

Glossary.tioga

Written by: Lyle Ramshaw

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A Glossary of Terms, Subsystems, Directories, and Files

(and acronyms, protocols, and other trivia)

Try reading me in Tioga, using the "Def" command to get around!

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XEROX

Xerox Corporation
Palo Alto Research Center
3333 Coyote Hill Road
Palo Alto, California 94304

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abstract machine: A set of low-level functions and capabilities, provided by some combination of hardware and software, that forms the underpinnings of a system sitting above. For example, the **Interlisp-D** system, which runs on various machines, consists of a lot of machine-independent stuff sitting on top of a small amount of machine-dependent code. The goals of the machine-dependent part were specified by describing an abstract machine that it must implement. As another example, part of the **Cedar** project has been the specification of a "Cedar computer" as an abstract machine.

Alpine: A transactional file server being built within **CSL** for use by database systems and other distributed computing applications. **Alpine** is being built on top of **Cedar**, and helps support the **FS** file system. See the **blue-and-white** report titled "The **Alpine** File System," number **CSL-84-4**.

Alto: (archaic) A small personal computer with a **bitmap** display and **mouse**, designed at **PARC**; the precursor to **D-machines**. See the **blue-and-white** report titled "Alto: A Personal Computer", number **CSL-79-11**.

Alto world: An environment created by running an **Alto emulator** on a **D-machine**.

AltoFontGuide.Press: A file, available on **[Indigo]<Fonts>**, that tells all about the existing families of display-screen raster **fonts**, and describes how they are organized on different subdirectories of **[Indigo]<AltoFonts>**. Note that the name "AltoFonts" is an anachronism, and should really be changed to "DisplayScreenFonts" or the like; the same rasters that were drawn for use on **Altos** work just fine on today's **D-machines**.

AM: Acronym for the **Cedar** abstract machine.

Anacapa: printer

ARPA: Acronym for the **Advanced Research Projects Agency** of the United States Department of Defense. They support, among other things, a network linking research computers: our **ARPANET** address is simply **XEROX.COM**. It used to be **PARC-MAXC** and will probably change to **Xerox.COM** in the near future.

atom: (or **ATOM**;) Unique identifiers implemented over a global naming space. Two occurrences of the same atom will evaluate to the identical value, rather than just to equivalent values. Atoms have always been part of **Interlisp**; they were added to **Mesa** on the way to **Cedar**. In **Cedar**, an atom literal is written with a prefixed dollar sign, as in "\$foo". Each atom has a list of <name, value> pairs associated with it, called its property list.

bar: A generally thin, generally rectangular, generally invisible region of the screen in which certain generally display-related actions occur, e.g., the scroll bar, the line-select bar.

baseboard: A microcomputer that lives on the lowest printed-circuit board of a **Dorado**. The baseboard listens to the terminal's **boot button**, and to various thermometers. Its job is to supervise the rather complex booting sequence necessary for bringing a **Dorado** up from a cold start. The baseboard announces its state to the outside world by flashing a number (encoded in unary) on a little green light on the **Dorado** chassis. Signs near each bank of **Dorados** explain what various numbers of flashes mean.

BCD: A compiled object program module in **Mesa** or **Cedar**; an acronym for **B**inary **C**onfiguration **D**escription.

BCPL: A free-wheeling and typeless system programming language used as the environment for much early **Alto** programming. Also, the compiler for that

language.

Binder: BCD's export services to their clients, and, in turn, import various services from other BCD's. The process of resolving these inter-module references is called *binding*, and the **Binder** is the program that does it. Actually, the loader can handle many of the easy cases of binding on the fly, as part of the loading process; but for complex stuff, you need the **Binder**. The **Binder** accepts compiled modules (with extension ".bcd") and binding instructions in the form of a **configuration** description (with extension ".config"); it produces another ".bcd" as output.

Bit-pig: Person who fills up the image server Pixel to the exclusion of others.

BITBLT: (pronounced "bit-blit"). A complex instruction used for moving and possibly modifying a rectangular **bitmap**. The "BLT" part is an acronym for **BL**ock **T**ransfer.

bitmap: Generally refers to a representation of a graphical entity as a sequence of bits directly representing image intensity at the points of a raster. The display hardware and microcode on an **Alto** or **D-machine** process what is essentially a bitmap of the image to be displayed. At PARC, bitmaps are normally stored word-aligned, and in row-major order.

blue-and-white: A report that has been cleared for distribution outside Xerox, and published in a blue and white cover. Such reports have identifying numbers formed by concatenating the laboratory acronym, the year, and a small integer. CSL blue-and-whites are stored on bookshelves in the CSL Alcove. A list giving the titles and numbers of all of the blue-and-whites is available from the PARC Technical Information Center (**TIC**).

boot: Short for "bootstrap", which is in turn short for "bootstrap load". Refers to the process of loading and starting a program on a machine whose main memory has undefined contents.

boot button: The small button behind the keyboard used (sometimes in conjunction with the keyboard) to **boot** some program into execution. On **Dolphins** or **Dorados**, there are other more potent boot buttons on the chassis, in addition to the boot button behind the keyboard.

boot server: A computer on the network that provides a retrieval service for certain stand-alone programs (which are encapsulated as **boot files**). See **NetExec**.

BravoX: A successor to **Bravo** written in **Butte** with somewhat greater functionality and a somewhat richer interface. Warning!: BravoX source files are stored in a weird and wonderful format that almost NO programs other than BravoX can handle. Also, BravoX runs, at the moment, only on Alto II's and (perhaps?) Dolphins.

Bringover: A button in **DFTool** which retrieves files from remote file servers to one's local disk; Bringover reads ".df" files in order to figure out what versions of what files should be retrieved, and where in the great wide electronic world they might be found.

bug: A computing term for a non-feature, something that is not as intended. Sometimes used in a different sense to refer to the act of pointing at something with the **mouse**, and then **clicking** a mouse button; but this usage is frowned upon by 100% of our Usage Panel (namely me: I recommend using the verb "click" instead in this context, since I think that "bug" is already an overloaded word).

bug award: Refers to a occasional custom within **CSL** wherein those brave souls responsible for ferreting out the cruelest and most intricate bugs in critically important systems are rewarded for their efforts by being presented with a cute little bug-shaped sticker that they can then display on their office nameplate or elsewhere. A bug award is the

moral equivalent of a gold star. If the sticker consists of a background from which a bug has been excised, then the award is an "inverse bug award", and serves to praise its recipient for producing code that is notably free of insect infestations.

Building 32: Located on Hanover Street, north of Page Mill. Once called **PARC-place**, when it was occupied by parts of **PARC**.

Building 34: A part of **PARC**, located on Hillview, just across Coyote Hill from the **Building 35**, the home of the **ICL**.

Building 35: The main building of **PARC**, located at the intersection of Coyote Hill and Hillview. The site of the cafeteria.

button: A small area on the screen that reacts when **clicked** with the **mouse**. In **Viewers**, buttons are rectangular areas labelled with a word or phrase; they are organized into **menus**.

byte code: **Lisp**, **Cedar** and **Smalltalk** at **PARC** compile into directly executable languages that are stack oriented, and whose op codes are usually one byte long. Such an instruction is called a **byte code**. These byte codes are in turn interpreted by special microcode on each of our various machines.

Cabernet: A particular mail server that is part of the **Grapevine** distributed transport mechanism, located in the **CSL** machine room.

caret: A blinking pointer, indicating where keyboard characters will appear when typed.

Casaba: A small **CSL** project to build a compiler-compiler whose compile function is defined by a system of recursion equations, the recursion equations may refer to (user defined) assumed known primitive functions (such as "AddSymbol" = "add Symbol to symbol table"), where the primitive functions can be implemented using (declared) side-effects (e.g., implement symbol tables using Hash Tables), and which performs a flow analysis on the recursion equations to verify that the side-effects are benign.

catch phrase: A chunk of **Mesa** or **Cedar** code that is prepared to handle a certain type of exceptional condition. The best way to think of a catch phrase is as the body of a procedure variable that is dynamically bound. Such procedure variables are called **signals**. If you suspect that an exceptional condition might arise, and you think that you know what to do if it does, you specify this response as a catch phrase: that is, you bind a procedure value to the signal, which is a procedure variable. If any procedure that you call notices that the condition has in fact arisen, it will notify the world by "raising the signal", which should be thought of as a procedure call to the catch phrase that you specified. (This method of explaining signals is a minor facet of the religion espoused in the **CLRM**.)

Cedar: A large project in **CSL** to build a programming environment for **CSL's** future applications. Also the name of that environment. Also the name of the programming language upon which it is built. The Cedar language is a variant of **Mesa** augmented by garbage collection, **atoms**, and run-time types. The design of the Cedar environment was strongly influenced by the programming environment and services available in **Interlisp** and **Smalltalk**. For a discussion of the goals of Cedar and a tour through the environment, see the **blue-and-white** report titled "The Cedar Programming Environment: A Midterm Report and Examination", number **CSL-83-11**.

Chardonnay: A **Grapevine** server.

Chat: A program that provides teletype-like "interactive" access to a remote computer on the network. Most programming environments include this capability in some form:

both **Alto** and **Cedar** include programs actually named "Chat". Chat is mainly used to communicate with XNS and IFS servers.

Checkpoint: A method used in **Cedar** to preserve the state of your computing world. Taking a **Checkpoint** involves preserving a snapshot of the current state of the virtual memory, but not of the file system. If, after taking a **Checkpoint**, something bad happens and your **Cedar** system gets **wedged**, the command **RollBack** will return you to the earlier clean state of your virtual memory; but changes to the file system made between the **Checkpoint** and the subsequent **RollBack**, such as storing edited versions of files, will not be undone.

Cheshire: A subsidiary of Xerox. They make a machine that binds stacks of paper into booklets by melting glue and letting it be absorbed by the edges of the paper. There are Cheshire binders in CSL and in the PARC TIC.

Chromalin: The trade name of a fancy color printing process used with the **PlateMaker** for creating high-resolution color prints from **Press** files or **PD** files.

ChipNDale: A **Cedar** program for interactively creating and editing integrated circuit designs.

CIF: Caltech intermediate format. A format to describe layout.

CIFS: An acronym for **Cedar Interim File System**. CIFS was used within **Cedar** to manage a portion of the local disk as a cache containing readonly copies of remote files. This function and others are now provided by **FS**. CIFS was the first **CSL** system to allow the components of a hierarchical file name to be separated with simple slashes instead of with square brackets and angle brackets; the clumsier brackets are being used in this document (sigh) for compatibility with the past.

Circus: ISL's version of **Dealer**

Clearinghouse: The analog of the **Grapevine** registration database in the NS world. That is, a machine running **Star** talks to the local Clearinghouse in order to find out how to talk to a particular **file server** or **print server**.

click: A manipulation of a **mouse** button. Pushing and releasing a mouse button several times in quick succession is sometimes called a "double-click", "triple-click", etc. as appropriate. The phrases "click-hold" and "double-click-hold" are also sometimes heard.

client: A program (as opposed to a person) that avails itself of the services of another program or system. For instance, **Laurel** is a **client** of **Grapevine**. See **user**.

Clover: A **Dover** located in **CSL**.

CLRM: Acronym for the **Cedar Language Reference Manual**. This document isn't exactly easy bedtime reading, but it is the most authoritative description currently available of the behavior of **Cedar** programs in interesting and subtle cases. The **CLRM** also attempts to convert you to a particular religion regarding the proper design of a polymorphic language within the Algol tradition. To get the good dope about current Cedar without spending the time necessary to undergo religious conversion, skip immediately to Chapters 3 and 4 of the **CLRM**. It is a blue-and-white, CSL-83-15.

CMOS: **C**omplementary-**M**etal-**O**xide **S**emiconductor integrated circuit technology. A technology that is being used to build the **Dragon**. This technology minimizes power dissipation thereby offering the promise that **Dragon**, unlike **Dorados**, will be able to reside in people's offices.

CMYK: cyan, magenta, yellow, Black

CoCedar: A world-swap debugger for **Cedar**.

- Color correction:** The process of adjusting color specifications to compensate for inadequacies in the pigments/dyes of a color printer.
- CommandTool:** Also called the Commander: a stream-oriented "glass teletype" command-line processor. It is much like the Unix (TM) shell, or the **Alto** or **Tajo Executives**.
- Commons:** The room in which many of the talks and meetings in CSL, including **Dealer**, take place. Sometimes referred to as the "beanbag room".
- component:** Among many other things, a chunk of software that is distributed as part of a **Cedar** release.
- config:** A source file that tells the **Binder** how to assemble modules into a complete system.
- CoPilot:** A world-swap debugger for **Pilot**.
- Core:** A data structure to represent the structure of VLSI layout.
- Corporate Internet:** An emerging **Internet** internal to Xerox making use of **XNS** technology.
- create date:** When said of a file, the date and time that the information contained in this particular version of this particular file was created. Create dates are generally stored accurate to the nearest second. This makes them sufficiently unique that the pair <file name, file version's create date> can serve as a unique identifier for a particular pile of bits.
- credentials:** Proof that you are who you say you are; usually your **R-name** and the corresponding password.
- CSL:** Acronym for Computer Science Laboratory, a part of **PARC**, located on the second floor of **Building 35**.
- CSL-Notebook:** A mechanism for distributing, indexing, and generally sharing the documentary output of folk in **CSL**.
- cursor:** A small picture on the display that tracks the motions of the **mouse**.
- Cyan:** An **IFS** server in **PARC**, used by **CSL** to store project software files.
- Cypress:** A database package based upon an entity-value-relationship model of data, and written in **Cedar**. **Walnut**, **Whiteboards**, **Thesaurus** and **Squirrel** are clients of **Cypress**. For more, see the **blue-and-white** report titled "Design and Implementation of a Relationship-Entity-Datum Data Model", number **CSL-83-4**.
- D-machine:** A generic name, referring to any of the current machines within Xerox that implement the **PrincOps** architecture: **Dandelions**, **Dicentras**, **Dolphins**, and **Dorados** are the primary **D-machines**.
- D0:** ("D-zero", not "DO") An obsolete name for the **Dolphin**, a **D-machine**.
- Dandelion:** The name of the processor that is in the **Star** products: an example of a **D-machine**.
- Dandetiger:** A **Dandelion** upgraded with extended control store, optional floating point, etc.
- DATools:** A pseudo server, actually **Cyan**.
- dead:** Either not currently operational (said of a piece of hardware), or operational but not currently undergoing continued development and support (said of bodies of software).
- Dealer:** The name of **CSL's** weekly meeting, occurring on Wednesday afternoons from 1:15 until 2:45 (or so) in the **Commons**; also used to refer to the person speaking at that meeting. Giving such a presentation is referred to as "giving a **Dealer**" or sometimes "Dealing".
- design & architecture group:** A group in **CSL** working on **Dragon**, VLSI chip design, and

VLSI design tools in **Cedar**.

DF files: A collection of programs for describing the files needed to build a complicated system, for automatically retrieving these files from remote **file servers** to the local disk, and for storing them back later. Unlike the more grand and glorious **system models** to come, DF files primarily addresses the problems engendered by our current feudal collection of file systems. The letters "DF" are an acronym for Description Files, which suggests that the phrase "DF files" is redundant. **DFTool** is used to manipulate and create these files.

DFTool: A **Cedar** tool to operate on **DF files**.

Dicentra: A recent and inexpensive **D-machine**. The Dicentra essentially consists of the **Dandelion's** CPU squeezed onto one **Multibus** card, and communicating with memory and with I/O device controllers over the **Multibus**.

Digital Darkroom: Class of programs that manipulate scanned images.

dirtball: A small, perhaps struggling outsider; not in the major or even the minor leagues. For example, "Xerox is not a **dirtball** company".

distribution list: A list of **R-names** to which mail can be addressed. In some cases, **Maintain** can be used to add oneself to interesting **DL's**, such as "MesaFolklore†.pa". If **Maintain** responds that you aren't allowed to do that, the correct recourse is to send a polite message to "Owners-MesaFolklore†.pa", asking that they please add you to their list. For more details about distribution lists, try **MaintainDoc.tioga**.

Dolphin: A **D-machine**; once called the **D0**. More flexible than a **Dandelion**, but also slower and more expensive.

Dorado: A high-performance **D-machine**, designed by **CSL** and coveted by all and sundry. See the **blue-and-white** report titled "The Dorado: A High-Performance Personal Computer", number **CSL-81-1**.

Dover: Generic name for a type of 384 bpi laser-scan printer built on the Xerox 7000 xerographic engine and connected to an **Alto** by means of a **Orbit** interface. Successor to **EARS**. **Dovers** are normally driven by the program **Spruce**.

Dragon: A new multi-processor machine being custom designed using **CMOS** technology by the **design group** of **CSL**. It is hoped that the **Dragon** will satisfy our ambitions to have "a **Dorado** in a shoe box".

DWIM: Acronym for Do What I Mean: a facility intended to help the programmer by making **LISP** do what you mean, rather than what you say.

EARS: (archaic) Acronym for Ether Alto Research SLOT. An obsolete prototype laser-scan printer built on the Xerox 7000 xerographic engine and equipped with a hardware character generator. (Interesting to some as an example of a third level acronym: the S in EARS stands for SLOT, and the L in SLOT stands for LASER, and LASER itself is an acronym!)

Ebbetts: Alpine server

EditTool: A menu-oriented command interface to the **Tioga** editor, providing complete access to **Tioga's** functionality, including the commands that you can't type (either because they can't be typed, or because you have forgotten how to type them).

EFTP: A venerable **PUP**-based protocol now mostly used to transfer print files to **print servers**.

EmPress: An **Alto** **subsystem** used to convert text files to **Press** format and ship them to a **Press print server**.

emulator: A technique in which one computer is programmed to imitate another. Fast imitations are called emulators, while sufficiently slow ones are called simulators.

EOS: Acronym for Electro-Optical Systems; an organization located in Pasadena that was formerly a part of Xerox. The defense contracting portion of EOS was recently sold by Xerox for 40 megabucks. The portion of EOS that built Scientific Information Systems is now SIS; they are the ones who are marketing **D-machines** running **Interlisp** and **Smalltalk** to the outside world.

Ernestine: A particular **Lily** server located in Building 35.

error 33: (1) Predicating one research effort upon the success of another. (2) Allowing your own research effort to be placed on the critical path of some other project (be it a research effort or not). Known elsewhere as Forgie's principle.

Ethernet: The communication line connecting many computers (with compatible interfaces) together. Strictly speaking, an Ethernet is a single, continuous piece of co-axial cable, but the term is sometimes applied to the entire network accessible through the cooperation of **Gateways** (which is more correctly called an **Internet**). Ethernets come in two flavors: the original Ethernet, now called the Experimental Ethernet, was built within **PARC** and runs at 3 MBits/sec. The Ethernet that has been proposed as a communication standard is a re-engineering that runs at 10 MBits/sec. **PARC** currently has Ethernets of both these flavors running around, as well as a special 1.5MBits/sec Ethernet used by the **Etherphones**. See the **blue-and-white** report titled "The Ethernet Local Network: Three Reports", number **CSL-80-2**.

Etherphone: A box of magic widgets that can replace your office telephone, giving you much greater functionality by taking advantage of the power of computing in general, and of your personal multi-function workstation in particular. An Etherphone has a microphone, a speaker, digital-to-analog and analog-to-digital converters, a connection to Ma Bell, an Ethernet interface, and several microprocessors to tie them all together. The Etherphone is a recent product of the **Voice Project** within **CSL**. The existence of the Etherphone should make it easy to write lots of exciting experimental systems (any volunteers to write a CedarVoice interface?).

Executive: A distinguished Alto **subsystem** that provides simple commands to inspect and manipulate the file system directory, and to initiate other subsystems.

export: A **Mesa** or **Cedar** program that provides (either some or all of) the services described in an **interface** is said to export that interface.

file extension: The portion of a file name that appears following a period (possibly null). By convention, a number of extensions are reserved to indicate the type of data in the file, though not all subsystems are consistent in their use of extensions. Some commonly encountered extensions are:

- ~ an Alto Executive command (not really an extension)
- .al: screen font rasters in the original format
- .bcd: Mesa object program module
- .bcpl: BCPL source program module
- .bfs: an entire Alto file system gathered into a file
- .boot: program invokable by booting
- .br: BCPL object program module
- .bravo: text file containing Bravo formatting information
- .cm: Executive command file
- .config: Mesa source that describes how to combine modules

.dale: ChipNDale design file
 .df: description of a system for use with DF files software
 .dl: distribution list (in a file as opposed to in Grapevine's database)
 .dm: (archaic) dump file, i.e., several logical files stored as one
 .errors: Swat error message file
 .icons: file containing displayable Icon images
 .image: executable Alto/Mesa program
 .install: used by Install
 .jam: JaM interpretable code
 .ks: screen font rasters in a fancy format
 .laurel: special flavor of .bcd that can be run within Laurel
 .load: used by Load
 .log: history of certain program actions
 .mail: Laurel mail file
 .mail-dmsTOC: Laurel table-of-contents file
 .mesa: Mesa source program module
 .pd: file in PD (=printer dependent) print file format, usually produced from an InterPress master
 .press: print file in Press format
 .profile: records a user's preferred values of various user interface parameters in Cedar
 .run: executable Alto program, that is, a subsystem
 .sil: SIL source file for a drawing
 .st: Smalltalk source program text
 .strike: screen font rasters in a compact and efficient but limited format
 .style: Tioga document style rules for formatting
 .symbols: Mesa symbol table (for debugging)
 .syms: BCPL symbol table (for debugging)
 .tex: TEX source text
 .tfm: font metric information
 .tip: TIP interaction description
 .tioga: Tioga text document

file name: See **file extension** and **path name** for information about the local conventions for file names.

file server: A computer on the network that provides a file storage and retrieval service. IFS and Alpine are different types of file servers.

Fishbowl: also called nursery.

FLG: (pronounced "flug") In LISP programs, a switch that customizes a program's behavior to an individual user's working habits.

fog index: A measure of prose obscurity. Units are years of education required in order to understand the measured prose.

font: An assortment of characters all of one size and style: more precisely, a mapping from a set of character code numbers to a consistent collection of graphic images.

Fontology: The body of knowledge dealing with the construction and use of new fonts. It

has been said that fontology recapitulates file-ogeny.

Fonts.widths: A file containing character-width information for a large number of fonts. Used by some programs that do text formatting while producing Press files. The standard source is **[Indigo]<Fonts>Fonts.Widths**. Other programs appeal to separate ".tfm" files, one for each font, as their source of information about character metrics.

foo: The first meta-syntactic variable. The second is "bar". There is a tie for third between "fum" and "baz". The words "foo" and "bar" are cognates, both derived from "fubar", an acronym popular in the U.S. Navy and used by early computer programmers employed by the Navy, possibly as a technical term describing the state of a system.

Football: A two-person game in Cedar; a many person brawl when not in Cedar.

format: An attribute of a **node** in a **Tioga** document. Examples might be "long quotation", or "item in a bulleted list". The effect of the various formats is defined by the **style**.

FS: A file directory system in Cedar; FS replaced **CIFS** and the Common Software Directory (a part of **Pilot**).

FTP: Acronym for **File Transfer Protocol** (or **Program**). An **Alto world** program that provides a convenient user interface to the file transfer protocol, enabling the transfer of files between co-operating computers on the **Internet**.

Garage: A nickname for the **Electronic Model Shop**.

Gargoyle: An illustration program in Cedar, a successor to **Griffin**. Gargoyle is useful for making precise illustrations using a compass-and-straight-edge technique called **snap-dragging**. Gargoyle has become the illustrator of choice in Cedar, largely because it takes advantage of most of the power of the **Imager**.

Gateway: A computer serving as a forwarding link between separate **Ethernets**. Gateways may also perform certain server functions, such as **name lookup**.

germ: A small part of **Pilot** that runs first: the germ handles bootstrap loading, inloading and outloading memory images during **worldswaps**, **teledubbing**, and the like.

Grapevine: The distributed electronic message transport system; it has a set of protocols all its own, and provides various server functions such as authentication. See the **blue-and-white** report titled "Grapevine: Two Papers and a Report", number CSL-83-12.

group: (when referring to **Grapevine**) A set of **R-names**. The standard interpretation of a group is a **distribution list**. For example, CSL.r.PA is the group of all people in CSL, in case they all should get copies of a message. Groups can also be used for other purposes, such as access control. The R-names that constitute a group are called its *members*. In addition, a group has *friends* and *owners*: a *friend* is someone who may add or delete herself from the group, while an *owner* may add or delete anyone from the group.

Hardy: A **Tool** that provides the functionality of **Laurel**, that is, mail sending and receiving, within **Tajo**: a client of **Grapevine**.

Hickory: A reminder and calendar system based on the **Cypress** database in Cedar.

Hornet: Generic name for a family of 300 bpi laser-scanned printers, built on top of 2600 copiers.

Iago: The disk utility program for Cedar. Useful for manipulating the local disk, such as creating **volumes** and installing Cedar.

Ibis: An **IFS** server in **SDD/Palo Alto**.

Icarus: (archiac) An **Alto**-based program for creating and editing integrated circuit designs graphically and interactively.

- icon:** A small image representing some concept. Used extensively in **Star** and **Cedar**.
- Idun:** An IFS server in SDD/Palo Alto: the home file server of the **Pilot** group.
- ICL:** Acronym for Integrated Circuit Laboratory, a part of **PARC**, located in **Building 34**.
- IDL:** Old acronym for Integrated Design Laboratory, now the **design and architecture group** of **CSL**.
- IFS:** Acronym for Interim File System. An **Alto**-based file server. Many IFS servers exist on various **Ethernets**, including **Cyan**, **Ivy**, **Indigo**, **Ibis**, **Iris**, **Idun**, **Igor**, **Phylum**, and **Erie**.
- IFU:** Acronym for Instruction Fetch Unit; many computers have them.
- Igor:** An IFS server in SDD/Palo Alto: the home file server of the **Mesa** group. This name should be pronounced "Eye-gore", as in the movie *Young Frankenstein*.
- Imager:** A subroutine package of graphic primitives, built by the **imaging group**, that forms an important part of **Cedar**. Its design was heavily influenced by the results of experimental systems written in **JaM**.
- ImagerColorDisplay:** A component of **Cedar** that provides a command interface for using a color display.
- imaging group:** Formerly the Imaging Sciences Laboratory. A graphics laboratory that existed at **PARC** until 1983. Now the **imaging group** in **CSL**.
- implementation module:** A **Mesa** or **Cedar** module that actually provides a set of services, as opposed to an **interface module**, which simply specifies exactly what those services are to be.
- Indigo:** An IFS server in **PARC**, used by **CSL** to store project software files.
- [Indigo]<Alto>:** A directory on which standard Alto (**BCPL**) programs and subsystems are stored. Only object code files (extension **.br**) and runnable files (extension **.run**) are stored here; source files and documentation are stored on **[Indigo]<AltoSource>** and **[Indigo]<AltoDocs>**, respectively.
- [Indigo]<AltoDocs>:** A directory on which documentation for various Alto subsystems are stored (generally with extension **.press** or **.tty**).
- [Indigo]<AltoFonts>:** A directory on which screen fonts for the Alto are stored (extensions **.al**, **.strike**, or **.ks**). Subdirectories are used on this directory to distinguish various families of display screen fonts that have accumulated over the years.
- [Indigo]<AltoSource>:** A directory on which source versions of standard Alto programs are stored.
- [Indigo]<BasicDisks>:** A directory on which the standard starting configurations for Alto disks are stored, as files with extension **".bfs"**. The normal way to initialize a new **Alto world** is to use **CopyDisk** to retrieve one of these disk images.
- [Indigo]<Cedar®>:** A directory containing the **Cedar** source code and documentation, where ® denotes the version number, e.g. "6.0".
- [Indigo]<CedarChest®>Documentation>:** A directory containing the on-line documentation for **Cedar**.
- [Indigo]<Cedar®>Top> and [Indigo]<CedarChest®>Top>:** Directories containing top level **.df** files for components of the **Cedar** release.
- [Indigo]<Fonts>:** A directory containing various documents of printing interest, including **Fonts.widths**. You might be interested in **CloverFonts.Press**, or **AltoFontGuide.Press**.
- [Indigo]<Forms>:** (archaic) A directory containing files that are usable as templates (in **Bravo**) for various kinds of documents (e.g., memos, letters, reports).

[Indigo]<PrintingDocs>: A directory containing documentation related to printing and graphics facilities such as **Press files** and **font file formats**.

input focus: Suppose that the user types a key, while operating in an environment that supports multiprogramming—lots of things going on at once, each in their own **window**. Which program was the keystroke intended for? Different systems have different conventions on this important point. In some releases of **Tajo**, the window in which the **cursor** is currently located gets the keystroke. But in several other systems, including **Cedar**, there is a concept called the "input focus" that is passed around among the running programs: whatever program has the input focus gets the keystrokes. Left-clicking a **mouse** button inside of a window often has the side effect of giving that window the input focus.

Inscript: A mechanism for keeping track of user input to a program in a general way (key strokes, mouse clicks, and the like), used within **Cedar**.

install: A term applied to the **Alto** Operating System and a number of **subsystems** (notably **Bravo**), referring to a procedure whereby certain configuration options are established. Frequently, what is really going on is that the program being installed is salting away somewhere the current hard disk addresses of the pages of important files, so that later access to those files can avoid the tedious operations of looking up the file in a directory and chaining through disk headers to get to the right place within the file.

Intelnet: The Xerox corporate phone system, accessible by starting your dialing with the digit 8. Not to be confused with the **Internet**.

interface: A formal contract between pieces of a system describing a collection of services to be provided. A provider of these services is said to "implement the interface": a consumer of them is called a "client of the interface".

interface module: In **Mesa** and **Cedar**, **interfaces** are written down as a special kind of source file, starting with the word "DEFINITIONS" instead of "PROGRAM". This explicit encoding of an interface is called an interface module.

Interlisp: A dialect of Lisp with a large library of facilities, as witnessed by Interlisp's famous 15-pound reference manual (would that **Cedar** were so well documented!).

Interlisp-D: An implementation of **Interlisp** on **D-machines**, done by a group within **PARC**. It provides network facilities and high-level graphics primitives. See the **blue-and-white** report entitled "Papers on Interlisp-D", number CIS-5 (SSL-80-4) Revised.

Internet: Many **Ethernets** and phone lines connected by **Gateways** form an Internet. Xerox currently operates two internets: the **Research Internet** and the **Corporate Internet**.

InterPress: A print file format standard: a second cut at the same issues addressed by **Press** format.

InterScript: A standard format for the interchange of editable documents that is currently under development.

Iris: An IFS server in **SDD/Palo Alto**, which serves as the official source of released **Pilots**.

ISL: A new acronym for the **Intelligent Systems Laboratory**. Formerly called the **Cognitive and Instruction Sciences** group. Home of many of the builders of **Interlisp-D**. Also, an old acronym for what used to be called the **Imaging Science Laboratory**, which now exists as the **imaging group** in **CSL**.

Ivy: An IFS server in **PARC**, used by **CSL** mainly to store personal files.

jaggies: The annoying sharp corners visible when smooth curves are imaged on a raster device without sufficient resolution.

JaM: Acronym for **John (Warnock)** and **Martin (Newell)**. An interactive language, similar to the language **Forth**, with a simple, stack-oriented execution model: equipped with

lots of graphic operations as primitives; implemented in **Mesa**.

JaMGraphics: (obsolete) An application that provided **JaM** commands for all the **CedarGraphics** features. **JaMGraphics** is much like **Postscript**. **JaMGraphics** has been replaced by **JaMImager**.

JaMImager: A **Cedar** application that provides a **JaM** interpreter and a graphics window. **JaMImager** defines **JaM** commands for all of the **Imager** features. It is a powerful illustration tool combining the power an interpreted language with all of the features of the **Imager**.

Jedi: A **Raven** at **PARC**.

Juniper: (archaic) An **Alto**-based distributed file system, built within **CSL**.

Juno: A constraint-based system for interactive graphics in **Cedar**. **Juno** is dead until someone converts it from **Cedar5.2**.

junta: A technique for eliminating layers of the **Alto** Operating System that are not required by a particular subsystem.

Kanji: A **Dover** in **Building 34**.

Larch: A family of specification languages.

Laurel: An **Alto**-based, display-oriented program that provides access to the facilities of **Grapevine** for sending and receiving mail. Succeeded by **Walnut** in the **Cedar** environment.

Leaf: A page-level file access protocol supported by some **IFS**'s.

level: There is a tree structure imposed upon the **nodes** that make up a **Tioga** document, and the **Tioga** editor can be informed to suppress the display of all nodes deeper than a certain level. In combination with **scrolling**, the **levels** commands in **Tioga** provide a convenient way to navigate in a well-structured document.

level i system: (for $i \in [1..3]$). A terminology for classifying (software) systems according to their intended user community:

- 1 implementors only
- 2 implementors and friendly users
- 3 naive users

Librarian: A **Tajo** program for check-in/check-out of the modules of a large **Mesa** system, used in **SDD**; also, a server for this program.

Lily: A program that provides teletype-style access to the mail sitting in one's **Grapevine** mailbox. **Lily** is designed to help out those folks who, because of travel or whatever, are unable to use their personal computers and either **Laurel**, **Hardy**, or **Walnut**. Also, a server that runs this program.

logical volume: A portion of a **physical volume** that is being used to support a **Pilot** environment: the **Pilot** equivalent of a **partition**.

look: An attribute of a character or string of characters in various editors, including **Bravo** and **Tioga**. "Bold" and "italic" are examples of **Bravo**'s typographic looks, while "emphasis" and "quotation" are examples of the functional looks espoused by **Tioga**. The meaning of looks in **Tioga**, like the meaning of **formats**, is defined by the **style**.

Loops: A layer of software on top of **Interlisp** that turns it into an **object-oriented** environment tailored for building rule-based expert systems.

Lotus: Internal development name for the 1075 Xerox copier.

Lupine: The translator used to generate **RPC** stubs so that **Cedar** modules can call procedures located on remote machines.

- Luther:** Alpine server.
- Maggie:** A tape server; that is, a machine on the **Internet** with tape drives that it will let a requesting machine use.
- Magic:** Acronym for **M**ultiple **A**nalyses of the **G**eometry of **I**ntegrated **C**ircuits. A system for dealing with **VLSI** designs: printing them, converting them among formats, examining them with various programs.
- Maintain:** A program for updating **Grapevine** and **Clearinghouse** registration information. There are two versions of **Maintain**. One, with a widely reviled teletype-style user interface, is available within **Laurel**, or as a **Tool** in **Tajo**. It is documented in the file [Ivy]<Laurel>Maintain.Press. The other, with a nifty buttons-style interface, is available in **Cedar**. See **MaintainDoc.tioga**.
- Maintain:** A program for updating **Grapevine** registration information. There are two versions of **Maintain**. One, with a widely reviled teletype-style user interface, is available within **Laurel**, or as a **Tool** in **Tajo**. It is documented in the file [Ivy]<Laurel>Maintain.Press. The other, with a nifty buttons-style interface, is available in **Cedar**. It is not yet documented.
- MakeConfig:** A program that reads Mesa **configs** and **bcds** and produces a collection of commands that will compile and bind the many modules of a system in the correct manner to build a consistent system.
- Marion:** A **Librarian** server in **SDD/Palo Alto**.
- Markup:** A dead Alto **subsystem** for editing **Press** files.
- MAXC:** (archaic) Acronym for **M**ulti-**A**ccess **X**erox **C**omputer (pronounced "Max"). A locally produced computer that was functionally similar to the DEC PDP-10. At one time, there were two **MAXC**'s, named **Maxc1** and **Maxc2**, but now they have been decommissioned.
- memory smash:** Writing through a pointer that doesn't point to what you think it does. This occasionally reduces your machine to a **rumble of bits**.
- Menlo:** A **Dover** located in the imaging area.
- menu:** A collection of text strings, **buttons**, or **icons** on a display screen generally used to represent a set of possible actions.
- Mesa:** A PASCAL-like, strongly typed, system programming language developed by **CSL** and **SDD**.
- Mesa Development Environment:** (or **MDE**;) Officially known as the **Xerox Development Environment**, this package of software is used by **SDD** to develop other software in **Mesa**: combines the **Tajo** user interface with the compiler, binder, packager, and other system software running on top of **Pilot**.
- MesaNetExec:** A **Mesa** implementation of the **NetExec**: valuable because it knows how to load **Othello**.
- MetaFont:** A font-designing language built by Don Knuth at Stanford, and used to generate fonts for use with **TEX**.
- Microswitch keyboard:** Microswitch is a company that makes keyboards. The standard **Alto** keyboard, also in use at **PARC** on **D-machines**, is made by Microswitch.
- MIG:** An acronym for **M**aster **I**mage **G**enerator: a high-resolution laser-scanning printer, based on a photographic process. The **MIG-1** can run up to 2000 bpi, while the slightly different **MIG-3** runs at about 800 bpi. Also called the **Platemaker**.
- Mimosa:** A compiler that Dragon machine code from **Cedar** language programs.
- Mockingbird:** A music system that runs on a **Dorado** with an attached audio synthesizer

and its keyboard. The goal of **Mockingbird** is to relieve the serious composer of some of the clerical burden of writing out scores for music as it being composed. For more details, see the **blue-and-white** report "Mockingbird: A Composer's Amanuensis", number CSL-83-2.

- mode:** A special state through which certain user interfaces must pass in order to perform certain functions. For example, in order to insert characters into a document in **Bravo**, one must type the "I" key, which invokes the "Insert" command. The effect of this command is to put Bravo into "insert mode", in which typing the "I" key has a quite different effect (to wit, it inserts an "I" into the document). One must then hit another special key, "ESC", in order to leave "insert mode". Modes are locally viewed as generally evil.
- modeless:** Describes a user interface that is free of **modes**. In such an interface, pressing a particular key always has essentially the same effect. **Laurel** was the first local system with an approximately modeless editor interface; the **Tioga** editing interface is very similar.
- mouse:** A box-shaped pointing device with which many personal computers come equipped. The switches on the mouse are called "buttons" to distinguish them from the "keys" on the keyboard. **Cedar** workstations have three-button mice. **Star** and **Viewpoint** have two-button mice.
- mouse-ahead:** Analogous to **typeahead**, except refers to mouse clicks rather than to key strokes. Can become very confusing to non-**wizards**, as there is no analog of the backspace key for mouse clicks, that is, no way to cancel unwanted mouse clicks.
- MtFuji:** The color thermal transfer printer. 400 spi CMYK. 10" x 14" wide plots.
- Multibus:** An Intel standard specifying the physical and electrical characteristics of a bus by which various boards in small computers can communicate. Many useful boards that plug into a Multibus are available, such as **Ethernet** cards and disk controller cards. The **Dicentra** is a **D-machine** that uses the Multibus.
- mumble:** A colloquialism used to signal the fruitlessness of further discussion.
- name lookup:** In the context of network communications, the process of mapping a string of characters to a **network address**. Also, the protocol that defines the mechanism for performing such a mapping.
- name lookup server:** A computer that implements the **name lookup** protocol.
- Nebula:** A time server on the **Internet** that is equipped with an antenna to listen to time broadcasts made by a synchronous satellite, and hence has excellent long-term reliability. There is a display showing Nebula's opinion of the time in the same room as **Clover**: just the thing for setting your digital watch.
- Neptune:** An Alto **subsystem** providing more sophisticated manipulation of the file directory system than is available with the **Executive**. See also **DDS**.
- NetExec.boot:** A mini-**Executive** usable on an Alto without a spinning disk and obtainable directly over the **Ethernet** (from a **boot server**). The NetExec makes available a number of useful stand-alone programs, including **CopyDisk**, **Scavenger**, **FTP**, a number of diagnostics, and lots of neat games.
- network address:** A unique identifier for any computer in an **Internet**, often a pair of numbers <network number, host number>.
- node:** A chunk of text in a **Tioga** document: each heading and paragraph in a document forms a node, and the nodes are hierarchically structured. Node-structured documents are easier to browse, using the **levels** commands in **Tioga**. Note: you can't have two nodes on the same line.

Nucleus: The virtual memory and file system base for **Cedar**.

Nursery: A large room in **CSL**, across from the **Commons**; so named because it was to be where new printers would be nursed to life, and also where fresh blood (summer interns and the like) would be housed. The funny windows were intended to make it convenient to hold demonstrations in the **Nursery** with some of the audience on the outside, looking in.

object-oriented: Describes a philosophy about how programs should be structured that finds its purest expression in the **Smalltalk** system. An object is a little pile of private data together with a collection of procedures by which other folks are allowed to ask the object to do something. Other folks must not play with the data directly, but instead are required to interact with the object only by calling its procedures (or, in **Smalltalk** parlance, sending it messages.) Think about complex numbers as a trivial example: A non-object-oriented programmer would probably represent a complex number as a record containing two real numbers. An object-oriented programmer would be tempted to represent a complex number as a record containing public fields and private fields. The values of the public fields would be procedures, with field names such as: **AddToMe**, **MyXCoord**, **MyYCoord**, **NegateMe**, **MyMagnitude**, and the like. The private fields in the standard implementation of complex number would be simply two reals, named **X** and **Y**. The advantage of the object-oriented approach is that someone else can come along later and implement a new flavor of complex number that uses polar coordinates in the private fields, and previous programs that dealt with complex numbers will not have to be changed.

OIS: An acronym for **Office Information Systems**: a name for a concept, a type of product, and (perhaps) a market, not a particular organization.

OPD: An acronym for **Office Products Division**, located mostly in Dallas. They make and sell 820's and the like: see **products**.

Orbit: A high performance **Alto**-based image generator designed to merge source rasters into a raster output stream for a **SLOT** printer (e.g., **Dover**). So named because it ORs bits into buffers.

OS: Acronym for **Operating System**. Generally used to refer to the **Alto** Operating System, which is stored in the file **Sys.boot**. Rarely used locally to refer to the operating system of the same name that runs on **IBM 360/370** computers.

OSD: An acronym for **Office Systems Division**, of which **SDD** is a part: they deal with the higher end of the office market, in contrast to **OPD**.

Othello: A network-bootable **Pilot** utility, good for initializing **logical volumes** and the like.

page (on a disk): A unit of length: an **Alto** or **Pilot** page is 512 bytes, while an **IFS** page is 2048 bytes.

PARC: Acronym for **Palo Alto Research Center**.

partition: A chunk of a large local disk that is being used to emulate the largest system disk that the **Alto OS** allows. A **Dorado** has five or nineteen **partitions**, while a **Dolphin** has two. Partitions are numbered starting at 1; the phrase "partition 0" refers to the current default partition. The current partition in use is determined by the contents of some registers that belong to the disk microcode. You can change these registers with the "partition,~" command available in the **Executive** and in the **NetExec**. A (14-sector) partition has 22,736 **Alto pages** (11.6 **MB**bytes). It took a little adroit shoehorning to fit two full partitions onto a **Dolphin's** disk: it turns out that a **Shugart 4000** has just one too few cylinders to squeeze in two full partitions. So we have to ask the heads to seek off the end of the advertised disk (on the inside, it happens), and put one more cylinder in there! Ah, the joys of hardware hacking...

- PasMesa:** A program that more or less compiles Pascal source into **Mesa** source, and hence assists in importing Pascal programs into our environment; developed in **CSL**.
- path name:** The complete name of a file, including the **file server** and directory or **subdirectory** on which it is stored—everything you need to know to get the file. In the old style of writing (**Alto** and **IFS**), a **path name** consists of a machine name in square brackets followed by a directory name in angle brackets, optionally followed by one or more subdirectory names separated with right angle brackets, followed by the file name itself, as in
 [Indigo]<Cedar@>Documentation>BriefingBlurb.press.
 In **Cedar**, a simple slash may be used instead of the various flavors of brackets, as in
 /Indigo/Cedar@/Documentation/BriefingBlurb.press.
- PD files:** A **Printer Dependent** print file format. The format and semantics of PD files are simpler than those of **Press** files. Software exists to turn **InterPress** masters into PD files, and also to print PD files on various marking engines, including **Lilac**, **Stinger**, and the **Platemaker**.
- Peanut:** A mail program in **Cedar** that fetches your messages into a structured **Tioga** document, rather than storing them in the **Cypress** database as does **Walnut**.
- Penguin:** Generic name for a type of 384 bpi laser-scan printer built on the Xerox 5400 xerographic engine, and connected to an **Alto** by means of an **Orbit** interface. **Penguins** have better **solid-area development** than **Dovers**, and can also print two-sided. They are normally driven with **Spruce**.
- Phylum:** An **IFS** in **PARC**.
- physical volume:** The name for a disk pack in **Pilot**.
- PIE:** Acronym for **Personal Information Environment**. Implemented in **Smalltalk**, PIE uses a description language to support the interactive development of programs, and to support the office-related tasks of document preparation, electronic mail, and database management.
- Pilot:** An operating system that runs on **D-machines**, and was produced in **SDD** for use by **Star** and future products. Using **Pilot** instead of the **Alto** OS gives you the advantages of multiprocessing and virtual memory.
- pixel:** A contraction of the phrase "picture element", referred to the tiny, usually square cells out of which a raster image is built up.
- Pixel:** An **IFS** reserved for scanned images
- plaid screen:** Occurs when certain kinds of **memory smashes** overwrite the display bitmap area or control blocks. The term "salt & pepper" refers to a different pattern of similar origin.
- Platemaker:** Another name for the **MIG**.
- PolyCedar:** A name for the polymorphic language in the Algolic tradition that is the subject of the religious material in the **CLRM**.
- Pop:** Colloquialism. Equivalent to "Moving right along" or "Hey guys, up-level!"
- Poplar:** An interactive programming language system implemented in **Mesa**, an experimental system in the direction of programming by relatively inexperienced users. Useful for text manipulation applications.
- Poseidon:** A **Tool** that provides the functionality of **Neptune** in the **Tajo** environment.
- Postscript:** A product of Adobe Systems. Postscript is a page description language much like the **JaMGraphics** or **JaMImager** languages or like **InterPress**. Adobe was founded by John Warnock and Chuck Geschke, formerly of the **Imaging Sciences Laboratory** at **PARC**.

- Press:** A file format used to encode documents to be transmitted to a printer. Files in this format are conventionally given the file extension **.press**. Also, a **print server** program, written in **BCPL**, that can print curves and raster images as well as characters and rules.
- PressEdit:** A subsystem that recombines **Press** files on a page-by-page basis; it can also merge illustrations into documents, although requesting this is a somewhat arcane and delicate operation.
- profile.name:** A file in the **Cedar world** containing a number of logically distinct sections that each define certain configuration parameters (e.g., the location of a preferred **print server** for a particular file format). Programs that interpret such parameters are often organized to read **user.cm** only at **installation time** (e.g., **Tioga**).
- primary selection:** A chunk of text that has been distinguished, usually by **mouse** clicks, as an argument to a future editing operation. The current primary selection is indicated in **Tioga** by a solid underline, or by video reversal.
- PrincOps:** The Xerox Mesa Processor **Principles of Operation**, essentially a description of a particular **abstract machine**. **D-machines** implement the **PrincOps** architecture by means of hardware and microcode, and **Pilot** was constructed to run on **PrincOps** machines.
- printing discussion:** Refers to a protracted, low-level, time-consuming, generally pointless discussion of something peripherally interesting to all.
- print server:** A computer that provides printing services, usually for files formatted in a particular way. The term also refers to the software that converts such files into a representation that can be processed by a specific printer hardware interface. **Spruce** and **Press** are examples of print server programs that accept the **.press** print file format.
- proc:** (or **PROC:**) An abbreviated form of the common and important word "procedure".
- products:** The following is a list of the most commonly encountered Xerox product numbers and their distinguishing characteristics:
- 610: low-end Memorywriter electronic typewriter
 - 800: typewriter-based, word-processing terminal
 - 820: personal computer product
 - 860: display-based, word-processing terminal
 - 1000: series of copiers being advertised with Marathon theme
 - 1100: a **Dolphin**, sold outside to run **Smalltalk** and **Interlisp**
 - 1108: a **Dandelion**, sold outside to run **Interlisp**
 - 1109: a **Dandetiger**, sold outside to run **Interlisp**
 - 1132: a **Dorado**, sold outside to run **Smalltalk** and **Interlisp**
 - 2600: desktop copier
 - 2700: a laser printer (**Raven**) replacement for line printers
 - 3100: 3 sec/page copier, good **solid-area development**
 - 4045 Laser CP: a desktop laser printer
 - 4500: 1 sec/page copier, 2-sided copying
 - 5400: 1 sec/page copier, good resolution
 - 5700: **InterPress** laser printer, 1 sec/page
 - 6085: new professional workstation with IBM-PC option
 - 6500: 20 sec/page copier, color copying

- 7000: 1 sec/page copier
- 8000: a series of processors used in the XNS product offerings
- 8010: the **Dandelion** workstation running **Star**
- 8044: an XNS **print server (Raven + Dandelion)**
- NS 6085 Laser CP: an XNS **print server (Laser CP + 6085)**
- NS 8000 Laser CP: an XNS **print server (Laser CP + Dandelion)**
- 8700: **InterPress** laser printer, offset-quality, 1 sec/page (half-speed 9700)
- 9200: offset-quality, .5 sec/page copier
- 9700: **InterPress** laser printer, offset-quality, 0.5 sec/page
- PSD:** Acronym for **Printing Systems Division**, a part of Xerox.
- pseudo server:** A Pseudo Server is a mapping from a logical file server name, to some real file server names. Each pseudo server most one write server (a write server of "\$" means don't write), and a list of read servers.
- public interface:** An **interface** that offers to provide services to all comers. Private interfaces, in contrast, specify the services that various modules in a single program will supply to each other.
- Puffin:** Generic name for a type of 384 bpi laser-scan color printer built on the Xerox 6500 xerographic engine, and normally driven by **Press**.
- PUP:** Acronym for **PARC Universal Packet**. The structure used to transmit blocks of information (**packets**) on the **Ethernet**. Also, one such unit of information: a datagram. Bob Metcalfe once remarked that this name was chosen since all prior PARC communication protocols were "real dogs". See the **blue-and-white** report entitled "Pup: An Internetwork Architecture", number CSL-79-10.
- Quake:** A **Dover** on the first floor of **Building 35**.
- Quantum:** Brand name of certain disk drives.
- Quoth:** printer
- R-name:** A complete name from **Grapevine's** point of view: R-names have two parts, a prefix and a **registry**, separated by a dot as in "Anderson.PA". R-names that designate **distribution lists** have prefixes that end in an up-arrow, as in "CSL↑.PA".
- Raven:** A 300 bpi laser-scan printer based on the 8044, with good **solid-area development**. Upgraded in the **imaging group** to 384 bpi and used as a **Press** printer.
- registry:** A concept used by **Grapevine** to partition the space of names. "PA" and "WBST" are examples of registries.
- release:** A consistent set of versions of all of the files in a large software system. **Cedar** releases occur whenever major enhancements in functionality become available or when sufficiently numerous or important errors (see **show-stopper**) have been corrected.
- release master:** The person in charge of coordinating a **Cedar release**, with the help of special software (the **ReleaseTool**) based on **DF files**.
- religious:** Used locally to refer to a debate about which people have strong feelings, but for which there is no easy technical resolution; when discussing religious issues, positions are advanced based on belief rather than on understanding. For example, the question of whether or not **windows** in a user interface should be allowed to overlap and partially obscure each other, as pieces of paper do in the real world, is often the subject of religious debate. More experience in user interface design, or sufficient advances in the cognitive psychology of user interfaces, may someday make this question less religious.

- Research Internet:** The original Xerox **Internet** using primarily **PUP** protocols designed by folks in **CSL**.
- Reticle Generator:** A version of the **MIG** that prints directly on masks for integrated circuits.
- reverse engineering:** Designing something by taking measurements from an existing sample that someone else designed.
- Rigging:** A **component** of **Cedar** that implements the various flavors of strings, including **Ropes**.
- RollBack:** The way to return to a clean **Cedar** world saved by a **checkpoint**.
- Rope:** An immutable string of characters (a rope is a "thick" string). Ropes are the standard way to pass strings around within **Cedar**; other types of strings, including **REF TEXT** and **REF READONLY TEXT**, are available for places where performance is a big issue.
- RPC:** Acronym for **Remote Procedure Call**, a technique for calling a procedure from one machine to be executed in another machine over a network. Also, a package of software supporting Remote Procedure Calls within **Cedar**. **RPC** is the standard way for **Cedar** programs to communicate over the network: **Tank**, **Football**, **Alpine**, and **Etherphones** all communicate by means of **RPC**. For more details about the concept of **RPC**, as well as fascinating references to life in the South Pacific, read Bruce Nelson's thesis, which is available as the **blue-and-white** number **CSL-81-9**.
- rubble of bits:** An unintelligible **Cedar** world arising from violations of **safe storage** invariants.
- rule:** A printing term describing a rectangle whose sides are parallel to the coordinate axes; usually thin enough in one dimension or the other to be thought of as a (horizontal or vertical) line.
- safe storage:** Garbage-collected, dynamically-allocated, strongly-typed storage in **Cedar**.
- Scavenger.boot:** An **Alto** program available through the **NetExec** that checks for damaged file structures in a **BFS** and tries to repair them.
- SCL:** Acronym for **System Concepts Laboratory**, a part of **PARC**. Formerly known as the **Software Concepts Group**. Notably, the builders of **Smalltalk**.
- Scripto:** printer
- scroll:** Refers to a method of repositioning text on a display as though as though one were moving a **window** over a long, continuous sheet of paper.
- scroll bar:** A **bar**, usually located along the left edge of a **window**, with the property that **clicking** in this bar causes **scrolling** (or perhaps **thumbing**) to happen.
- SDD:** Acronym for **System Development Division**; the technical (as opposed to marketing) portion of **OSD**.
- secondary selection:** A chunk of text distinguished, usually by **mouse** clicks, as the second argument to a future editing operation. The current secondary selection is indicated in **Tioga** by a gray underline, or by a gray background.
- Semillon:** A Grapevine server in **Building 35**.
- server:** A computer dedicated to performing some collection of service functions for the communal good (e.g., a **print server**, **boot server**, or **file server**).
- seven-wire interface:** Yes, Virginia, hardware people use the concept of **interface** as well as software folk. The seven-wire interface describes how the microprocessor located in the terminal of a **D-machine** (in the base of the CRT, to be specific) communicates with the parent computer.

- show-stopper:** A bug serious enough to prevent further progress.
- Shugart:** A manufacturer of disk drives.
- signal:** A mechanism for handling exceptional conditions that arise in **Mesa** or **Cedar** programs. See **catch phrase**.
- SIL:** Acronym for **Simple Illustrator**. An illustrator program used for logic design and drawing in general. A weird but efficient user interface: solid performance.
- SIS:** Acronym for **Scientific Information Systems**; the name of that part of **EOS** that is still a part of Xerox.
- Sisyph:** A program which analyses a **ChipNDale** design and creates a **Core** data structure.
- Sleepy:** The color versatec. 200 spi CMYK. 40" wide plots. Electrostatic
- SLOT:** Acronym for **Scanning Laser Output Transducer**.
- Smalltalk:** An integrated programming system based on **object-oriented** style and message passing, invented and developed by **SCL**. Described in great detail in a recently issued book(!).
- snap-dragging:** The combination of three interactive graphical editing techniques that work well together--gravity, alignment lines and circles, and interactive application of affine transformations in response to the motion of the **mouse**. Snap-dragging is used in **Gargoyle**.
- SnipSnap Scanner:** TV resolution public scanning server located in the maze.
- solid-area development:** The ability of a printer to produce large areas of black. Requests for large black areas on printers like **Dovers**, which don't have this ability, will result in a fringe of dark gray around a sea of light gray.
- SophtSpheroid:** A small, round, white object usually found on diamonds. Consider joining a Xerox softball team for more information on this indelicate topic.
- Spruce:** A program that takes **Press** files consisting of text and **rules**, converts them to a form acceptable by an **Orbit** interface, and prints them. A **print server**.
- Spy:** A program to investigate another program's performance when running in **Cedar**.
- Squirrel:** A personal database program based on the **Cypress** database in **Cedar**.
- Star:** An **OIS** product of Xerox, developed within **SDD**. Also referred to by various product numbers in the **8000's**. The primary professional workstation of **Star** is the **8010**. The 8000 architecture was created in **CSL**.
- Stinger:** A **Raven** located in the **imaging group**, running **Press**.
- STP:** The **Pilot interface** to the **FTP** file transfer protocol.
- style:** A collection of little programs in a language very like **JaM** that define the meanings of the various **looks** and **formats** of the text in a formatted **Tioga** document. Different style rules exist for how things should look on the screen and for how they should look when printed on paper (implemented by the **TSetter**).
- subdirectory:** File directories on an **IFS** can be divided into a hierarchical collection of subdirectories. The subdirectory names are listed from the root of the tree down to the leaves, and are separated by the single character ">" (see **path name**).
- subsystem:** A program running under a specific operating system. Normally used to refer to **Alto** programs that run under the **Alto OS**, but also used to refer to **PDP-10** programs that run under **TENEX**.
- Swat:** A debugger used primarily for **BCPL** programs. Also, the key used in conjunction with the "control" or "shift" keys to invoke this debugger, as well as various other debuggers. The Swat key is the lowest of the three unmarked keys at the right edge of the keyboard. Used as a verb to refer to the act of striking these keys or entering

the debugger.

Swatee: A file used by debugging programs (both **Swat** and the **Alto/Mesa** debugger) to hold the core image of the program being debugged. Also used as a scratch file by many Alto **subsystems**. Not to be deleted under any circumstances.

Sys.boot: An **Alto** disk file containing the executable representation of the Alto Operating System.

SysDir: The **Alto** file directory. Roughly speaking, this file contains the mapping from file names to starting disk locations.

SysFont.al: An **Alto** screen font used by the **Executive** and (generally) as a default by other programs. The safest way to change your **SysFont** is with the **Delete.~** and **Copy.~** commands of the **Alto Executive**. Simply FTP'ing a new font on top of **SysFont** will cause exotic behavior during the **CounterJunta** when FTP is finished.

system models: A part of the **Cedar** project aimed at giving programmers help in describing the structure of large systems: getting consistent versions of files, replacing single modules within a running system, and recompiling and rebinding just what has been changed, all in the right order.

Tajo: The user interface portion of the **Mesa Development Environment**. Each facility in the **Tajo** environment is called a **Tool**, and **Tajo** itself is sometimes called the **Tools Environment**.

Tank: An n -player video arcade game in **Cedar**. Get a tank game going and then close the tank **viewer** and check out the wonderful **icon** that results.

teledebug: Debugging one machine from another over the **Internet**. The prefix "tele-" is used in general for doing things remotely.

Telnet: A **PUP**-based protocol used to establish full-duplex, teletype-like communication with a remote computer. (The term is borrowed from a similar protocol used on the **ARPANET**.) **Chat** speaks this protocol.

Tenex: An operating system for the **DEC PDP-10** computer, which also ran on **MAXC**.

TEX: A document compiler written by **Don Knuth** at **Stanford**; the only current implementation of **TEX** at **PARC** runs in **Cedar**. **TEX** can handle mathematical formulas, but doesn't let you see anything like what you get.

Thyme: An electrical-level circuit simulator, used for evaluating the correctness and performance of small pieces of the designs of integrated circuits.

thumbing: A technique of positioning a file (usually text) to an arbitrary position for viewing on a display. The name is intended to suggest the "thumb-index" with which some dictionaries are equipped, which performs somewhat the same function: gets you to roughly the right place quickly.

TIC: Acronym for **T**echnical **I**nformation **C**enter: the fancy name for what is more generally known as the **PARC** library.

Tioga: The document editor in **Cedar**, which was built by folk in the **imaging group**. **Tioga** formatting uses the concepts of **level**, **node**, **look**, **format**, and **style**: for more details, read **TiogaDoc.tioga**. Documents formatted with **Tioga** can be printed with the **TSetter**.

TiogaDoc.tioga: Documentation for the **Tioga** editor. The official home of this file is `[Indigo]Cedar@>Documentation>`.

TIP: A system for interpreting keyboard and **mouse** actions and turning them into sequences of commands. You may customize your **Tioga** user interface by layering your own **TIP** table on top of the standard **Tioga** **TIP** table.

- Tool:** A facility available in the **Tajo** environment, or the program that makes that facility available. For example, one speaks of the "File Tool", which can perform file transfers for you.
- Tools Environment:** Former name for **Tajo**.
- transaction:** A collection of reads and writes of shared data that is guaranteed to be atomic: either all of the writes happen (the transaction *commits*) or none of them do (it *aborts*). Furthermore, the reads will see consistent data in that either all of the writes made by some other transaction will be visible, or none of them will.
- Trident:** The brand name of a type of disk drive that is quite common around here. There are T-80's (that is, 80MByte Trident drives) and T-300's. Tridents are manufactured by Century Data Systems, a subsidiary of Xerox.
- TSetter:** The typesetting program for **Tioga** documents; converts foo.tioga into foo.press, and optionally sends the latter to your favorite **print server**.
- typeahead:** An ability to type characters to a program before that program has asked for them. Useful for **wizards**; essential when using slow machines. See also **mouse-ahead**.
- typescript:** A file used to back-up information (usually text) appearing in a region of the display.
- Twinkle:** A Gateway in **Building 35** of **PARC**.
- uncaught signal:** An exceptional condition (perhaps an error indication) that no current program other than the **Mesa** or **Cedar** debugger has expressed a willingness to deal with. The debugger is willing to deal with anything, of course: it deals with these exceptional events by halting the offending process and then informing the user. In the language of the **CLRM**, an uncaught signal should be thought of as an invocation of a dynamically bound procedure that turns out not to have been bound at all; see **catch phrase**.
- user:** A person (rather than a program) who avails herself of the services of some program or system. At the moment, the author is a **user** of **Tioga**. See **client**.
- VAXC:** (or **PARCVAX:**) A Vax 11/785 running Unix 4.3 BSD providing remote login (**Telnet**) and file transfer (**FTP**) to other Arpanet machines.
- viewer:** The name for a **window** in the **Viewers** window package.
- ViewerDoc.tioga:** Documentation for the **Viewers** window package. You might try looking for this file on the directory [Indigo<Cedar@>Documentation].
- Viewers:** A screen management and window package for **Cedar** providing **buttons**, **menus**, and **windows**.
- Viewpoint:** The successor to **Star**. Like **Star**, **Viewpoint** is an electronic desktop type office information system, providing filing, integrated text and graphics, and a carefully designed user interface. **Viewpoint** is programed in **Mesa** and runs on a new processor called the **Daybreak**.
- ViewRec:** A software package in **Cedar** that produces convenient user interfaces to fairly arbitrary programs automatically.
- Viking:** A **Dover** on the first floor of **Building 35**.
- VLSI:** Acronym for Very Large Scale Integration of electronic circuits on chips.
- VM:** Acronym for Virtual Memory.
- Voice:** A small but mighty project in **CSL** to tame the telephone and otherwise make full use of voice communications in our personal information systems. The Voice Project recently produced the **Etherphone**. See the **blue-and-white** report titled "Adding Voice to an Office Computer Network", number CSL-83-8.

- Walnut:** A mail system for Cedar. Walnut uses the Cypress database to store and organize messages, and it calls upon Grapevine to transport them.
- Watch:** A Cedar performance monitoring tool displaying computing activity.
- WaterLily:** A Mesa program that does source compares: compares two text files and reports the differences. Available in Alto/Mesa, Tajo, and Cedar.
- wedged:** Describes the state of a program when there is no response to input from either the keyboard or the mouse. May affect the whole system (*my system is wedged*) or just some part thereof.
- whiteboards:** A package in Cedar for arranging and accessing information graphically.
- Winchester:** Originally, this was the name of a project within IBM. But the name leaked out, and it is now used industry-wide to refer to a particular rigid disk technology. In a Winchester disk drive, the heads and platters come all hermetically sealed; that is, Winchester drives do not use removable disk packs.
- window:** A display region, usually rectangular, used to view (a portion of) an image that generally exceeds the bounds of the region.
- wizard:** One who knows a programming system inside and out.
- Wonder:** A Dover on the third floor of Building 35.
- world-swap:** The process of writing out the complete state of a machine's processes and memory onto a disk file, and of swapping in a different state. Some debuggers work by means of world-swaps, which swap between the debugger and the program being debugged. Note that the more memory you have, the slower a world-swap will be.
- WYSIWYG:** "What you see is what you get." Used specifically in reference to the treatment of visual images by various systems, e.g., a Tioga viewer should be as close as possible to the hardcopy version of the same text. Also known in some circles by the acronym "WYSIWYG", pronounced "whiz-ee-wig".
- Xerox Development Environment:** (or XDE:) See the Mesa Development Environment.
- XGP:** (archaic) Acronym for Xerox Graphics Printer. An obsolete, CRT scanned, 200 bpi, continuous paper, xerographic printer.
- XM:** Acronym for Extended Memory: an option on Alto II's that allows the memory size to be increased from one to four banks.
- XNS:** (or simply NS:) An acronym for Xerox Network Services: the protocols for using the Ethernet in the Star world. NS packets are analogous to PUP's, and the NS protocols include analogs to such higher-level protocols as FTP.
- Yoda:** A Dover in Building 35.
- Zinfandel:** An Alto mail server that is part of the Grapevine distributed transport mechanism.