

SEGA-CD
SOFTWARE STANDARDS

SEGA ENTERPRISES, LTD.

Sega Ozisoft

MEMORANDUM

To: All Sega-CD Software Developers
From: Jim Huether *J. H.*
Subject: Preliminary Sega-CD Software Standards
Date: May 6, 1992

Attached is a preliminary description of the Sega-CD Software Standards for the U.S.
This will be a growing document and is subject to change.

Sega Ozisoft

SEGA-CD SOFTWARE CREATION STANDARDS

Points to Be Strictly Observed

I. CD-ROM Startup

1. Because the SEGA logo is displayed by the BOOT-ROM, it is not necessary to have the application itself display the SEGA logo.
2. If no control pad is plugged in, or if only the 2P control pad is plugged in, the program should regard the buttons as not being pressed.

In all other cases, pressing the START button should cause the program to proceed to the display of the game title.

3. Pressing the RESET button will always open the CD Tray. This is controlled by the BOOT-ROM.

II. Title Display

1. The program should display the title logo and "PRESS START BUTTON". After the control pad START button is pressed at this point, the program should display the start option selection screen.
2. Copyright display.
3. After displaying the title screen for a fixed period of time, the program should display a demonstration screen.

III. Demonstration

1. If nothing is input while the title screen is displayed, the program should display a demonstration screen.
2. Include sound in the demonstration.
3. Pressing the START button while the demonstration is in progress should cause the program to return to the title screen.
4. After the demonstration has run for a fixed period, the SEGA logo should be displayed.

IV. Contents of Game

1. Do not display important information such as player scores within two cells of the left and right edges of the game screen and not within one cell of the top and bottom edges. (This is because the size of the area of the display screen which is actually displayed may vary for different monitors.)
2. Copyrights should be carefully observed when using third-party songs for background music.
3. Be certain to carefully confirm that the name of the game and the characters in the game do not violate any intangible property rights.
4. Do not use anything that can be associated with other manufacturers, their products, characters in their games, etc.
5. Avoid scenes depicting smoking, drinking, or the mistreatment of children.
6. Avoid the use of God or names from the Bible.
7. Adjust the level of complexity for the country where the product is to be sold.

V. Game Restart/Pause

1. The effect of pressing the A, B, C and START button simultaneously should differ, depending on the status of the application:

- (1) Control screen

Return to the SEGA-CD logo. (Displayed by BOOT-ROM.)

- (2) Manufacturer's logo screen, title screen, demonstration screen

Return to the control screen.

- (3) While game is in progress

Return to the start of the application.

*Do not clear data such as the high scores or password.

2. Pausing the play of the game should be possible by pressing the START button.

When two players are playing, it should be possible to pause and restart play from either control pad.

3. The sound should be turned off when the game is paused. If the background music is interrupted, it should resume from the same point when play is restarted.
 4. Pausing should not be possible while the manufacturer's logo, title screen, demonstration screen or a blank screen is being displayed.
 5. Whenever possible, the word "PAUSED" should be displayed on the screen when the game is paused (in order to distinguish the pause state from a problem with the program).
- * These restrictions do not necessarily apply to certain types of games (such as adventure and role-playing games) where a pause function is not required, or to other uses.

VI. Continue/Ending

1. Continue

- (1) As a general rule, a continue function should be provided, with a limitation on the number of times it may be used.
- (2) The manufacturer's logo should be displayed after a fixed period of time.

2. Ending

- (1) It should not be possible to cancel the ending screen.
- (2) Once the ending has been completed, the manufacturer's logo should be displayed (activated either by timer or by button input).

VII. Other General Points to Be Strictly Observed

1. As a general rule, all buttons should have an immediate effect when pressed. This does not, however, apply in cases such as where the length of time the button is pressed determines how far a character can jump, for example.

2. The START button, used for starting the game and for pausing the game, should be readable regardless of whether other buttons are being pushed or not.

3. Buttons A, B, and C on the control pads should all be used.

VIII. Regarding Sample/Master Discs

1. Do not attach seals, labels, etc., to the surface of the disc.

2. Record the following necessary information on the disc surface and index sheet with an oil-based magic marker:

- * The full game title (not an abbreviation)
- * Release date
- * Game version

Example:

*For the first sample, with two copies, write the following:

Disc 1: VerA-1

Disc 2: VerA-2

*For the second master, with three copies, write the following:

Disc 1: VerB-1

Disc 2: VerB-2

Disc 3: VerB-3

3. Do not use an unusual type of magic marker, and do not use one with a soft, spongy tip.

4. Write-once discs are vulnerable to damage from dust and dirt; handle the discs carefully. Do not leave them out of their cases for extended periods of time, and do not leave fingerprints on the surfaces.

Recommendations

I. Start Option Screen

1. A Start Option screen should be provided if possible.
(However, in a case where a game ported from another system did not have an option screen in the original version, it is not necessary to add such a screen if doing so will negatively affect the game.)

2. Concerning control pad operation and the display for the start option screen:

- (1) Selections should be made by using the direction buttons to move up and down and then pressing the START button.
- (2) Because of item I-2 in "Points to Be Strictly Observed," there should be no case where just the 2P control pad is plugged in when the option screen is displayed. The case where only the 2P control pad is plugged in will not be discussed hereafter.
- (3) One-Player Games

****SCREEN**

A one-player game should begin once "1 PLAYER START" is selected.

- (4) Two-Player Simultaneous Games

* If the 1P control pad only is plugged in:

****SCREEN**

Although "2 PLAYER START" is displayed, it should not be possible to move the cursor to this selection. Different color characters may be used to indicate whether an item can be selected or not.

A one-player game should begin once "1 PLAYER START" is selected.

* If both the 1P and 2P control pads are plugged in:

The method of display differs, depending on whether the START button on the 1P control pad or the 2P control pad was pushed in order to display this start option screen. (See item II-1 under "Points to Be Strictly Observed.")

- (a) When the START button on the 1P control pad was pushed:

****SCREEN**

Either choice should be selectable. Selection should only be possible with the 1P control pad, however.

* If "1 PLAYER START" is selected, a one-player game should begin; the player uses the 1P control pad.

- * If "2 PLAYER START" is selected, a two-player simultaneous game should begin; player 1 uses the 1P control pad, and player 2 uses the 2P control pad.

(b) When the START button on the 2P control pad was pushed:

****SCREEN**

"1 PLAYER START" should not be selectable. Selection should only be possible with the 2P control pad.

- * If "2 PLAYER START" is selected, a two-player simultaneous game should begin; player 1 uses the 1P control pad, and player 2 uses the 2P control pad.

(5) Two-Player Alternating Games

- * If only the 1P control pad is plugged in:

****SCREEN**

Either choice should be selectable.

- * If "1 PLAYER START" is selected, a one-player game should begin; the player uses the 1P control pad.
- * If "2 PLAYER START" is selected, a two-player game should begin; both players take turns using the 1P control pad.

(6) Other Cases

****SCREEN**

When playing via a modem, the system checks for a modem when the power is first turned on; "MODEM START" should be selectable if a modem is connected.

(7) Option Screen

**** SCREEN**

If "Options" is selected on the start option screen, the options screen should be displayed.

- * Use the up and down direction buttons to select the item to be changed and the left and right direction buttons to change the setting.
- * There should be two methods for returning to the title screen:
 - a) Selecting "EXIT" and pressing either button A, B, or C.
 - b) Pressing the START button anywhere on this screen.
- * The following items are recommended as options:

LEVEL	Complexity
PLAYER	Number of players
SOUND TEST	Sound test
CONTROL	Control settings
RAPID	Rapid fire

II. Password/Name Entry Screen

1. Use a font that is easy to read for password entry.

Make sure that it is easy to distinguish "0" (zero), "O" (capital "oh"), "o" (lower case "oh"), "Q", "1" (one) and "I" (capital "aye"), in particular.

2. Operation

**SCREEN

- a) Password
- b) A B C D E
F G H I J
LEFT RIGHT END
ABCDE_

Input character screen

- * Input should be made by using the direction buttons to select the letter to be input and then pressing button C to actually input the letter.
- * Correcting letters that have been input should be possible by holding down button B and then pressing the direction keys to move the cursor to the letter to be changed. It should also be possible to move the cursor by selecting "LEFT" and "RIGHT" on the screen.
- * If the password is entered incorrectly, the software should not erase the characters that were input.

- * The cursor should move so that it wraps around in any of the four directions.
- * Pressing the START button should either cause the cursor to move to "END" or else end input.

III. Basic Operation of the Controls Within the Game

While the guidelines below are only examples, the operation of the controls in the game should not differ greatly from other games. Furthermore, it is desirable that the user be able to select the functions of the controls. (Refer to the options screen.)

1. General control functions

START button: Should not be used for anything other than starting the game and pausing the game, as a general rule.

Direction buttons: Used primarily to select a direction.

Button A: Used primarily for special functions and operations that are not performed often.

Button B: Used primarily for "negative" uses, such as cancelling an action.

Button C: Used primarily for "positive" uses, such as electing an action.

2. Games requiring rapid action, shooting, etc.

* Two actions

Button A: Jump/shoot
 Button B: Shoot/main shot
 Button C: Jump/subshot

* Three actions

Button A: Punch
 Button B: Kick
 Button C: Jump

3. Slower games, such as role-playing games, simulations, adventure games, etc.

* Two actions

Button A: Make decision/open window
 Button B: Cancel
 Button C: Make decision/open window

* Three actions

Button A: Examine/special function

Button B: Cancel

Button C: Make decision/open window

IV. Terminology

1. In order to avoid confusion, do not use the same name twice in one game.

Ex.: There should not be an item labelled "tournament" under "tournament mode."

2. Display of "Units (Lives) Remaining":

This count should not include the current unit being used.

Ex.: If "2" is displayed for "units remaining," this means that there are two units left in addition to the current unit being used. In other words, if the game will end when the current unit is lost, the "units remaining" display should indicate a "0" (zero).

BACK-UP RAM

Points to Be Strictly Observed

I. Consistent Terminology

1. The backup RAM built into the SEGA-CD unit: Internal backup RAM
A dedicated backup cartridge sold separately: Backup RAM cartridge

Use the above terms correctly and consistently in the descriptions in the game and in the user's manual.

II. Important Notes Concerning the Use of Backup RAM

1. Always use the BACKUP RAM BIOS whenever accessing the internal backup RAM or a backup RAM cartridge.
2. When the game starts, initialization of the backup RAM should be confirmed; if the backup RAM has not been initialized, the user should be informed so that he may initialize the backup RAM via the OPTION command on the control screen. (An alternative is to inquire whether the backup RAM should be initialized or not and then initialize the backup RAM in the game program.)
3. In order to avoid cases where insufficient available space in the backup RAM makes it impossible to save a game while it is in progress, always check the amount of available space when the game starts; if a lack of available space makes saving the game impossible, inform the user.
4. The file name under which game positions are saved is controlled by SEGA (so that the same file is not used in two different games). Therefore, when more than one save is made for a single game, the first eight characters of the file name should be the same.

Ex.: In the case of Phantasy Star X *three saves are required*:

First save: PS_SCENE_00

Second save: PS_SCENE_01

Third save: PS_SCENE_02

The first 8 characters are shared. Only the last three characters differ.

5. Only numerals, capital letters and the underscore mark (i.e., 0-9, A-Z, _) can be used in file names. The first character can not be a numeral, however.

6. File names must be eleven characters long. If the file name is less than eleven characters, pad it with underscores so that it does contain eleven characters.
7. If the amount of data to be saved is less than \$20 bytes, help to conserve RAM space through measures such as saving more than one group of data together.
8. During a game, it should be up to the application whether to save data to the internal backup RAM or a backup RAM cartridge.
9. Do not format internal backup RAM or backup RAM cartridges with anything other than SEGA_CD_ROM format.

III. Consistent Messages

1. Messages used during a game in conjunction with backups should be as follows:

*Format error: "Internal backup RAM (Backup RAM cartridge) is unusable"

*Load error: "Data loading error"

*Save/verify error: "Data could not be written to internal backup RAM (backup RAM cartridge)."

When a load error, etc., occurs, do not use a message (such as "RAM is damaged") that will mislead the user into thinking the hardware has malfunctioned.

IV. Problems of Back-Up RAM

Two files of the same name can't exist in the Internal Back-up RAM and Back-up RAM cartridge.

If you make two of the same files, the following problems will occur.

If there is only one SEGA-CD and one BACK-UP RAM cartridge:

1. User A saves data in software.
(In this case data will be automatically saved in Internal Back-up RAM.)
2. Copy the User A's data into Back-up RAM cartridge.

3. User B plays same software and saves data. The data of User B will be saved in Internal Back-up RAM, data of User A will be overwritten.
4. When User A again tries to play, the data which is saved in the Back-up RAM cartridge has to be copied into Internal Back-up RAM, however, it can't make a copy due to the User B data which exists.
5. If User A wants to play, he needs to either delete the data of User B or copy it into the Back-up RAM cartridge.
6. However, User A can't be copied into Back-up RAM cartridge if a file of same name (the data of User A) is existing in the cartridge.

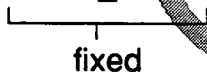
Therefore, in the above case, if the User B data is not deleted, User A can't play again.

The following systems for future applications are recommended.

1. Make application have several back-up files names.

Ex.: Change only the last 3 characters since 8 out of 11 letters have to be standardized according to the regulation.

If the file name of GAME_DAT-00 existing in Back up RAM.



fixed

Let user to select the OVERWRITE and NEW WRITE command.
If NEW WRITE command is selected, data will be saved by the name of GAME_DAT-01 automatically. (Of course, the number of possible files is limited.)

2. Make applications able to access each RAM directly.

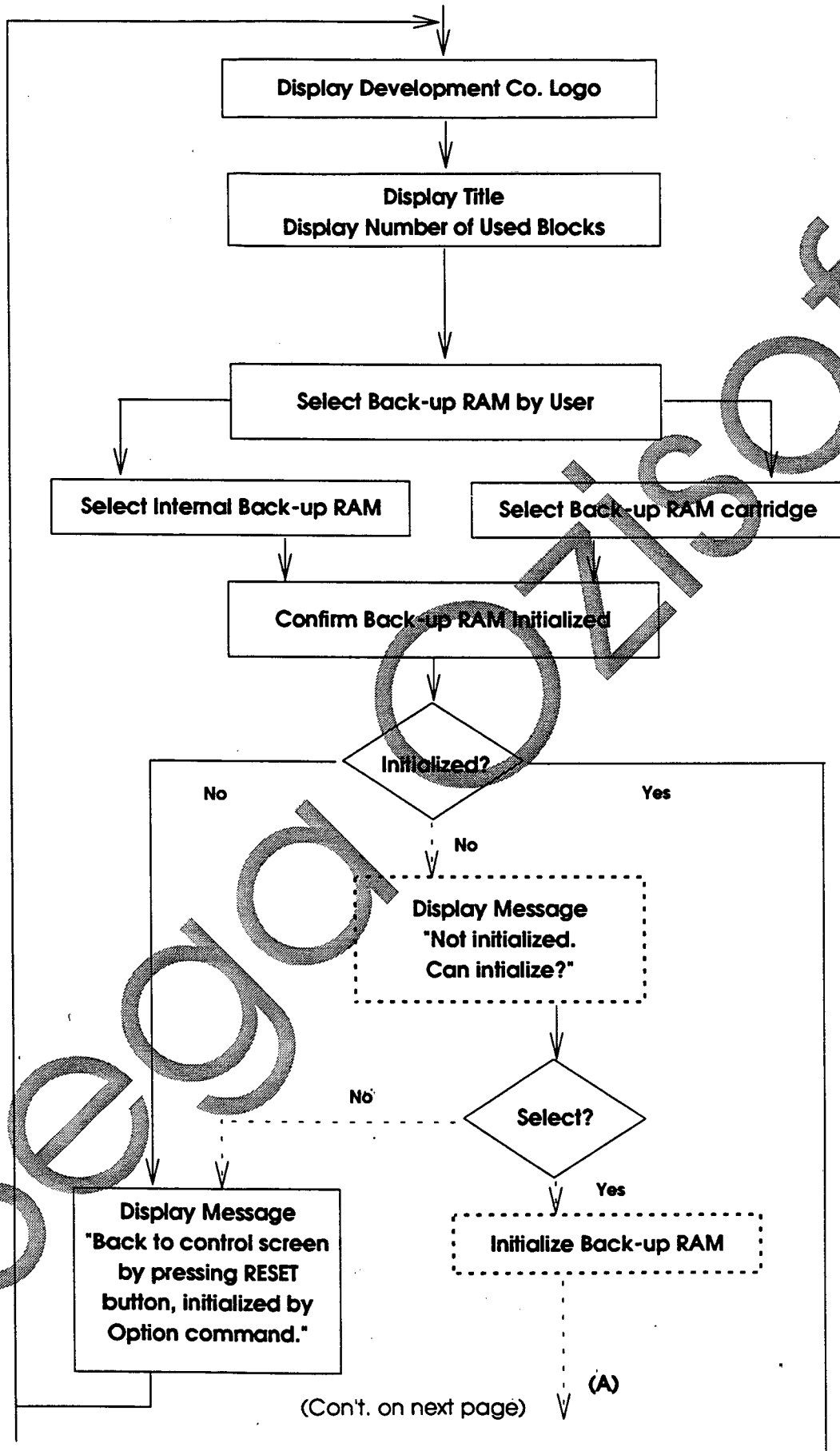
Ex.: In the case of data loading and data saving, let the user be able to select accessing Internal Back-up RAM or accessing Back-up RAM cartridge.

3. Make it possible to rename within the back-up file regulation under the application.

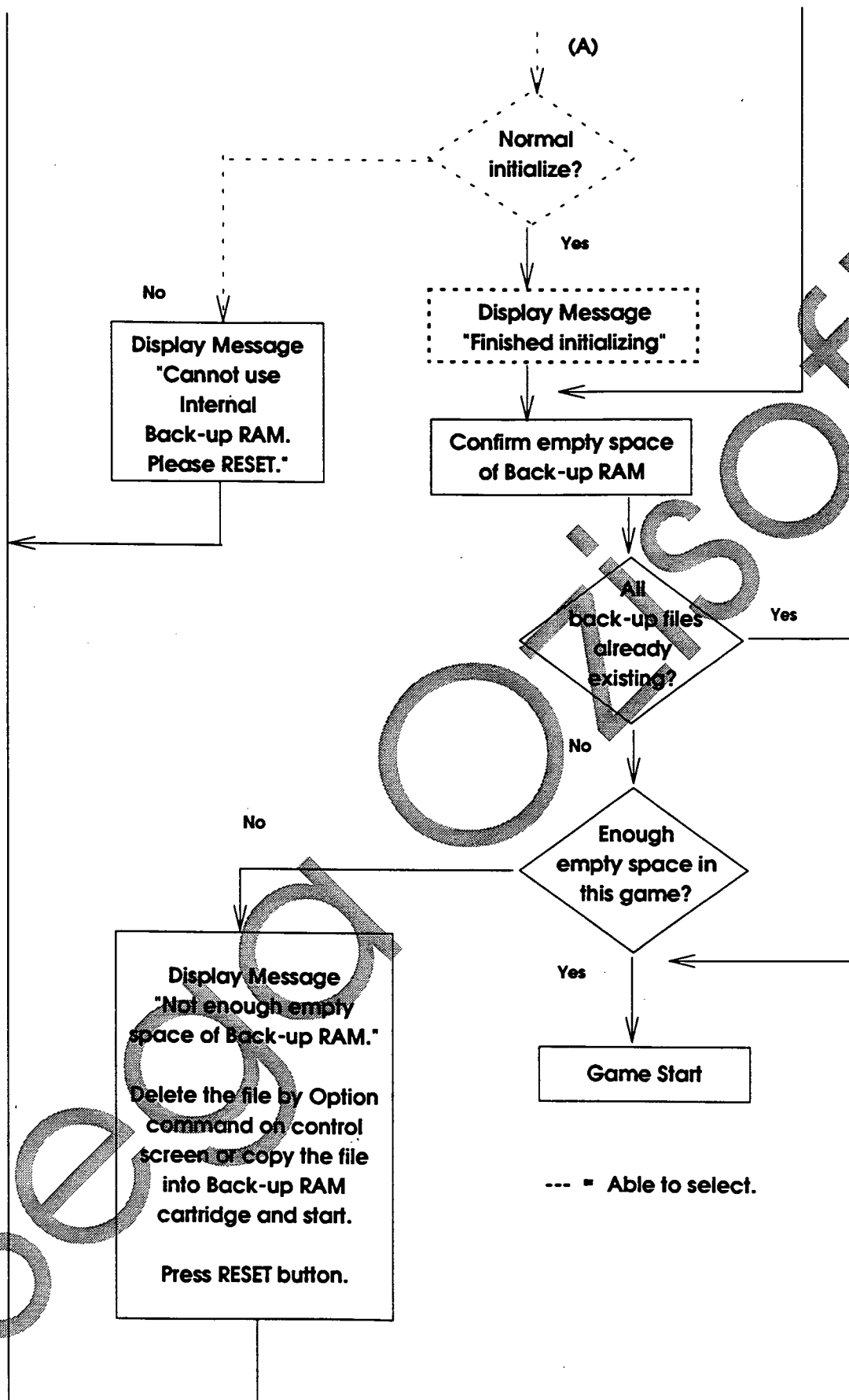
Ex.: Change only the last two of eleven letters in the game.
ABCDEFGG-00 ----> ABCDEFG-02

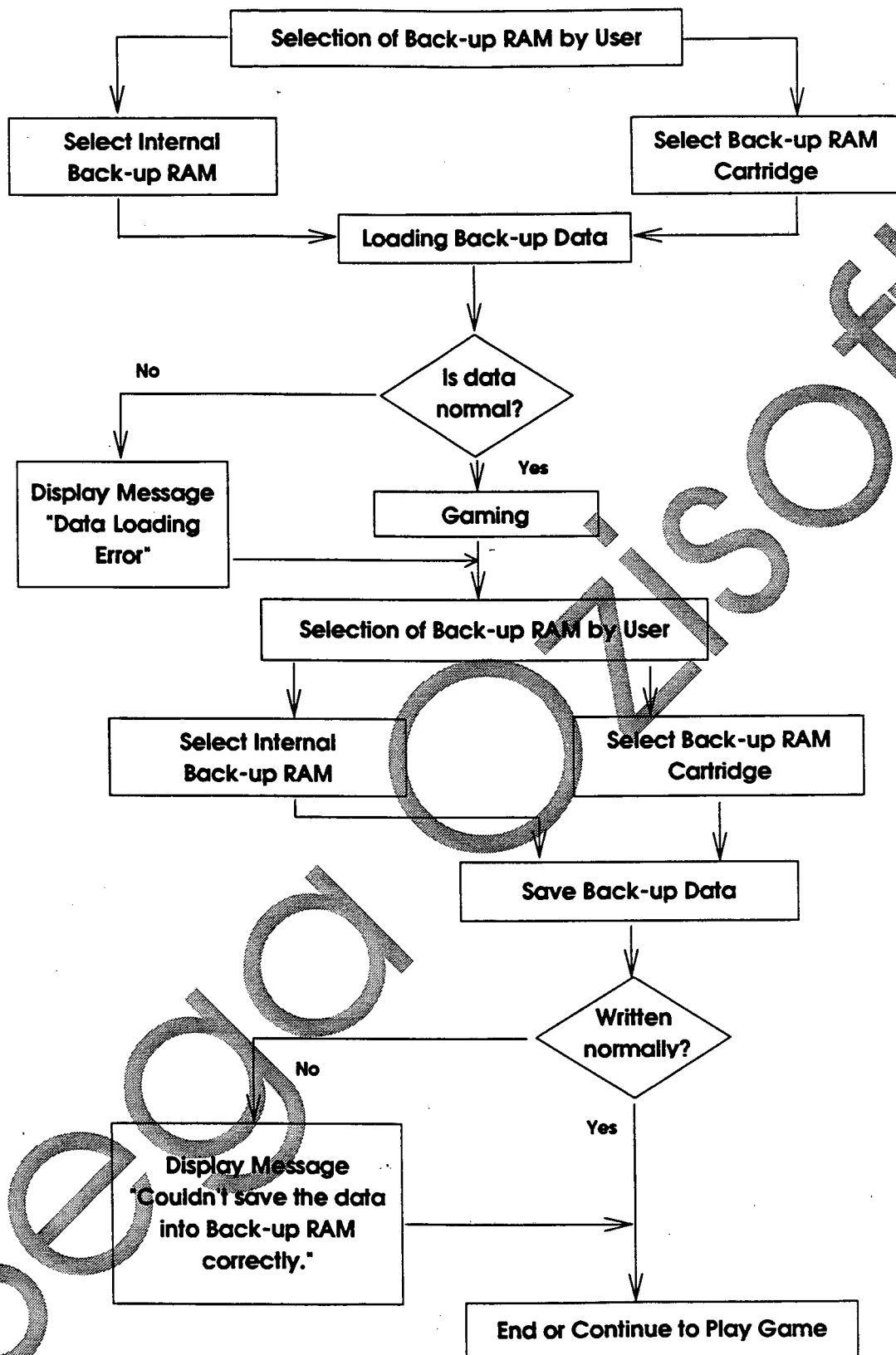
If we can adhere to the above items we can create the most user-friendly software for the user.

V. Flow Chart Sample on Back-up RAM Usage



(Con't. on next page)





At this point, let users know that it's possible to continue to play the game, however, they cannot save the data after this game, or it's possible to skip to the control screen by "Press start button, system will go back to the control screen."



SEGA OF AMERICA, INC.
Consumer Products Division

MEMORANDUM

To: All Sega-CD Software Developers
From: Jim Huether *J.H.*
Subject: Preliminary Sega-CD Software Standards
Date: May 6, 1992

Attached is a preliminary description of the Sega-CD Software Standards for the U.S.
This will be a growing document and is subject to change.

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Sega-CD Software Standards Distribution List

Absolute Entertainment, Inc.
Acclaim Entertainment Inc.
Acme Interactive
Blue Sky Productions
Bright Star Technology, Inc.
CD Game Arts
Cross Products
Dynamix/Sierra On-Line
Fathom Pictures, Inc.
GTE ImagiTrek
ICOM Simulations, Inc.
Infogrames
Interactive Productions
Interactive Designs
Interactive Technologies Corp.
Leland Corporation
Livesay Technologies Inc.
Lucasfilm Games
Maxis Software
Meridian Data, Inc.
MicroProse
Mirrorsoft
The Multimedia Corporation
Novalogic Inc.
Novotrade International
NuRomantic Productions
Rare Coin-It, Inc.
Renovation Products Inc.
Sector Technology
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Sierra On-Line
Burt Sloane
Smart TV
The Software Toolworks
Sphere, Inc.
Tengen
Virgin Games
Visions Unlimited
Warner New Media
Western Technologies, Inc.

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OLD
Soft. Std

ABOUT BACK-UP RAM

-OPERATION NOTE-

I. STANDARDIZATION OF TERMINOLOGY

1. Internal Back-up RAM in MEGA CD - - - Internal Back-up RAM
- Optional Back-up dedicated cartridge. - - - Back-up RAM cartridge

Please standardize the above terminology in messages of games and manuals.

II. INSTRUCTIONS FOR USING BACK-UP RAM

1. When accessing Internal Back up RAM or Back up RAM cartridge, you must use BACK-UP RAM BIOS.
2. Confirm that the Back-up RAM has been initialized before starting the game. If it is not initialized, use the OPTION command of the control screen to let the users initialize (or make sure to make it initialize, and then performing initialization in game program is also ok.)
3. Confirm the empty memory space before starting the game to avoid the situation where necessary data can't be saved because of insufficient back-up RAM. If it is impossible to save data during a game, the user will be notified.
4. Sega manages the saving file's names (to avoid using the same file name for different games.) Therefore, standardize the first 8 characters if several files need to be saved in one game.

Ex. 3 different files need to be saved in Fantasy Star X.

1st. P S S C E N E - 0 0
2nd. P S S C E N E - 0 1
3rd. P S S C E N E - 0 2

8 SAME
LETTERS

CHANGE THIS PART ONLY

5. Only numbers(0-9), capitalized English(A-Z), under score are available for a file name. The first letter can't be a number.
6. 11 characters must be used for each file. If it is less than 11 letters, use under score(-) to make it 11.
7. If the saving data is less than \$20 bytes, several different sets of data can be saved together to help save RAM consumption.
8. Format the Internal Back-up RAM and Back-up RAM cartridges only with the SEGA CD-ROM method.
9. Display the necessary block numbers on the screen for saving when starting up the application (for users to know which data should be deleted).

III. STANDARDIZATION OF MESSAGES

1. Standardize the back up related messages in a game as follows,

If a format error happens —Internal Back-up RAM (Back-up RAM cartridge) can't be used.

If a loading error happens——Data loading error.

If a saving verification error occurs——Couldnot write into Internal back up RAM (Back up RAM cartridge)

IV. PROBLEM OF BACK-UP RAM

Two same files cannot exist in the Internal Back up RAM and Back-up RAM cartridge.

In you make 2 of the same files, the following problems will occur.

If there is only one MEGA-CD and one BACK-UP RAM cartridge:

1. User A saves data in software.
(In this case data will be automatically saved in Internal Back-up RAM).
2. Copy the User A's data into Back-up RAM cartridge.
3. User B plays same software and saves data.
The data of user B will be saved in Internal Back-up RAM, data of user A will be over written.
4. When user A again tries to play, the data which is saved in Back up RAM cartridge has to be copied into Internal Back-up RAM, however, it can't make a copy due to the user B data which exists.
5. If user A wants to play, he needs to either delete the data of user B or copy it into the Back up RAM cartridge.
6. However, user A cant' be copied into Back-up RAM cartridge if a file of same name (the data of user A) is existing in the cartridge.

Therefore, in the above case, if the user B data is not deleted, user A can't play again.

The following systems for future applications are recommended.

1. Make application have several back up file names.

Ex. Change only the last 3 charactors since 8 out of 11 letters have to be standardize according to the regulation.

If the file name of GAME DAT-00 exists in Back up RAM.

fixed name

Let the user select the OVERWRITE and NEW WRITE command.

If NEW WRITE command is selected, data will be saved by the name of GAME-DATA-01 automatically. (of course the number of possible saving files is limited).

2. Make applications able to access each RAM directly.

Ex. In the case of data loading and data saving, let the user be able to select accessing Internal Back-up RAM or accessing Back-up RAM cartridge.

3. Make it able to re-name within the back up file regulation under the application.

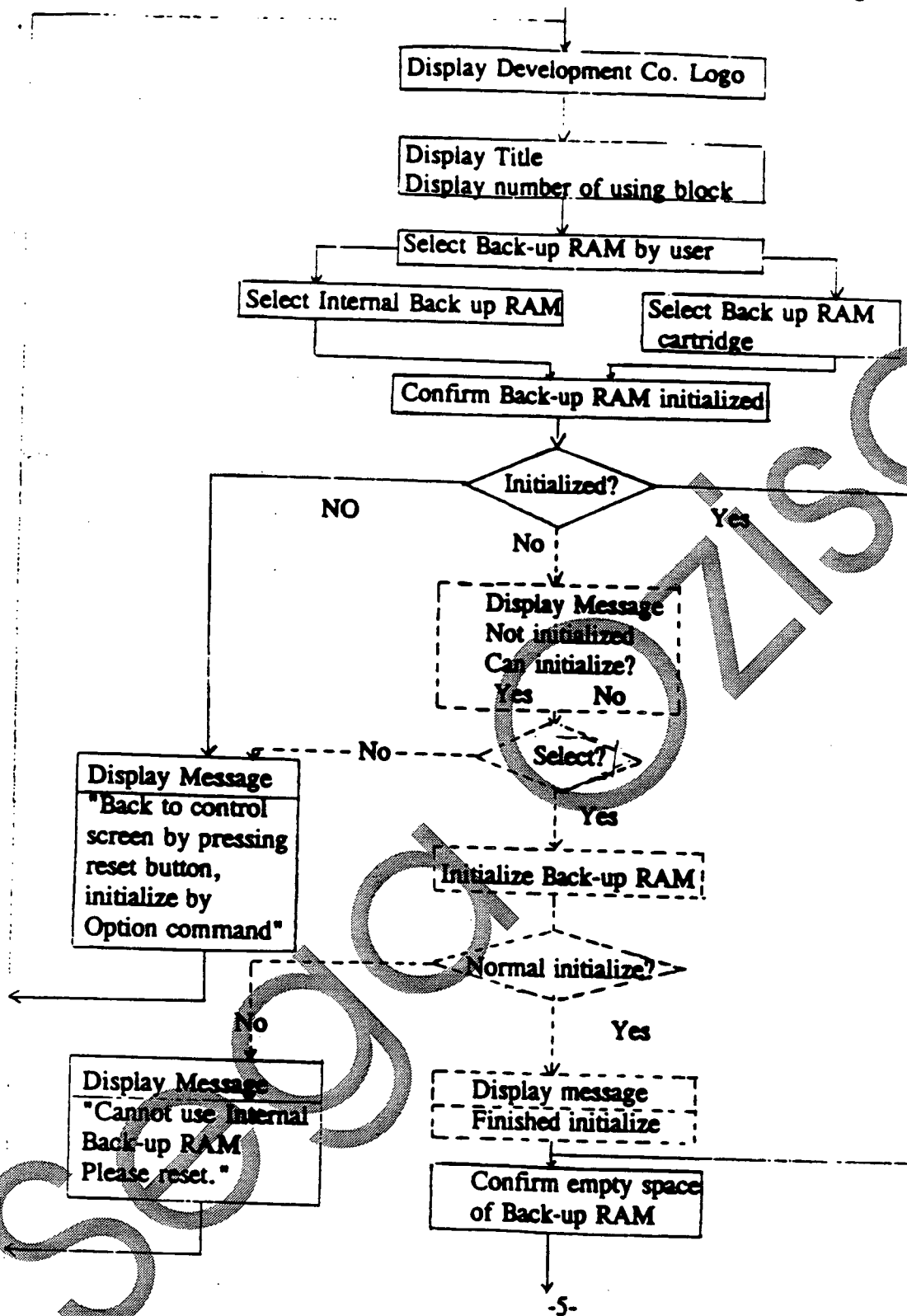
Ex. Change only the last two out of the eleven letters in the game.
ABCDEFGG-00 ----> ABCDEFG-02

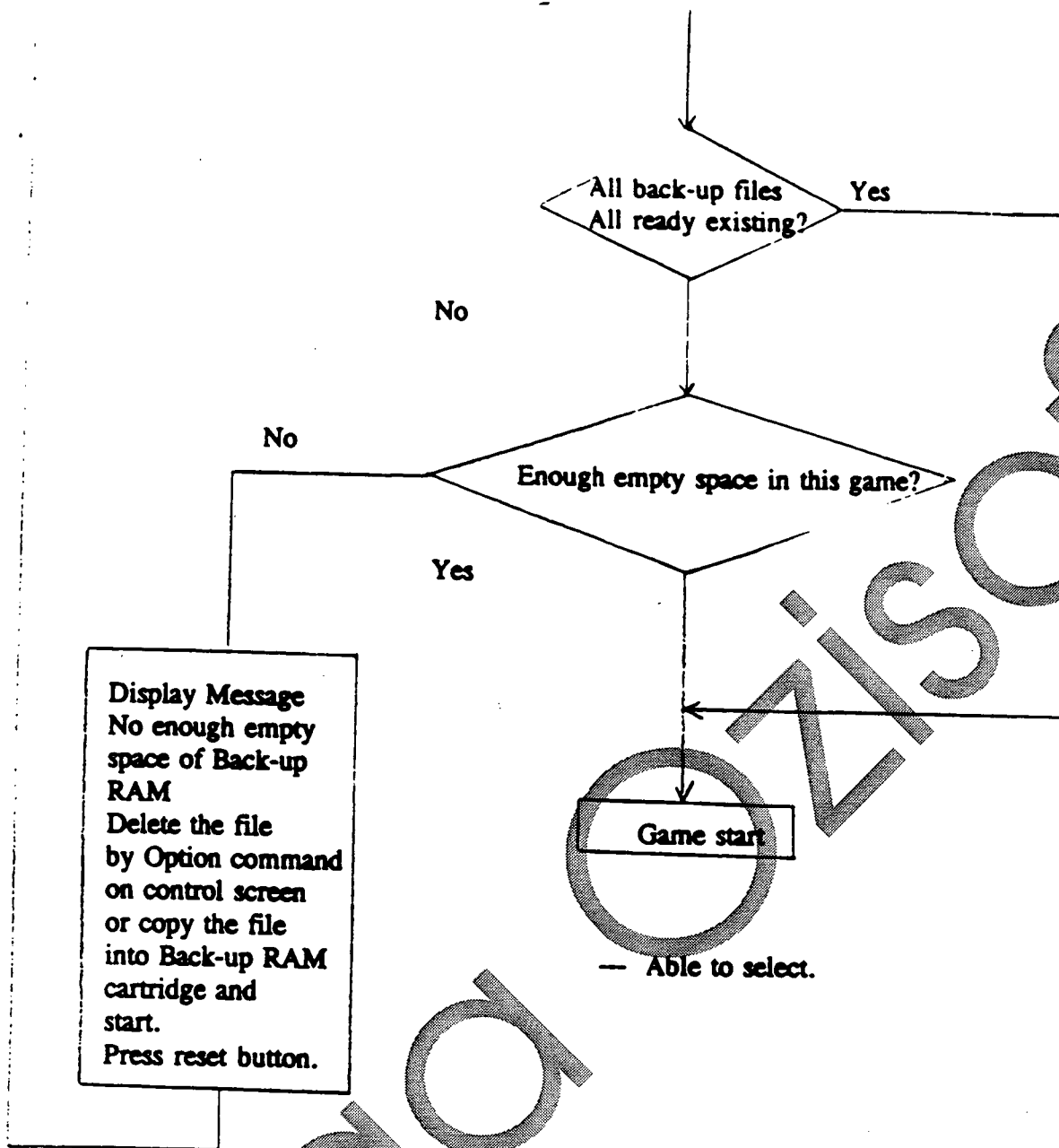
If we can cope with the above items we can create the most user-friendly software for user.

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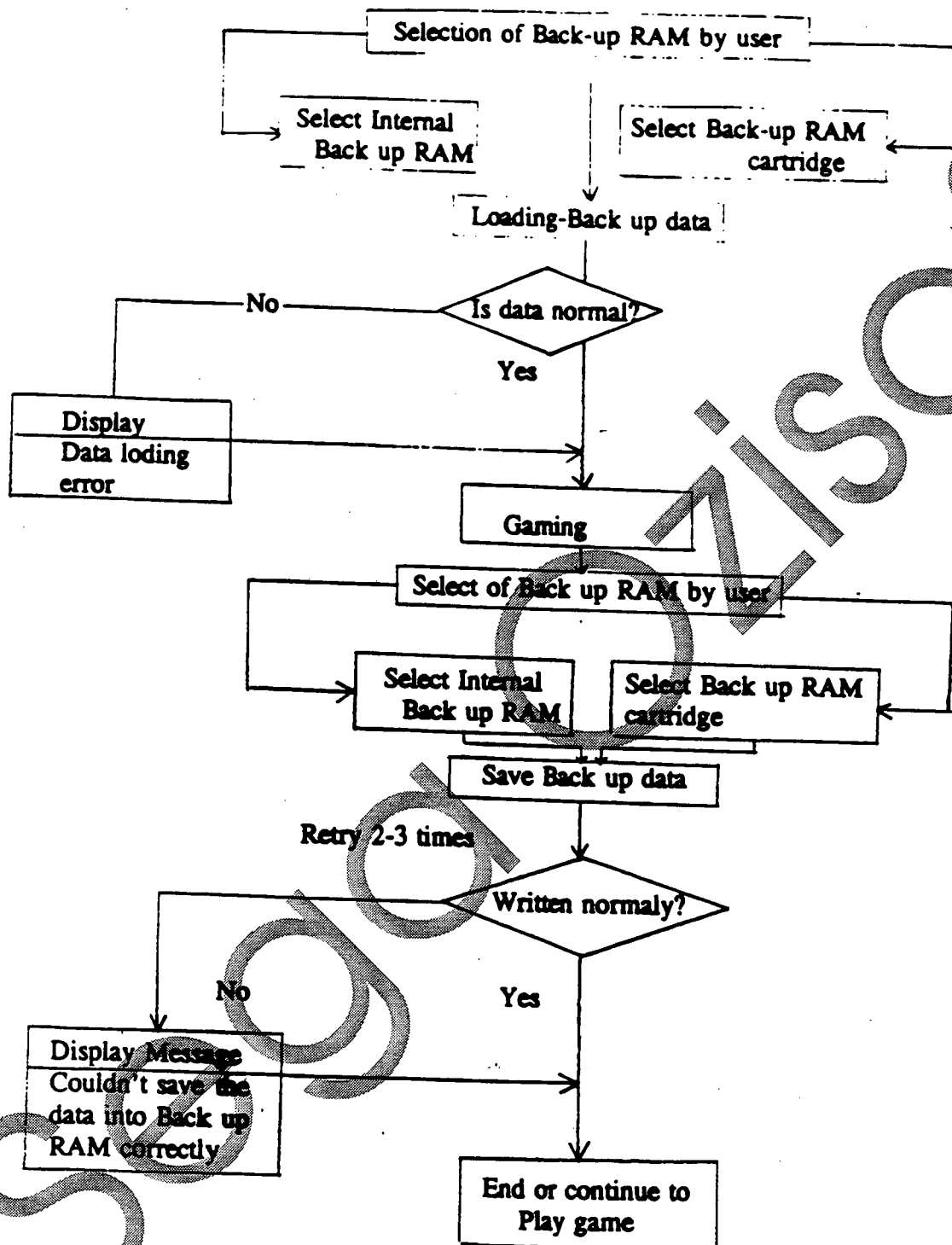
V.

The flow chart sample on Back-up RAM usage.





— Able to select.



At this point, let users to know that it's possible to continue to play the game, however, cannot save the data after this game, or it possible to skip to the control screen as " Press start button, system will go back to the control screen"

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Mega-CD internal back-up RAM on development Board

Internal back-up RAM write access is protected after power on.
We cannot initialize back-up RAM with option screen command.

How to release the protect:

\$800000 Bit 7 6 5 4 3 2 1 0

0:Disable (Protected)
1:Enable (Released)

Notes:

If you call protected RAM with BIOS:

1.BRAMINIT

BIOS returns there is no RAM when unformatted.

2.BRAMFORMAT

Error will be returned.

3.BRAMVERIFY

If there is no same file, miss much will be returned.

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