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Consumer Products Division

Backup System Production Standard

Doc. # ST-203-100494

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Document number	ST-203-100494	Date
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Attachment 2: Backup System Creation Standard (Saturn Version)

This document standardizes the basic functions and terminology related to backup and, in doing so, establishes a creation standard for realizing a user-friendly environment applicable to all software.

1.0 Terminology Standardization

The notations that appear in game screens and instruction manuals are standardized to the standard terms listed below. Prohibited terms must not be used because they tend to confuse the user.

Standard Terms for Saturn Backup

For terms related to backup in the Saturn, as a rule, use the terms listed below in screen displays and in instruction manuals of applicable software. The underlined terms listed after Previously) are not appropriate for use in games. *Use of the double-underlined terms is strictly prohibited.*

Hardware Names

- 1) Backup RAM
 - Previously) Backup/RAM/RAM<u>cartridge</u>
 - (General name referring to both base RAM and cartridge RAM)
- 2) Base RAM Previously) Internal backup RAM/<u>internal RAM</u>
 3) Cartridge RAM
 - Previously) Cartridge/backup RAM cartridge/RAM cartridge

Hardware Function Names

- Multiplayer screen Previously) <u>Control screen/control panel</u> (in boot ROM)
- Save Data Control screen Previously) <u>Backup RAM tool</u> (backup tool in boot ROM)
- 3) Record/data
 - Previously) Data/save data/<u>file</u>
- 4) (Record) name/data name
 - Previously) Data name/<u>filename</u>
- 5) Capacity
 - Previously) Capacity/<u>area/block</u>
- 6) Used space, empty space/available space
 - Previously) Number of used blocks, number of empty blocks/free area

Function Names

- 1) Erase all/erase all records/erase (initialize) all records Previously) Initialization/format/initialize
 - **Note:** Do not use "initialization" except when the media is in its actual unformatted state. Even in this case, use "Erase (initialize) all records."
- 2) Load/read

Previously) Load/read

3) Save

Previously) Save/write/new write

- 4) Copy Previously) Copy
- 5) Erase
 - Previously) Erase/<u>delete</u>
- Erase the record and copy/update the record Previously) <u>Overwrite</u>
- 8) Update record name Previously) <u>Rename</u>
- 9) Backup switching Previously) Switching/<u>RAM switching</u>/<u>RAM change</u>

Warning Messages

1) was ... correctly

Previously) was ... correctly/was ... normally

- 2) could not be ... (correctly) Previously) could not be ... (correctly)/failed/<u>...error</u>
- cannot be used Previously) cannot be used/<u>is abnormal/is destroyed/was destroyed</u>

New Terms

1) Comment

Detailed information (represented with up to 10 half-size alphanumeric and/ or kana characters) that adds record content information to the record name.

2) Time information

Record time information indicated by a time stamp.



2.0 System Specifications

Figure 2-1 shows the flow of the basic backup system. The processes, functions, and messages shown in the flow must be incorporated into the backup system.



1) Initialization check

- Check initialization of base RAM and cartridge RAM.
- Prevent startup if either RAM is not initialized.

The application must always check initialization of the base RAM and the cartridge RAM before starting the main game. If either RAM is not initialized, the application reports the condition to the user and either initializes the RAM directly or instructs the user to initialize the RAM from the Save Data Control screen in the Saturn unit boot ROM. The application must not start the game if either RAM is not initialized. When accessing the backup RAM, always use the BACKUPRAM BIOS. When formatting the base RAM, cartridge RAM, or extended memory, always use the SEGASATURN_BACKUP_FORMAT method.

- 2) Existing data/capacity check
 - Check for application data.
 - Check empty space.

Before starting the main game, the application checks for data that it can use and checks the available space for each backup. If the check indicates no data for the application or insufficient space available, the application displays a warning message according to the status (see item 8) Warning message.

3) Load

• Check for data corruption/load errors.

When loading data, the application must always check for data corruption. If the data cannot be used, the application must report the condition to the user and somehow differentiate the data to show that it cannot be used.

4) Save

- Check for save errors.
- Check available space
- Define record name.
- Define record size.

When saving data, the application checks the available space. If the capacity is insufficient, the application reports the condition to the player. The application checks whether the data was written normally. The record names used in save processing are controlled by Sega. (This is to avoid using the same record names in a different game.)

Example) Fantasy Star X requires save at three locations:

Location 1: PS_SCENE_00 Location 2: PS_SCENE_01 Location 3: PS_SCENE_02 Only last 3 characters are variable. First 8 characters are common.



Do not use a general name like GM_DATA_000. The characters that can be used in record names are limited to numbers, uppercase alphabetic letters, and underscore. The first character must not be a number. File names must be 11 characters in length. If a file name is less than 11 characters, pad the name with underscore (_) characters. Do not use spaces. When executing several saves in a game, fix the first 8 characters of the filename, and use underscore and numbers in the last three variable characters.

The size of one record must not exceed 256 kilobytes. Records over 256 kilobytes cannot be copied because the copy function of the Save Data Control screen in the boot ROM does not support sizes over 256 kilobytes. If the record size exceeds 256 kilobytes, the application itself must be able to copy the records.

5) Comment support

- Define comment.
- Enter game name in katakana as the default.

Note: The user may be allowed to change the default.

The comment is up to 10 half-size alphanumeric or kana characters. Although there are no rules on the comment contents, the game name must be entered in katakana as the default.

- 6) Time stamp support
 - Define time stamp.
 - Set file display sequence.
 - Always write time stamp.

The time stamp cannot be deleted or changed by the user. The files are displayed in reverse chronological order based on the time stamp (file with the latest save date is displayed first).

- 7) Selection of base RAM/cartridge RAM
 - Always support both RAMs.

Note: The position of the selection within the processing sequence is not defined.

The application must be able to read backup data directly for both the base RAM and the cartridge RAM. The creation standard does not specify where this process should take place in the processing sequence.

8) Warning messages

The following warnings must be incorporated into the application to support the specifications described in items 1) to 5).

- Initialization check warning (during startup).
- New save disabled warning after game is started (during startup).
- Save disabled warning (during startup).

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- New save disabled warning during game (during save/copy execution).
- Load/save/copy/erase/initialization failure warnings (after execution of each process).
- File corruption warning (during load execution).
- Display of backup space used by application (When new save is disabled after a game is started or during a game).
- Warning instructing the user not to turn off the power during save execution.



3.0 Sequence and Warning Message Examples

This section gives sequence and warning message examples for each process. Refer to these examples and, if possible, implement them to create a user-friendly system.

1) Initialization check and existing data/capacity check



<Warning message (1)>

If either the base RAM or the cartridge RAM is not initialized, *the game cannot be started*. After displaying the warning, the application should initialize the target ROM or instruct the user to switch to the Save Data Control screen in the Saturn unit boot ROM and execute RAM initialization.

"Base RAM (cartridge RAM) is not ready for backup (has not been initialized)." (*1)
"All records in base RAM (cartridge RAM) will be erased (initializing). Yes/No?" (*1)
"All records in base RAM (cartridge RAM) were erased (initialized)." (*1)
"All records in base RAM (cartridge RAM) could not be erased (initialized)." (*1)
"All records in base RAM (cartridge RAM) could not be erased (initialized)." (*1)
"All records in base RAM (cartridge RAM) could not be erased (initialized)." (*1)
"To switch to Sega Saturn's Save Data Control screen." (*)
"To switch to Sega Saturn's Save Data Control screen, hold down the L or R button and press Reset."

*1 Always place the word "initialize" in parentheses. Using the word by itself is prohibited.

<Warning message (2)>

Space for saving the new data cannot be reserved. The user must be informed that the only way to save the new data is to sacrifice an existing record. (At the start of a new game or the continuation of a game, the new record cannot be saved unless an earlier record is erased or updated.) Information on the capacity used by the game must be displayed at the same time.

"Not enough free space to store new record. If game is started, new record cannot be saved unless previous record is erased."

"*** of empty space required to save new record."

"From Sega Saturn's Save Data Control screen, erase other game records or copy other records to cartridge RAM, then restart the game. To display Sega Saturn's Save Data Control screen, hold down the L or R button and press Power or Reset."

<Continue selection disabled processing>

The game cannot be continued because there are no game records (initial status immediately after the software is purchased). Include processing that prevents the user from selecting continue or skips the Game Data Selection screen (load screen).

<Warning message (3)>

There is no game data and no empty space. In other words, the save function cannot be used at all. *Even in this condition, the user must be allowed the option of playing the game (of course, the save function cannot be used).* Information on the capacity used by the game must be displayed at the same time.

"If the game is started in this condition, the record cannot be saved. Start the game? Yes No"

"*** of empty space required to save a game record."

"From Sega Saturn's Save Data Control screen, erase other game records or copy other records to cartridge RAM, then restart the game."

"To switch to Sega Saturn's Save Data Control screen, hold down the L or R button and press Power or Reset."



2) Load, save



Figure 2-3 Load processing sequence

<Warning message (4)>

An error has occurred during load processing. This type of warning message is issued if data becomes corrupt or if read fails (probability is very small). The warning message must inform the user that the data could not be loaded and the record cannot be used.

"Record could not be read correctly." "Load failed." "Game cannot be started with this record." "This record cannot be used."

Note: Do not use the expression "is destroyed."



<Warning message (5)>

An error has occurred during save processing. This type of warning message is issued if the capacity is full and data cannot be saved or if write fails (probability is small). If the capacity is full, the warning message must display information on the capacity used by the game.

"*** of empty space is necessary to save a record for this game."

"From Sega Saturn's Save Data Control screen, erase other game records or copy other records to cartridge RAM, and then restart the game."

"To switch to Sega Saturn's Save Data Control screen, hold down the L or R button and press Power or Reset."

"The record could not be saved correctly. Re-execute the save."

<Warning message (6)>

This warning instructs the user not to turn off the main unit power during save processing. This message should be displayed at an appropriate location in the game sequence and clearly written in the instructions manual.

"Saving a game record. The record may not be saved correctly if the power is turned off."

