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RM-10108

Date: April 18, 2001

RM-10108

Thomas D. Fitz-Gibbon, Esq.
Technical and Public Safety Division
Enforcement Bureau
Federal Communication Commission
445 12th Street, S.W., Room 7-A820
Washington, D.C. 20554

RECEIVED

MAY - 9 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Subject: "Petition for Rulemaking" for the DABT System.

FCC Ref: EB-01-TS-11

Dear Mr. Fitz-Gibbon:

This letter is in response to the FCC's four questions as stated in their letter dated January 30, 2001. The questions and our responses are as follows:

FCC QUESTION (1):

Your proposal does not include information which demonstrates it's technical feasibility. Do you have any information which demonstrates the technical feasibility of your proposal? If so, please furnish it.

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List A B C D E

DTI RESPONSE TO QUESTION 1:

What constitutes the technical feasibility of a system or process is when the technology of today is available to create such a system or process. When a system is not technically feasible, today's technology is inadequate or is not advanced enough to meet the system's requirements. Having said this, we offer the following discussion to the DABT System's technical feasibility.

As was discussed in the "Petition for Rulemaking", the DABT System is divided into three subsystems: the Remote Computer Terminals (RCTs), the Main Central Computer System (CCS), and the Telephone Interface System (TIS). We will address each subsystem's technical feasibility separately .

The RCTs are the subsystems that transmit warning information to the Main Central Computer System (CCS). The RCT units are desktop or workstation computer systems that are programmed to communicate directly with the CCS System. They will have multiple communication pathways to the CCS, such as DSL, Road-runner, modem (Internet and telephone network system), or other cabling systems that will quickly transmit the warning information to the CCS.

The RCTs are to be located at each of the threatened disaster or hazard detection stations, that is, those organizations that have the responsibilities to monitor particular threatening or hazardous conditions or to serve as a central communication or control center. These facilities will be both governmental and private facilities and will include but are not limited to the following: National Weather Service forecasting field offices, nuclear power plants, hazardous chemical plants, toxic or hazardous waste storage facilities, Federal, State, and Local Law Enforcement agencies, and other governmental and private agencies which have the responsibility of detecting and/or dealing with disasters or hazards.

One of the workstation computer systems that is being strongly considered for the DABT's RCT application is the "Sun Blade" 1000 system from Sun Microsystems. This system accommodates up to two superscalar, 64-bit , high performance CPUs and features a high-performance, crossbar-switch system interconnect that provides high bandwidth for ultra-speed processors and graphic subsystems. It also delivers an ample of internal disk and memory and a 64-bit PCI bus for incredibly fast I/O (input/output) interfaces and peripherals, which would be very important for this application.

It is important for this system to have a large fast memory capacity and graphical capabilities. Each RCT system will have its own geographical mapping database installed and stored within it. This database represents the geographical mapping area that this computer workstation would be responsible for alerting. The purpose

of this is for the RCT operators to be able to select the precise geographical target area quickly and effectively and then transmit this information to the CCS. By storing the geographical mapping database in the RCT workstation itself in lieu of the CCS, much data transfer time will be saved in getting the alert information to the CCS.

For additional information on the "Sun Blade" 1000's performance capability, features and technical specifications, please refer to Enclosure 1 of this submittal.

The CCS is the heart of the DABT system and analyzes the warning information that comes from the RCTs, thereby determining what telephone subscribers are to be alerted. It then initiates the notification process. The CCS includes a high performance computer system and an Internet server provider system that is tied directly into the Internet Web. The Internet shall be the primary pathway of communications between the CCS, the RCTs, and the local telephone switching systems (local telephone exchanges or the local telephone central offices).

THE HIGH-PERFORMANCE COMPUTER SYSTEM:

This is not new technology. The high performance computer systems that transact hundreds of thousands of transactions over the telephone networks has been around for some time. For instance, look at the national credit card authorization process. Hundreds of thousands of transactions will go across the telephone networks in just minutes to a single computer. These transactions are from thousands of stores around the country, sending authorization codes, account numbers, and authorization request base on purchases. The Central Computer system analyzes this data and responds in only seconds by either authorizing the purchases or denying them. The international and national banking network systems and the Federal Government systems such as those being used by the National Security Agency (NSA) are other good examples. The point here is that the DABT's CCS high performance computer system is no different.

The question is can the DABT's CCS's HIGH PERFORMANCE Computer System communicate with at least 2000 other computers simultaneously, 1,000 local central telephone switching systems (local telephone exchanges), and 1,000 RCT systems? This is the basic engineering requirement that will allow the DABT System to alert millions of telephone subscribers in just minutes. The answer is yes! Such operations and transactions are minuscule in regard to these high performance computer systems.

Let us further examine the computers that will be used in the DABT's CCS System.

The computer system that is strongly being considered for this task is the SGI's Origin 3400 system.

The SGI Origin 3400 computer system is one of the leading technical high performance computer systems of today and would well serve the DABT's CCS application. This system is designed to be upgraded easily as our needs dictate, including our CPUs, I/O bandwidth, memory, and disk infrastructure requirements. The system bandwidth is 45 GBps (45,000,000,000 Bytes per second) with a memory capacity of 64 GB. The I/O (input/output) bandwidth is 1.6 GBps. The I/O bandwidth is most important because this governs the data transfer speed of incoming and outgoing data. The SGI Origin 3400 exceeds our requirements in CPUs, Internal clock speed, Memory, I/O bandwidth, and the architectural flexibility.

To demonstrate further how the SGI Origin 3400 meets the basic engineering requirements for the CCS to have the capability of simultaneously communicating with 1,000 RCTs and at the same time instructing 1,000 local telephone exchanges, let us examine the I/O needs. In Enclosure 4 of this submittal, the desired requirements for the data transfer speed between the RCTs and the CCS and the desired data transfer speed between the CCS and the local telephone exchanges were estimated to meet the above requirements. To meet these requirements, it was calculated that the I/O bandwidth must be approximately 0.0625 Gbps; however, as noted above, the SGI Origin 3400 I/O bandwidth is 1.6GBps. The SGI Origin 3400 exceeds the present I/O requirements, and when the data transfer speed is improved (the broadband technology), this system will be capable of accommodating such technological growth.

For additional information on the SGI's Origin 3400 system's performance, capabilities, features, and technical specifications, please refer to Enclosure 2 of this submittal.

THE INTERNET WEB-SERVER PROVIDER SYSTEM:

The Internet web-server provider is the primary pathway to and from the local central telephone switching systems (local telephone exchanges) and to and from all the RCTs. We will now examine how this pathway was determined to meet the engineering requirements.

The SGI Origin 3400 system could also have been used as our Internet web-server provider; however, we chose another provider in order to keep these two systems separate because of security and system protection considerations. The Internet web-server provider that will be used for the DABT System will be the first line of defense to disallow unauthorized incoming and outgoing data and unauthorized

users. This system must also meet the data transfer requirements and criteria to communicate with the CCS high performace computer system.

The Internet web-server provider that we are strongly considering to use for this purpose is the "Sun Fire" 3800 system from Sun Microsystems. The "Sun Fire" 3800 is a high-performance system that features the Sun Fireplane [TM] interconnect. The Fireplane interconnect is packed-switched, crossbar architecture. It provides very high aggregated bandwidth, up to 67.2 GBps, and high sustained bandwidth of 9.6 GBps. This feature helps to deliver high service level for a variety of applications, whether they demand memory-intensive computation or high-volume I/O. The low-latency design also translates into more predictable performance since the movement of large volumes of data is accommodated.

The DABT System Internet web-server provider must also meet the I/O needs as did the SGI Origin 3400, so that the basic requirements for the CCS to have the capability of simultaneously communicating with 1,000 RCTs and with 1,000 local telephone exchanges will be met as well. As noted above, the desired data transfer speed is 0.0625 Gbps. The "Sun Fire" 3800 I/O bandwidth is 9.6 Gbps, which exceeds the basic engineering requirements of the DABT System.

For additional information on the Sun Microsystems' "Sun Fire" 3800 system's performance, capabilities, features and technical specifications, please refer to Enclosure 3 of this submittal.

The cabling system that connects the DABT System Internet web-server provider to the Internet web must also be considered. Enclosure 4 of this submittal discusses various Internet cable types and their transfer speeds. This project will use a minimum of four (4) OC-3 (OPTICAL CARRIER, LEVEL 3) cables that would be directly connected between the server provider and the Web. Each OC-3 has the capacity to transfer data at the rate of 0.019 GBps. Four cables would have a data transfer speed of 0.0775 GBps, which exceeds our requirements of 0.0625 GBps.

The TIS is the subsystem that connects to and notifies the telephone subscribers that are in the threatened areas and alerts them of the potential threat. This includes how the local telephone exchange switching systems can receive instructions from the CCS and carry out these instructions so that their local telephone subscribers receive the alert information quickly.

The terminating local telephone exchange or the local central telephone office is the location where telephones are switched into the local loop, also called local office

or end office. This is where the telephone switching system has a physical connection to its local telephone subscribers. Furthermore, these terminating local telephone exchanges are the switching systems that the DABT System will be communicating with directly.

In these central telephone offices or local telephone exchanges, there are three types of switching systems still in use: the Electromechanical; Analog Electronic Switching System (ESS); and Digital Electronic Switching System (ESS); however, since the late 1980s, the Electromechanical switching system is being completely phased out. Few Electromechanical switching systems are in use today.

The new technology of the Electronic Switching System (ESS) makes the DABT System possible. The ESSs are themselves nothing more than large computer systems that are made up of three essential components: The memory, the central control, and the switching network. The "DABT" program software would be developed and downloaded in the store memory of the Switch which contains the instructions that guide the switching system; therefore, when the DABT program is activated, communications between the Central Control of the Switch and the CCS are allowed. The Central Control (Central Processor of the ESS) is the computer that provides the intelligence to control the switching operations. Furthermore, the Central Control would then have the capability to instruct its peripheral equipment or switching operation system to carry out the instructions of the CCS, that is to close the switches of their subscribers, ring their phones through the ring generator and once the phones are answered, connect them to the announcement equipment, transmitting the proper alert message to their subscribers. This multiple channel announcement equipment will be programmed and installed on each Switch, if necessary, by DABTCOM Technologies.

These Switches also have IP (Internet Protocol) address pathways so that direct communications can be achieved with the central control of the Switch. The DABT's CCS would use primarily this communication pathway for instructing this Switch. Because of the ESS technology, it is now possible for the DABT System to quickly alert millions of telephone subscribers quickly and effectively.

To further support our position that the DABT System is fully technically feasible in regard to the CCS capability of communicating with and instructing the local telephone exchange switching systems and for the local telephone exchanges to perform functions that are required by the DABT System, DABTCOM Technologies, Inc. commissioned **Telcordia Technologies, Inc.** (formally known as Belcore) to perform an Independent technical feasibility study of this system.

Telcordia was selected to perform this study because of their broad expertise in telecommunications, along with current activities in requirements and/or standards related to E9-1-1 service and community notification/disaster preparedness. Furthermore, Telcordia's expertise in the evolution of existing Public Safety networks and the inner workings of the telephone ESS switching systems further supports their involvement in the identification of feasibility issues associated with the DABT System.

It is expected for Telcordia Technologies to complete this independent feasibility analysis by May 30, 2001. Once DABTCOM Technologies receives this analytical report, we will send a copy of it to the FCC for their review, along with a detailed explanation of the analysis.

FCC QUESTION (2):

You propose a monopoly. Do you have any information which demonstrates that a monopoly would serve the public interest better than competition? If so, please furnish it.

DTI RESPONSE TO QUESTION 2:

In response it must be asked why we do not have a National Emergency Telephone Alert system today where every telephone subscriber in the United States would be automatically connected?

Making the DABT System a monopoly or an Unified National Emergency Telephone Alert system, would indeed serve the general pubic interests more effectively and more efficiently than multiple competitive systems. First, let us consider one essential criteria that makes a strong National Emergency Alert System. That is the capability of providing immediate communications and information to all of the general public at the National, State and Local Area levels during periods of national emergencies. For this criteria, it is essential for all responsible reporting agencies and parties, including the President of the United States, to have the capability and ease under all circumstances to communicate important information quickly and effectively to the multitudes of people when they are in danger. This Nation needs a unified system that will serve *all telephone subscribers in all the States,* not just a selected number of people who sign up for such a program. By having multiple competitive emergency telephone alert systems only a selected number of telephone subscribers would be served, and the criteria that was discussed above would not be met.

Competitive emergency telephone alert systems would not serve all telephone subscribers automatically. Having competitive systems would require selling these various systems to various individual communities. There are such systems available or being worked on today such as the one Telcordia (Community Notification System) has, but these are community based systems, where one must purchase and/or obtain special equipment and sign up for this service to receive its benefits. This means that some of the people will be connected to such a system and some will not, even within the same community. These systems will not effectively serve the over-all general public and can not be considered as an effective National Emergency Telephone Alert system. For an effective National Emergency Telephone Alert system, all telephone subscribers in all communities in the United States must be automatically connected to such a system.

Furthermore, by having multiple competitive systems, people tend not to commit

themselves to them. For instance, look at the "Weatherman" Alert System that the National Weather Service developed. People must purchase this radio ($40 to $70 per radio) to receive its benefits (keep in mind, the "Weatherman" Alert System is for weather alerts only, where the DABT System is for all threatening disasters and hazards). Very few households actually have or maintain this system, even though the National Weather Service has for years been promoting it. It must also be noted that these systems are design to mainly serve residential telephone subscribers, where the DABT System is engineered to serve all residential and commercial telephone subscribers, day or night.

Having multiple systems available, would create logistic difficulties for responsible reporting organizations (such as the National Weather Service, Federal, State, and Local Law Enforcement agencies, the Defense Department, and the White House) in determining what system to use under what circumstances and which communities or people would have the capability of being alerted by these systems. A National Unified System would alleviate such confusion.

The movement of information across competitive systems could become delayed or lost. If it becomes necessary to move information from one system to another, difficulty could occur interfacing independent systems. Independent systems would not likely be as efficient at moving warnings from one region to another. The DABT System would eliminate these costly delays and lost information.

Other important considerations are economics and technological growth. By having an Unified National Emergency Telephone Alert system that covers every type of threatening disaster or hazard, the cost would be negligible as well as consistent to each individual telephone subscriber. Furthermore, maintaining uniformed technical advancement and enhancement throughout the system would be far more possible and effective with the DABT System as compared to individual systems.

The DABT System is engineered to be a Unified National Emergency Telephone Alert System where every telephone subscriber, commercial and residential, would be automatically connected to the system. **This System is estimated to reach 94.1 percent of all households (based on the FCC report issued March, 2001) and at least 99 percent of all businesses**. Furthermore, telephone subscribers would not need to purchase or obtain special equipment to be part of the DABT System or would not need to enroll into the program.

Furthermore, a precedence has been set by the FCC in allowing the 9-1-1 emergency system, where each telephone subscriber pays a small monthly fee for the service. The DABT System, as a Unified National Emergency Telephone Alert system, would be just the reverse of the 9-1-1 emergency system in that it would contact them when there is an threatening condition.

FCC QUESTION (3):

Is the system you propose intended to supplement the existing emergency alert system or to replace it?

DTI RESPONSE TO QUESTION 3:

The purpose of the DABT System, as a Unified National Emergency Telephone Alert system, is to supplement the existing National Emergency Alert System (EAS), the Siren System, and the National Security Emergency Preparedness activities. It is not being suggested that the current methods of alerting the general public be dismantled and replaced by the DABT System, for they do have a purpose; however, it is suggested that the current systems are inadequate to meet the needs of the general public. The DABT System will greatly enhance these systems, including the EAS, to more adequately accommodate the needs of the American people.

Let us examine a few reasons as to why the present systems fails to completely serve the American people:

1. If a group of terrorists contaminate a major water system with a deadly bacteria or dangerous chemical, how are the threatened public alerted? The primary method of alerting the public would be through the broadcasting media. This method would be acceptable if one assumed that every person targeted was tuned into the broadcasting media (TV or Radio) at the time of the threat. The fallacy is that this assumption does not reflect reality. If the DABT System is a National Alert system where every telephone subscriber is connected to it, then anyone with a telephone would receive this emergency information, day or night. Remember, the existing telephone systems are nearly always in a stand-by or enabled status, ready to receive telephone calls without the need to purchase any special equipment or to be turned on to be enabled. The other methods of alerting people would still be used; however, the DABT system would be the primary system.

2. What about a dangerous chemical spill at 2:30 a.m.? How would people be alerted quickly? We cannot assume that these people are listening to the broadcasting media at this time.

3. What if a tornado threatened a residential area at 3:00 a.m. ? What are the odds of these people being woken by a siren that is three to

five miles away during a noisy storm? In addition, sirens have been known to fail quite often. It is well known that after 11:00 pm, people "tune-out" (simply go to bed). This has always been a worrisome period for the professionals that deal in alerting the general public during times of emergencies. How can threatened communities be warned during this "tuned-out" period? Using the DABT System, these people would receive a telephone call (with a unique telephone ring). Once they answered their phones, they would be told what the threat is and what action to take even during this "tuned-out" period. Yes, we can alert people using the systems we have; however, the question is how quickly and effectively can we notify them, and under what circumstance will they actually receive the warning information? If you are talking about large areas of notifications, just the logistics alone may cause deadly consequences.

Remember, one of the most important criteria requires that in all circumstances the general public would be alerted quickly and effectively when in danger. As we discussed, today's standards cannot meet this condition; therefore, we must conclude that our current methods of alerting the general public need to be improved. The DABT System, as a Unified National Emergency Telephone Alert System, would greatly enhance these current systems thereby potentially preventing many injuries and deaths each year.

FCC QUESTION (4):

If the system you propose is intended to replace the existing system, would the proposed system provide the President of the United States with the capability to provide immediate communication and information to the general public at the National, State, Local Area levels during periods of national emergency? If so, explain how this would be accomplished.

DTI RESPONSE TO QUESTION 4:

No, the DABT System is not intended to replace the existing EAS; however, the DABT System will greatly enhance the President of the United States' capability to provide immediate communication and information to the general public at the National, State, Local Area levels during periods of national emergency.

The EAN (Emergency Action Notification) network is one of two networks used to distribute national emergency messages from the Federal Government. It consists of a dedicated communications service connecting industry networks, wire service, and common carriers with government activation points. The other network used to distribute national level messages is the PEP (Primary Entry Point) system which was originally developed to serve as a backup to the EAN network. The PEP system consists of a nationwide network of broadcast stations designated as National Primary (NP) sources that are connected with government activation points. In the near future, the EAN network will be discontinued as directed by President Clinton; therefore, leaving the PEP system to become the exclusive distribution network for the national level EAS.

It is not the intent to replace the PEP system with the DABT System, for the PEP system has its purpose; however, the PEP system is a limited system relying on a nationwide network of broadcast stations. To get these important emergency messages to the bulk of the general public, one must assume that they are tuned in to the broadcast stations at the time when these messages are being delivered. This assumption is faulty as we discussed above. The DABT System, on the other hand, would have the capability of reaching approximately 94.1 percent of all households (based on the FCC report issued March, 2001) and at least 99 percent of all businesses at any given time, day or night. (Future enhancements of the DABT System will also include cellular phones). The Federal Government who distribute the national emergency messages, would be directly connected to and have access to the DABT System. By using both the DABT System and the PEP System this would greatly enhance the distribution of national emergency messages from the Federal Government and further enhance the President of the

United States' capability to provide immediate communication and information to the general public at the National, State, Local Area levels during periods of national emergency. The DABT System has been engineered to allow responsible agencies and parties, including the White House and the Defense Department, to communicate important information to millions of people in just minutes by telephone.

In summary, the DABT System is completely technically feasible; however, to reach every telephone subscriber in the United States, the DABT System must be a Unified National Emergency Telephone Alert System. This would be in the best interest of this Nation. Furthermore, this System will greatly enhance the President of the United States' capability to provide immediate communication and information (day or night) to the general public at the National, State, Local Area levels during periods of national emergency. It will enhance all of the present Emergency Alert Systems, the Siren Systems, and the National Security Emergency Preparedness activities and has the potential of preventing hundreds of deaths and thousands of injuries each year. Why is it necessary to enhance our current EAS? Our present technology demands us to do so, because our present system is not adequate to serve the needs of this great country. There are simply to many fallacies with the present system that causes unwarranted deaths and injuries each year. The DABT system would alleviate many of these problems.

Please note that a copy of the independent feasibility analysis report will be sent to the FCC in the near future. If there are any further questions regarding this subject or our responses to your letter, please do not hesitate to contact this office. Thank You.

Sincerely,

James L Leichner
President & CEO

ENC: (1) Technical data for the "Sun Blade" 1000 system
(2) Technical data for the Origin 3000 system
(3) Technical data for the "Sun Fire" 3800 system
(4) Internet data transfer ratings for cable systems

ENCLOSURE 1

A tremendous performance boost for demanding compute-intensive applications.

Sun ushers in the next generation of exceptional tools for technical professionals with the Sun Blade™ 1000 workstation. The Sun Blade 1000 system accommodates up to two superscalar, 64-bit, high-performance UltraSPARC™-III CPUs. It features a high-performance, crossbar-switch system interconnect that provides high bandwidth (up to 4 GB/sec.) for today's and tomorrow's ultra-high-speed processors and graphic subsystems. It also delivers plenty of internal disk and memory and a 64-bit PCI bus for incredibly fast I/O. The Sun Blade 1000 workstation provides both USB and IEEE1394 interfaces for connectivity to the leading edge in third-party peripherals. With state-of-the-art high-end graphics, dual monitor capabilities, and support for Sun's advanced storage systems, this workstation is truly a powerful, flexible next-generation desktop.

View the latest product updates.

Benchmarks:

	Sun Blade 1000 Model 1600 600MHz/4MB	Sun Blade 1000 Model 1750 750MHz/8MB	Sun Blade 1000 Model 1900 900MHz/8MB
SPECint_base2000	293	370	438
SPECint2000	313	395	467
SPECfp_base2000	302	373	427
SPECfp2000	339	421	482
	Model 2600	Model 2750	Model 2900
SPECint_rate_base2000	6.67	8.45	9.97
SPECint_rate2000	7.12	9.01	10.7
SPECfp_rate_base_2000	6.51	8.03	9.09
SPECfp_rate2000	7.25	9.02	10.2

More information:

- Downloadable pdf of the datasheet
- Downloadable pdf of the whitepaper

" Sun's new Sun Blade[tm] 1000 workstation is an ideal system for our processor and graphics-intensive applications, especially for computational fluid dynamics calculations. We're always striving to stay ahead of the competition, and to ensure we keep pace with new technology and leading-edge solutions, we rely on Sun systems to help us get our newly-designed cars on the track fast. We're seeing reduced test times and cost of car development, leading to faster time to market. The time limitations we have, and the need to get it right the first time, every time, is key. That's the competitive nature of Formula One, so

HIGHLIGHTS

Processor
Powered by up to two 600-, 750-, or 900-MHz UltraSPARC-III CPUs.

Memory
Delivers up to 8 GB of main memory and up to 72 GB of 10,000-rpm FC/AL disk storage.

Graphics
Choice of Sun™ Creator3D, Sun™ Elite3D m6 and Sun Expert3D graphics technology for high-performance graphics functionality.

I/O Interfaces
IEEE 1394 ports for high-speed digital video transfers; USB ports for connecting USB devices such as Iomega Zip® or JAZ® drives.

Peripheral Drives
Three removable media slots for choice of DVD-ROM, 4-mm tape, or floppy; smart-card reader is standard.

PCI Cards
Four industry-standard PCI slots provide access to hundreds of expansion and high-performance networking options.

Operating System
Runs Solaris™ 8 Operating Environment; binary compatible with previous Solaris versions and entire workstation and server lines.

McLaren cannot tolerate reboots, system failures or slow equipment. With its dual 750 MHz UltraSPARC III[tm] processor, McLaren is able to load an entire data set efficiently to perform wind tunnel simulation. The Sun Blade 1000 workstation gives us a very powerful machine in a small footprint that is affordable, reliable and easily maintained. Sun's new hardware provides us with the type of scalability we need to better plan our resources and upgrades to satisfy our long-term requirements "

Andy Knight
Information Systems Manager
McLaren International, Limited

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Feature: CPU 600/750/900 MHz

Benefit: Higher speed for big jobs.

Feature: L2 Ecache 8 MB (750/900 MHz), 4 MB (600 MHz)

Benefit: Bigger data sets are kept in fast RAM longer.

Feature: Memory up to 8 GB.

Benefit: Maximum performance for large applications and data sets.

Feature: Disk: up to 2x36 GB

Benefit: More storage capacity for larger tasks.

Feature: Disk I/O: FC-AL

Benefit: Twice the speed over UltraSCSI.

Feature: Graphics Supported: Sun PGX32, Sun Creator3D, Sun Elite3D and Sun Expert3D.

Benefit: Full selection of graphics for every need.

Feature:33 MHz PCI: 3 slots

Benefit: I/O expansion flexibility.

Feature: 66 MHz PCI : 1 slot

Benefit: High-performance PCI slot.

Feature: UPA: 2 slots

Benefit: Powerful graphics board support.

Feature: IEEE 1394:2 ports

Benefit: High-performance digital video port.

Feature: USB:4 ports

Benefit: Industry standard support for USB devices.

Feature: Internal UltraSCSI: peripherals bay only (DVD).

Benefit: FC-AL and UltraSCSI for power and legacy support.

Feature: External UltraSCSI: yes

Benefit: Easily supports legacy UltraSCSI disks investments.

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Sun Blade 1000 : Features & Benefits | Specifications | Recommended Configurations | ISV Solutions | Guided Tour

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The Sun Blade 1000 workstation provides exceptional flexibility in memory, disk, I/O interfaces, peripherals, and graphics options, while meeting the rigorous standards required by today's technical and business professionals.

Architecture	Up to two, 600-, 750-, or 900-MHz UltraSPARC-III (64-bit)
Cache	4-MB External Cache for 600-MHz models 8-MB External Cache for 750- and 900-MHz models
Memory	8-GB maximum, ECC error correction Eight Sun 232-pin Sdram DIMM slots; add in groups of four
Network	Ethernet/Fast Ethernet, twisted pair standard (10-BaseT and 100-BaseT) self-sensing
Audio I/O	One line-in/line-out. One microphone-in/speaker-out
Serial	Two RS-232C/RS423 (DB25-F) ports Four USB (Type A) connectors; Two IEEE 1394 (6-pin) connectors; One Fibre Channel Arbitrated Loop (FC-AL) for mass storage
Parallel	One D-sub 25-pin connector, IEEE 1284 (bidirectional)
Expansion bus	Four 64-bit PCI slots, full-size, Three at 33 MHz, one at 66-MHz Two UPA graphics slots
MASS STORAGE AND MEDIA	
Internal Disk	Two 18/36-GB, 10K rpm FC-AL disk drive
Three removeable media bays for choice of:	4-mm tape Drive 4X-speed DVD-ROM 3.5-in. 1.44-MB floppy
External	External UltraSCSI port Automated tape devices (optional) FC-AL Storage Arrays (optional) FC-AL Disk Multipak (optional)
GRAPHICS AND IMAGING	
	Two graphics UPA slots support Sun Creator3D and Sun Elite3D m6 graphics. Multiple PCI-based PGX32™ and Sun Expert3D graphics are also supported. SunVideoPlus™, Sun Camera™ peripherals are available as options.
Sun Creator3D Graphics	Accelerated 24-bit double-buffered 3-D graphics with 28-bit Z-buffer and 8-bit overlay plane. Gouraud shading, alpha-blending and screen-door transparency, line antialiasing, depth-cueing, 4-bit stencil support with hardware acceleration of OpenGL® stencil functions, four 256-entry colormaps for dynamic color map segment allocation and adjustable gamma correction. NTSC/PAL video timing support.1280 x 1024 @76 Hz resolution standard, stereo 960 x 680 @112 Hz supported with 21-inch monitor. Option to reconfigure frame buffer to high-resolution single-buffered Creator for imaging applications supporting 24-inch high-resolution wide-screen monitors, up to 1920 x 1200 @70 Hz.
Sun Elite3D m6 Graphics	Very high performance graphics with the integrated imaging features of Sun Creator3D graphics, plus accelerated 24-bit double-buffered 3-D graphics with 28-bit Z-buffer and 8-bit overlay plane. Gouraud shading, alpha-blending and screen-door transparency, line and dot antialiasing, per-pixel depth-cueing, per-pixel alpha interpolation,4-bit stencil support with hardware acceleration of OpenGL® stencil functions, four 256-entry colormaps for dynamic colormap segmental location and adjustable gamma correction, NTSC/PAL video timing support.1280 x 1024 @76 MHz resolution standard, stereo 960 x 680 @112 Hz supported with 21-inch monitor.

Sun Expert3D Graphics	High-performance graphics with texture-mapping acceleration for demanding 3-D applications in geotechnical, high-end MCAD, digital content creation, visualization and simulation - where hardware-based texture mapping is essential. Features 128-MB total on-board memory with 64 MB for accelerated texture-mapping performance. Expert3D graphics also supports true-color 3-D double and Z-buffering at very high large screen HDTV monitor support (1920 x 1200 @75 Hz), and stereo-mode graphics for enhanced realism a high resolutions (1280 x 800 @112 Hz).
Sun 1394 Visual Collaboration Kit	A real-time video conferencing kit contains a digital camera, a microphone, and Sun Forum™ 3.1, video conferencing software and connects via the IEEE 1394 interface.
SOFTWARE	
Operating System	Solaris 8 (10/00) (pre-installed)
MONITOR OPTIONS	
17-inch entry color	-1024 x 768 resolution,76-Hz refresh rate -1152 x 900 resolution, 76- or 66-Hz refresh rate
18-inch color flat panel	-1152 x 900 resolution, 76- or 66-Hz refresh rate -1280 x 1024 resolution, 60-,76- or 67-Hz refresh rate
21-inch color	-960 x 680 resolution, 112-Hz refresh rate -1024 x 768 resolution, 76-Hz refresh rate -1152 x 900 resolution, 76- or 66-Hz refresh rate -1280 x 1024 resolution, 60-, 76- or 67-Hz refresh rate -1600 x 1200 resolution, 75-Hz refresh rate
24-inch wide screen color	-1280 x 800 resolution, 76-Hz refresh rate -1440 x 900 resolution, 76-Hz refresh rate -1600 x 1000 resolution, 76- or 66-Hz refresh rate -1920 x 1200 resolution, 70-Hz refresh rate
ENVIRONMENT	
AC power	100-120; 220-240 VAC, 47-63 Hz, 0.3 K VA
Operating	5°C to 40°C (50°F to 95°F) IEC 60068-2-1, IEC 60068-2-2 Test Bb 20% to 80% relative humidity, noncondensing
Nonoperating	-40°C to 60°C (-4°F to 140°F) IEC 60068-2-1, IEC 60068-2-2 Test Bb 5% to 93% relative humidity, noncondensing
Operating acoustic noise	5.0 bels
Idling acoustic noise	4.5 bels
Declared noise emissions	In accordance with IDO 9206, measured at 23°C
Regulations	Meets or exceeds the following requirements: Safety - UL 1950, CSA C22.2 No. 950, TUV EN 60950, CB Scheme with Nordic deviations, EMKO-TSE (74-SEC) 203, ZH1/618 RFI/EMU - FCC Class B, DOC Class B, VCCI Class 2, EN 55022 Class B, EN 61000-3-2 Immunity - EN 50082-1 X-ray - DHHS 21 Subchapter J; PTB German X-ray Decree Power management - Energy Star compliant
DIMENSIONS AND WEIGHTS	
Height	455 mm (17.9 in.)
Width	256 mm (10.0 in.)
Depth	610 mm (24.0 in.)

Weight	70 lbs. (32 kg.)

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