows

Media Production Tools.

Audio Content Creation - Soundforge, ProTools, Specialty Software

\*\*

you know what? I heard that library (the one "smoked") has wireless LAN card for notebooks -PC cards, and base stations. I wonder if they smell bad or still work, but maybe we can borrow some, when we need to field test/ try out to see how far it goes and how fast etc. I forgot to tell you this yesterday.

They had some wireless LAN things at Fry's @Fremont. I didn't know this has been so close to consumer. When I grab a iBook, I'll get Airport definitely.

\*\*

Since Wearables are so expensive.

Here's another less pretty idea but its much more powerful and cheaper and obviously Sony is not the only option.

Sony VAIO FZ505 Series notebook sells for \$2800. It has Pentium III 500, 128 MB RAM, 12GB harddrive, 12" display, is 1" thick and weighs 3.75 lbs, 1 type II card slot (wireless LAN) and 2 USB ports (which only windows 98 can use).

Sony VAIO F series notebooks start with the PCG-F420 at \$1700 for a PIII 450, 64RAM, 13" Display, 7lbs, 2" thick, 6GB drive, and 2 Type II card slots, 4xDVD.and go up to the VAIO PCG-F490 selling at \$4000 for a PIII 650, 128RAM, 15" XGA TFT Display, 7lbs, 2inches thick, 18GB drive, and 2 Type II card slots 4xDVD.

All of these guys come with a built in 56k modem.

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I think in terms of getting a wireless LAN, it would be best if we got a dedicated machine to our project. I dont' want to be "borrowing". It tends to be a pain.

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I was out all day, and couldn't go to the library...you guys think we can borrow their wirelessLAN system?

I also have a catalog of prototype components: I found a tiny motherboard that comes PCI slot/ISA slot/LCD Screen

Circuit/HD-FD-EtherPort kinda stuff: designed for Kiosk machine type thing. The catalog is at school, I'll get the URL and let you'll know. I don't know if this machine can give enough horse power -but quite small so.....

\*\*

I agree... we should ask for it all...

## **June 2000**

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Good Morning,

If you would like I can assemble an "add-on" sheet to the paper with the list of equipment we've been passing around. I can e-mail it to Jim and drop off a paper copy to Raquel tomorrow. Tomonori, let me know that motherboard URL so that we can include that as well.

Let me know if you want me to do this. Or if you want something added.

\*\*

Hi. this is the address of company that makes single board computer (SBC) which is used for Kiosk machine or brain for industrial machines. <http://aaeon.com/>

and this is the SBC with LCD controller (so stick LCD display in without converter) This takes Celeron (socket370, right?) and has one PCI slot, and one PC/104 (PC card?) along with other stuff, such as FD/HD port, Ether, USB, KB/Mouse, Serial/parallel. it is priced as \$560 according to the catalog I have (but not sure at what quantity.) <http://aaeon.com/html/pcm6890.htm>

## July 2000

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We were thinking that we are kinda leap frogging from brain to brain... so we thought mindfrog.com.

Well, some guy in New York registered it last month, but I registered

mindfrog.net and mindfrog.org and e-mailed that guy about mindfrog.com. We're thinking a frog as a character might be cool... and maybe this mindfrog.com guy will give up the .com... and of course, we're still open for suggestions. I just registered mindfrog as a second best... possible first choice.

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Phil,

Here's a hardware and software list. Prices are fairly accurate.

Cisco Aironet Wireless LAN Access Point (AIR-AP342E2C) - \$1300

Cisco Aironet Wireless LAN PC Card (AIR-PC342) - \$250

Streaming Media Server (based on Real Networks Requirements):

Micorsoft Windows NT 4.0 Server, Dual Intel Pentium III 500+, 256RAM, standard harddrive (4+ gig), keyboard, monitor & mouse. - \$3000

Workstations (based on group memeber requests):

2 Windows NT 4.0 Workstation, Pentium III 500+, 128RAM. - 2 \* \$1900 =

\$3800

2 Apple G3/G4 128RAM. - 2 \* \$2400 = \$4800

Access to Bandwidth:

120kpbs stream with 10 streams = at least 1.2 Mbps

Wearable Computers (based on VIAIIPC and Wearables):

Windows NT 4.0, Cyrix or Celeron 166-230, 64-128RAM, 3.2GB Harddrive, Interface, Display. \$3500-8000

One of the two following Notebooks (or equivalent):

1) Sony VAIO FZ505 Series notebook. It has Pentium III 500, 128

MB RAM, 12GB harddrive, 12" display, is 1" thick and weighs 3.75 lbs, 1 type II card slot (wireless LAN) and 2 USB ports (which only windows 98 can use). \$2800

2) VAIO PCG-F490 selling for a PIII 650, 128RAM, 15" XGA TFT Display, 7lbs, 2 inches thick, 18GB drive, and 2 Type II card slots 4xDVD. \$4000

Head Mounted Display:

Sony Glastron Glasses PLM-A35 - \$500

Cameras:

2 Color Surveillance Cameras - 2 \* \$250 = \$500

Audio:

Mic PreAmp - \$200

Headphones - \$100

Software:

Streaming Media Server - Real or Windows Media.

Web Server Software - Apache, UNIX, Netscape.

Visual Content Creation - Photoshop, Fireworks, Dreamweaver, Premiere, RealNetworks/Windows Media Production Tools.

Audio Content Creation - Soundforge, ProTools, Specialty Software

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The following domain name(s) were successfully registered:

eyeleap.com

Sigurdur matthiasson

2177

rosedale ave, ca 94601

US

Domain Name: eyeleap.com

Subscription Length: 1 year(s)

Period From: 14-Jul-2000

Period To: 13-Jul-2001

Order ID: 12912833

Amount Charged (US\$): \$35.00

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I have a feeling that we may not necessary need base station for

wireless LAN. -maybe "airPort" type networking is possible. One desktop connected to LAN by Ethernet Card also has PCI wireless card, that bridges for the laptop/mobile computer with wireless PC card. You know what I mean? I don't know how much lines one PCI card can handle, but the stand alone station looks like just a router/hub, and replacable with normal machine. I haven't read much, tell me when you find which hardware supports that.

I saw the ad in data comm warehouse, and the package of ZOOMAIR has picture of a Desktop and 2 notebooks connected by "radio" the actual site:

<http://www.zoom.com/zoomair/index.html>

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Farallon Skyline PCMCIA card is compatible with AirPort Base Station. So, Mac, PC notebooks can be networked simult. to AirPort Base -Airport is \$300 or so, right? This way we can save money on base station.

Also, using skyline, skyline can communicate with Mac with airport card -base station is not necessary. it's really just like HUB. <http://www.farallon.com/products/wireless/skyline/>

11Mbps/150ft

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600k movie of camera-glasses is at  
<http://www.haywire.csuhayward.edu/~tyamasa/camerahead.mov>

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I opened my HMD and took some shots.

<http://www.haywire.csuhayward.edu/~tyamasa/images/1close.jpg>

<http://www.haywire.csuhayward.edu/~tyamasa/images/1open.jpg>

<http://www.haywire.csuhayward.edu/~tyamasa/images/1front.jpg>

<http://www.haywire.csuhayward.edu/~tyamasa/images/1circuit.jpg>

so, the display unit is half the depth -the other is 2 prism, big ones.

I read Mann's paper. He made a "closed" HMD with camera, so the

wearer see things through camera totally. That's kinda interesting. I

think it's do-able with Glasstron and 2 cameras. Maybe with IR cameras for dark place? the "club version"?

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Hey All,

I got this from the guy who owns mindfrog.com. It sounds like he wants money. What do you guys think should be our next step. We could plead poor graduate student... or offer a small some and wait for a reaction... or ask what his price is... let me know so I can bug this guy a little.

-Christian



mindfrog.com wrote:

Hi.

Thank you for your inquiry.

I have registered the MindFrog.Com domain name a while ago but because of some errors it went through only about a month ago.

We have been working on a project for which this particular domain name is very important. In addition we have began to offer this name for sale to other companies who are currently working on or already have a web presence similar to what we intend to do with the name.

Perhaps we can work on some kind of compromise that would be beneficial for both of us.

Thank you and best wishes.

Abraham

\*\*

So AOL now includes RealPlayer for all its users...

[http://www.realnetworks.com/feature/index.html?src=home\\_071400\\_feature](http://www.realnetworks.com/feature/index.html?src=home_071400_feature)

Also, Rane and Tomonori... are we meeting at my place thursday at 7PM? I know Siggi is off on a shoot. I may be required to attend a 3D seminar that evening... I'm still looking into that. If so, I wouldn't be able to host or attend the meeting. I'll let you guys know, sorry for the short notice.

I'm gonna e-mail this mindfrog.com guy back with some questions and hope to get some more definitive answers.

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I thought we were meeting at your place...

Tomonori, should we meet if Christian can't meet? Or should we wait until next week at my place?

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I'm leaving next monday to Japan -I'll be back on August 28th. So, if I can go grab some parts at Radioshack, I'll be able to make binaural microphone. I'll try to do it. If I can't get it done by next week, I'll do it in japan and send it to one of you guys -so as de-soldering CCD from cheap USB camera or something like that.

if you guys have time, check Mike Quinn Electronics (san leandro)  
<http://www.bluefeathertech.com/technoid/calswap.htm>! There's a info on the shop -though they moved the place recently, I'm not sure if the address here is really updated. Check it by phone first. They have whole room full of junk. Broken/Old/Parts-stripped, computers/electronics etc etc as well as new parts. It's not a clean nice looking place but worth checking out.

\*\*

Are we supposed to make a diary of what we're doing? I think that's for the next year, but maybe it's nice to keep log so we can see how we went through the process.... I tried to make the binaural microphone. First I connected battery to microphone, little pop and smoke from the

microphone -dah, I forgot to put a little resistance. I connected a new microphone, I can't get signal on Oscilloscope -maybe I need a preamp. I'll work on that.

\*\*

Hi all. I'm now in Tokyo at my brother's place.

I went to Akihabara city, where only electric/parts/computer/cell phone shops exists within 10 by 5 blocks area this evening. I saw some "done" spy cams, that are about \$200 and small, looks like Rane's. It was too late so I couldn't get parts level stuff, but I'll try that tomorrow. They have all kinds of components, but if I look for a somewhat complete product (at least in a plastic case), they all too expensive.

Sorry I couldn't finish the binaural mic -I've done it, but couldn't find a free mic pre-amp in our booth so I couldn't test it. My plan for this weekend is to into binaural processing for feedback. Please let me know how the meeting goes.

\*\*

I went to the place again. Here's the short report.

Cameras:

3 Types -

1. Pin Holl Cameras, tiny (finger size) (CMOS) \$170
2. Lenz type, tiny to super tiny (CCD) \$200 to 700 (supertiny, as the microphone I had at the BBQ)
3. fiber -I couldn't find it -but it has worst quality image in those three (looks like bee's view since the fiber consists of several fibers)

The other news is that there's a "pocket PC". It's a "bare bone" system, we have to add CPU, RAM, and HD, but it's really tiny. It has USB\*2, Parallel, Serial, Video, S-video, and CD-ROM. The kit is \$600, of course we have to add CPU RAM and HD, but it's worth checking, since it's really a complete PC (it has trackpad, button and up/down key for presentation) the maker is Century, i'll look for the website for it. The other choice of computer is called NLX (format, as ATX, AT etc) it's really mid size pizza box, with CD-ROM, FD, power included. Some used laptops I found are 486 \$100, Pentium \$200+.

I didn't find CCD camera kit ikinda thing, something we can assemble a camera from parts - Though I've seen some Video transmitter (analog) and Mic Preamp kit etc.

I'm going back to Hiroshima tomorrow, where my family live. I'll do some job there, and check out the place again when I go back to the US.

## August 2000

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Check this out for a wireless camera

<http://www.x10.com/home/offer.cgi?!REG3,../1index5687.htm?>

\$170 for 3 wireless camera is a good deal. Very nice for demo....

## September 2000

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Hi Guys.

Well I finally got stuff onto tape. I figured out the problem with the

camera. I was dumb enough not to read the specs on it fully. Unlike your camera Rane, The new one needs 12volts to run. I got the powerpack and everything works great. I did some taping to nite on the street. It was fun. The video looks great. Now I only have to post it and marry it.

\*\*

wow. things are happening. I'm looking forward to see the movie.

\*\*

Hi group. I'm back now. I didn't get much e-mail lately from you guys -I guess things are happening at the meeting. I brought a bottle of sake so let's meet.

\*\*

Tomonori,

Good to see you've made it back in 1 piece.

I believe Rane is down in Arizona or New Mexico this week and Siggie is still in Iceland. (Siggie, Rane, please correct me if I'm wrong)

You and I could meet Thursday at my place around 7 and go over some of the microphone and computer boards' specs. Also, did you get my e-mails about mindfrog.net? Rane and I have been piecing together some theory ideas to put on the site. Siggie has got the "recorder" glasses working and will fine tune the 3D effect when he gets back.

Let me know if Thursday is good for you. I could use some sake!

Christian

\*\*

Thursday 7PM About the website and/or the paper purpose, should I assemble some theories/figures/links about binaural recording? I think we need some kind of it anyway, so I'll go ahead and start doing it. If you already have it, let me know so maybe I can beef up. (I know what it is and where to get the data, but haven't really put them together...)

\*\*

Hi Tomonori,

I'm in San Diego right now. Siggie is in Iceland. Christian, the stuff is at my house, and Bill knows where it is. You can pick it up if you want. I should be home by the 3rd. I'm into sake! :) I can communicate from here, let me know what's going on... We've been creating the camera glasses, and trying to film stereoscopic video.

\*\*

hey, are you coming to the tonight's session at Christian? I just need to catch up so pass it if you're tired. so, how was the trip?

\*\*

So do we attend this "divvy" thing on the 27th or is that the advisors only?

Let's ask. If we can attend, I suggest we do attend. Let's invite Phil to our next meeting. It sounds like we need to meet with Phil before the 27th to review our equipment list. It also sounds like everything is still up in the air.

\*\*

Hey guys.

good news. Today I completely took a part off my HMD. I thought it's got a small TV inside -but that was wrong. The tube I thought was actually just a mirror.

After several steps, I found a familiar shape -yes, half-inch square LCD screen. One LCD and one backlight -like overhead projector. it's the miniture of it. I used a lens to see if it can be a monocle-LCD-display -well, it works.

I don't know much about those optical equip, but I think we can make a HMD with pair of this cheap HMD. I'm now going to call my parents to get one more (only \$80 -it was too big to carry-on to the flight, though) to see if it works. Even if it doesn't work with our project, I can still have some fun with this LCD screen -tiny TV? 007 style.

I'll bring it to the next meeting, as well as the binaural microphone that I'm going to solder now.

\*\*

Hi...

I'm back... when are we meeting? Thursday? Where? We can meet here. What time? 7:00 p.m.? I think we need to begin focusing on the 'paper' that needs to be turned in on the 20th. I have some theory ready for it. What has happened that I am unaware of? I still have the stuff here that Siggi dropped off before he left.

\*\*

Hey so we are all ready to roll?

I got the LCD screen with video input (RCA) I heard Rane has a 3D-viewer-toy so maybe we can try installing LCD screen to the viewer at the next meeting. I'll bring the parts to the next meeting. I completely took the HMD off, so I have all the parts -do we need any mirrors or lenses? I can bring them to the next meeting.... (I'm pretty sure the electrics are OK, but I was curious about the optical system -the lens etc, since that's the most sensitive/hard to adjust part of the HMD...)

Are you all like the idea of making HMD for ourselves? The advantage of building our own HMD is that we can make it totaly our way -where to put what, the design, the way it displays etc etc.

Those Sony or Olympus HMDs only takes video inputs, not the VGA (HD15 jack) so we need video outs of computer anyway.... A cheap video card called "All-in-wonder" has a video out (NTSC I guess, "TV out" it says.) they sell @ \$50 a piece. so if we have 2 computers (receiving 1 L or R video each) with all-in-wonder, connected to L and R LCD screen, then that's all we need. -I don't know if Windows supports multiple monitors (not mirroring) like Macs do. If it does, we can just put 2 All-in-wonder to one machine...

\*\*

Hi Guys.

I game for Thursday. Yes I agree... we need to start getting the nuts and bolts of the paper and all that stuff down for... is it the 23rd of this month? Anyone heard from Phil? I have been spending this weekend relaxing with the family and getting back into the BA pace. Tomorrow I'm going to put everything back in motion. Look forward to it.

\*\*

the demo binaural microphone set is ready. To test with computer (soundcard) mic in, the battery wasn't necessary to the mic since the computer is giving the current. (it took half day to find that the mic works without a battery!) oh well. So, I have 2 microphone with about 70cm cable, to mini-phone jack. Now, are we going to record this "stereo" recording into one Camera? (if it has stereo mic ins, that's cool but if it's mono, then we have to bring the signal to line level, giving RCA jack to the Camera.) Or two mono mini phone jack, for one channel each to the Cameras.... I used the bigger microhpone elements, not the tiny one. Though it's not hard to use those, I have to solder them to a pair of cable...

\*\*

Great! the camera has stereo mini mic input. No prob. See ya Thursday.

\*\*

kool. I'll bring the LCD too.

tomonori: Mics, LCD, Sweets, Wine (no?) a little knowledge about binaural

<http://www.binaural.com/>

<http://www.binaural.com/binfaq.html>

<http://www.soundprofessionals.com/binaural.html>

-interesting -loud music recording require high power source for the mics.

<http://www.core-sound.com/lcmics.html>

<http://www.cogsci.kun.nl/~miami/taxonomy/taxonomy.html>

-paper

<http://www.cogsci.kun.nl/~miami/taxonomy/node108.html>

-binaural

<http://www.neumannusa.com/ku100.htm>

-The Dummy head by Neumann.

<http://www.aes.org/>

-AES

<http://www.headwize.com>

-all about headphone listening

a cool gadget I found -stand alone web server in-a-pocket. Picoweb

-What it is

Stand alone web server that costs \$99. It has RJ45 and RS232C port for Ethernet and communication.

-What for

This is a stand-alone web server -it makes anything work as a web accessible device. It comes with 8 Kbytes of flash program memory, 512 bytes of EEPROM, 512 bytes of RAM, 32 I/O lines, and a built-in UART. All sources are available.

-Costs

\$149 development kit comes with development board (connects with RS232C) and software. It draws quite small current, so it can run on battery. -alternative

check <http://www.chipcenter.com>

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so, the meeting is at Siggi's place? Christian, please give me a ride in that case.

I heard Rane is going to have BBQ at her place. when?

\*\*

kool.

I still have a bottle of reserve, but maybe I should keep this until the BBQ. see you all tomorrow. 7pm.

\*\*

I fixed the typo! Please let me know if there's anything else you'd like to see.

Also, I made some binaural recordings, converted them to real and wmt format and will have them up tonight as 100k and 200k streams and downloadables. I also have the first 3D (which really isn't that 3D) video converted to Real and WMT so those will go up too. I'll have the Spreadsheet of milestones finished up tonight as well and e-mailed out by tomorrow the latest!

Has Phil confirmed his meeting with us this Thursday? I have a "company meeting" until 5:30 on Thursday so I might run a little late, but no later than 7:30.

\*\*

interesting. digitalcamera with RJ45

[http://shop.outpost.com/cgi-bin/bv.cgi?BV\\_EngineID=falikiilhbedbfickcln.4&BV\\_Operation=Dyn\\_AppdRecv&BV\\_SessionID=534472990&form%25destination=%2ftemplates%2fOutpost%2fproduct%2fproduct\\_detail.tpl&form%25destination\\_type=template&BV\\_ServiceName=Outpost&form%25bv\\_content\\_content\\_oid=193265](http://shop.outpost.com/cgi-bin/bv.cgi?BV_EngineID=falikiilhbedbfickcln.4&BV_Operation=Dyn_AppdRecv&BV_SessionID=534472990&form%25destination=%2ftemplates%2fOutpost%2fproduct%2fproduct_detail.tpl&form%25destination_type=template&BV_ServiceName=Outpost&form%25bv_content_content_oid=193265)

\*\*

Hi Gang,

Here's the Milestones Spreadsheet I promised. Take a look at it. Add whatever you need to add. Don't worry about formatting, I can compile the final one with whatever you send back to me.

If you have problems viewing the .xls format, look on the site under the "project" tab for a PDF downloadable version.

\*\*

Hi All,

I was hoping to get some feedback as to what you wanted to do from November 2000 through June 2001. I was then going to fill in the blanks on the spread sheet. Maybe 2-3 items for each month. It's a requirement for the paper which is a week away, so if you could get me your items this weekend that would be great.

\*\*

I like what I see. It's a good start. Maybe we should add under Rane and me, "Content Research" for Oct and "Content Creation" for Nov/Dec. I think we should have quite a few "spots" on our website by the end of the quarter. Other than that I can't think of anything. I'm now doing a drill on Noam Chomsky and his ideas on language.

Pretty heavy stuff. I'll have something in writing soon. I'll see ya all Thursday. What's up with the other group? We haven't heard anything from Dianne, Mari and David.

\*\*

In the second half of fall quarter, for the blank spaces we have, we can put some interface research/design/development. Interface that is more than a mouse and a keyboard.

I think we need some kind of interface to do something in the contents level, for both camera guy and the other HMD guy. (maybe for "general viewer" too) Maybe serial, parallel, USB, ADB or something like that, some weird mouse-kind interface for pushing buttons or giving electric shock to other people. (hehe) This is an important part of our project, since the good interface creates good illusion. (please somebody rephrase this in normal English...)

Anyway, I believe our project is divided "physically" by:

1. 3D Color Camera (what's the "code name"?)
2. PC unit or some kind to mediate camera and server ("codename"?)
3. HMD for chosen viewer (again it needs "code name")
4. Interface
5. Server, Hub and other backstage system (I don't know how to divide this into piece. needs suggestions.)

And, divided "virtually" by:

1. A/D, D/A parts (Camera and microphones to digital out, HMD, video cards etc)
2. Streaming media (server, network, software)
3. "Controls" (interface, signal, and devices that are controlled.)

as,

- 1) Analog layer

- 2) Digital layer-(Digital, high resolution)
- 3) Stream layer -(digital, streaming (multicast etc) )
- 4) Control layer-(Digital, low resolution)
- 1) = layer 1, 2) = layer 2.....

Layer 1-Analog-----Camera(go down)    HMD, Monitor, Headphone

Layer 2-Digital-----PC Unit(go down)    (Video cards etc) (go up)

Layer 3-Stream -----Server=====>>>receiving unit (go up)

Layer 4-Digital-----control<<<=====>>>control (independent layer)

(I don't feel right to make control just one layer. maybe needs to be laid out like top three, making the chart more complex....) errrrr, got

that? I mean, we have 2 pipes: stream and control, RSTP (or some kind, right?) and HTTP (or some kind of low speed, general packet forwarding, send in chat, Timbuktu, CGI etc)

\*\*

to all:

For the video testing, we use video cameras, which requires microphone preamplifier. I believe we use some type of PC so we may not need one for the real unit. Now, does anyone have a portable audio equipment such as portable cassette recorder, Mini Disk player/recorder, or something like that. By using those in "record mode" or "record ready mode", we can use them as microphone preamplifier. it's not hard at all to make microphone preamp, but It'll be much easier this way. I can grab a microphone preamp from our studio, a half rack type, and maybe it works with batteries for short time, so I'll use this if I can't be ready for the shooting.

Siggi and Rane, when are you planning to do the next video test?

\*\*

Phil,

Here's a hardware and software list. Prices are accurate as of June 2000.

Cisco Aironet Wireless LAN Access Point (AIR-AP342E2C) - \$1300

Cisco Aironet Wireless LAN PC Card (AIR-PC342)        - \$250

Streaming Media Server (based on Real Networks Requirements):

Micorsoft Windows NT 4.0 Server, Dual Intel Pentium III 500+, 256RAM, standard harddrive (4+ gig), keyboard, monitor & mouse. - \$3000

Workstations (based on group memeber requests):

2 Windows NT 4.0 Workstation, Pentium III 500+,128RAM. - 2 \* \$1900 =

\$3800



2 Apple G3/G4 128RAM. - 2 \* \$2400 = \$4800

Access to Bandwidth:

120kpbs stream with 10 streams = at least 1.2 Mbps

Wearable Computers (based on VIAIIPC and Wearables):

Windows NT 4.0, Cyrix or Celeron 166-230, 64-128RAM, 3.2GB Harddrive, Interface, Display.  
\$3500-8000

One of the two following Notebooks (or equivalent):

1) Sony VAIO FZ505 Series notebook. It has Pentium III 500, 128

MB RAM, 12GB harddrive, 12" display, is 1" thick and weighs 3.75 lbs, 1 type II card slot (wireless LAN) and 2 USB ports (which only windows 98 can use). \$2800

2) VAIO PCG-F490 selling for a PIII 650, 128RAM, 15" XGA TFT Display, 7lbs, 2inches thick, 18GB drive, and 2 Type II card slots 4xDVD. \$4000

Head Mounted Display:

Sony Glastron Glasses PLM-A35 - \$500

Cameras:

2 Color Surveillance Cameras - 2 \* \$250 = \$500

Audio:

Mic PreAmp - \$200

Headphones - \$100

Software:

Streaming Media Server - Real or Windows Media.

Web Server Software - Apache, UNIX, Netscape.

Visual Content Creation - Photoshop, Fireworks, Dreamweaver, Premiere,

RealNetworks/Windows

Media Production Tools.

Audio Content Creation - Soundforge, ProTools, Specialty Software

\*\*

-----it's about 2 usb cameras to 1 computer. -----

[http://www.ask.com/main/metaanswer.asp?MetaEngine=AltaVista&logQID=284B34F4DB8DD411A828009027732680&qCategory=sale&qSource=0&frames=yes&site\\_name=Jeeves&ads=&MetaTopic=Re%3A+Logitech+USB+Cameras&MetaURL=http%3A%2F%2Fwww.usb.org%2Fforums%2Fretail%2Fmessages%2F1022.html&EngineOrdinal=1&ItemOrdinal=4&ask=can+i+connect+2+](http://www.ask.com/main/metaanswer.asp?MetaEngine=AltaVista&logQID=284B34F4DB8DD411A828009027732680&qCategory=sale&qSource=0&frames=yes&site_name=Jeeves&ads=&MetaTopic=Re%3A+Logitech+USB+Cameras&MetaURL=http%3A%2F%2Fwww.usb.org%2Fforums%2Fretail%2Fmessages%2F1022.html&EngineOrdinal=1&ItemOrdinal=4&ask=can+i+connect+2+)

usb+cameras%3F+metasearch&origin=0&MetaList=http%3A%2F%2Fwww.usb.org  
%2Fforums%2Fretail%2Fmessages%2F1022.html&x=21&y=7

It says it's possible... If we don't need 2 PCI Video Capture card, that'll save lots of space. -Make the box with Motherboard, Wireless Card, CPU, RAM, HD, and battery.

----diagram-----

I don't know what kind of diagram we need to put on the paper -I kinda did the "network" flowchart. "flash" version -need some sound or cool animation? I'll add them later.

<http://www.haywire.csu Hayward.edu/~tyamasa/project/diagram.html>

here's the GIF version so you can grab.

<http://www.haywire.csu Hayward.edu/~tyamasa/project/1.html>

<http://www.haywire.csu Hayward.edu/~tyamasa/project/2.html>

<http://www.haywire.csu Hayward.edu/~tyamasa/project/3.html>

<http://www.haywire.csu Hayward.edu/~tyamasa/project/4.html>

What do we need more? and what format? May I should make more "block" like diagram rather than picture diagram..? a picture of portable unit? -go translucent and mouse-rollover description of each components such as CPU and battery?

should we talk about network structure, such as UDP, with some API and Application laid on top of it? I don't know how technical we should go.

\*\*

We got a MindFrog suitcase today for the gear. Very cool. So should we not do the 4th of Oct?

I have had a bad experience with presenting a project when it's in it's very early stages. I guess that's why I'm nervous about it. Although feed-back is always good, it might also have a negative impact.

\*\*

Cool!

I am willing to do it, and don't need to do it. What do you think, Tomonori and Christian?

\*\*

<http://www.haywire.csu Hayward.edu/~tyamasa/project/diagram.html> -- now with sounds!

If we need a particular block diagram, let me know. I'll make it up and upload.

Presentation: we don't NEED to do it, right? We sure can show some cool gizmos, parts and junks, but I don't think they're so impressive from the "multimedia project" kind of view that few teachers think (and they're pretty good at that, right Phil?) -what we have is pretty technical all right, but still need killer contents to blow them away.

\*\*

Re: Theory paper -- is this okay?

I read your theory paper. Lots of good stuff. Should we include it with the proposal?

\*\*

Hi,

Ok, so I've integrated Tomonori's graphics and Rane's writings with the original paper. I've updated the dates, terminology, etc... I think

it's a really good paper and Rane I liked what you wrote. Tomonori

thanks much for the graphics. I've attached a Word version of the doc so if that's a problem let me know and I'll get an HTML version up as soon as possible.

The "almost" in the subject is in reference to the appedices....

According to Raquel we require some additional information. I'm

including them as appendices:

Appendix A - Milestones

Appendix B - Software and Hardware list.

Appendix C - Criteria for Evaluation

Appendix D - Member Responsibilities

I'm still working on Appendix C and D... I'll pull responsibilities (D)

from the milestones.

Please send any specific recommendations for evaluation criteria (C) and please also review the paper and send me any feedback.

Sorry for the short notice, but I need some feed back by tomorrow so that I can hand in the proposal Thursday night on my way to class.

By the way... its 13 pages without the title page or appendices! Oh

yeah... watch out David! HERE COMES MINDFROG!

\*\*

This company claims they have the technology to stream content at up to 25 frames per sec onto a palm via wireless. <http://www.firepad.com/>

\*\*

Susan has the firepad viewer and converter for her palm and it does images... I haven't seen the video working though... I'll keep looking into it. I believe it since my iPAQ will do video I assume the Palm is not far behind...

Did you hear that handspring is going to release a cell phone pda combo by October... tech gadgets are coagulating... beware

\*\*

I can read the word file. it appeared as a word file, no problem.

A couple of updates.

#### 1) Plastic

I asked my buddy boss about the "Plastic job." A guy works in the back of AE building, I left the memo with his name in the studio so I'll give tomorrow, he knows about plastic jobs. (I guess he is a part of Art department.) Also, a company called Tap Plastic, just off Marine Blvd or something, San Leandro or somewhere near, does all the plastic job –They have everything we need, they have press or any other machines. And they also have junk plastics that somebody dumped, we can get them for free!

#### 2) LCD Display

This time the LCD I'm talking is not the small one, but a display for desktop computer. I went to CompUSA today, and saw a internet appliance made by <http://www.netpliance.com/>, \$399 one-box computer (LCD with piggy-back computer) I thought, maybe, we can get the LCD out of that box and use it as normal LCD screen. It's good for the "server" computer we're going to have (We will have a server box in any case, unless we go Laptop-server) and a LCD screen is kind of cool. And light.

\*\*

> On Tue, 14 Mar 2000, Paul H. Anderson wrote:

I don't think I've seen this here, but it is pretty neat:

<http://www.linux-hacker.net/iopener/>

These are indeed neat, and seem to really be taking off, though perhaps not how netpliance, inc. expected. People everywhere are snapping them up and hacking them into x-terminals, linux workstations, etc. Development projects are springing up, and people are already selling conversion kits.

There are talks of {net|open|free}BSD, networking options (PLIP, USB Ethernet), and a lot more. From what I've been able to ascertain, the majority of Circuit City retailers are out of stock, with no ETA on the next shipment. I don't know of a single source within Michigan at this point. Shipping is \$39.95, for a total of \$138.95 direct. I anxiously await the arrival of mine. Further resources, in addition to <http://www.linux-hacker.net/iopener/> :

<http://www.netpliance.com/>

The manufacturer. Ordering direct, general company info, general info on the appliance.

<http://www.i-opened.com/>

The parts. Custom IDE cables, if you don't care to hack your own. External VGA port/cable, more.

<http://www.higuchi-clark.com/iopener/>

Everything you ever wanted to know. A collection of information, opinion, advocacy, and more.

happy hacking\*,

\* <http://www.pfuca.com/products/hhkb/hhkbindex.html>

--

Jeff Godin

Network Specialist

Traverse Area District Library / Traverse Community Network

jeff@tcnet.org - 231/932-8546 voice

\*\*

Hi!

Thanks for the feedback... as you will see Rane, I cut and pasted your eval reqs into the paper and added some nice wrapper around it. Thanks for the specifics. I've attached both the milestones and proposal docs to this e-mail.... the milestones fit in as page 15 in the proposal. I'm printing everything out tonight and won't have a chance to revise anything for tomorrow night so any revisions that pop up we can address online and in future paper revisions with the committee. I'm uploading a PDF version to the site tonight.

\*\*

Hi.

We're going to stick with our Thursday meetings (I think). And meet with you, Phil, on the off-forum nights if/when we need to. Phil, is Thursday out of the question for you? I forget. When do we meet as a group for the grad lab?

\*\*

About the presentation, are we going to do it in Flash?

I'm pretty sure I can send a better version of the one I sent before –the current one just look HTML, no fun. I'll add sound and stuff, so you guys can see if it's better than "web" (html or PowerPoint) presentation.

Anyway, we will plan about it on this weekend, I guess, but maybe we need to start with a flowchart? I'll make the image part ready by Saturday so tell me what elements we need to present in the presentation.

I can install Flash onto mac/pc on our space at school pretty easily, using 90days demo version, so we can work there on Saturday.

\*\*

We're going to present (I think) the general concept or idea. A flow chart of our process/plan makes sense. The visuals of the technology is a good idea -- much like you have, with bells and whistles is good for a presentation.

## **September 2000**

\*\*

I was in the Lab today. It looked like it had been cleaned up some. I mentioned that one of the

macs could use more drive space. Actually the PC could use perhaps more storage space too. They are good on RAM. Yes Saturday is tough but I'll have stuff done by Wednesday.

\*\*

How does Saturday from 1-4 sound as far as the clean up? I may go poke around tonight or tomorrow, but probably won't get dirty until Saturday. I think an initial presence in the lab may help us solidify some territory. As the quarter progresses I'll probably start migrating home to work (not that it's that far to go)

I'm really excited about getting into the lab and doing some project work. I'm glad we got some fast computers and am open to getting some hardware to beef up the ones that seem a little slow (Siggie mentioned the Mac may need some RAM).

Let me know about Saturday (Siggie I totally understand the weekend thing...I'm normally the same way I just have some time this weekend).

\*\*

I'll be there on Saturday, as well as today. I think I'll bring some stuff to clean up today to start. I won't be bringing a vacuum. I have a memorial funeral service to go to on Saturday at 11:00. I'll come there after that.

\*\*

Hi Guys,

I cleaned our station and the counter/wall next to us.. Only dusted, cleaned with window cleaner... we do need to vacuum.

\*\*

flash source file and sound files we worked today are uploaded to the ftp site. they are at: [ftp.mindfrog.net/tomonori](http://ftp.mindfrog.net/tomonori)

## October 2000

\*\*

So, what should I bring the show? I will bring my HMD... no? about the stereoscopic-personal-video-projection, there're 4 ways:

1. LCD shutter the Movie has left/right video images in even/odd line, and use LCD shutter glasses that are synchronized to the video to see it: when the right eye shutter is open, you only see the movie for the right eye.... [http://www.formac.com/2k/products/product\\_frame.html](http://www.formac.com/2k/products/product_frame.html)
2. filter you see those at Great America or something, i guess: you use a cheap glasses that has a kind of gray filter. left and right has 90 degree different filter: the video of 2, right/left signals are projected using the same filter with 90 degree different, thus you seen right movie with right eye.
3. HMD (2LCD) this is what we're trying now.
4. anagram 2 videos are made in red/green, and use red/green glasses to see individual video. deep see plug-in [http://ddd.com/3dsolutions/products/deepsee\\_plugin.html](http://ddd.com/3dsolutions/products/deepsee_plugin.html)

<http://ddd.com/>

<http://www.stereo3d.com/3dhome.htm>

bunch of stuff, mostly PC stuff.

[http://www.formac.com/2k/products/product\\_frame.html](http://www.formac.com/2k/products/product_frame.html) they have a 3D glasses for pci video card for macintosh.

**\*\***

I like this new technology. I've been fuzzing with the 3d camera reg thing. I didn't do it the way I wanted to for the presentation tomorrow. I didn't see a need to fully nail them into place because... Well I'll show you tomorrow. It's a little tricky. I was thinking if we could do the presentation and then sneak out into the lab to continue on. I will be nice to see you guys again and get some space on our own to reflect. I'll bring all the tools again to deal with the camers. We could play around with that and talk about all the other issues. I'll be at the grad lab at 6ish tomorrow. I know you Christian won't be there at that time but maybe the others?

**\*\***

I can be at the Grad Lab at 6:30 tomorrow night.

As far as what we will present.... I vote that we introduce our ideas with Tomonori's animation. Then segue to the briefcase and show the camera, the electrical taped hmd lenses Rane made... and then finish off with the website. Then open it up for questions. Simple. Short. I feel very comfortable going through the material if you want one presenter and then we can all answer questions... or we can each talk about one effort so far (tomonori = animation, siggi=camera, rane=hmd lenses, christian=website)... either way I think we can cover several minutes of material. Oh, by the way, I have a copy of the animation on disc as well as online.

Also, I spoke with sam. His priority is manray, however he is fully

aware of our desire to have windows2000 and/or NT on the 2 PCs as well as network and high resolution display capabilities on the PCs. He'll work with us tomorrow night before and after the presentations to set up our machines.

I'll see you guys tomorrow night.

**\*\***

I can be there at 4 pm, or 5, or 6.... whatever makes sense for everyone else. I do have a couple of questions.

1. I have NO idea what part I will play in the presentation...
2. What are we presenting, and who is doing it?

Thanks for the repost Tomonori... I'm going to check it out after I send this email. I think we need to meet (all of us) to go forward, the lab has kind of shut us down. So, let's talk.

**\*\***

So I don't know if I should make the 2 LCD HMD thing right away, since there might be a better way out there.

\*\*

We now have darwin streaming server in our space at the lab. It's a free quicktime streaming server on one of the win 2000 machine, Mindfrog 03, the one closer to the window. open quicktime and go to file menu, choose open URL and type: RTSP://134.154.168.212/sample.mov

\*\*

Also, let me restate that Tomonori and I got the two PCs up and running (with network connections and high res diplays) using Windows 2000. Both machines have office 2000 installed and await much more software.

\*\*

Streaming URL for Netscape:

<http://134.154.170.164:8080/ramgen/g2video.rm>

Streaming "location" for Real Player:

<rtsp://134.154.170.164:554/g2video.rm>

Real Server Web Interface URL:

<http://134.154.170.164:28529/admin/index.html>

\*\*

Hey guys. I found a video capture card in the lab today. It's CreativeLab, RT300 known as Video Blaster, some kind. Listen this, it's got 3 video input. yes, THREE VIDEO INPUT. wow. It's a:

1. ISA board (dah)
2. 95 driver is available (no NT, that's bad)
3. 3 RCA, 1 SVIDEO input
4. on-board compression of Indeo (i750) (so what) but 320/200 @ 30fps, according to the sites. One of the site confirm it does real publisher (how many years ago?) work. The board is spiked as 1994, 6 years old board. win2k had no luck. Is there 95 around, or 98 machine, which we can put 95 on it?

I think there might be more 2+ video input cards around.

\*\*

I have a video capture card (PCI) here on my G4 -the card is cross platform. Does anybody have 1 more capture card? then we can test "2 video stream from one computer" thing...

\*\*

Hi all,

Started looking into the PCMCIA Cards and got some clarification from [www.pc-card.com](http://www.pc-card.com), "In the past, cards were known as 'PCMCIA Cards', but the industry now refers to products based on the



technology as 'PC Cards,' 'PC Card Hosts' and 'PC Card Software,' and refers to the association as PCMCIA." Thought this might help in the search for more cards.

PCMCIA CARDS:

-- IEEE 1394 --

\$129 - 1394-to-Go:

<http://www.margi.com/products/1394togo.html>

\$??? - IEEE 1394 CardBus PC Card

<http://www.billionton.com.tw/product/1394/CB1394.htm>

\*\*

Hi all,

So I've been able to play the real streaming stuff off the "mindfrog real server" both from home over DSL and dial-up and from work at Cisco. Tomonori, let's keep testing the Darwin stuff it could be I just got something wrong in the URL. I didn't think it would be as easy as it has been to set up the servers... now we need to pick one and go look at some hardware cards. I've done some quick research on PCI cards will look into PCMCIA cards soon. Also, I'm uploading

some PDF brochures about the Cards onto my "Christian" folder in the FTP site.

-- Analog Cards --

\$159 - Osp 100 (video capture only, no output):

<http://www.viewcast.com/products/osprey/osprey100.html>

\$199 - Osp 200 (audio/video capture only, no output):

<http://www.viewcast.com/products/osprey/osprey200.html>

\$995 - Osp 1000 Real G2 (G2 encoder on card not software/CPU):

<http://www.viewcast.com/products/osprey/osprey1000real.html>

\$945.00 - Osp 500 DV; \$1949.00 - Osp 500 WM/PRO; \$2399.00 - Osp 500 WM/DVPRO

(All these card are built for Windows Media Technology onboard encoding):

<http://www.viewcast.com/products/osprey/osprey500wm.html>

-- DV Cards --

\$400 - DV Raptor RS:

<http://www.canopuscorp.com/products/dvraptor.php3>

\$400 - MotoDV (\$80 just for the IEEE 1394 Card):

<http://www.digitalorigin.com/products/motodv.html>

\*\*

oh, and I lifted the CCD from the board. they look good... but it was hard. I would rather get smaller camera. and, I run sorensen broadcaster in our square.  
<ftp://mindfrog.net/tomonori/test.mov> it's streaming out from g4 close to the windows.

\*\*

We have the frog...

He's (not sure if he is a she or a he).... a pacific tree frog...

\*\*

CCD lifted.

I lifted the CCD from the board. they look good... but it was hard. I would rather get smaller camera.

Okay, me too... the dime size color camera, right? It looked like it would be hard, Tomonori! and, I ran sorensen broadcaster in our square.

<ftp://mindfrog.net/tomonori/test.mov>

it's streaming out from g4 close to the windows. Tomonori, what do you mean by 'our square'? I'll probably bring in the frog on Monday.. maybe Sunday, but I doubt it. I ordered a PCI oxygen card today. We do have 4 slots, right, Christian? I think we should email Phil and Suzy about money and timelines. Good idea or bad idea? I think good. I can do it.

\*\*

Hi all,

Another quick find, The IBM Thinkpad A series advertises:

"2 Type II, 1 type III" do you think that's a total of 3 slots or the capacity to handle either 2 Type II's or 1 Type III? All the Dells I looked at online are clearly 2 Type II's or 1 Type III. That's what I saw as well. I think it means it can handle either 2 Type II's, or 1 Type III. I don't think they'll meet our needs. Rane, did Tom S have any specific models in mind? He didn't mention any specific models. I think his needs are different from ours. He needs to be able to show 3D modeling, and is probably just talking about the 'type' of graphics cards... not the numbers of them.

\*\*

I'm in the labs Sunday (not sure when) to do some more software loading. I'll take apart both PCs to see if there isn't an AGP port on one of them. I'll at least verify the PCI slot count... The PCI card should work, but if there's an AGP I recommend getting Oxygen AGP card instead. I'll let you know what I find out...

I've already ordered the PCI card, though I guess I could return it or replace it.

In regards to the video capture card with multiple inputs... normally those cards have several inputs not for several streams, but rather so that you can have multiple devices hooked up at once (an SVHS Deck, a Composite VCR, a camera, etc.). Not to be too snobby, but I doubt a 4-5

year old card is going to be worth installing windows 95 onto on of the win2000 PCs. Although, if there's another PC laying around... it's all free hard ware and it if doesn't take too long there's no harm in trying, right? I don't think there's any harm in trying, I also suffer from the thinking that 'new' is better... and that 'old' is obsolete.

I've looked into some more firewire cards and they all run about \$85-\$95...although I'm not sure how real producer/server would handle that source....Also, I'm impressed with some of the new Osprey Cards, \$150 isn't bad for a full screen full framerate card. In any case, I'll keep looking for cards....any luck on the 3 type III PC Card laptops? just curious. No luck. I understand that we need 3 PCI card slots... am I right/wrong about that?

If so, then I can only find 2 type II, and 1 type III slots on the laptops... IBM and Dell. I looked at those on Thursday in the lab when you were installing software on the Dell. The Osprey cards, price wise seem fine. I think I'll bring our frog by today at some point.

\*\*

So I just looked at a PC Mall Catalogue and it states that the IBM Thinkpad A series can handle "2 Type II and 1 Type III"... the "and" is interesting...I would use an "or" there to say one or the other... Maybe there's a retailer in the area that carries the thinkpad: Fry's, Best Buy, etc. I call around and see... That way we can check it out in person.

Okay, sounds good. On another note, What does the frog eat? Crickets. It ate one yesterday after I put it in the aquarium/habitat.

There are 4 more in with it right now. I have a cricket keeper that has another 12. The pet store guy said it will eat no more than 18 in 2 weeks, and that is how long the crickets will live. Crickets eat cardboard... they have some. When there are no more crickets in the aquarium, we give the frog 6 new ones. I only got five in there yesterday. One cricket seems to be floating in the water dish.

Should we bring a stash of bugs to keep in the refrigerator? What if we change our name to the "dog 'n' pony show offs" it could get really expensive to buy mascots? :)

LOL! That's true! Let's not change our name, okay? The crickets don't need to be in the refrigerator. I can feed/care for the frog. We need to change the water quite frequently... every other day, but the water in the grad lab seems yucky... I'll have to bring some water in for the frog. It has moss on the bottom of the aquarium that needs to be changed 2x/ month. I have more and can get more.

So, what is it's name? Mind?

LOL...

\*\*

I wanted to let you know that I installed Windows 2000 on my PC at home (the

one with the AGP Oxygen VX1 graphics card). We'll need to download some drivers from the 3dLabs site prior to installing the card or we'll get some really funky ascii art on the screen... I thought I was doomed last night! I had to reinstall win2k with standard VGA drivers until I thought to download the win2k drivers from the site. Just thought I'd let you know incase your card came before we talked in person.

Also, I found and bought a \$55 firewire PCI card for my machine (now that it has win2k I can actually do some digital video editing on it)... in any case, Premiere doesn't accept the card since

it isn't premiere standard but rather IEEE1394 OHCI standard. So I have to use the capture software that comes with the card. I haven't tested it with Real Producer yet. It's got 3 ports so I'm not sure how that might play into the whole 2 capture card conversation... Also, I came across this quote on the realnetworks.com site regarding real system 8, "RealSystem 8 is a true leapfrog in technology. -PC Magazine" I'd say we're on to something here!

\*\*

Hi guys.

I spoke with Jon today. He is the guy who hosts the parties on Thursday nights. He is very excited about us coming down and possibly using our idea for an internal project with in the club (not a webcast) although I would like to do a webcast. The signal would be projected onto screens here and there. He says that it would be very easy to create a simulated 3-D vision using the mixer we were using by inserting a Key Channel that would Black each field of each camera creating an image where 2 cameras would render as 1 frame thus creating a 3-D image. I would still have to see it in practice because in theory there is no camera "offset" by doing that. Anyways... it seems to me dancing along the ideas that rane wanted to do in Premiere. It's worth exploring. Jon wanted us to get right down to it next week but I told him that we are not at that stage yet, but that we might come down to check the scene out and maybe have a couple of drinks.

So what do you say? Maybe we should get out and check out the "real life"... for inspiration. We could meet and have dinner at first in the city. I have to be at the Forum next Wednesday so if anyone would like I wouldn't mind meeting then if Lab time is critical. I'm going to make a Movie out of the 2 signals with the wearable that we did yesterday for our next meeting to be viewed via the goggles as before to see how it comes out and with binaural sound this time!

\*\*

the guy for the forum sounds good -we should definitely check out. For Thursday, I'm cool with SF plan. I have to go to SF to get some protein anyway...

As an update, I have opened the other HMD and got 2 independent LCD display working as "2 LCD HMD prototype" so we can check out how things looks like. -though we need 2 independent video supply which means we need 2 video cards with video (RCA) out, for sync-ed video. no matter how we do with recorder end, it sure is much easier if we can just do it by one stream of video instead of 2 -it's just \$100- video cards job, but still better than two of them, with setting each movie window up and full screen etc etc.... Anyway so I can make 2-LCD HMD thing anytime, with my metal and plastic guild skills.

I'm thinking of starting Rock climbing, maybe the in-door ones. Does anybody have experience?

\*\*

Hi guys,

Here's something to look into. With Quicktime 5 being released, there's a technology/plugin that converts 2D to 3D. Haven't seen it work yet, but thought you might want a look:

[http://www.ddd.com/technology/tech\\_main\\_frm.htm](http://www.ddd.com/technology/tech_main_frm.htm)

\*\*

Hi Guys. It looks like there might be a good guest speaker at the forum tomorrow. Something that might interest us. I unfortunately have to teach tomorrow so I can't go.

BTW, thanx for the Mindfrog logo Christian, I'll take a look at it. So what about this Thursday. I had suggested a loose trip to that party in SF. We could meet there for dinner earlier on and then go and check it out. Or should we just do the GradLab. I'm up for anything. Let me know.

\*\*

Hi all,

Metricom, makers of the Ricochet modem, unveiled a 128kbps "always on" PC Card on Tuesday. They claim whenever you power up an enabled Windows based PC or handheld there is an instant connection established... "no dial-up". Pretty cool if it works... may change the outcome of the project by next year regarding wireless LAN stuff.

One video signal at 128kbps at a smaller size, say 240x180, with stereo audio is do-able quality wise. 320x240 might still work at lower frame rates, 15fps. Just keeping it interesting. ;)

Here's the press release:

[http://www.metricom.com/news\\_events/media\\_center/press\\_releases/2000/news001017.html](http://www.metricom.com/news_events/media_center/press_releases/2000/news001017.html)

\*\*

Hey guys.

We are not doing a webcast tomorrow. Maybe we should just meet at the lab. What do you guys think. We could do This next Thursday...

\*\*

We are going to meet at the lab... and try to do a webcast. Then it will make more sense for us to go to the club.

\*\*

Hi all,

Sony just released a curusoe based notebook that is TINY! 2.2 pounds and 1.14 inches thick 600 MHz Transmeta Û Crusoe Û processor 128 MB SDRAM 1 type II PC Card slot 1 USB port Firewire capable

To throw another whole idea into the project... we could network using Sony's i.LINK technology from one sony pc to another. And use a USB camera (or the one that's built in to this notebook) in conjunction with the red/green stuff you were working with on Thursday.

Here's some more info:

[http://vaio.sonymstyle.com/vaio\\_direct/75/47/6583.main.vaio.html](http://vaio.sonymstyle.com/vaio_direct/75/47/6583.main.vaio.html)

\*\*

Hi All,

Here's some telling info about who is using the internet. Let's keep this in mind as we build up our technology... "everyone" surfing the web is on the Windows OS:

Percent of operating systems used on the Internet:

Windows = 92.82%

Mac = 2.84%

Unix = .44%

WebTV, Linux, Sun, IRIX, Amiga, and OS/2 = 3.90%

Here's the actual quote:

"As of Oct. 4, 2000, the Mac OS accounted for 2.84% of all monitored Internet

usage, according to WebSideStory's StatMarket. Windows had a usage share of 92.82% on the same date, while Unix had 0.44%. Other operating systems, including Microsoft's WebTV, Linux, Sun SunOS, Silicon Graphics IRIX, Amiga, and IBM OS/2 among others, had an aggregate 3.90% usage share worldwide." - Motion Blur Media

\*\*

Hi All,

Not to be the odd man out, but I won't be able to make it into SF at any reasonable hour as I'll be running late from Cisco as is tomorrow... however, if this is going to be a webcast test then we might need someone to work the server glitches on the grad lab end. I'm more than willing to be "on call" in the grad lab from 8ish till whenever Thursday night to try and get a stream from a "satellite" PC to the gradlab servers. There's obviously the issue of bandwidth at the club, getting a camera hooked up to a PC (via firewire, analog, USB) with realproducer, etc... it might be too short notice. Either way let me know.

Also, I just got handed an Aironet PC Card for my work laptop. It's very liberating to be wirelessly connected at 11mbps... I'm connecting to an access point about 100 ft away and 1 story up through 2 major walls and the ceiling/floor. Cool to see it in action. I'll try and make the Forum tonight... what's it all about?

\*\*

Hi all,

I vote we call the frog "envy". It's green and everyone hates how much fun we're having. ;)

I'll pick up one camera if you pick up the other. I thought about it some more and figure for \$30-\$40 a pop we should just answer whether or not two USB signals will work tonight. If it works we can look into how to convert NTSC to USB via a consumer grade board. Also, we need to look into video out via RCA for the HMD.

\*\*

I'm on my way out the door to get the camera... glad I checked my mail first. I'll get two of them so they're the same...See you tonight... and I like 'Envy'.... cool name

\*\*

If it works we can look into how to convert NTSC to USB via a consumer grade board. Also, we need to look into video out via RCA for the HMD.

\*\*

Here is the scoop on VREX. Their multiplexer is a \$1000 which does not matter since it would not work for us because our cameras would not be able to genlock to it. Genlock is a signal reference that syncs up the cameras and locks them into place. VREX is working on a codec for live video streaming but that technology is quite far from being done. I'm going to get an analog wireless transmitter just to have as an experiment.

\*\*

Hi all,

Sorry if this didn't make it out the first time. This is a live feed from the gradlab!!!

<http://134.154.170.164:8080/ramgen/encoder/live.rm>

Here's the breakdown. The one server with a PIII chip and 256MB of RAM crashed after only a few seconds when encoding 2 live streams and serving those 2 streams. What we can try is installing real server on the other PC and have the 2 live Streams get encoded on the PC with the cameras and then have the other PC "serve" the 2 streams... that should split the processor requirements over 2 PCs and hopefully work well. What this means is that all we have to do is find a laptop with 2 USB ports and 1 PC Card slot. Hook up the wireless LAN and we're wirelessly streaming 2 video streams. THATS EASY and CHEAPER!!!!

Now all we have left is too make things smaller, prettier and cheaper! That's

FUN! I guess we still have the whole feedback loop to look at... but we're definitely ahead of our milestones! I'll start looking into VoIP and other live voice chat stuff. What did ChinaNet use? We can look into 1 stream and/or 2. Maybe we offer "true" 3D for those with

Our HMD's and "simulated" 3D for the 1 monitor users. If we want 1 stream then all we need to think about is interlaced or color-based multiplexing. Then build the glasses and HMD work with the wireless LAN a little and we're done. I'm excited!

\*\*

Hi Guys.

Great! I like this USB direction that we are going... saves a lot of effort. Yes I do think we will need a separate server always when we go live. The field trip was

actually kind of cool. It's a nice space and good atmosphere. They are called

"Dimension7 or [www.dimension7.com](http://www.dimension7.com). I think it would be great venue to do a live webcast with the wearable. They have a fast connection. T1 I was told and we could also feed the signal on wall screen projectors kind of like video art and have people wear them. The new "eyewear look" I brought in today would work great. The place is not very big and crowded but kind of mellow, more like a performance space.

Well enough for now...I'm excited too. I'm still not feeling confident with the last test I did as working 3D. It's a good experiment but it's hard to get it right. I'm going to try a few more things. We met this guy who was one of the guys who wrote "Flame" and he said that this DDD thing does not work. See you guys Sunday.

\*\*

Hi again,

Here's a quick list of some full duplex voice chat apps... maybe we can mess around with these and others and see how they work.

Dialpad:

<http://www.dialpad.com/>

Speak Freely:

<http://www.speakfreely.org/>

FreeTel:

<http://www.zdnet.com/downloads/stories/info/0,,000G9M,.html>

PhoneFree, MediaRing Talk U, and HearMe for ICQ:

[http://www.fwnetwork.com/voice\\_chat/index.html](http://www.fwnetwork.com/voice_chat/index.html)

PalTalk:

["Courier New";http://www.paltalk.com/paltalk/index.html](http://www.paltalk.com/paltalk/index.html)

\*\*

3D Video and Glasses

<http://www.i-glasses.com/Store/3dhardware.php3>

<http://www.3-dvideo.com/ti9809a.html?>

<http://www.vrex.com/>

<http://www.vrex.com/html/multiplexers.html>

<http://www.vrex.com/html/cam-3000c.html>

[http://www.vrex.com/html/shutter\\_glasses.html](http://www.vrex.com/html/shutter_glasses.html)

[http://www.studio3d.com/pages2/store\\_glasses.html](http://www.studio3d.com/pages2/store_glasses.html)

\*\*

Thanx for the links Rane. I'm determind to make this 3-D thing work in the simplest way possible. I'm really leaning towards the experiment of 2 cameras registered on the Z-axis and then taking them into an analog processor that blanks out every field of each camera and combines them into 1 3-D signal.

I think DDD does work but not for realtime. Only for post stuff and it takes a while to compress.

\*\*

I'm understanding this "field sequential" way of creating 3-D better now. The only problem is that it will work when displayed full rez 640x480 as a ntsc standard signal. It has to be at 60 cycles a second or 29.97 frames a second= 60 fields. So for the internet as the delivery platform it's probably not going to work. Jon is willing to come to the lab on Tuesday evening to demonstrate how to do this 3-d thing in his switcher.



What he does is he creates one black field in photoshop and another white field. These 2 get sent to the key channel of the switcher. One black and one white will sequentially mask out a field of each camera. The final composite is a signal made out of 2x1 fields cameras a and b that generates a single image which imitates the eyes. It basically imitates the way our eyes work.

I'm curious to see how this happens.

\*\*

Hi Guys.

I'm still trying to get through on the Multiplexer Unit. These guys are really hard to get to. But I think this unit may be the key except the "Genlock issue" . I can't Genlock our small cameras but we'll find a solution. I'll find out more tomorrow. I would like to do a "performance" at Dimension 7 before this quarter ends. It could involve 2-wearables using an Analog wireless transmitter and "Video Projection in 3-D" on the walls and a live stream on the internet. Maybe Tomonori will be able to do live sounds?

I primarily see this as an experiment to "test our idea" and also have a little bit of fun. It doesn't have to be perfect I'm thinking Mid December. What do you guys think?

\*\*

I definitely think the end of the quarter time frame is better than next week... it gives us time to figure out how we're going to do the 3D technology. Also, analog wireless is totally cool for this quarter... it meets our milestones.

:)

\*\*

Hi Guys.

I am unfortunately not going to make it in tonite. An old friend from England is in town and tonite is the only nite I can hook up with him. I'm having a phone talk with VREX on Monday. They are at Internet World right now. I'm going to discuss our idea with them and see if they'll maybe throw us some equipment for free or at a good price. I think we should set a date in Dec just to have a deadline for the "event". Is everyone game for this? It would be a great experiment. It would just be good to confirm with Jon a date. I'm pretty confident right now after having read a lot of stuff on "stereoscopy" (thanx Tomonori for the link) that the color way of doing 3-D is not going to work for us. It needs a higher resolution and the web is just not there yet. The shutter way to go with the multiplexer is the way to go I think and simpler in many ways too.

\*\*

are we meeting today? I can but... I went to VREX site -I think they have some cheapest goggles around, about \$50, no? development kit is even \$70 or so, I have to double check. I didn't see video stuff on their site.... use of Multiplexer pros:

1. video signals are mixed in analog, before going to computer.

2. we need one stream line. cons:

1. receiver has to have the goggles.

2. we need to make our own "playback" software. (this is, if VREX doesn't have a software that put monitor in "3D" mode, meaning sync goggles and shutter even/odd. I think we have to do

something, since there's no way for computer to tell even=left, odd=right or vice versa, the stream has to tell which is which, when to tell. Those things we can ask VREX and see if they have VIDEO stuff out.) the other important point is, we have to double check the encoding scheme of MPEG and other, in order to use video-multiplexer. If you encode the video into even-odd by left/right vision, it has be delivered keeping the even/odd lines. (sorenson, cinepack can't be used...) if there's no video codec does what we want, we have to make codec by ourselves. The another way to do multiplexer is doing it on client computer:

pros:

1. video are multiplexed on client, perfectly even/odd, no need to concern about codec problem.

cons:

1. we need 2 streams.

2. definitely need dedicated playback software that has multiplex mixer function. I went to realnetwork and downloaded a SDK, source code for realplayer just for fun. they have SDK for PC and Mac... Maybe we can do the "make playback software" part by making a realplayer plug-in, not making whole thing.

## November 2000

\*\*

How would you guys feel about if we met this Thursday somewhere out of the lab just to talk and put all information into perspective. It could be Bronco Billys. And then we could go to the Lab...

\*\*

Siggi, Too bad about the VREX expense... I'm still waiting on the 3D Glasses from DDD. The whole 2 stream thing may be more complicated and bandwidth consuming...but it's starting to seem like the best quality and cheapest hardware setup. We'll talk at Buffalo Bill's.

\*\*

We can talk about what we "need" and what would be "cool" regarding upgrades. It may be that all we need is 256 MB RAM and a mother board and one 800 PIII chip (\$700) on the current PII machine... or just one 800 PIII chip on the dell (\$300)... of course two dual 800 PIII machines with 256 MB of RAM would be the "coolest" but that would run \$1700.

Also, not that it's that expensive (\$50), but we should really get a sound

Card for the older PII machine.

We'll talk later on.

\*\*

Hi everyone,

The good news is I can encode and stream 2 60kbps video streams from my dual 500 PIII. That is I am encoding and streaming from 1 machine (not using the grad lab at all). The bad news is I

only have 120k of bandwidth so the image doesn't look so great... and I'm not sure if my IP address is public or not.

In any case, could you go to mindfrog.net content section:

<http://www.mindfrog.net/project/content.htm>

And click on the 200k live stream link at the top of the page and see if you see two streams... If so, the other good news is that we may not need to worry about syncing the video. I've experimented with SMIL (an HTML- like language) which allows you to layout rich media like Real content. In anycase, I'm actually linking to a SMIL file, not the 2 separate video streams. In essence the SMIL file combines the 2 60kbps video streams into 1 120kbps SMIL stream so the only way to loose sync is if the PC doesn't capture in sync which on this machine has not been an issue.

Let me know what you think.

\*\*

So everything I said was true... but upon further inspection I realized that the 2 videos are actually about 1-5 seconds apart. I'm sure there's code to compensate... I just don't know SMIL well in enough to bang it out right now. I'll keep lookin into it.

Oh, by the way, the reason I even went to SMIL is because I couldn't get 2 separate real videos to play either in the same window or in separate windows. When the 2nd video would play it would pause the first video and vice versa. I guess only one instance of real player can be playing at any time. The SMIL solution combines the streams into one stream so only one real player is needed even though there are technically 2 sources.

Look forward to hearing from you guys. Back to work.

\*\*

If you take newspaper (I don't!) take a look at toysRRRus flyer. (I think. I've seen eToys, and some other ones. kinda "get ready for christmas" deal) There're some interesting stuff, like LEGO Mindstorm Digital Camera option etc, but here, look for a "kid's CamCorder" kinda thing, maybe yellow/orange color one. It's a Camera-Plus-RFTransmitter. It transmits the video signal to TV channel frequency so kids go around and shoot the video on VCR. \$70 or so. We have to take a look at it, but if the Camera part is good (just like what we have, I'm curious if it has huge bulky lens unlike ours have), this is something we can hack!

Watch out for toys.

\*\*

HI Guys.

I already ordered 2 small color cameras from Supercircuits. The model # is PC87XS. They should arrive here by Friday if not then, then at least on Monday. Call my wife to pick them up since they will be delieverd to my house.

NOTE!!!

These cameras run on 5 volts or 3xAA batteries. Do not plug any higher voltage into them than this. It may blow the powerpack!!! I'm getting a digital switcher today. I'll give it to Rane.

\*\*

Christian, if you can, try using iMac/G3/G4's USB Keyboard -it's got 2 port USB hub inside, on the right and left. I tried the mouse and worked, wonder if keyboard works... oh well cheap test.

\*\*

Okay... I brought the cameras that Siggie got. Our presentation/discussion will be on December 6th. That's a Wednesday. I ordered 100 pairs of anaglyph glasses (red/blue). I think it makes sense to make a video of our progress thus far. We can tape the evolution of the eye wear, how we looked at it on the screen with the little viewers, then Tomonori's goggles, the Wild Planet glasses, and the glass magnifiers from inside the HMD. Oh, the cameras from Supercircuits are not in a housing box, just open cards with the camera mounted on it. We should videotape an interview of our progress. Each of us can be in it.. it can be a 'show and tell' movie. I think it would be ideal if it was in red/blue 3D... how realistic do you think that is in terms of the time frame? Siggie will be back in town on Tuesday, and I'm sure he'll be burnt out , exhausted/ jet-lagged, etc.

So, what are your ideas on this? Tomonori suggested that we do some filming at Dimension 7 club as footage to incorporate into our video. Siggie, we haven't yet used the mixer, though it is here. We need to have 2 independent video streams to get 3D. We need to discuss the imple-taken-for-granted stuff we have.. such as why

3D? And leaping from mind to mind. What else can you think of? Forget the theory – it seems as though no one cares. Anyway, get back to us.... and let's continue this discussion. We have to leave time to create the footage and to edit it.

\*\*

some thoughts.

When we say "mindfrog", the first word comes up is "communication" no? Having that on top, we can talk about 1st person experience that the Internet makes possible. to get realistic experience, we want 2 video/audio streams to "fake" the reality. Thus we use 2 cameras, 2 microphones delivering 2 video/audio streams to client's 2 LCDs/Speakers (headphone) There're some other approaches to "communication" and internet", using sensory other than Audio-visual. The Internet networks people. Faster Internet connection can be a "nerve", the nervous system that connect/cross-connect people's sensory, delivering "what they feel" other than "how they feel." I'm thinking of a simple device that transmits and receives simple parameters through wireless network, with sensors and feedback device. When the Internet infrastructure is truly implemented, where we can get a connection wherever we are -in a car, a hotel, even on a street, this device can be used for many purpose. conversion of input is another interesting topic. I saw in an animation, that they try to convert a feeling into another -for example, changing "pain" into "scratchy" or something. When there's a pain to measure, but you don't want be put in a pain. If you can convert the pain to something else, you can easily accept and say "how scratchy" other than "how painful." The animation was about A-10 nerves and those brain stuff..... So, we don't NEED to deliver how fast the guy is moving to the other guy, instead we can deliver it as an other parameter, maybe by the tempo of music...

I know we can transmit MIDI over the internet on Mac/PC. And there're some "cigar box" Linux PC around. (hey PDAs are Palm size!) we can develop the sensor/feedback device with internet capability -the part we work on is the hardware/software, not the building-a-PC part. The Springboard for Handspring Visor will be nice... (but they are not yet "wirelessly" connectible) it can be wireless/wired... (when the feedback device is a desk-size, there's no need for a wireless machine...) just a thought.

\*\*

update: the analog transmitter thing will come on 21st. I went to the hardware store in Hayward but couldn't find some tiny volts and nuts for mounting the camera. They say I should go to the hobby shop where they have mini-train stuff. There should be one on Hisperian, but any idea? For this time, I want to use 1mm or thicker brass or aluminum plate with nuts and volts so we can "fine-adjust." If I get the parts I want, I can make the "camera-glass" in a day. Hey, we should start thinking about Christmas break. All the classes should be over by 12/10 -the presentation is on 6th, Wednesday. When is the presentation for the committee?

\*\*

Can I know when you guys take break, so I know what to do during the break?

If I have more than 2, or 3 weeks, I may go to Japan for the christmas/ new year.

\*\*

Hi... It's okay with me if we don't meet for a couple of weeks over Xmas. Who else is planning on going away?

\*\*

here's the 'character'. I can edit the parts, keeping the action the same.

<http://www.mindfrog.net/workspace/frogProto.html> any particular action you guys want? (dance, jump, "bud-wei-ser"?)

\*\*

I like the frog.... NO on budweiser...

\*\*

Hi All,

Sorry for the late notice but I won't be able to make tonight's meeting. I can say that I've tested my Toshiba Protege 7200 labtop with a powered USB HUB and the 2 logitech cameras and can stream at 2 x 50kbps streams to my Dual PIII machine. The obvious draw back is the 2 cameras require that the USB HUB be powered Which means another quick draining battery pack. The good news is we could demo a crude wireless video stream (with AC/DC power cords) if the wireless LAN is working in the labs. Also, I just yelled at my computer guy to have him e-mail me a written quote so that we can soup up the pentium II machine. We need to decide if we want a dual PIII 800 or a single PIII 800 etc. Let me know if you want me to send the cost chart again. (Ballpark numbers are \$1000 for a complete dual PIII 800, 256MB RAM PC. \$750 for a single PIII 800.)

In any case, I think I'll have the quote by tomorrow so we can order the upgrade in time for the demo next week. I'll be at the labs Thursday and over the weekend. Let me know what you think about all of this. Enjoy the evening and I hope you all had a wonderful weekend.

\*\*

Hi all,

About Meeting this week. I won't be able to do it Thursday... I could meet tonight or tomorrow night or we could double up next week. Regarding Christmas, I'll be out of town December 21st through January 1. Sigg, glad to hear the trip was worthwhile. Tomonori, thanks for putting all the

work into the frog and presentation. Maybe we could brainstorm ideas for the presentation even if we don't meet this week.

\*\*

Hi all,

Here's a potentially relevant write up on a company that measure the Quality of Service (QoS) of media streams. They can show where a stream get's bottlenecked in the network etc. It's higher end than we might use on our site but we may want to address issues like QoS in our project.

<http://www.streamingmediaworld.com/gen/reviews/keynote/index.html>

\*\*

So, tomorrow is the thanksgiving or something, right? (haha.) No meeting I guess. Then we have the thursday next week and that's it. you guys think we can just shoot the video next thursday, then mix and finalize them onto a VHS by the presentation? (a week to think about, a day to shoot, a week to mix down) Sounds reasonable.

\*\*

So, tomorrow is the thanksgiving or something, right? (haha.) No meeting I guess. Then we have the thursday next week and that's it. you guys think we can just shoot the video next thursday, then mix and finalize them onto a VHS by the presentation? (a week to think about, a day to shoot, a week to mix down) Sounds reasonable.

\*\*

Whatever video we want to do for our presentation. It's no problem. Yes we can do that.

\*\*

bad news: or temporally out of order: the TV transmitter thing doesn't work like charm. It kinda tune in, but not completely. This could be because of the BARE WIRE I used for TV capture card as kind of Antenna, I can try with real one later, or the power supply, maybe too hi/low current. I'll work on this. good news again: In our invisible cubicle, I saw a white box with two antennas named as 'cismo' or something. ;) it's there.

\*\*

Hi Tomonori/everyone

happy turkey day. It sounds like you really want to go home over the holidays but are maybe a little reluctant because of our project. Do what you want/have to do. I mean I had to take 2 weeks off for this gig in Asia. It was a lot of work but fun though. I'll tell you more later. I'm still just recuperating. I'm on a different time zone so I usually get up at 3am. One thing I did not have any time to do was to do some research on electronics while in Singapore. I absolutely worked all the time unfortunately. Maybe you Tomonori can continue doing some research while in Japan (if you go) on electronics because they have some stuff over there that is not available to us here. I'm mainly inerested in finding smaller cameras than what we have. Maybe they exist on the black market...Maybe we could kind of do a list of equipment stuff that you could research while there.

I'm wondering if we could meet this Tuesday too. Since we are on the final stretch. I have to teach Monday night. But all the other nights are available.

\*\*

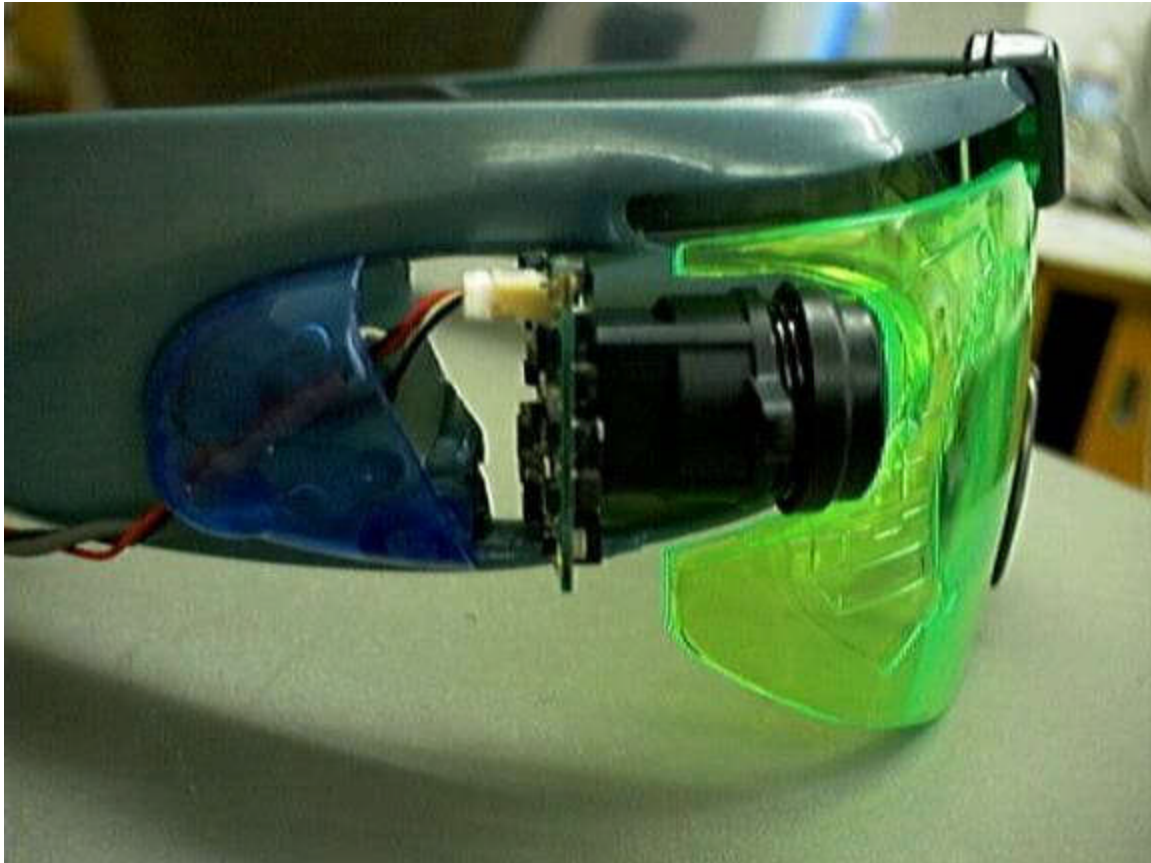
Anyway, I thought of going there from 12/15 or so to 1/4, 3 weeks. But if we don't do much thing on the week after the final, I may just leave since I had nothing else going on other than this project. Yes I can do electronic search but this is more like finding parts, circuits, DIY stuff, half-broken laptop etc etc, I already looked for a smaller camera this summer but they said there's only pin-holes that are tiny.

About the tiny-ness, do you think the size of the lens seems good? One other thing we didn't do is to \*cut\* the CCD off the board and do the trick, not by de-soldering it. All we need to extend is the distance from the camera mount position to the back of the guy's head, right? (not as far as waist) But this is so far the only thing we can try with those cameras I guess... We can still finish up the first generation "capture system" and continue working on/to make the smaller cameras. I'll try to mount the Color cameras onto something by next week so we can see how it "looks" like. (Rane, I can't find the tiny-enough nuts'n'bolts. Can you find some on your way to the school?)

\*\*

Tomonori, if you can't find the right screws, let me know and I'll try to find them.

\*\* take a look at the pictures. I mounted (not tight!) one of the color camera onto the visor thing (I saw the name on toysRus ad, but forgot) It's not completely aligned, it needs a plastic job a little. We'll talk about that and see how to do it. I have some metal plates, metal tools, metal saw, and a drill. e-lectric drill. the movie thing I uploaded was meant for splash of web site. I'm still working on it.



\*\*

[http://www.x10.com/products/product\\_list2.htm](http://www.x10.com/products/product_list2.htm)

so I don't see the difference of DVD thing and VCR thing. BTW, the "big picture" thing on the bottom is like Scan converter/ transmitter receiver. interesting. So, if this DVD or VCR anywhere thing work for 2 that'll be great. just one will do for now. Should I order two of them? I'll ask them tomorrow if they have a switch or something for tuning them so they can co-exist.

\*\*

[http://www.x10.com/products/product\\_list2.htm](http://www.x10.com/products/product_list2.htm)

I bought DVD anywhere, 2 of them. They have 4 channels to tune, sooo we can send 2 separate movie independently. coming on next Tuesday.

\*\*

<http://www.akizuki.ne.jp/video.html>

this page has a pre-made composite-RGB circuit. they also have RGB-composite circuit. meaning you can lift G and B to get R, that Siggi was talking about. So, suppose we have two color cameras, the question is, do we still need some kind of mixer or just "solder" two camera's R and R, B and B to get R and B pictures? I'm looking for a way to hack into NTSC now... either doing it in raw NTSC or after converting it into RGB...



## December 2000

\*\*

Hi All,

I've ordered two USB capture devices from Belkin. The USB VideoBus Û and the



Belkin USB VideoBus II Û. The USB VideoBus converts composite or SVHS video to USB. The VideoBus II adds stereo audio input. If all goes well we might be able to hook up the green headset with binaural mics to the laptop and stream the signals wirelessly. However, after last night's test we probably need a faster laptop to do 2 streams with audio, but we should be able to do at least 1 video stream.

I've included the URLs to the product description but in case the long URLs don't work, here's how to get there.

Go to <http://www.belkin.com/>

Click on the "USB" graphic Scroll down and Click on "Multimedia, Mice And Keyboards"

USB VideoBus Û:

[http://catalog.belkin.com/IWCatProductPage.process?Merchant\\_Id=1&Section\\_Id=38&pcount=&Product\\_Id=21018&Section.Section\\_Path=%2FUSB%2FMultimed%2E%2E%2Eeyboards%2F](http://catalog.belkin.com/IWCatProductPage.process?Merchant_Id=1&Section_Id=38&pcount=&Product_Id=21018&Section.Section_Path=%2FUSB%2FMultimed%2E%2E%2Eeyboards%2F)

Belkin USB VideoBus II:

[http://catalog.belkin.com/IWCatProductPage.process?Merchant\\_Id=1&Section\\_Id=38&pcount=&Product\\_Id=88962&Section.Section\\_Path=%2FUSB%2FMultimed%2E%2E%2Eeyboards%2F](http://catalog.belkin.com/IWCatProductPage.process?Merchant_Id=1&Section_Id=38&pcount=&Product_Id=88962&Section.Section_Path=%2FUSB%2FMultimed%2E%2E%2Eeyboards%2F)

\*\*

<http://www.ibpstl.com/lahome.htm>

What is an Ampere-Hour (A.H) Capacity? Product of amps multiplied by time. It refers to the volume of electricity that can be drawn from a battery. Other things being equal, higher ampere hour capacity batteries will run a truck longer than those with lower ampere hour capacities. A.H. capacity of a battery depends on the number and design of plates per cell. battery life. So for USB Hub (2.4A) if we use 2.4A.H battery it works for an hour. (but I don't know how much current the device draws.)

\*\*

So I was in the lab, thinking of the next generation prototype. For now, the cheap solution for "alignment" is to put them onto a flat metal sheet. So I did it.  
<http://www.mindfrog.net/workspace/3rdProto1.jpg>

...../3rdProto2.jpg

...../3rdProto3.jpg

\*\*

k,

So the final word is this. If we can squeeze all this new gear in the same case a Dual PIII 800 256MB RAM upgrade will come in just under \$1000 parts, tax and labor included. If a new case is needed the price pops up to \$1130 parts, tax and labor included. If we need the case, York would let us pay the bulk with the school credit card (which has the \$1000 daily limit) and we could pay the \$130 difference. I've attached the invoice which locks in the price for a couple weeks. Let me know what you think. I can fill out the paper work and get the machine worked on over Christmas break if you'd like. It might be cool to come back to a kick ass server. I'll see you

all on Tuesday at 7 in the labs for Wednesday's prep work. I have a meeting that goes till 5 so the earliest I'll be at CSUH is 6:30. Maybe we can work on the wireless lan tomorrow night.

\*\*

I got the NTSC to USB capture cable. It works really well except for the audio is SUPER hot. It may be a mic/line level thing, but the capture cable has 2 RCA's so I assume it's a line level from the camcorder to the capture cable. In any case we can check it out tomorrow. The good news is that with NTSC to USB we can at least demo a wireless signal from one camera on the "cool" green glasses with the binaural audio. The unit is pretty small (about the size of a pack of smokes plus a USB cable). I haven't tried two USB captures as the HUB is in the gradlab. In anycase, see you tomorrow night.

\*\*

<http://www.nipron.co.jp/products/battpack/remove.html>

sorry, japanese page. They have a 5-inch bay size UPS. 2\*12V package to make 24V for the computer to work. simple. From the data they have, we just need 2.2Ah 24V battery to operate a desktop. certainly do-able. there're some desktop PC with microATX form, which has one-5-inch bay, 1 (or

2) IDE bay, and 3 PCI slots. we can use this as portable unit... the Pocket PC thing "espresso" looks interesting, but it doesn't have PC/PCI slot. they use USB-to-Ether thing to get it connected. doesn't sound good. But somebody has to make one of those... Just tiny minimal PC with external power supply...

\*\*

So, I was riding BART. I was clarifying the whole system we have.

----->basic view of our project<-----

We want the video goes producer and server. that's simple. We have analog signal needed to be digitized, serialized and packetized. In addition, we need the packet transmitted wirelessly. simple. components we need:

1. Analyser camera.
2. Digitizer (A/D) PCI card, USB converter, etc. (this simply digitize the strength of light from the CCD.)
3. serializer small microcomputer that "multiplexes" the signal. the microcomputer sends signals for CCD to point out one of the sensor array (X,Y position of tiny light sensor) and receive the A/D result from digitizer.
4. packetizer small microcomputer that makes signal into packets. Meaning, bringing "data" from Application level (layer 3!) to physical layer (layer 1). Meaning, take some bunch of data (sample size, so to speak) and put header data (like destination, origin and checksum) based on TCP/IP or UDP rule.
5. Wireless transmits/receives Packets. Ideally, think of our Cisco base-station to base-station (Apple AirBase to AirBase works too). 2 boxes with a Ethernet jack and an antenna each.

----->trend (wireless)<-----

Christian: "...everything wireless..." (from our presentation) I went to CompUSA and saw a Intel's "wireless USB connection for home PC" thing. ("Intel AnyPoint Wireless Home Network Products" <http://www.intel.com/anypoint> )

So what we really need \*at this point\* is a box that can transmits signal wirelessly. Analog wireless, wireless LAN, and homeRF (bluetooth etc for small range...)

1. Analog wireless cheap, "\*\*\*" (what do you say when the signal slowly go bad, against wireless LAN that cuts off right at a point) insecure, interfere with other device (no much channel. "frequency multiplex" as oppose to "\*\*\*" (something! we learned at Telecom class! packets!))
2. Wireless LAN expensive (at this point) more channel (unlited, or, more for low bandwidth, less for high bandwidth) secure. 802.11b or CDMA (wireless LAN or Celluler phone... so to speak.)
3. low power wireless LAN doesn't exist yet (bluetooth chips and FCC rules are ready.) cheap (it should be.) the next generation for home appliances.

----->system configuration<-----

The test we did is one of the way to do this. Camera spits out Analog signal, goes to Belkin converter, which just converts RCA to USB, the computer digitize (driver) and packetize (producer). What we don't necessarily need is the LCD screen. The other way to do is get the Espresso" thing as portable unit. list of things we use:

Camera, Belkin USB cable, Espresso (producer), USB-to-Ethernet, Cisco Base station, (wireless here) Cisco Aironet card, Laptop (router, receiver, or possibly server), Server (desktop type if necessary) In this way, we use base station as portable Ether-to-Wireless box. it should work. we can use Apple AirBase too. (AirBase to Cisco should work...) we do in this way (computer-in-the-middle) since it's much easier and cheaper if we use video compression in normal (portable) computer, not by hardware. (I guess... we need to look into "hardware video compressor". If we can get some budget, we should definitely go search for making a box that does all.)

Video is a most bandwidth-consuming type of data from anything else. Bluetooth etc are interesting and cutting edge, but since they're designed as "home appliance networking", the range is not so big (3 meter to the size of the house) so it may not be suitable for our purpose.

-----><-----

We're making the model. Using pre-existing products daisy-chained. If we have enough budget, we should definitely go looking into making a stand-alone model. We can still do this with less painful way, using pre-existing operating system (so we don't have both hardware/software pain.) (in depth, for example, using small portable linux computer, not the microcontroller that we have to program in assembling language...cheaper and smaller but hard.) (uCLinux and uCSimm is the SIMM-RAM board sized Linux computer, that's as small as it goes.)

\*\*

[http://www.advantech.com/epc/products/index.asp?category\\_name=Single%20Board%20Computers](http://www.advantech.com/epc/products/index.asp?category_name=Single%20Board%20Computers)

something like those are so called "embedded computing" stuffs. They're smaller than ATX or microATX. some can run on Celeron. A bit pricy (\$700 for a board) Advangate is that we can use PCI for those, and they have PCI-riser, L-type PCI slot extention for reducing space (so the board and PCI card go parallel.) If we want PCI and not want the screen and still look for small, this is the way.

\*\*

<http://www.yokogawa.co.jp/MAT/english/products/ip/ipv8532.htm>

this, a camera and a Cisco or apple base station as a portable looks pretty small. this machine spits out video through it's 10baseT jack. Video is accessible via http. ....so, can real server use this kind of signal as input? (like pulling-up from the source) or it should point-out the server? (I don't really know how this output looks like on the client... I have to research on that. If this works just good without real system, that's cool -if we need two video source, we just add another and a 10baseT hub...) kool.

\*\*

<http://www.studiomoon.co.jp/welcome/html/020102.htm>

this is how it looks like. you can control panning (up, down, left, right) and zoom via web. they use java applet for web browser viewer. well, it's slow. I don't know how they can achieve "15fps" with this thing...

\*\*

custom linux-serialCamera solution Arial;such as this:

<http://www.uclinux.org/ucsimm/>

can be the brain of the portable machine. (if 16Mhz is good enough...) it's got a Ethernet, Serial, I2C (high speed serial, for inter-communicating microprocessors) There's Real Producer for Linux... They use this as a brain for IPphone. (look at their website.) How about video?

\*\*

News from Tokyo – I got another TV transmitter cheap, and NTSC-to-RGB, RGB-to-NTSC converter, IR transmitter (for b&w \*night\* vision) now, here:s the good news.I found the \*FBI\* camera, 7 or 9 mm diam, so small. this is the \*fiber optic\* camera. 1M fiber optic cable goes to a match-box that has video out etc. cool. the guy at the shop said that the Japanese version of FBI really use this . bad news. awfully expensive. \$800. (the other shop had similar one at \$1200) I would, include this camera in the proposal, and say we:re sure it looks great, and not really do it ( until we meet an Angel that supports us, who can get 2 of those for us. there:re some \*lipstic\* camera, but they:re some \$500 range. up to

\$300: small \*box\* type camera

\$500 up: lipstick

\$800 up: fiber optic

I guess this is the vision.

One shop had the 3D \*video adapter\* thing for the camcorder (the one that does sutter job with mirrors, before digitizing, the one we saw on he website. It looks good, the shop also sell 120hz (shuttering at 60) hi-frequency TV too. the 3D adapter thing, has the same problem we had -it has to have \*focus\* of 3D set manually. So, when the focus is set to 3meter range, the things in front is little hard to see, (sticking out)

[www.j-3d.com](http://www.j-3d.com)

product name \*Nu-View\*

\*\*

Hi Guys.

Sorry for the long e-mail.

So this is a run down of what happened at the Streaming Media Conference and all the issues me and Tomonori talked about. There wasn't much good stuff going on at the SMC. At least not stuff that relates to us. Most of best stuff was happening in Mpeg 4. That is a codec that would ideally work best for our purposes. Best quality for the bandwidth. It's also the codec of the future. Mostly some companies were doing live stream videos to a PDA via Wireless LAN. It should also work via cell phone. Go to

[www.packetvideo.com](http://www.packetvideo.com)

<http://www.packetvideo.com/press/pr11172000.htm> for more on Mpeg 4

[www.phillips.com](http://www.phillips.com)

Phillips sells Mpeg 4 encoders for the mere price of \$25,000. Unfortunately Mpeg 4 is still in it's developing stages and I believe that it is not supported by real but maybe with quicktime? Me and Tomonori discussed that although we are able to make our eyewear look 3-D via 2 LCD screens in HMD, the client will not have those kinds of units. We are exploring 2 ways to go.

One is to do an analog color offset of the 2 signal R-G/B and B-G/R for the red/blue technique. Or to do it the shutter way. On the shutter technique we would write the buffering code in Java Script for the server side and then a Java code for the Client side. The Java code would control either the color scheme or it would control the frame rate cutting out the odd and even frame of each signal to create the strobed look.

WE both discussed that since we have only a limited amount of time left that we should revise our plan/flowchart before we go into the winter quarter and come up with work plan. Other Issues Should we buy a laptop or Create our own Single Board computer platform for the wearable?

The quality of USB capture VS using a Videocapture cards. We should test the USB transmission on a desktop and also test the signal via VideoCapture Card.

We also discussed that we should make a single camera unit to test that properly and start creating Content for the final model. Finish Business cards. Research of coming shows for this summer 2001 where our project could go.

Siggraph?

Brief Summary for research. Mpeg 4 standards Laptops VS our own wearable. Business cards Motors to control the cameras for the 3-D at 3 different object distances. Up-Close, Medium distance, Infinity. Lastly if you guys want to meet over the holidays I can and would like to. I know you are swamped Christian.

\*\*

Hi All!

I just popped into the labs to install our new Real Server. We now have a true

work horse of a machine. As discussed we used our "lab fee" funds to upgrade to a dual PIII 800 MHz, 256 MB RAM. The motherboard and RAM run at 133MHz... it's fast. In a last minute

decision, I spent \$150 of my own money to upgrade to a 20 GB harddrive running at 7200 rpms (the old drive was super small, 3GB, and super slow, 4000 rpms).

Since we used our lab fees, we can divey up the 2 processors, 2 ram chips, and mother board at the end of the program. I'm assuming the Oxygen video card will stay with Rane and the harddrive will stay with me, although I'm sure we can work something else out if need be.

Also, I have all the old parts in a box in the labs as we'll have to put the PC back together as it was when we got it... not a big deal. Also, the only application I installed is Real Server G2. Let's talk before we install any other apps. Don't want to drain to many resources. I hope all of you had a great break. I got to see my niece in Peoria (where it was 20 degrees below zero when I arrived). The lab is a little disorganized for my flavor so I'll be in later this week to clean up a little... I'm not sure when. I'll see ya all in class Thursday night. We can resync and proceed onward with new meetings. Talk to you later!

## January 2001

\*\*

I can be at the labs by 7PM... I'll bring cleaning supplies cuz the corner is getting a little grimmy!

\*\*

So. Should we meet tonite anyways. One thing I want to do is to reorganize our space. I'm game.

\*\*

Call me or mail me for MacExpo and the Class schedule. I guess we can meet this week on Thursday -we do have forum on Wednesday.

(I guess I wrote this before, but on the way back from Streaming Media Conf., I and Siggie talked about doing the shutter thing in Java. Basically, playing 2 movies in the same position and mask one by one... I grabbed a Intro to Java Book (in Japanese!) but if anybody have time, look into the graphic capability of Java -can it handle 60hz refresh? (speed issue?)  
-how should we do it? (mask, alpha channel etc)  
-should we buffer a frame, or just shutter the streaming movie?  
(I thought it's easier to "hide" one by one, and multiplying (or adding) the 2 pictures (like photoshop's layer thing. this time, the other is always black so no problem...)

\*\*

HI All.

Me and Rane are going to the Mac Expo on Thursday around noonish. Tomonori!

Welcome back. Rane said that she'll be in class at CSUH till 11:30 am and then she could pick you up if you make it and then we'll all go together. Christian I assume that there is a no possibility in you making it with us but we'll meet in the evening at 7pm on Thursday?

\*\*

Sounds great. I read up on the new 733Mhz G4 being released in February. Pretty cool stuff. Siggie, I won't be able to make the expo, but look forward to Thursday's meeting. Also, I wasn't aware of this until Sunday night, but Adobe has released Premiere 6. It seems there are some significant improvements including native support of OHCI compliant firewire cards on both Mac

and PC systems. See you all Thursday night.

\*\*

Stereoscopic Movie Presentation with Quicktime and Java (paper) I think it's doable but, most common stereoscopic device is the shutter glasses. It's a glasses with LCD screen that covers left or right eye one by one. (as described in link1) One of the site (link2) has several sample still images that should look in 3D with their glasses. (attachment picture)

The picture is simply mixture of 2 completely different images -they're placed as even/odd line. Since the glasses shutter at same rate as monitor screen (1/2 the rate for each eyes, 60fps on left/right eyes at 120fps. fps=hz)

Since video codecs destroys this even/odd proportion, we have to do this mix operation on client side. One of the way to do this is to use Quicktime and Java. Quicktime is highly integrated with java, so it's easy to manipulate parameters in Quicktime.

link 3 has some mixing parameters. my plan is to subtract even line from video A and put it onto video B -thus odd is video A, even is video B. Maybe this can be done just by quicktime, when the video is encoded, but I don't think it'll work when streaming video. (we haven't test windows version of quicktime broadcaster.)

one Glasses maker has software development kit open to public. (link 4.) Real also has SDK for custom client software. What we're trying to do is not so complicated, but it will take time to find specific code that we want in the API. (in Quicktime, Java, Windows or Real, any environment.)

-----link-----

1. <http://www.hut.fi/Misc/Electronics/docs/pc/3dglass.html>  
brief description of shutter glasses

2. <http://www.apec.com.tw/english/products/products.htm>  
the maker

3.  
<http://developer.apple.com/techpubs/quicktime/qtdevdocs/REF/refVectors.23.htm>  
quicktime tricks (effects)

4. <http://www.stereographics.com/index.htm>

\*\*

Shutter glasses work with the picture I sent before. it's at:  
<http://www.geocities.co.jp/SiliconValley-Oakland/8644/car001.jpg>  
even/odd mix of 2 pictures. easy. cheesy.

it's not exactly what it will be, but here's the test.  
<http://www.geocities.co.jp/SiliconValley-Oakland/8644/test1.mov>  
and old kind test is also there  
<http://www.geocities.co.jp/SiliconValley-Oakland/8644/test2.mov>

The first one has one "mask" that masks out even-line of 2 movies... I actually wanted to mask only one, and place it on top of the other, like  $(n * A) + B$  you see what I mean? Even/odd as MovieA/MovieB... but it end up as  $n * (A + B)$  because of it's "track" (layer) structure... (the effect on a track affects to all lower layers.) that's what happens.

BUTTTTT!!!!!!!

<http://www.geocities.co.jp/SiliconValley-Oakland/8644/test3.mov>

look at this!! This is it! we're done!!! even layer is movie 1, odd layer is movie2!!!!.

I used mask, instead of layering mask and making it transparent. This is more straight forward, and correct. so, here's how to do.

@@@@@things to ready@@@@@

left eye movie

right eye movie

left eye mask picture

right eye mask picture (in GIF)

@@@@@preparing for mix@@@@@

1. open left eye movie movie
2. copy mask, and get info, go video1 (track) and mask, choose mask gif
3. do it the same for right eye movie save them.
4. copy "masked left eye movie" on top of "masked right eye movie by "ADD SCALED"
5. make both of video tracks transparent

If I made the mask at suggested monitor resolution (800\*600, 400 black lines on white) it should work with shutter glasses.

I did this only with quicktime movie player. I think I can do both with streaming material.

\*\*

here's the movie with multi track

<http://www.geocities.co.jp/SiliconValley-Oakland/8644/test4.mov>

you can see 2 video tracks (4, actually, with hinted tracks) and the 2 has "mask" -you'll see it when you get-info. this way, the shutter thing is not burned into the movie, instead it happens on client side.

\*\*

Hello Sigg!

Great! The deadline is March 14th. Most of the submission process can be done on-line at :

<http://www.stanford.edu/s2001/cfp/skapps/>

To begin the submission process, I would recommend finding a good title, and being the on-line submission process. You can finalize the submission closer to the deadline, but beginning the process will give you a clearer idea how the submission is organized, and will allow you to get some of the administrative details, like printing, signing, and sending the Submission Authorization Form, out of the way.

Essentially, what the jury will be looking for is a clear proposal about what you would like to talk about for 15-20 minutes, and some examples of what kinds of visuals you would be showing. A nice format might be to state the problem/challenge your project is addressed, and then follow that up with your successes and the problems you encountered (or are encountering). In many respects, the format is similar to that of the presentation you gave when I was there.

On the website listed above is a sample submission in .pdf format.

Hope this helps!



Best,

Dena

Dena Slothower  
SIGGRAPH 2001 Sketches and Applications Chair

\*\*

This list is great. There are a lot of products out there for shutter glasses. This company is local. Or they are in San Rafael. Maybe we should go there and check them out.

[http://www.stereographics.com/html/contact\\_us.html](http://www.stereographics.com/html/contact_us.html)

\*\*

yeah, they're just right there... They're the one that has source code on their site.

\*\*

Phil,

Mindfrog is Meeting on Monday nights from 7ish to 10ish PM. We'd like to meet with you from 9:30 - 10PM (after your Monday night class) when appropriate. As this upcoming Monday (1-15-2001) is a school holiday, we'll be meeting Wednesday (1-17-2001) from 7ish - 10ish PM.

We'll present our status quo and on going plans next Monday (1-22-2001) as our first official meeting with you.

I hope all is well... we were suprised to hear your taking on the Telecom class. Good Luck grappling with PBX's, MAC addresses, OSI models, DTMF, FDMA, TDMA, CDMA, AMPS, PCS, DTCH, DCCH, SACCH, RECC, IS-54, SAT, FOCC, FVC, RVC, MTSO, RARP, ICMP, TSAP, FDDI, MAU, CSMA/CD... I know we all had a hell of a time wrapping our brains around it!

\*\*

So I looked at some notebooks and the fastest ones are attached in a PDF file. They're pricey even for the 2 IBM refurbished units. The prices are from PCMALL.com which is fairly competitive. We could probably shave \$100-\$300 off by shopping around... but we're still talking \$2400-\$3200. These are all 850Mhz, 128MB RAM, DVD, 14-15" display notebooks. I'll keep lookin for deals!

\*\*

So, I went to MacExpo today again with mark and marilenis...

first thing first.

At Canon's booth, they had a prototype of stereoscopic camera. This thing is like what we saw, an attachment for video camera that does shutter glass thing. BUT, this comes with IR-proximity detector. Meaning? THIS LITTLE THING ADJUST FOCUS POINT BY IT SELF, BASED ON THE DISTANCE TO THE OBJECT!!! bad. very bad. it's named as "prototype of 3D camera" so there's no info, brochure, and I had no camera. it's the attachment for the 3LCD digital camera (one with red plastic parts, famous one.)

Well, the other thing. I sent a mail before this, which has links to LCD shutter glasses comparison and compression that works with Interlacing. Now.

Maybe we can use those shutter effect things if we can successfully use those interlace compression format in the broadcasting software. (I guess real use it's own compression, so either QUICKTIME or MICROSOFT...) this way, we only need to broadcast one stream -since we mix signal in analog...

I met an Apple guy again. At quicktime booth. In OSX, we can use 2 same software -just like we did with real producer on PC. that's new.

Yesterday I did a test of 2-movie-in-one-with-live-stream with sorenson broadcaster. Sorenson broadcaster saves a file that is

\*\*

.mov, and that's like a pointer to streaming server. (channel storm use RTSP, not pointer file.) Soooo. I imported 2 (same file) sorenson "pointer" file in one, but STREAMING TRACK IN QUICKTIME DOESN'T HAVE MASKING EFFECT. Well, we don't need to care about this masking thing IF we can do the interlace-friendly-compression.....oh well.

Sooooo. I met a sorenson guy at MacExpo. yes i'm busy. I seid what I did. He said "the two movies in one .mov file are not really time-synchronized when it's live stream." well that make sense. right, live streaming is live streaming.

(I'm pretty sure this masking thing works with shutter glass, so we have a back-up plan -3D streaming for shutter glasses with pre-recorded material...)

I also included some links to LCD-shutter glasses maker/theories/comparison. Some companies have encoding software -mostly not for streaming though (but we can use "interlace friendly compression" right?) So maybe we can use those software to do shutter glass encoding. I didn't know there're 3 types of shutter glasses technic -above/below, Interlace, and cross eye (cross eye? how does it work?? maybe we can put LCD screen in HMD so that left eye can comfortably look at left half of LCD screen while right eye look at right half of the screen, and we stream 2 movies in one movie file... works, even with Real! the difference is that the shutter glass mask the unwanted half of screen for each eyes, allowing eyes to see only 1 movies each.) let me know if I have to describe those ideas deeply.

\*\*

here's the one:

<http://www.mindfrog.net/workspace/test4.avi>

used Intel Indeo compression (they use this for VCD, chinese favorite compression for video-CD. you can get copy of legal movies in CD at chinatown.... )

it keeps proportion of even/odd field. I just saved as a movie, not for streaming. I'm now at the lab and don't see Intel compression on Mac's here so I can't test, but I have to check if this works with streaming video...

\*\*

All,

I'm waiting to here back from 3dlabs about the VX1 card in the dual 800 PIII machine... until then if you come across shutter glasses that work with the NVidia Riva TNT2 Model 64 video card let everyone know as that's what the 400 PIII PC has.

\*\*

All,

3DLabs responded in German, luckily I can translate! :)

The jist is that the standard VX1 video card installed in our daul pIII machine will not support 3D glasses. If we were to purchase from Oxygen we need to buy the \$520 VX1-Stereo Card and glasses bundle (or the more expensive GVX1 card and glasses). Let's keep looking for now!

-Christian

\*\*

\*\*

\*\*

Forwarded Message Follows

\*\*

\*\*

\*\*

\*

Sehr geehrter Herr Grossmann,

der Unterschied zwischen diese beiden Versionen ist außer der mitgelieferten Stereobrille vor allem, daß nur diese Variante einen Stereoausgang hat.

Die "normale" VX1 AGP hat nur einen VGA-Anschluss, keinen Stereoausgang. Die Modelle ab GVX1 verfügen alle zusätzlich über einen Stereoausgang, die VX1 jedoch nicht.

Aus diesem Grund gibt es keine Möglichkeit mit der Standard VX1 Stereobrillen zu benutzen.

Mit freundlichen Grüßen

Dietmar Brinkmann, Vertrieb dcp, design+commercial partner GmbH, <http://www.dcp.de>

E: db@dcp.de, T: +49 (0) 40 - 254085-0, F: +49 (0) 40 - 254085-73

\*\*

I got an e-mail back from Michal in CZ. He sounds really nice. he is interested in knowing what we are doing. He sounds really nice and he is an educator. I'm tempted to share our project with him to see what he thinks. What do you guys think?

Christian... have you heard anything back about the 3-D googles?

\*\*

so we're back from the party. that was fun. we should do it again.

we still need to work on camera mount/adjustment issue. I looked into director to do live video manipulation and streaming.

1. director can use live input from USB/PCI capture device
2. director can alter live video (squish and mixing)

3. director can stream out video as server  
so good news -we can provably do our project all in director bad news -we do our project all in director. kinda funny.

well, we still have issue here

1. the output of the director may not work with the freeware movie player for shutter glass, since it works with only AVI or MPG compression.
2. meaning, we have to make the receiver software too.
3. we may not be able to use sorenson (since it's power consuming...?)

(the reason we use director is for alternating video in live, like custom video mixer. so if we setup a computer does the mix by itself, and stream into another streaming server, it's OK -for anaglam (red/blue) and interlace, since they don't require special receiver software. the project is getting trickier as we learn technologies for the parts of the project. we should draw picture and see how close we're. we're close.)

[http://www.macromedia.com/support/director/ts/documents/stream\\_qt\\_via\\_sw7\\_d7\\_02\\_qt4.htm](http://www.macromedia.com/support/director/ts/documents/stream_qt_via_sw7_d7_02_qt4.htm)

<http://www.macromedia.com/software/xtras/director/drozin.html>

<http://www.macromedia.com/software/xtras/director/main.html>

<http://www.macromedia.com/software/xtras/director/penworks.html>

\*\*

Can director not output quicktime?

\*\*

Hi Guys.

There is a telepresence seminar or lecture this Monday evening at UCB.

<http://www.ieor.berkeley.edu/~goldberg/lecs/>

Rane you might know some of these people. It would be interesting to go.

\*\*

I'm willing. How about you Tomonori and Christian?

\*\*

I would love to attend the UC Berkley lecture and can give Tomonori a ride... all I need is directions as I've never been to UC Berkely before. I also think meeting again is a good idea. What about Wednesday... is there a forum this week?... Phil's gone right?

\*\*

well here's the thing:

at first, we had:

2 cameras 2 signals 2 streams 2 LCD screens.

we found shutter glass which minimize to:  
2 cameras 1 signals 1 streams 1 LCD shutter glass

but encoding and decoding happen. (codec!) we mix the movie in the way that the player decode it somehow and play in shutter glass mode.

we first tried with encoding in Interlace format (john's, and my quicktime) the problem was that both Sorenson and Real doesn't work with this compression (since they do "block" type of compression)

So we met above/below and left/right technique. we mix 2 signals into one my just altering the proportion (dimension) of the movies, in order to get over with compression problem (lines doesn't matter) but in this way, we need special software to play on client side (which we found "win3D") but win3D works with AVI and MPEG, not real or sorenson. The other problem is that video mixing in analog doesn't work for our project, it seems (unless we choose to do analog transmitters, in order to take mixer and stream server off of the camera guy.) The link I sent were something about doing capturing and streaming in director, hopefully solve all the problems. The plus is that we can also make our custom player (if we choose not to use AVI or MPEG, we SHOULD make our custom player)

My impression is like this: make a "broadcast" director projector (BDP), and "receiver" director projector (RDP). In terms of 3D streaming, BDP captures 2 streams of video from USB cam, change dimation and mix into one, and stream out (broadcast) to client. RDP receivers the video, and change dimation by expanding vertically or horizontally (depending on how we do on BDP) and put the movie in even/odd interlace format (well playing A,B,A,B end up with even/odd field interlacing) or flash left and right movie at monitor refresh rate.

\*\*

<http://www.mcs.csuhayward.edu/tebo/>

this is bill tebo, a computer science teacher at CSU Hayward. He is a real programmer, he has done some work with video -picture recognition, pattern analysis. he has his own surveillance camera that's hooked up to the net in his own house -he's familiar with video and networking.

so, should we meet him and do a little presentation, to borrow his brain?

## February 2001

\*\*

In terms of price comparison I think the difference between PC vs Mac is not that big. Just a couple of hundred. Unfortunately it's hard to say which way to go. I'm confident that we can find a way to run the cameras through a TBC/Synd Stabilizer before going through the multiplexer. Were we able to test properly if what we did last night is doable in Real?

So far we haven't been hitting companies up for equipment. Mabey we could get the department to provide us with one (pc or mac) and then we could try to get companies to donate a laptop to our project. It's a lot easier to get the equipment if we can be more specific. Plus this would really test the performance power of their laptop machines.

\*\*

ThinkPad A21m PIII800, 64MB RAM, 20GB Drive, W2K, 8X-2X CD, 8 MB 2x AGP Graphics.

Mfr Part#:

2628GTU

Pricing: AVG = 2768.98 + \$64 (64MB RAM upgrade) = \$2832.98

ibm.com - \$2,749.00 + \$64 (64MB RAM upgrade) = \$2813.00

pczone.com - \$2,749.98 + \$64 (64MB RAM upgrade) = \$2813.98

pcmall.com - \$2,747.00 + \$64 (64MB RAM upgrade) = \$2811.00

buy.com - \$2,829.95 + \$64 (64MB RAM upgrade) = 2893.95

[http://commerce.www.ibm.com/cgi-bin/ncommerce/ProductDisplay?  
prfnbr=1907934&cntrfnbr=1&prmenbr=1&cntry=840<=en\\_US&shoptype=D](http://commerce.www.ibm.com/cgi-bin/ncommerce/ProductDisplay?prfnbr=1907934&cntrfnbr=1&prmenbr=1&cntry=840<=en_US&shoptype=D)

Tecra 8100 with 800 MHz, 14.1" TFT, 10BB, 128MB, Mdm, DVD, Win2000.

Mfr Part #:

PT810U-39CF7

Pricing: AVG = \$2822.98

toshiba.com - \$2,899.00

pczone.com - \$2,749.98

pcmall.com - \$2,729.99

buy.com - \$2,912.95

[http://www.csd.toshiba.com/cgi-bin/tais/pd/pd\\_sc\\_shoppingCart.jsp?BV\\_  
SessionID=@@@@0111333835.0981604607@@@@&BV\\_EngineID=gal  
kdgkmljbfdkchmcfkcgk.0&action=none&aoid=1073768096&poid=10737  
83771&rout=comm!LB%7eplin!Portables%7epfam!Tecra%7eaoid!107376  
8096%7epoid!1073783771%7eaction!none%7esRetPage!pd\\_pt\\_prod.jsp&qty=1](http://www.csd.toshiba.com/cgi-bin/tais/pd/pd_sc_shoppingCart.jsp?BV_SessionID=@@@@0111333835.0981604607@@@@&BV_EngineID=gal kdgkmljbfdkchmcfkcgk.0&action=none&aoid=1073768096&poid=1073783771&rout=comm!LB%7eplin!Portables%7epfam!Tecra%7eaoid!1073768096%7epoid!1073783771%7eaction!none%7esRetPage!pd_pt_prod.jsp&qty=1)

\*\*

PowerBook G4 400MHz, 256MB, 10GB, DVD, 56K, 15.2"TFT, OS9  
\$2,913.00

PowerBook G4 500MHz, 256MB, 20GB, DVD, 56K, 15.2"TFT, OS9  
\$3,289.00

\*\*

meeting with bill is on Friday at 10:00 a.m. in the lab.

\*\*

surprise guest: Scot. the Hardware guru.

\*\*

I'm bringing the camera

See you there.

\*\*

All,

Although I won't be able to make it this morning, I did want to say that I installed the drivers for the USB capture cable on the New Dual 800 Box along with WM Encoder. I was NOT able to replicate the "flicker" using that set up. I believe both the standard WMT codecs and the USB cable are to blame. WMT comes with WM7, ISO MPEG4, and MPEG4 V2 and all of them created a "boxy" looking encoded signal which did not maintain the interlacing. Also, the input signal from the USB capture cable had already lost the interlaced signal, so the USB capture cable must be compressing the video.

This means, we either strap the Desktop G4 to our backs or find another solution for capturing on a notebook (Mac or PC). I've found an IBM Thinkpad A20p model which has s-video in and out built in... of course it costs \$3900! The model we looked at has only s-video out. The iBook and Powerbooks (G3 or G4) do not have standard s-video in capabilities.

I'm looking into some other solutions... PCMCIA based, but I'd love to know if Bill has any suggestions for us on this front. Also, any idea what "Zoomed Video" means... alot of cards say they use "zoomed video"?

Here are some links:

Techadvice.com (scroll down to the Video Section):  
<http://www.techadvice.com/help/Products/H/hardware.htm>

Margi Capture-to-Go? \$300 (we already looked at this once):  
<http://www.margi.com/products/capturetogo.html>

iREZ CapSure Video Capture Adapter PC Card \$180 (Mac only solution):  
[http://www.synchrotech.com/products/video\\_11.html](http://www.synchrotech.com/products/video_11.html)

\*\*

when you capture video with USB thing, did you use 640\*480? if not, it could be a problem...

we'll meet on Monday night.

\*\*

Yup... I captured at 640x480, 30 fps... any ideas?

\*\*

interlaced sample movie is at:  
<http://www.mindfrog.net/workspace/footage.mov>  
about 30MB. in case you guys want to mess up with it...

\*\*

I think I set it before but here's the copy:  
<http://www.videoguys.com/datavid.htm#tbc3000>

The Datavideo TBC-3000 is a high-resolution, low- noise, wide-bandwidth Time Base Corrector (TBC) that Gen-locks any two video sources for synchronous effects

see you tonite.

\*\*

Just out of curiosity... is there a sample online somewhere of the site you're developing... Any chance at a preview would be appreciated.

\*\*

These are just opening pages and no flash on them yet...

images could be replaced by flash...

but here are the URL's..

<http://www.mindfrog.net/rane/mindfrog1.html>

there are 10 versions -- some are very slight variations.....

so...

<http://www.mindfrog.net/rane/mindfrog2.html>

<http://www.mindfrog.net/rane/mindfrog3.html>

all the way through mindfrog10.html

See you tonight. The camera isn't here yet and the reason it isn't is because they are missing the wires, and will ship them as soon as they get them.

\*\*

I do want to give some feedback on the web pages which by in large I think look good. Here's my critique:

- I have always preferred a white background to a black background, but understand it's preferential so can easily be swayed.

- I like the vertical navigation more than the horizontal, although in general I'm hesitant on putting navigation on the right as it limits the size of pages.

- I like the pictures on 7, 10, 3 and 8 (in preferential order).

- I like the logo on 1 the best... and not just because I did it. :) I think as we move forward we should drop the green, gradiated banner on 1, but I like the motion blurred effect of the text.

- I think the image on 1 should be used elsewhere as it is a good shot of one of our prototypes. I did notice the image had a blue hue rather than total white... easily fixed in Photoshop/Fireworks.

- With either navigational option, we could sub-classify by having expanding menu options. I know this was not part of the critique, but [www.designinsites.com](http://www.designinsites.com) has cool pull downs and look/feel.

I hope this helps... sorry for pulling out last minute. Please let me know what comes of the



meeting and what I need to do help in moving us forward. FYI - no luck with Real and the USB connector... :( Any ideas on the Notebook? Did Tomonori get a test to work on his iBook? Just curious...

\*\*

Plan of hardware/software

ok.

1. I'll try and see if Real Producer can successfully compress the footage.mov file keeping even/odd interlace. (can you do this Christian? I have to go to the lab to do it... the raw footage.mov file cannot be accepted by Real, because of it's compression "picture JPEG". you can use Quicktime Pro on Mac to convert into something else, like "raw" video)

if it can do it and serve to the other machine, PC/Mac situation is then same. (software supports interlace) then we'll move onto hardware tests. (video capture PCMCIA card for mac and pc)

2. we'll wait on video multiplexer/sync separator chip to come, to make the magic interlacer box.

\*\*

We decided that there would have to be other ways to test the interlacing on PC instead of buying a video card. Also Tomonori mentioned that the videocard in the mac might work also for PC.

\*\*

I'll work on flash over this weekend. if you notice let me know what kind of animation we need.

\*\*

I'm working on the getting the Sorenson Broadcaster and the Genlock figured out.

\*\*

Tomonori, if you go to my folder on the mindfrog site, you can get images that I have in there. I think a flash piece of our prototypes would be good... they're called googles, hmd1, prototype, and headgear. There are different photos and versions of them.

I downloaded a bunch of fonts and am working on the site.

\*\*

Hi Guys.

First the Sorenson Broadcaster. I should be getting a version of Sorenson Broadcaster sent to my mindfrog acc. Tomonori later today/tonite. If you are around the lab tomorrow you can go on the mac computer and my mindfrog mail is set up in netscape. Just click get mail. It should be there tomorrow morning.

Genlock. I finally got a hold of Don Day. Good news. He works for a company called RGB in Alameda [www.rgb.com](http://www.rgb.com). He wants to meet on Tuesday evening coming up at his work around 7pm. He wants us to bring the 2 color cameras. He is going to do the research on that specific

chip set (I gave him the specs from supercircuits). He wants to put them under a microscope and he has the technology to lock them together via wire. Otherwise he said he could tell us how to make a sync chip. Or namey he had a small TBC. He also wants us to bring the specs of the field sequential chip that we are building (the diagram). He wants to see the whole picture. He mentioned that he might have a small multiplexer that he would give/lend to us. So that way we wouldn't have to builld the chip. So he is basically willing to help us out a lot. We don't all have to be there. But I would like you Tomonori to be there.  
Rane... Is there any chance of getting the camera ASAP. So we have both working before we meet him?

\*\*

cool I can do tuesday.

I don't worry too much about multiplexer but if he can help us that's great.  
I hope he can get us out of genlock hell.

at the lab, I started downloading raw footage file onto PC today and left so I'll be able to test it with Real tonite or tomorrow friday. also sorensen on G4, with second partition.

\*\*

I just remembered that one thing I hated about last years senior thesis presentations was they looked like crap when viewed through the projector in the CSUH lecture room. That's because the projector shows only 800x600 resolution. Can we make sure the pages we build are completely viewable in 800x600 mode. I noticed your current sites aren't, but there's some negative space we can work with....just an observation/request. Thanks.

\*\*

Here are my 2 cents on the web page. I personally like the black best for backdrop. I like the font treatment on this one  
<http://www.mindfrog.net/rane/mindfroga.html>.

On some of them I feel the the "leaping from mind to mind " is not connected well enough to "MindfroG" but on this one <http://www.mindfrog.net/rane/mindfroga.html> I think it works...

I like the smaller font treatment of Logo/Slogan and the nav bar.

Overall I like what I'm seeing

\*\*

yeah I like it.

for nav bar, you can use 100% height. like:

```
-----  
| LOGO |||  
| || N |  
|-----|| A |  
| | V |  
| | |
```

```
|||
|| B |
| MAIN STUFF | A |
|| R |
|||
|||
|| FROG |
|||
```

-----  
this way you can see it in 800\*600, on my iBook.

you can reuse the open space in between like:

```
-----
| LOGO | SUB ||
|| MENU? | N |
|-----|| A |
| TITLE of PAGE?(as Navi) || V |
|-----||
|||
|| B |
| MAIN STUFF | A |
|| R |
|||
|||
|| FROG |
|||
-----
```

**\*\***

quicktime 5 public preview 3 is out. it supports new codec sorenson video 3.

also quicktime streaming server public preview 3 is out. we'll install onto PC box.

**\*\***

Black background is fine by me...

I like the font on:

<http://www.mindfrog.net/rane/mindfrogblack.html> #14

I like the vertical nav, assuming the preferred font would be used (right aligned is fine):

<http://www.mindfrog.net/rane/mindfroga.html>

I like the image on:

<http://www.mindfrog.net/rane/mindfrog2.html>

Regarding the dynamic links, I've suggested changes in sections 3, 4 and 5... (in 5 I only flip-flopped the order).

- 1) project
- a) content
- b) software

- c) hardware
  
- 2) theory
  - a) telepresence
  - b) culture
  - c) communication
  - d) identity
  
- 3) events
  - a) current
  - b) archived
  
- 4) resources
  - a) links
  - b) whitepapers
  - c) project plans
  
- 5) team
  - a) contacts
  - b) bios

\*\*

the chips they're coming. slowly.

- > Tomonori,
- >
- > Your samples were shipped today, 2/21/01, via US mail.
- >
- > Please let me know if you have any questions.
- >
- > Regards,
- > Armelyn Mendoza
- > Samples Coordinator
- > Elantec Semiconductor, Inc.
- > 675 Trade Zone Blvd.
- > Milpitas, CA 95035
- > Phone: 408-945-1323 x383
- > Fax: 408-263-8067

\*\*

Hi mindfrogers,

So I called Raquel today to see if there were any developments with the Notebook.

I will be at Cisco tomorrow... when and where is the meeting taking place? ... any confirmations Sigi? After 7 is doable for me, but I know you guys were talking earlier in the day. Sorry I keep skipping out on these day events... please let me know if its an issue and I can pick up slack somewhere else.

Also, Rane if you need/want any help with graphics, titles, etc send me a description and I can build them. I'm also looking into VoIP stuff... I currently use a Cisco IP Phone that I can hook up to my DSL router at home or an ethernet port at work and make free calls and anyone dialing my extension gets sent to where the phone is home or office.

\*\*

I won't be able to attend a 6 o'clock, but I'll be curious to see how we might miniaturize the multiplier. Also, I think it's key to point out that the laptop we're getting has a built in s-video in... meaning, no video capture issues (USB vs PCMCIA)! Raquel thinks it'll take 2-4 weeks to get in the unit because she needs to have CSUH people do the paper work, purchase, etc.

This Java Telephony may be something viable. The more I read the cooler it sounds...  
<http://java.sun.com/products/jtapi/download2.html>

I'll put a VoIP folder in the ftp://www/workspace folder on mindfrog. It'll have some apps we can install on the PC's to test quality, customizations, etc...

\*\*

I need a ride to a shop in San Leandro -it's Mike Quinn's Electronics (a junk shop!) well I thought they may have something, or something close to TBC (the video card for toast etc...) and I want some electronic parts too. It won't take more than 2 hours, could be 1 hour, but does anybody want to go? Any time. (it's not a clean place... all electronics but a junk shop is a junk shop...)

\*\*

Tomonori, I can go Thursday morning. Let me know when

\*\*

anytime is good. If we need further research at that place, or some other junk shop, we can do it more.

I'll check on evening/weekend schedule of that place.

\*\*

What time does the shop open? I have to leave for AZ in the afternoon and need to get packed, so let's go as soon as possible, okay?

## **March 2001**

\*\*

Hi guys.  
I'm back. What a crash and burn trip. Tomonori. I got this message from Don Day...  
See ya guys Monday.

Siggi and Tomonori,

While the chips involved are cheap, there are a lot of connections on several surface mount parts, and there are some subtle design choices.

Ten years ago Philips did a demonstration board DTV7199, which had almost everything you would want. Their latest similar board, the SAA7118 Evaluation System, has almost everything,

but not genlock. They also have a Module evaluation system for decoders and encoders, but so far it's incomplete.

Basically you would need  
2 video decoders, Philips SAA7113  
one for genlock timing information  
one to digitize into the TBC fieldstore  
1 fieldstore, Averlogic AL422  
1 video encoder, Philips SAA7121  
1 PLD, Altera EPM3128 for control logic  
1 microcontroller, PIC or 8051,  
or I2C interface to control Philips chips

If you are making less than 20 of these, adapting an old DPS TBC card sounds much easier than building from scratch.

Don

\*\*

Hi Guys.

I decided to go and check out the show at the San Francisco Art Institute on Telepresence. It was actually a really great show and Steve Mann had a very interesting piece in it. Check it out.

Tomonori...Rane and everyone. Don Day will meet us tomorrow just before class at CCAC in Oakland at 5:30pm. There after I'm going to San Francisco to work on our video. So Before all this I'll be at CSUH at 3:30pm for the Photoshop class and then you and me Tomonori can go from there. It turns out that i have a lot of work to do these days with my business. Just trying to stay on top of it.

Rane... We talked about the presentation next week and we liked what you guys had thrown up. We also messed more with the multiplexer and then we decided to put in the app for Siggraph which is next wednesday. A 1 page paper and the new video which I'm cranking out.

\*\*

I got one of the video multiplexer's channel working: it just output normal video, not so distorted. I still have to work on the other channel... the chip is simply a switch, but has different gain on channel 1 and channel 2....

we're having an important group meeting with Don so we need to skip class

\*\*

Hi Guys.

I'm jamming away on the new video. I like many of the still Jpegs. We could use Mindfrog logo somewhere on the proposal but mainly I like JPeg #3. It explains telepresence well. I think that could work well as an image for our proposal. I'll have the video done tonite. I will be at school early tomorrow to deal with Photoshop class and sending these out. Rane... will you be there?

\*\*

I was planning to be there earlier. Around 11pm. But if you come later I wanted to wrap up the Siggraph app and get this all onto fed-ex. Could you bring your camera and the hi-8 tape with the Rave footage we shot tomorrow?

\*\*

Brenda from EDC Systems just called and the ThinkPad is ready for pick up. She said that if you cannot pick it up today, it will be delivered to Receiving tomorrow.

\*\*

I'm leaving to go get it.

\*\*

Awesome! No rush intended, but when do you think you'll bring the notebook to the labs? Over the weekend, Monday, Wednesday... just curious. Thank you very much for taking care of this.

\*\*

All,

I unpacked the notebook which is pretty cool. I was able to install the wireless LAN hardware and I installed Netscape, Windows Media Encoder and Player. A video capture app by MGI was already installed. Let's limit the apps we install on this machine so we keep it running efficiently.

I was NOT able to get WMT encoder to recognize the s-video capture port but I was able to get the MGI software to read the s-video port... oh yeah, guess what, we got an s-video to composite (RCA) converter with the laptop... so I think there may be driver issues with the capture device and WMT encoder. I didn't mess around with it too much. The built in s-video capture device is by Philips.

There is also a line-in, a mic-in and a headphone jack. I didn't mess around with the audio yet either.

That's the update. Hey at least we're wireless!

\*\*

All,

I heard about this great place just up the hill from us... Bronco Billy's? Any one heard of it?... :) just kidding...

There's a couple places in downtown hayward. There's Buffalo Bills which tomonori mentioned. The the Bistro on B street. That italian place we went to on A. Sapporos japanese restaurant... mmmm saki. There's a tex mex place on D street and mission. Then there's like marie calenders, applebee's near the southland mall... just some options.

\*\*

Well, Appleby's sounds yucky, Marie Calender's isn't so hot either. I'm up for the rest.

\*\*

Hi Guys.

I'm swamped right now. Youi guys decide. Whatever... I'll be there.

\*\*

Hi guys.

Sorry if I was coming across as a grouchy after the bag event. Yes it was stolen and the thieves had already started using my credit cards. Well I'll see ya Monday and I'll bring the TBC.

\*\*

All,

Just wanted to let you know that I was able to use firewire to capture the multiplexed signal. Not sure how it shutters, but the movie is in workspace on mindfrog.net if you want to take a look... it's about 5MB... it's encoded at 300k and is 640x480 large:  
[http://www.mindfrog.net/workspace/multiplexed\\_firewired.rm](http://www.mindfrog.net/workspace/multiplexed_firewired.rm)

\*\*

HI all.

I just got this message reply from Heather at CCC.

I was under the impression that you would be using the Video Toaster on the CCC campus. Your message talks about picking it up. I will need to discuss this issue with Suzy further.

I'll get back with you.

Heather

\*\*

Hi Guys.

How did it go tonite. I'm sorry I wasn't there.

\*\*

It was just Christian and I. We discussed the web page and are working on it. I think it makes sense to break off into separate parts at this point.

I also think it makes sense to buy a video card, buy a Toaster card (IF) Suzy can't get it to us. Why does CCAC have it?

\*\*

I agree with buying the videocard. It seems there might be a problem with getting the Toaster as you guys probably know now. This Heather person misunderstood and though we actually wanted to come over to the CCC to use the Toaster. I will send Suzy an e-mail on the matter. Is there anything that I could bring to next Monday meeting?



\*\*

<http://www.belkin.com/support/faq/F5U208.html>  
this page says "640x480 at 15fps".

I did some stuff -real is acting weird -the first launch freezes and never goes away. but Windows Media encoder works. I did some tests with Windows Media -not good but better result.

Belkin is not perfect, but doesn't throw away 1/2 of input video ---With internal video capture, the picture is half the input -it locks to one of the interlace, you always see crispy but one camera's picture, right? with Belkin USB cable, it "tries" to capture both -one camera for a sec, and the other for another sec... it could be because of "un-genlocked" cameras I used, or "un-balanced" input level or something electrical, or it's just the way they capture (which is bad).

by looking at those behavior, those are different from my TV capture card for Mac -it looks like the capture of both thinkpad internal and Belkin work with two buffer -even and odd field, encode, and output the video the order of the fields, not as 640x480 video -640x240 (even) 640x240 (odd) .... ??? instead of capturing 640x480 in a buffer and encode as one big picture, which is what mac tv capture card does.

There're some software issues. on the fancy software came with Thinkpad, Belkin's max resolution is still 320x240 or so -it's not the driver, it's the software that limits the resolution. Real too. Real limits the max resolution to 320x240 or something for Belkin, I guess that's because of "blah blah (win32)" driver, which I think a generic video capture driver for Real.

\*\*

Hi Guys.,

So we are meeting this Monday 7pm to lay down the lines for the rest of this project? I agree with Rane. It's time to go in for the "Kill". Tomonori.... Thanx for running these tests. I hope we can get the Thinkpad to work....I'm picking up the Toaster some time next week according to Heather.

## April 2001

\*\*

I've uploaded the sample navigation at the following URL:  
[http://www.mindfrog.net/new\\_nav/](http://www.mindfrog.net/new_nav/)

You will see a suggested table template as we discussed. Basically, the top cell is 600x80. The first cell in the second row is 490x 400 (although the 400 height could be anything). The second cell in the second row (the black cell) is where the navigation goes; it's 110 wide. This is just a layout of the table...

Click on any cell and you will see the sample navigation. I've left the non-nav cells gray only to differentiate. The buttons are 110x40 for big buttons and 110x25 for little buttons. I assume we will fill in the gray with actual content as we move forward. Let me know what you think.

\*\*

All,

Rane and I discussed a 2 phased approach to building the new site. Rane and I will build the site up as an HTML-only version first. While we're building up the HTML only version, Rane will be

learning Flash and then we can migrate applicable content into Flash for a flash version. The navigation is definitely something we want to convert to flash when we finish up the HTML only version. Also, I will script an autodetect for the flash plugin so that users with flash will go to the flash version and users without will go to the HTML only version.

Rane and I also thought since Siggi and Tomonori are well inclined to work with the capture device, that Rane and I would work on the site and content so that by the time Siggi and Tomonori are ready to capture content, we'll be done with the rest of the site and we can sail smoothly into graduation.

If this is at odds with anyone's desires, please let us know. This was merely an attempt to get things moving forward and break down responsibilities so that we could make some good headway in the next 2 months. Let me know if this makes sense. Thanks.

Also, Tomonori, thanks for running the capture tests... any ideas if the PCMCIA card's capture buffers work like the Mac card or like the laptop? Should I buy a PCMCIA capture card and see what's up? any suggestions for which one, I know we've seen several online.

\*\*

The core of the discussion about capture card is one thing: interlace or non-interlace (progressive). We talked about it so long, and now it came back again. This time, it's "capturing in" interlace or progressive.

Before the breakthrough in January, we knew "3D is 2 pictures flashing very fast". When I came up with the breakthrough, that is the idea of "capturing at somewhat high quality makes the output as interlaced 2 pictures, which turns out to be 2 separate pictures flashing on the client end, using interlaced monitor", we have 2 ways to see the video signal: A. 1 flow of signal in series, which is electronically correct for both interlace/progressive, and B. even and odd line one after the other (only on interlaced video, both capture and display) now. what's the meaning of "capturing as interlaced video"? answer is, good for high motion picture. Using interlaced video, you get 1 full picture (even or odd, one field, half the quality though) while progressive can get only 1/2 of it. easy, right?

The problem is, that this doesn't work for us: since it capture even field first and then odd field, our beautiful interlaced 3d video is already separated into 2 video streams when captured -and the machine cannot capture 30fps, result is 1-29 fps of even....odd, even, odd.... even kinda jumpy video... Just imagine like 2 frames loop in director, with different images in each frame. got it?

more: it looks like they have 2 separate (or 4, according to video buffer for OpenGL 3D video playback method) video buffer, that one collects only even, and the other collects only odd field's data. Apples and oranges come one by one, the guy puts apples into bucket #1 and oranges into bucket #2, and give you the bucket full of apples OR oranges WHEN HE FEELS LIKE. (if he gives us the video at 30fps ON TIME, we are A okay but....)

SO. we need a good capture card that does progressive capturing (or both progressive and interlace, in case)

But I bet we can go around by using Firewire capture card with DV cam: DV cam capture good quality picture, and digitized, and send to the machine -if DV cam capture really works. we have to test on that on PC Desktop first. (cameras -> the circuit I made -> DV cam -> firewire port on PC -> broadcast)

think about it. I'm pretty sure what I'm talking about, but don't trust me:

if I was wrong, "interlace" and "progressive" can be completely swapped in this mail. that's why I'm saying "the capture card should support both."  
some info

<http://www.belkin.com/support/faq/F5U208.html>  
capture card with info on interlace/non-interlace capture

[http://www.synchrotech.com/product-usb/video\\_12.html](http://www.synchrotech.com/product-usb/video_12.html)  
progressive scan on belkin usb-video bus2

<http://www.dazzle.com/products/vidednote.html>  
capture card (firewire)

<http://video.multimediam.com/>  
place to look into

<http://www.margi.com/>  
capture card and firewire card manufac. in Fremont

**\*\***

Tomonori,

Got it...

Just so I'm clear though...  
cameras -> the circuit I made with TBC -> DV cam -> firewire port on PC ->  
broadcast

means we need to convert Analog RCA to Firewire... for the purposes of the test, can we use Rane's or my sony camcorder? I can bring in my desktop from home for the test as it has a firewire card.

Also, here's another crazy idea... since we're hacking a TBC Card could we hack a desktop capture card.... capture video in to a PCI card and take digital video out from the PCI card to a PCMCIA interface? Lots of Driver issues... just an idea.

**\*\***

All,

It's too expensive, but pretty cool...

-Christian

Media 100 Announces Cleaner Live

Coming this month from Media 100 is Cleaner Live, its \$2,995 application for real-time capture and Internet streaming in both the Windows Media and RealSystem 8 streaming formats simultaneously. The software works with Media 100's suite of Internet streaming applications-- CineStream, for content design and interactive video authoring, and Cleaner 5. Features include:

accept input directly from DV cameras using a IEEE 1394 Interface PCI card and cable, included with Cleaner Live encode multiple data rate streams of Windows Media and RealSystem player

formats simultaneously decode DV content in real time using Media 100's DV Accelerator PCI card, also included with Cleaner Live save full-resolution DV input streams to disk for later editing using CineStream optimize saved content for interactive streaming using Media 100 Cleaner 5 preview Windows Media and RealSystem streams before and during live Webcast monitor digital flow meters to assess throughput in frames, bits and bytes view status of key functions instantly with Traffic Monitors with "red/yellow/green" status indicators

<http://www.media100.com>

\*\*

Zoomed video port?

Is this something that could work?

Here Rane is the Link for the TBC half rack from Tomonori.

<http://www.for-a.co.jp/eng/z1.htm>

\*\*

Deciding on equipment/hardware to buy by Wednesday.

Should we pursue 3D more for the thinkpad? Is it worth testing it out.

That comes with the TBC issue?

We need to do 3D on demand. Who is in agreement with this? The problem is live from a portable machine.

Live is one stream with interactive. On-demand is 3D.

We need to research which interactive software we're going to use. Siggie prefers i-visit, it's free, people are using it.

We need to finish off the 3D wearable and make it work, the headgear going into a TBC into a multiplexer -- the multiplexer spitting out an interlaced signal.

Okay... this is what we need to think about and DECIDE on right away. We need to up the workload.

Siggie will call Heather tomorrow. Siggie, send me the link for the TBC that Tomonori emailed you. I will and can buy the TBC and I can and will buy the PCMCIA card. So, we need to decide. They have to be here for the work to be done.

Okay, that's the wrap up from tonight's meeting. See you Wednesday.

\*\*

All,

My comments are inline:

Zoomed video port?

Is this something that could work?

I've seen all this info about Zoomed Video Ports and PCMCIA cards and I wanted to understand what it meant with regards to buffering. The link I sent was informative and I thought would help

us make a decision... whether or not it works I can't say just yet... anyways, I'm 0-1 with my predictions on capture cards. :)

Here Rane is the Link for the TBC half rack from Tomonori.  
<http://www.for-a.co.jp/eng/z1.htm>

Not to sound totally inept, but which TBC of the 9 listed at the URL are we looking to buy?

Should we pursue 3D more for the thinkpad? Is it worth testing it out. That comes with the TBC issue? We need to do 3D on demand. Who is in agreement with this? The problem is live from a portable machine. Live is one stream with interactive. On-demand is 3D

I think 3D on the thinkpad is still a viable option... firewire is still in the running. Having said this, I also think getting 3D on Demand (3DoD) with live interactivity is more feasible and should be a priority. I think it's more important to get 3D content online, to get our journal online, and to get our thesis online than it is to battle out the details of one weak link in our concept. If we can't capture interlaced video live because streaming media tools aren't there yet, then they're not there yet... we're not expected to make the next Real or the next WMT.

What we can do:

Show that 3DoD works over wireless.

Show that our approach ( analog --> firewire --> labtop ) works in Premiere and/or Final Cut Pro to make 3DoD.

We then conclude that since wireless streaming works, and 3DoD works on a laptop our project is not a failure it's just that free streaming technologies (Real, WMT, etc) don't have the same device control that new versions of Premiere and Final Cut Pro do. Therefore without developing our own Streaming Format we can't produce the final goal.

I Like the idea of 3DoD and 2DWL (pronounced two-dwill), that's 2D Wireless Live , over I2 (do you like the acronyms?) It's something we can do today and we can work at 3DWL (or at least document how we would do it if we had more time). Our sticking point is not hardware, it's getting Real, Quicktime, and/or WMT to recognize uncompressed video from a firewire port.

Let's also consider how we can make 3DoD interactive... not between the recorder and viewer obviously, but between multiple viewers.

We need to research which interactive software we're going to use. Siggie prefers i-visit, it's free, people are using it.

I prefer any solution that allows for a customizable or at least webpage embeddable solution. I'm not sure if i-visit allows for this, but I'd rather not have an MSN or AOL IM where a slew of banner adds overwhelms the interactive experience.

We need to finish off the 3D wearable and make it work, the headgear going into a TBC into a multiplexer -- the multiplexer spitting out an interlaced signal.

Agreed! And we're close... we just need to wrap up the following quickly:

Make/Buy the Glasses (I vote make vs buy; function over form)  
Purchase the TBC and PCMCIA Card (I can pitch in \$150 or so)  
Put everything together

Siggie will call Heather tomorrow. Siggie, send me the link for the TBC that Tomonori emailed you. I will and can buy the TBC and I can and will buy the PCMCIA card. So, we need to decide. They

have to be here for the work to be done.

I say buy the TBC and PCMCIA for sure as we can use them in the 3DoD solution. I think even if it is heavier and bigger, we should use the Camera -->TBC/MultiPlexer --> Firewire --> Laptop solution for On Demand Capture as it emphasizes the work we've done this year.

Hope this makes sense... just my thoughts after a short night sleep. Look forward to some feedback.

\*\*

Hi Everyone,

First of all, I bought the PCMCIA card online last night. I ordered it for overnight mail, hopefully we'll have it on Wednesday.

I've been reading about Zoomed Video Ports, and it looks like it's an older technology. Margi used to sell them, they don't any longer. The articles I read mentioned Win 3.1, Win 3.5, etc. The dates for the Tobisha links are 1996. It doesn't look viable to me.

I can't figure out which TBC either from the link. No Toaster cards on Ebay today... at least not yet.

I agree that we should focus on 3D on VOD, and one interactive video stream for the wearable.

As an aside, the frog pics will be uploaded soon. Just 8 more to clean up!

\*\*

Siggi and/or Tomonri, can you send us the specific product link to the TBC we should order? Both Rane and I don't know what to do with:  
<http://www.for-a.co.jp/eng/z1.htm> Thanks.

Rane, cool about the capture card!  
Didn't realize Zoom Video was old... I was seeing alot of the ZV stuff as a feature for what I thought were current PCMCIA Card sites... I will pay more attention.

Any feedback on the 3DoD and 2DWL/3DWL acronyms... I think if we start using them like I2 we could start a trend! :)

Look forward to the Frog Pics... if you want to upload the unprocessed ones I can clean up some aswell. I'll work on the title graphic today and have something tomorrow or sooner.

\*\*

The frog pics are up. FROG02.JPG through FROG15.JPG. They're on the site, under WWW/New\_Nav/Images

The caps are compliments of going from PC to Mac.

I like the acronyms... Forget the ZV (unless you find something current -- I have been unable to), I like 3DoD (three Dodd) 2 Dwill and three dwill are good. They should all go well with I2, but by the time I2 catches on, we should switch to I3.

\*\*

>>> <http://www.videoguys.com/dataavid.htm#tbc3000>

I ordered it and also next day air. I guess that will mean we'll get it on Thursday.

\*\*

Guys...

I'm picking up the Toaster tomorrow morning.

\*\*

Hi Guys.

I have to be on location tomorrow so I won't be able to come in. But perhaps Saturday? I found a store that carries the Oakleys.

\*\*

Hey guys.

I checked out the Oakleys. They are really funky and if anyone has hair and isn't bald, one really looks like an idiot wearing those, so I'm thinking up some alternative solutions but the Oakleys I think are out. Also they don't have a "sidebar" like normal glasses for the earphones.

\*\*

All,

I've uploaded 3 "frog" home buttons as samples at:

[http://www.mindfrog.net/new\\_nav/sample1.htm](http://www.mindfrog.net/new_nav/sample1.htm)

Just click on the frogs to scroll through the 3 samples.

Also, regarding the oakleys... no big deal in my opinion if they don't work out. We can find something else.

\*\*

he he he he. you noticed it now? plus it looks like bra too.

\*\*

Yes... : )...

I'm bringing tomorrow the video on CD-Rom for the Web. I guess we really need to nail down the eyeglasses this week. Get the design done.

\*\*

So this message came from Don. We are going to meet this Wednesday.

\*\*

Dear Christian Grossmann,

Thank you for your submission. We enjoyed the opportunity to review your submission, Beyond Telepresence: Experience Enabled by Stereoscopic Video with Interactive Binaural Audio. With nearly 300 entries, the selection process was quite competitive. As a result we were unable to include your submission in this year's Sketches and Applications Program.

I recognize a large amount of time, creative energy, and hard work goes into a submission. I hope the comments in the reviews will be helpful.

Sincerely,

Dena Slothower  
SIGGRAPH 2001 Sketches and Applications Program Chair

Comments from the Jury

Sketches is not the appropriate venue for this piece. The show-floor may be a better place to show this.

\*\*

As Sigg and Tomonori are going to be with Don on Wednesday, I'd like to use that time at home to build some content for the site. Is that cool... or should we meet?

\*\*

The only problem I have is that I'm not able to go to Hayward to pick up Tomonori and the stuff because I'm in an edit session all day in SF. So I was hoping to be able to go straight to CCAC from SF. Any ideas?

\*\*

I'm in meetings until 6 so I can't get Tomonori to DDay by 6:15? I guess the question is, can you give Tomonori a ride back if he can get public transport there?

\*\*

Sorry to get into this thread late, but should we also bring the TBC and PCMCIA card? Maybe Don has some ideas there as well?

\*\*

Tomonori is taking BART to the Rockridge BART station -- Sigg is picking him up there.

\*\*

Yeah... I responded before reading all the other e-mails... the curse of a linear mind.

\*\*

Mindfrog Not Accepted to Siggraph -- LOL! See??? We told Dena that Mindfrog wasn't appropriate for Siggraph. Now we won't have to be fighting over who gets to go.



\*\*

I still think Tomonori should show up with the oscilloscope and try to present something. ;)

\*\*

Dear Rane,

The quarter screen issue is more to do with the VGA driver. Please install the latest from the Web site. Uninstall the previous driver, directions are on the Website. Additionally remove the MARGI INF in the windows\inf\other directory.

Enclosed is the updated driver for the Capture-to-Go, Unzip it in a directory and insert the card and follow the procedure. Once card is installed then install the application running Setup.

Sincerely,

Shrikant Acharya  
MARGI Systems  
Tel: 510-657-4435 x212  
Fax: 510-657-4430  
e-mail: Shrikant@Margi.Com  
www.presenter-to-go.com

\*\*

Dear Rane,

Pls. provide more detailed information such as VGA controller and socket controller for us to better support you in the future. Which thinkpad model you are using etc.

Sincerely,

Shrikant Acharya  
MARGI Systems  
Tel: 510-657-4435 x212  
Fax: 510-657-4430  
e-mail: Shrikant@Margi.Com  
www.presenter-to-go.com

\*\*

Everyone,

I'm on vacation this week in Illinois. I just wanted to remind everyone so that you weren't waiting around for me in the labs tonight and wednesday. I'll be checking e-mail on occasion and will get back to you with questions as quickly as possible.

Rane, in the frenzy of packing and leaving for SFO I forgot to send my archived e-mails. I will do so Sunday when I get back. Sorry for the delay.

\*\*

Hi guys.

So we have about 6 weeks to go. Me and Tomonori were not able to get the firewire card working.

I'm starting to do some 3-D content this weekend. We need to firm things up this coming week on Monday. We should all meet and finalize what's going on.

\*\*

Siggi, I got the box's audio cleaned up. It's super clean now. The noise on video is from multiplexer - a channel that isn't giving sync makes it... I'll think of it but...

## May 2001

\*\*

Rane, Scot took the electric drill back so I need a drill. Can I borrow yours? I need one for making new wearables...

\*\*

I'll bring the drill tonight.

\*\*

Hi,

Under Project I want to use the word 'hypomnemata'.

It means, a weaving of thoughts, ideas, reactions... a notebook, a web sketchbook.

I want to use this word instead of 'journal'...

What do you guys think?

Current interpreters see in the critique of the hypomnemata in the Phaedrus a critique of writing as a material support for memory. Now, in fact, hypomnemata has a very precise meaning. It is a copybook, a notebook. This type of notebook was coming into vogue in Plato's time for personal and administrative use.

Huh? Please???

\*\*

Hi Guys.

How is it going? I'm going to jamming on the content like a wildman before I go to Atlanta.

Rane. I like the theory word. Whatever makes it rock.

here is a quote which might be cool to put on our website.

"If Jean Luc Godard (French New wave filmmaker) speculated that in the future reality will exist at 24 frames per second. Just imagine how much reality will exist live on the internet at 30 frames per second".

\*\*

Using Yahoo and plagiarizing e-mails... I tell ya!  
<http://artnetweb.com/iola/journal/>

Sounds good to me Rane!

\*\*

Yeah, well I figured you guys had better things to do than read that web page, that's why I only pasted some of it.

:)

\*\*

Hi Guys,

I didn't get nearly enough website stuff done this weekend so I'd like to work at home tonight. Let me know if that's an issue and I can stop by as needed. Also, I think this Wednesday is that documentary meeting... what's your take on the whole thing. Tomonori, I gather you're about as uninterested as I am in dedicating time to the documentary... Rane, Siggs... any feelings going into Wednesday's meeting?

\*\*

Hi Guys. I'll be at the lab tonite. I plan to get you video this week. mabey tomorrow. Tomonori... I need to show you something tonite. Will you be there?

\*\*

All,

I spoke with Jim and yes the meeting is mandatory... he wants everyone to attend tomorrow night... I mentioned I wouldn't be in until 7PM and he was fine with that. Basically the meeting is to address our questions. His vision is a minimally intrusive video taping of our groups at work... with the product being a video tape. He assumes CNTV will own the tape but we would get copies... he did mention if we sell/use the tape CNTV would probably need to be engaged somehow.

Hope this helps...

\*\*

I've uploaded my mail files (6.2 MB) in the following file:  
[http://www.mindfrog.net/new\\_nav/Mail.zip](http://www.mindfrog.net/new_nav/Mail.zip)

I'm uploading 700k versions of both Real and WMT formats of the 2 Skip movies:

[http://www.mindfrog.net/new\\_nav/movies/sample700k.wmv](http://www.mindfrog.net/new_nav/movies/sample700k.wmv)  
[http://www.mindfrog.net/new\\_nav/movies/sampleintro700k.wmv](http://www.mindfrog.net/new_nav/movies/sampleintro700k.wmv)  
[http://www.mindfrog.net/new\\_nav/movies/sample700k.rm](http://www.mindfrog.net/new_nav/movies/sample700k.rm)

[http://www.mindfrog.net/new\\_nav/movies/sampleintro700k.rm](http://www.mindfrog.net/new_nav/movies/sampleintro700k.rm)

It looks like the wmv format isn't natively supported by CIHost, so you may need to FTP to these folders to download... my browser just loads ascii characters rather than downloading. Also the interlaced WMV files doesn't look interlaced so I'll be running some more tests on this end... maybe the codec I chose....

\*\*

Hi Guys.

So Christian. Does the compression that i gave you. Mjpeg B work for you. So By the end of this week I'll have 3 characters done.

Skip Sweeney  
55 years old. Moveing back in with his Mom

Celine Germain  
27 years old  
O costume photoshoot for the costumes for the next NSync tour (good stuff)

Bowie  
16 years old  
Going to the comic bookstore to get his favorite comics

Rane Session  
Dogshow

(need one more) Tomonori?

\*\*

Siggi,

I was able to compress the CD you gave me... I sent out a set URLs although I the WMT didn't seem to interlace... I'm running a couple more tests and will verify what works (or not) on Wednesday. As I mentioned last week I'm working at work tonight since Susan has late meetings. See ya'll on Wednesday (Siggi have fun on your shoot Wednesday)

\*\*

Good.  
I'll be jamming on these tomorrow at the studio. I'll continue with the Motion Jpeg B

\*\*

Hey... do you think I should write about telepresence in terms of art?

\*\*

I think the more content we have on the site the better off we are. I haven't checked, but did you upload the other materials you're working on? If you feel telepresence in terms of art is something you enjoy writing about you should. I'll gladly review it along with the other stuff and add my 2

cents.

\*\*

Sounds good to me...

\*\*

I think we should send "thanks" mail to the video chip maker, with one of our presentation video (the one we used for the last presentation.) I don't know when the new website debut, but the company, and Don Day must know how we're doing what we came up with. (should we invite Don for the final presentation? I don't know how valuable for him, the whole presentationS, though.

\*\*

I agree, we should. We should also thank them on our webpage, probably on the front page and the project page. Wherever it applies.... like on the hardware page again.

Yes, we should invite Don for the final presentation. I don't know if he's interested in that or not, but I think he might like it???

\*\*

Hey there mindfroggers,

I agree that we should invite Don Day and give Don and the chip company credit where ever appropriate on the site. If Don doesn't want to come to the presentation I won't at all be offended... the invite is what's important.

Rane, can you upload all your theory docs into your Rane folder on mindfrog? I'd like to spend this weekend reviewing that content and adding it to the site.

Tomonori, thank you for all the work on the portable. Siggie will be able to get me the CD's on friday so I'll have the weekend to also work with the video content!

Are we in agreement to meet wednesday the 23rd. Rane and I had a really good meeting last night. Siggie and I synced up over the phone a couple days ago... I haven't spoken with you Tomonori in a while and I feel like getting together again possibly outside of the labs may be appropriate as we go into our last 3 weeks of the project.

I know I would like to talk about the next couple weeks as well as what we're doing personally over the next few months...

Cool? Talk to ya'll later!

\*\*

I also suggest we invite Bill Tebo, and Scott. I don't know if John would be interested. We should give credit to all of these guys on our page.

Yep, will do... two of the emails are up along with images in the rane file before www.

I agree. Also, we need to talk about the kiosk for viewing. I want to build it, and need to figure out the plans and get started on it. Oh, I'm meeting up with Siggie to get the unit to film this weekend.