SEGA DTS DEVELOPER NEWS

SEGA Developer News: DevCon '95 Wrap-up

Thanks to those of you who have been regular participants in our various conferences, and especially those who took time off from their busy schedules to join us during our First Annual Developers Conference, DevCon '95. DevCon '95 was held at the Santa Clara Marriott Hotel, Santa Clara, California, last March 14-17. We had a total of 514 attendees from 9 countries representing 120 developers, 30 partners/exhibitors and 7 Sega groups from various parts of the world. There were over 90 presentations for both beginner and advanced audiences.

This first multi-platform developers conference was made possible by the collaboration of the team at SEGA, our partners/exhibitors, and you who belong to the game development community. This effort exemplifies SEGA's continued commitment to your game development efforts by providing the latest information, documentation, tools, and technical support. The experience was made that much richer, not only by the technical content of the seminars, round-tables, Q & A's and various other formats, but also by the interaction that took place amongst all the participants.

We hope to count on your presence again next year and extend an open invitation to those who were unable to join us last March. Your participation was an important contribution to the success of DevCon '95. Your valued feedback has already given us ideas for next year's conference.

We look forward to continuing your partnership with SEGA and working with you again next year for DevCon '96 and with all our joint projects to come!

Cross Products Upgrades Technical Support

The Cross Products Technical Support line provides services Monday thru Friday until 8 p.m. (GMT). Phone, FAX or E-mail your technical support questions to the following numbers:

Tel: **(44) 113 242 9814**
Fax: **(44) 113 242 6163**
BBS: **(44) 113 234 0420**
CIX: **cross@cix.compulink.co.uk**
Internet: support@crossprod.co.uk

Tech support engineers Jav Shamsuddin (x 332) and Paul Hirst (x 333) are available to talk about Saturn, 32X and other supported platforms.

Cross Products also has a 24-hour BBS that contains the latest versions of their software. Log on to the BBS regularly for SNASM2 software updates as new features and upgrades are added.

Cross Products/SNASM future plans include a WWW home page providing improved services over the BBS, such as electronic distribution of documentation, SNASM FAQ's, and product information. FTP access will also be available. SNASM manuals are regularly updated in-line with the software. The latest versions for Saturn are dated March '95.

Inside this Issue:

Profile

Jean Yu

Technical Support Engineer

Many of you have probably met or spoken with Jean Yu. Jean has been with SEGA since August, 1993, and is one of our technical support engineers who specializes in the 32X and 16-bit systems. Did you know that during the last SEGA company-wide meeting, Jean was presented with the President's Award? The nomination was made by each department head and the winner is chosen in recognition of outstanding performance thoughout the year. Her next project will involve the implementation of our Developer Information section on SEGA's World Wide Web and ftp sites.

Prior to joining SEGA, Jean was the Accounting Application Programmer at Safeway Headquarters in Oakland. She obtained a Bachelor of Science in Computer Science from San Jose State University in May, 1990. Jean recently received her Masters of Science Degree in Telecommunications from Golden Gate University.

Congratulations Jean, and continued success!

Consumer Demand Drives Early Release of Sega Saturn

—Sega CEO Tom Kalinske Anounces Immediate Sega Saturn Launch at E3 Keynote Address—

Los Angeles, May 11, 1995— The waiting game is over for videogame enthusiasts in the U.S. as Sega of America today announced the immediate availability of its much anticipated Sega Saturn system. The early launch of the high-end video game system was fueled by tremendous consumer demand ignited by phenomenal sales in Japan.

Consumers nationwide can now enter new realms of interactive entertainment with Sega Saturn, the ultimate video game system that brings totally new immersive gaming experiences into the home.

With the Japanese launch of Sega Saturn as precedent—where more than 500,000 units were sold within the first month of sales, and more than one million units have been sold to date— Sega of America anticipates that the units available now will immediately sell out in the U.S. Sega Enterprises estimates more than three million units will be sold by Christmas 1995 worldwide; Sega of America is projecting sales of more than 600,000 units by year's end.

Sega Saturn is powered by a state-of-the-art arcade architecture that allows for unprecedented software development that includes 3D rendering, 360-degree action, intense surround-sound capabilities, dynamic perspectives, and truly revolutionary graphics, speed and fluidity.
Sega Saturn is available today in limited distribution around the country; the first wave of retail outlets that will carry Sega Saturn include Electronics Boutique, Software Etcetera, Babbages and Toys R Us. As production ramps up, additional retailers will be added as rapidly as possible.

The largest launch in Sega's 40 year history, the early arrival of Sega Saturn on U.S. soil will be supported with breakthrough television and print advertising campaigns, promotions, and a tremendous consumer direct-marketing campaign to hundreds of thousands of video game players across the country.

Neuromantic Sound Library

Neuromantic announces the GEMS FM Patch Library, including NRP General MIDI module.

Created by Jim Hedges and Mark Miller

Features:

- Over 500 top quality four operator instrument and sound effect FM patches for the Sega Genesis, Sega CD, and Sega 32X systems
- The best FM drums for the Genesis available anywhere
- A General Midi patch set modeled after the Roland Sound Canvas for easy conversions from IBM PC or Mac platforms to Sega Genesis, Sega CD, and Sega 32X systems
- Over 100 FM sound effect building block patches for creating complex, low memory sound effects
- Hundreds of high quality instrument sounds including electric guitars, basses, and synths, and a full compliment of acoustic and orchestral sounds

These patches are the culmination of four years of sound design for the Genesis and Sega CD by Neuromantic Productions. As such, they are the starting points for the patches used in titles such as Earthworm Jim, X-Men II, Taz-Mania I and II, Toejam and Earl I and II, Cadillacs and Dinosaurs, and Lodestar to name but a few.

This library is comprised of FM patch descriptions currently in the GEMS exportable .PAT format and in convenient patch banks organized by type (drums, basses, etc.). All library patches exist as general purpose templates which may be used as is, or refined for more specific applications. The patches can be used in SEGA-CD, 32X, or GENESIS, and are capable of being converted for use in any 4 operator FM sound driver (not just GEMS).

The library is divided into two main parts:

1. A general purpose library with patches divided into the following instrumental groups:

   strings
   woodwinds
   brass
   keyboard: electric/acoustic
   percussion: pitched/unpitched
   guitars: electric/acoustic
   synthesizers
   bass: electric/acoustic
   drums: kicks/toms/snares/cymbals
   sound effects

   Each group contains approximately 20-30 patches while the drums, synthesizer, and sound effects groups contain closer to 100 patches each.

2. A set of patches which conforms to the General Midi spec (level 1). This includes a bank of 120+ patches designed specifically to mimic the Roland Sound Canvas (everything except the SFX patches such as Helicopter or Applause).

In addition, there is a bank of drums which conforms to the standard GM drum map. This is available as a separate module or, if a driver with the capacity for 256 patch "slots" is used (such as GEMS 2.8), both the instrumental and drum banks can be used together, with the drums starting at patch number 128. Simply contact your Third Party Account Executive or your SEGA producer about obtaining Neuromantic. The library's part number is GN-SND-FM.

Good GNUs!

GNU documentation is now available on the WWW via the Cygnus Support Online Documentation Gallery. Check it out! Just key in :

http://www.cygnus.com/doc/rebuilding/rebuilding_toc.html

to view "Rebuilding From Source" (the document that SEGA distributes). The hypertext format makes it easy to navigate through the entire document. You can still get a hard copy of this documentation from SEGA. Just use your fax back form on the last page of the newsletter to make your request.

Developer Tools Exchange

This is a Sega feature that spotlights tools made by developers which are available for other developers. **Virtual Hollywood** has available two tools for the Saturn: **Gemini and Pisces.**

Gemini is a level map editor. It allows designers, artists, and engineers to lay out all necessary information in an interactive, visual manner. A key feature is the ability to attach specific information to a tag. For example, a spring mechanic could store the reaction strength of the spring in the associated tag. This permits engineers to store all necessary information in one place. This also allows designers to directly manipulate aspects of the game without impacting his engineer - he simply double-clicks on the spring tag, and the values of the spring are revealed and modified through a dialogue box.

Rather than hard-coding a few fields into each tag, Gemini permits the engineer or designer to add all necessary fields to the tag. Thus Gemini is fully extensible, without a line of code.

Gemini also supports multiple types of connected contours. And for artists, Gemini is a tool for interactive layout of multi-planing art layers. Using scroll bars, artists can immediately see how a particular scroll plane interacts with others. Artists can turn off planes, or click and choose as necessary to turn off sets of individual planes. Unlike other map editors, Gemini maps may be of any size, an important requirement of 32-bit games.

Gemini also flips art horizontally, vertically, or both, allowing game creators to save significant memory by employing symmetrical art.

Gemini uses links to art files, rather than the art files themselves, creating compact and efficient files. This also allows artists to work on files separte from the design and engineering process, eliminating version-control logjams when several members of a development team must work on the file at the same time.

Pisces is an animation sequence editor for 2D animation. With Pisces, animators can assemble sequences from a series of frames into a finished animation. Unlike other animation tools, Pisces recognizes repeated frames, allowing significant memory savings. Pisces allows animators to register their animation without changing art. It also understands looping animation, providing support for a windup sequence before each loop, allowing beautiful artistic results without impacting engineering.

Pisces permits designers to attach information to specific frames of animation, such as collision rectangles, hot spots, event flags, and sounds. Since this information is seperate from the art, this material can be adjusted without impacting the game artists.

Engineers will find Pisces extensible. There are three types of information that can be attached to art: hot spots (useful for linking sprites or any other time-specific point on an animation); rectangles (permitting multiple collision rectangles on a single piece of art); and events (allowing specification of the exact frame in which a gun is fired, etc.). Without writing tools, engineers can quickly create new variations on these three basic types.

Both Gemini and Pisces are usable for the Playstation, 3DO and Saturn. For more information contact Neil Balthaser at Virtual Hollywood, (805)528-0399.

If you wish to have your own tool put on the list, please contact our newsletter editor, Evelyn Merritt, at: evelyn.merritt@segaoa.com

Coming Attractions

Sega of Europe 'Prepare for Orbit' Developers Conference. July 20-21 at the Novotel Hotel, Hammersmith, London. For more information, contact: Kylie Carter:

Tel: (44) 181 996 4401
Fax: (44) 181 996 4488
E-Mail: carterk@sega.co.uk.

Saturn Graphics Library available now on June 1995 Developer Tool Kit CD. Contact: **DTS@segaoa.com**

Q Some RGB values do not display correctly on Saturn. The problem occurs most often when the red component is set to 30 (1E hex) and green component is set to 31 (1F hex). The resulting color appears brown.

A *The color burst signal on the midbox is not output at the correct time. This will be tuned in the small box and further tuned in the production model.*

Q My Cinepak movie is playing back too fast. I am using Cinepak version 1.2.

A *Usually this means the timescale is off. The timescale should be 600. This is the scale in units QuickTime uses to calculate time. There are two tools for Cinepak 1.2: Cinerate and Cinedump. Cinedump will display the film header, and Cinerate can change the timescale to 600.*

Q What is the maximum game size on Sega CD?

A *The maximum length on a Sega CD is 63 minutes. However the EMU file can be as long as 68 minutes (612000 bytes) due to the insertion of error checking code by the BuildDisk utility.*

Q In the SND_CtrlDirMidi Function there is a seq_no parameter which is the Sound Control Number. Is this the same parameter that is used in the Sequence function?

A *Seq_no is the Sound control number. Up to 127 direct Midi commands can be fired off on each sound control number (vs. 1 sequence). It is a good idea to keep the Direct Midi commands to one specific sound control number. Seq_pri refers to the priority level of that Midi direct command, 0 being the highest.*

Q When I load in two or more samples (non-loop, 16 bit, from SoundDesigner) into the tone editor, if I trigger the first one and hold it down, it will play through all the samples that have been loaded into the Saturn. Why is this happening (bad end address being sent?) and how can it be fixed?

A *You have to set loop start and loop end even though it's a one shot wave. Loop start should be set to 1, and the end point should be set to the same point as the sample end in case it's a non loop sample. This means that the loop end point and start point should almost be the same.*

SCSP chip checks loop end data and start data which are included in wave data itself and does not interpolate the data size as the end of the sample.

References: Sega Saturn Sound Manual ver1.27 1994.11 wave Editor ver1.13

Q I am using the Saturn Midbox with an E7000PC. The E7000PC only has 512K of emulation RAM. What can I do to extend the amount of memory that I have to be more than 512K?

A *Memory shouldn't be a problem if you use the Saturn's memory for code. Use the memory at $6000000. The midbox should have another 8 megabytes at address $04000000 - $04800000.*

Q Is there a way to include a binary file into Microtek or Sierra assembly files?

A *No, only Snasm assembly allows this (INCBIN). The solution is to convert the binary file into DC.B statements. The BIN2ASM.EXE utility will convert a binary file to a text file with DC.B statements.*

Q From reading 32X tech note #15, it seems like the Z80 can not access the SH2 side at all. Is this true?

A *Yes, you cannot use the Z80 to access the SH2. An alternative would be to Copy the data from the Z80 to the Genesis RAM and then write to the SH2 from the Genesis side.*

Documentation Requests

Here's how to file your requests for documentation or tools. If you are a SEGA developer, contact your producer directly. If you are a Third Party Licensee, contact your account executive. Your request will be forwarded to the DTS (Developer Technical Support) Support Specialist. You may also contact the DTS Support Specialist directly via E-mail, FAX or the DTS hotline. Contacting the Support Specialist ensures that all requests are documented and tracked through completion. Please forward your requests to the DTS Support Specialist via:

E-mail: dts@segaoa.com
fax: (415)802-1717, attn: DTS;
phone: (415)802-1719.

When your request is received, the documentation staff will ascertain if all the necessary confidentiality agreements are in order. If there are any issues that need to be resolved before your request is processed, you will be notified.

In the following section, you will find the latest list of Saturn documentation available for distribution. With all requests, please specify the document you need, indicating the title and the document number. Always include your name (the recipient of the document), your company name, address, and phone number. Include your E-mail address if you have one. Remember, please use E-mail whenever possible. Also, please inform us of any address changes so we can keep our records up-to-date.

We also have an updated list of Saturn and 32X documents. Please inform us if you would like to automatically receive the latest versions or new documentation of a specific platform. If your company has received documentation for a former colleague who no longer works in your company, please let us know about this, too. This helps us save time, effort, and trees!

New Country Code for Genesis and 32X

The country code in the Genesis ID Table has changed since the introduction of the 32X platform. The country code at $1F0 of the ID Table for both Genesis and 32X is determined from a Hardware Enable Code Table. Please refer to Genesis Technical Bulletin #31 and 32X Technical Bulletin #28 for more details on the hardware enable code information. The country codes "U", "J", and "E" are no longer valid for Genesis and 32X platforms. Software containing errors in country code (hardware enable code) will not be accepted for final master ROM release.

The territory lockout code has also changed due to this hardware enable code. The new lockout code can be obtained from our BBS in the Genesis Conference for Genesis software and in the 32X Conference for 32X software.

Note: The above change does not affect Game Gear and Sega-CD. Please continue to use the existing country code format for these two platforms.

DTS Internet Addresses

SEGA of America

Judy Jetté - Support Specialist	dts@segaoa.com
SEGA of America Fax	(415) 802-1717

SEGA of Europe

For technical support, please E-mail:	techsupport@sega.co.uk
SEGA of Europe Fax	(44) 181 996 4488

Documentation

Listed below are the complete sets of Saturn documentation as of June 1, 1995. If you wish to order complete Saturn documentation, please order by set (i.e. Set 1, Set 2, or Set 3). If you already have the sets, and would like to order new documents, please let us know. You may contact us by E-mail or use the Fax back section on the last page of the newsletter. Fax: (415) 802-1717 or E-Mail: dts@segaoa.com

Set 1: **SATURN PROGRAMMING MANUAL VOL. 1**

Saturn Introduction Manual	ST-155-062094	9/12/94
Sega of America-Introduction to Saturn Game Development		4/13/94
Saturn Overview Manual(temporary version 1)	ST-103-R1-040194	6/6/94
SCU User's Manual	ST-97-R5-072694	12/14/94
SCU Final Specifications: Precautions	ST-210-110194	2/14/95
SMPC User's Manual	ST-169-R1-072694	2/2/95
SMPC Sample Program User's Manual	ST-214-111594	2/14/95
Saturn SCSP User's Manual	ST-77-R2-052594	8/4/94
SEGA Saturn Dual CPU User's Guide	ST-202-R1-120994	12/12/94

SATURN PROGRAMMING MANUAL VOL. 2

VDP1 User's Manual	ST-13-R2-120693	4/1/94
VDP1 User's Manual Supplement	ST-13-SP1-052794	9/19/94
VDP2 User's Manual	ST-58-R2-060194	9/27/94

SATURN DEVELOPMENT TOOLS MANUAL

Saturn Boot ROM System User's Manual Ver.1.0	ST-220-120994	2/25/95
Disc Format Standards Specification Sheet	ST-40-R2-062294	9/21/94
System Library User's Manual	ST-162-062094	11/3/94
Program Library User's Guide 1	ST-136-R2-093094	12/15/94
Program Library User's Guide 2	ST-157-R1-092994	1/11/95
Program Library User's Guide 3	ST-135-R1-062094	11/10/94
DLL Library User's Manual	ST-200-092994	1/27/95
External specifications Saturn file system Library	ST-39-R2-011094	4/20/94
External Specification Doc. Saturn Stream System	ST-98-031194	4/20/94
Backup Library User's Manual	ST-199-092994	11/11/94
Backup System Production Standard	ST-203-100494	11/16/94
Saturn Software Library	ST-209-110194	11/9/94
Saturn Software Library Release 3.01 Supplemental Disk	ST-208-110194	4/17/95
Sample Game Program User's Manual	ST-159-R1-092994	4/17/95
CD Development Tool Description File	ST-211-110494	11/8/94
Simple CD Simulator User's Manual	ST-161-R1-092994	10/19/94
Virtual CD System User's Manual	ST-129-R1-062294	5/3/94
Virtual CD System (Release 3) Limitations	ST-182-081294	9/20/94
Write Once CD-R System User's Manual	ST-201-B-092994	2/2/95
SH2 Dynamic Load Linkage Editor	ST-19-R1-B-050994	6/29/94
Saturn SEGALIB/MAN README	ST-DISK-05-101794	11/2/94
Saturn SEGA SMP/MAN README	ST-DISK-06-101794	11/23/94
Sample Data User's Manual	ST-160-R1-092994	10/19/94
SATURN Readme File	ST-207-10194	10/25/94
SATURN Backup Data Name Registration Forms	ST-204-100794	10/19/94
Authoring Environmental Guide	ST-91-R1-062794	9/9/94
Saturn Author User's Manual	ST-164-062794	4/11/95

Set 2: **SATURN GRAPHICS TOOLS MANUAL**

Map Editor User's Manual	ST-127-042594	8/5/94
Photoshop Plug In User's Manual	ST-125-R1-090894	1/12/95
SEGA Converter User's Manual	ST-126-R1-091394	2/14/95
Simple Painter User's Manual	ST-131-R1-090894	2/23/95
"Simple Animator User's Manua Ver.2.0"	ST-130-R1-090894	3/17/95
2D Motion Editor User's Guide	ST-140-051894	8/30/94
3D Editors User's Manual	ST-141-R1-091394	2/14/95
Saturn/32X Graphics References ver. 2.0	ST-124-R1-091394	11/23/94

Set 3: **SATURN SOUND TOOLS MANUAL**

"Sound Development Manual ver 1.1"	ST-081-R5-062894	4/6/95
Saturn Sound Simulator Manual	ST-168-R1-092694	1/6/95
Wave Editor User's Manual	ST-99-R1-042594	6/23/94
Tone Editor User's Manual	ST-68-R1-042594	10/14/94
DSP Linker User's Manual	ST-70-R1-031094	3/21/95
Sound Tool Guide	20-April-94	4/20/94
Sound Tool Guide Addendum	ST-198-092694	2/2/95
Saturn Sound Driver System Interface	ST-166-R2-091394	10/21/94
Standard MIDI File: Converter Specifications	ST-66-121593	
Sound Programming Debugger User's Manual	ST-65-R1-0311494	7/1/94
Microcomputing Developing Int. Environment for Macintoch	ST-80-R2-050994	4/20/94

FAX Back

Thanks to those who have shared comments and ideas regarding the DTS Newsletter. Please continue to give us your feedback so we can work together to make the future issues even better. Please take a moment to fill-out the information below and mail or FAX it to SEGA @ (415) 802-1717.

What did you like/dislike about this issue of SEGA DTS Developer News? _____

_____

How can DTS better support your development efforts? _____

_____

What features/information would you like to see included in upcoming issues? _____

_____

If you need documentation, list the title and number below. You must have a SEGA non-disclosure document on file to receive documentation. If you have not signed a non-disclosure, contact DTS.

_____

_____

Please provide your E-Mail address to facilitate communication. _____

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