

# Exhibit X Part 1

Bill Paserman

408/272-2360

Dec Station

p 50

Plaintiffs' Trial  
Exhibit 77

CONFIDENTIAL

E 001462

EOLASTX-000000034

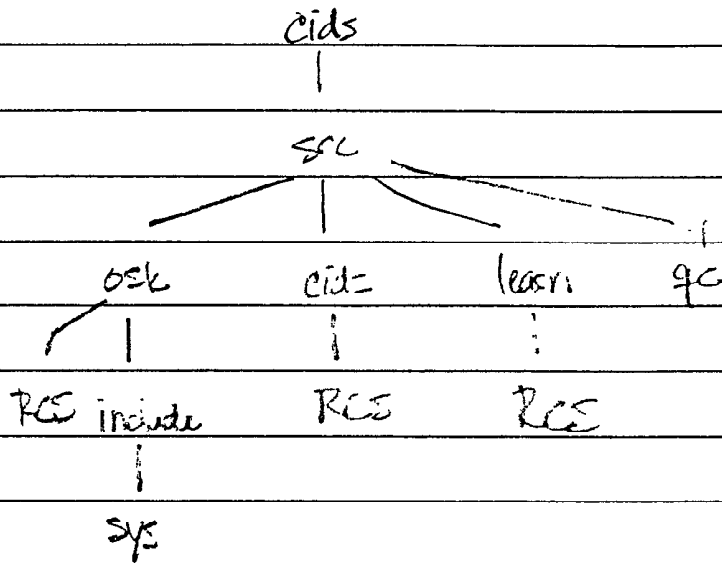
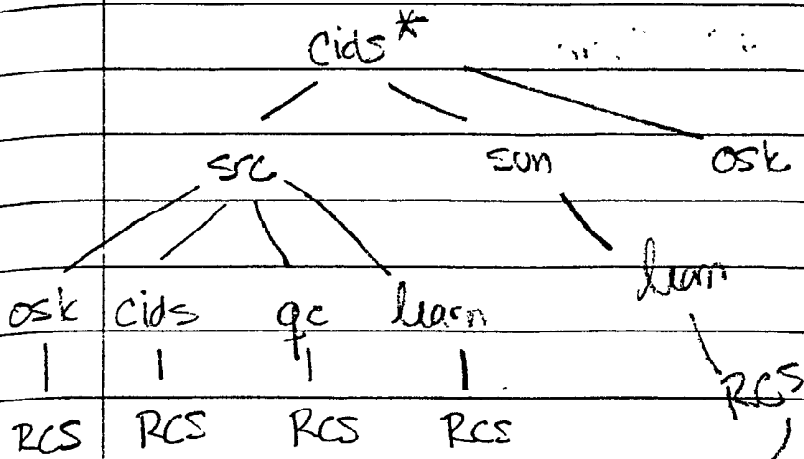
# NVRAM

To auto boot :

"bw" nvw 1 290 4

"wd(1)unix" nvw 1 425 2

-- : clear/erase NVRAM and update when receiving BAD MAGIC use "nve" followed by "nvo"



7/17

OSK system compatibility libraries

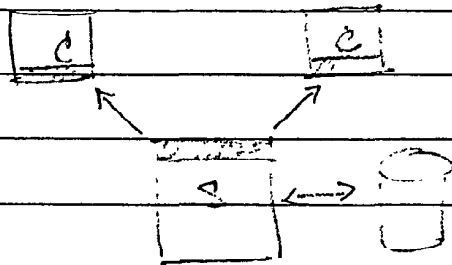
- \* remove dependencies on config.h, defs.h, warn.h
- \* change Make file to -rw = \$(DEST)/lib ; drop the \$@
- \* drop vfprintf.c until resolve -vfprintf ()  
/maxvideo/rel3.2

QC

- \* change LIBRARY to libqc.o
- \* change input to use in-utl-inp\* functions.

## MSI Design

1. Centralized DB model
2. all data is always resident



- per-client INDEX on server
- KPE based data access for all remote access
- no storage manager

## Limitations

- maintain low price/cost

Mtg 9/20/91 (status)

- mtg Monday @ 2PM for future directions
- Sandeep 2d graphics (withdraw)
- Richard 3d / TiterViews 3.0
- Matt 3d / data model
- Bill / API, C implementation

\* Statement of work (9/27)

Mtg 9/23/91

- \* checkpoint / undo at database
- \* undo log
- \* partial db / object or page level /

\* command undo posting to command queue  
to attempt to restart

## Persistent Object Store

\* Cricket (Zorra/11a)

\* locks acquired thru exception handling at memory access, rather than traditional RPC - equivalently expensive to catch exception locally, plus incurred cost of RPC.

\* page-level locking

\* extent-based scheme  $\cdot N$  kbytes/segment, linear hashing to map virtual to physical extent

\* indices as meta-data using tuple complex concurrency control and recovery algorithms.

\* concurrency control for meta data is done via ARIES algorithm [Mih89a], based on operation logging. Regular data is batch committed using a "no-steal" buffer policy, so that pages do not get propagated to disk until the next commit.

E 001468

CONFIDENTIAL

EOLASTX-000000040



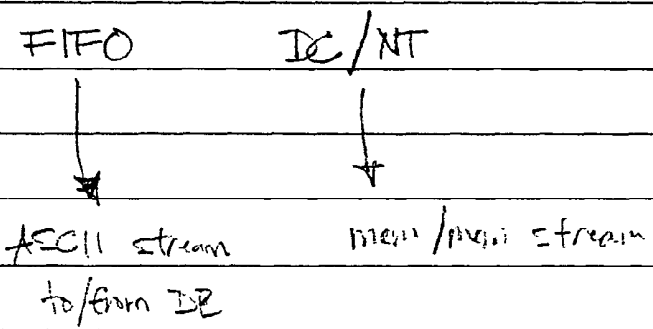
9/24 - OODB Planning

- \* File In/Out
- \* Deep Copy / Traversal
- \* Commercial OODB
- \* Third-party (PD) OODB
- \* In-house storage mgr / OODB

File In/Out

- \* Bill P. proceeding, estimate of prototype, delivery for release 1.0.
- \* non-ASCII output
- \* memory  $\rightarrow$  memory implementation
- \* related issue of working w/ Deep Copy
- $\Rightarrow$  implementation for all persistent types.

Testing : sample implementation w/ CORE  
performance modeling



CONFIDENTIAL

E 001469

DeepCopy / File I/O

\* sub-tree object loading

Statement

Short-term case, restore, checkpoint, copy.

- on-going analysis & support.

Long-term: 3<sup>rd</sup> party \$\$, no \$\$, in-house

- needs / requirements, capabilities.

- cost / time

- additional functionality beyond (N+R)

- potential solutions for needs

\* how implemented

\* advantage / cost

\* time-impacts, option evaluations that affect the above.

Schedule

- short-term time

- long-term option evaluations

\* DB Functionality / Capabilities for MS/CORE

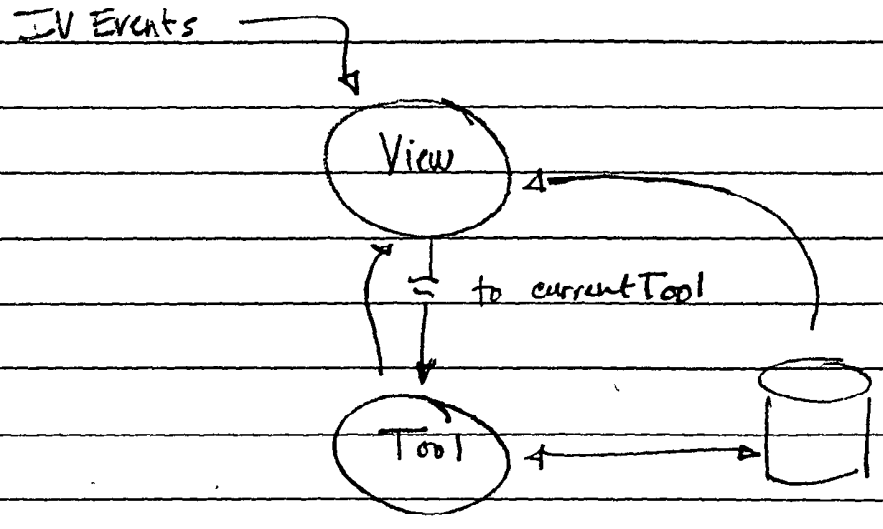
- break out identifiable tasks

e.g. Version, Exodus, working w/ Bill.

9/25/91 - Interview/ Unidraw Command /Event Model

\* Event model @ UAm

Tool Protocol



9/25 Event Model

Dialog {

instanceId

resourceId

key-value-table

3

Menu {

resourceId (menu-)

objectId (menu-item)

3

Status Mtg 9/27/91

- \* 3D viewer (next E.G.)
- \* InterView 2.6 tools to be used until 3.0 versions are available.
- \* InterViews availability for the Macintosh

rgiaino@polygen.com via unnet

Paul Bush

CODE 9/27/91

- \* modifications to all DM classes @ Base →
  - implement store(), isA(), etc..
  - multiple inheritance - cast down
  - class name vs. class Id.

\* TreeNode, ChemObject (TreeNode, EventNotify, Display)

CONFIDENTIAL

E 001472

9/30

\* changed names clashing from ISA() to misisA().

10/7

- short-term

- dump of tasks initiated + state

- outstanding issues

- file-in/out

- mid-term

- emulation of ODP functionality

- long-term (made a-ban trace-sets)

Mid-term

\* what is the model, where does the ID reside

TDD (Bill)

\* call review of NIK/Basc

\* dump tools + state

\* ODP vendors year

\* participate in ODM discussions

3. outside review

-documentation

2. additional review at OD

1. tasks and state

Disposables

9/5 hr

1/4 hrs (already spent)

on 10/8 contract

new training days per 1/2 hr for new training months

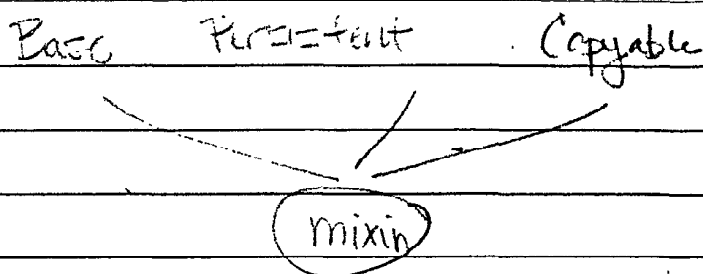
\* support for existing NIK code

Mid-term

- \* dynamic type hierarchy
- \* OODB emulation
- \* drive design from requirements

Meeting 10/8

- \* name classes inc/core vs. Unidraw (typedefs)
- \* Matt Hain Base class
- \* Event models (coding)



DEFINE\_PERSISTENT\_CLASS

DEFINE\_PERSISTENT\_MEMBER

private

ClassDesc

read- (OIOid & dnm)

read- (OIOid & fd)

Facilitiesneeds

- \* dedicated workstation / file server
- \* network backup utility
- \* integrated Macintosh / UNIX network
  - ↳ X terminal support for Macintosh (MacX)
  - \* Mac ↔ Unix mail (Eudora)
  - \* Mac ↔ Unix NFS (TOPS / Pacer)

Consistent NFS Hierarchy

10/18/91

- staying w/ InterViews
- holding to 12/15/91 for 1<sup>st</sup> release

Facilities Committee Mtg 11/6/91

- Mac/Unix mail
  - Gator Box (HW) received, but not installed.

- Network security
  - name daemon running
  - most machines / passwds are secure
    - SGI system administrator
    - ESV
    - Titans

MS/Core Freeze Mtg 12/23/91

\* mail aliases : core-bugs  
core-dumps

\* memory usage / core review



Mtg 12/13/91

## Small Molecule Request

April AES Intro at Receptor

- v/ MDL database - frontend via Receptor
- \* structural searching and visualization
- \* probably not use External API

## Checkpoint / Restart

Mtg 2/11/92  
Mika Regan

2/25 Event Handling

\* TCL Events ?

## 1992 TODO

1. persistent user-data (ParamArrays)
2. change attributes (all attributes for DM objects)
  - potential for data dictionary
  - periodic table
3. groups (persistent) - collections
4. tables

E 001477

CONFIDENTIAL

EOLASTX-000000049

2/28

1992 Scheduling

\* thru March: develop persistent user-data

: clean-up open/save/save-as, etc...

\* thru May: change attributes, groups, periodic  
table (discuss groups w/ DR)

\* thru June: optimization at checkpoint

CONFIDENTIAL

E 001478

2/3

Heuristics

\*\*  
F/M

Ange Hampton - good, would like to see OMS  
next week; bright, cheerful, good attitude 55K

Francis - potential; develops attitude; negative  
vibes.

Raymond - junior, might be able to grow into  
position. Seems somewhat interested in development.

\*  
Th

Thoi Nguyen - good potential to serve dual-role.  
Possibly not as sharp as other candidates do to  
lack of experience (e.g., no knowledge of DNS).  
Good attitude; possible language problem 35K

\*\*  
Th

Fred Jen - v. good. lots of experience, background seems  
strong; willing to learn new stuff; good (if not  
great) attitude, 60K

\*  
M

Farzad - good, not quite as gun-ho as Freds  
possibly would need a little prompting.  
Knows CISCO, weak on non-Sun platforms 65K

DR, FL, CDS, mH, Mario B.

CONFIDENTIAL

E 001479

2/9

Staff Mtg.

- \* no seating changes (yet)
- \* Fred L. is site mgr.
- \* Bill Poitras (table viewer subsystem)
  - = 5/1, 6/1, 7/1 tentative dates
- \* Paul Bush releases engineering discussion (TBD)
- \* SGI developers conference (Dave Baltzer)
- \* Cray external application schedule (Merck)
- \* Massively parallel project (MASPAR)
  - looking for manager (project mgt w/ chemistry)
- \* import/export to/from MS/Core via cut-buffers
  - at lowest-common-denominator via PDB format
- \* Bill Poitras table-viewer architecture
- \* Merck
  - \* concerned about command language
  - \* work from home
  - \* batching
  - \* selection list - selection criteria

CONFIDENTIAL

E 001480

EOLASTX-000000052

2/11

Staff Mtg

\* Paul Bush - VideoPix + VCR camera for  
network teleconferencing

3/24

4/6/12

Staff Mtg w/ R.N.

\* Katie as core server

\* /u3

\* Energize license server

\* Copy of Serve API

\* Stanford lucidemacs-19 (MIT)

\* Multiple RCS/CVS versions  $\Rightarrow$  multiple DB's

Q: load balancing / distributed compilation

## 6/23 Energize Product Seminar

Q: basic system overhead

- ⇒ requirements as executable grows
- ⇒ requirements as # of line increases
- ⇒ additional development tools (e.g. Purify)
- ⇒ GNU make, emacs, gdb, RCS, imake

Q: architectures (MIPS, ALPHA, Power, 486, 88000, 486)

- ⇒ compiler/linker requirements.
- ⇒ GCC/GLD/GAS?

Q: Development environment

- ⇒ non-Motif, non-OpenLook (e.g. future)
- ⇒ Emacs v 18 compatibility?
- ⇒ Std. make, RCS, CVS compatibility.
- ⇒ INLINES? (incremental compilation)

Q: Command-line drive interface

⇒ .↑G↑MQ, ↑CTMX

⇒ NO command line driven Energize

Q: FORTRAN? Std. C/C++ compilation

Q: debugging and optimization concurrently?

Q: Source code for GDB, Emacs?

Q: Solaris?

E 001482

CONFIDENTIAL

EOLASTX-000000054

7/6

Staff Mtg

Martin Karplus (CHARM)

Table design mtgs - 2PM (datatypes)

Thursday - Lucid Energize presentation (call)

DM Cte : Bob Pitha

7/7.

\* Fix selected to be non-persistent

\* Join tool and fuse tool.

\* ~~fix~~ PROCESS.TIMEOUT back in 3DViewer.C

\* UNDO?

7/17 tag tree for snapshots

\* ~~unselecting~~ cylinder bug

7/8

RN Mtg:

2<sup>nd</sup> Qtr. met goal (USA ↓, EU ↓, JP ↑)

Dan Woods (MPP) 7/20

7/9

Heuristics

~~Doyle Tang~~

Patrick Armstrong

Clem Lurdig

7/9

RN Mtg #2

Problem How to most quickly integrate "Ceres" and  
 "Polygraf" on the backplane.

- \* need to demo very soon (early Q1 '93)
- \* feasible plan to deliver (NLT June '93)
- \* similar look and feel

CONFIDENTIAL

E 001484



8/14/92 - Staff Mtg.

\*

10/2/92

REL, Ben, DEM

\* electronic mail problem(s).

- directory service, mailing lists

\* GDB/OMIM access via GALEN.

- campus-wide access to database(s).

\* positions (open/vacant).

- PA-3 (M. Pak)

- MAP (level?)

\* speak to Ken Weik re. hiring process

\* Epoch/Auspex potentials

\* Freimer, Nelson Faculty member in Genetics

- building a database

- problem building pedigrees

→ develop a database consulting service

- consulting for campus community

- where does gratis start/end

- ~~cost~~ vs standardization vs coordination

E 001485

CONFIDENTIAL

10/2/92

⇒ statistical consulting service

- conjunction w/ database consulting service

AMIA : UMLS (Unified Medical Language System)

\* goal: to develop an integrated approach to knowledge/database searching for the user

\* began in 1985 @ NLM

⇒ Lexical Technology, Inc w/ others

\* Randy Miller, MD Univ. at Pittsburg

\* CHARTLINE/L (Lexical)

\* CHARTLINE/P (probabilistic)

11/23/92

- \* images from high quality printer
- \* Springer-Verlag use Quick Xpress format for all Radiology journals but (-2)

\*

11/24/92

ASAP

- \* Database consulting service
- drafting service provided, etc.

- \* in-house help desk / bulletin board for user questions, etc... (Netnews? Sun's HelpDesk?)

1/1

- \* enhancing communications and setting policies and procedures for reporting problems/complaints to the technical staff; providing a means of both identifying and prioritizing these tasks and informing the user community of those actions
- ⇒ Cheryl Armstrong, Luis Novak, Gail ~~Winters~~ Tardio
- ⇒ Karen Butler

- \* Heidelberg in February
- ⇒ Technology Strategy
- GALEN replacement

CONFIDENTIAL

E 001487

KAB →

Staff: Diane Carberry or Pat Souza (+)

Librarian: Gail Persley or Jackie Wilson

Paul Waterford

Nancy Zinn (+)

Dept. Meeting 12/20/30

Malcolm A. Holliday

415/476-8183 (W)

415/669-1422 (H)

Toyota Camry Lic # 3BMK876

Jackie @ AAA

415/753-7400

401 Taraval Ave

Blaine McCurdy @ Bob Lewis / Capitol VW, Svc Mgr  
408/265-4400

Darryl Parker @ Son Micro CC

415/688-9396

Roy Sordina @ 415/888-9399

Ved Vidava 708/323-1188

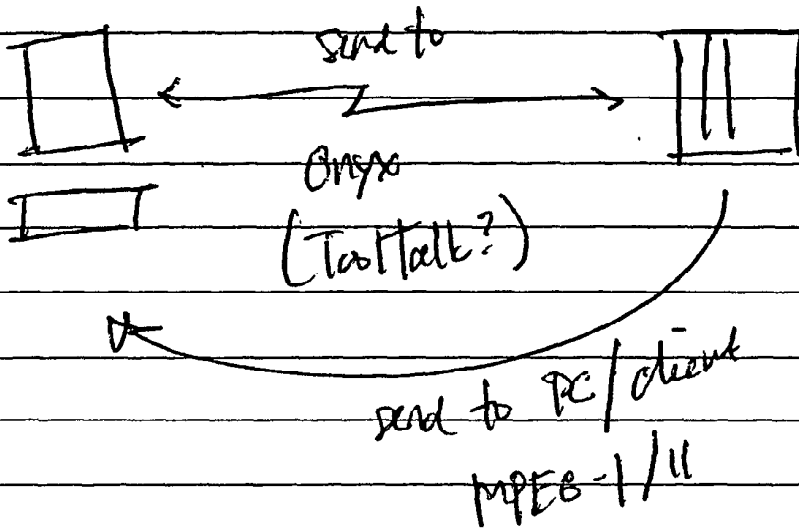
CONFIDENTIAL

E 001488

9/7/93 Mtz w/ MDD

\* MPEG compress output from Onyx and  
send to PC/CDI w/ MPEG decompress  
hardware

\* Video CD - type, but for visualization



### Problem

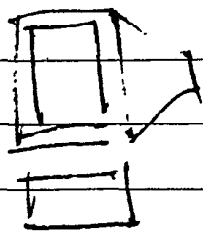
\* How to deliver \$ results, either due to  
computation or graphics to low cost sent?

Visualization: send commands to remote server  
that performs & visualization and sends back  
compressed image as result (e.g. JPEG)  
→ send back delta only, ala MPEG

low-cost PC/Windows?

MPEB stat server

31



network

cmds

local CPU  
w/ decompression

X-terminal?

2/4/94 J. Katz, KRIO, DEM

11/8/93

Audio Teleconferencing (3D)

- spoke to MDD and BFS



11/19/93

Mtg w/ TEF, MDD, ISSG, BES

- develop tools for on-line authoring/editing
- Springer desires to be able to commercialize results from NSF grant (same for ATFT)
- \* Integrate MIDAS as part of NSF grant
  - TEF: technical feasibility of MPEG compression of images as part of GL output. (not enough information to determine)
  - Attractive
  - MIDAS is molecule visualization package
    - Proteins, nucleic acids
    - Iris GL; going to OpenGL
    - ported to PEX
    - similar to Chemistry Viewer (MSI)
    - supports PDB
    - AMBER, molecular dynamics
    - DOC, searching 3D databases for receptor matches
  - Presenting data sets (e.g. Brookhaven PDB database)
  - Annotating visualized data w/ literature, both from PDB and other potential sources.

Nasa Steps

Dec 2/4/94 (complete middle of January)

Participants: ATFT, SV, NCSA, UCSF (CBL, CKM)

Tom Kascie (Wash U) IRI, MRI

Joel Ernst, Charles Ordell, Roger Pedersen

Cont. on Visible Embryo Project (SGI/ARPA cosponsor)

CONFIDENTIAL

E 001494

EOLASTX-000000066