Sega Dreamcast

Sega Dreamcast Software Creation Standards

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Preface

The standards documented in this guide were developed to provide users of the Sega Dreamcast system with a uniform, easy-to-use interface for all Sega Dreamcast applications. Requiring and recommending certain non-gameplay interface standards can give the user an important sense of immediate familiarity and comfort with your application's interface. We have designed these Software Creation Standards to provide as much flexibility as possible, making it possible for you to create titles that are easy to use without sacrificing your own creativity or your ability to be innovative.

P.1 Indicators

There are four indicators of standards documented in this guide: *Required*, *Recommended*, *Standardized*, and *Prohibited*.

Required

Required items must be strictly complied with during the creation of Sega Dreamcast titles.

Violating a required standard constitutes cause for Sega to refuse to accept a titled for ROM release.

Recommended

Recommended items are suggested to enhance user-friendliness.

Standardized

The *Standardized* indicator means that a game is based on past games. Refer to standardized items if you experience problems.

Prohibited

A *prohibited* item is one that cannot be used in an application. The reason for the prohibition is provided at the same time as the prohibition.

The *Unmarked*, *Required*, *Recommended*, and *Standardized* indicators apply both to the Sega Brand trademark (Sega Manufacturing or Sales trademark) and to third-party trademarks.

P.2 Use of the Sega Brand

Sega Brand (the Sega Manufacturing or Sales trademark) is an indicator that is specific to Sega products. Manufacturers of products with third-party trademarks are under no obligation to apply the same restrictions specified for "Sega Brand" items, but to avoid potential problems, it is suggested that "Sega Brand" restrictions also be followed by third-party manufacturers.

When you develop versions of applications that are not intended to be commercially sold—such as test versions of products—there are test version development standards that must be adhered to. Please keep these test standards in view and refer to them while developing titles.

Note: Sections labeled "Required" are (as their name states) mandatory requirements, and non-compliance with them will be regarded as A-level Bugs. Non-compliance with sections labeled "Recommended" will be regarded as B-level Bugs.

Chapter 1

Controller Functions

Required

Use the **A** button to *Accept* (perform) an operation and the **B** button to *Cancel* (reject) an operation.

Allocation of "Accept" and "Cancel" to the **A** and **B** buttons, respectively, is always assumed to be the default configuration. However, if a user chooses to redefine the uses of these two buttons using a configuration menu, it is permissible to allow the buttons to be redefined as requested.

Recommended

Allocate the **A** and **B** buttons first, and then the **X** and **Y** buttons.

Recommended

Set buttons to act when pressed instead of when released, except for special operations, such as rapid fire in a shooting game.

1.1 Various Controller Exceptions

Recommended

In virtual arcade games, settings for the **A** and **B** buttons and the **START** button should conform to the arcade settings if the original button settings still exist and a special controller is being used. (See "Pause Operation" on page 3–43.)

Note: For standard controller operations, observe their respective rules.

1.2 Cancel Operations

Recommended

In an application that uses a large number of spoken or displayed messages, a Cancel button can be used to speed up message processing.

Recommended

An application that uses voice can be supplied with a Voice Cancel button.

Recommended

An application that includes demo scenes other than in title loops (that is, demos that use movies or polygons) can be equipped with a Demo Cancel button. (This exception does not apply when demos are required to advance the game.)

Standardized

The **A** button causes rapid message processing, the **B** button cancels voice and rapid message sending, and the **START** button cancels movies.

1.3 Analog Direction Keys and Digital Direction Buttons

Standardized

Even in games that mainly make use of the analog keys, the player should be allowed to make digital selections, such as selecting a mode, using the digital direction buttons.

Chapter 2

Controllers and Control Ports

The Sega Dreamcast controller is not identified by an ID. Instead, controller ownership information is returned together with a key (or button) signal that specifies whether the signal is coming from a keyboard (system), a gun (system), or a control (system).

By using this kind of controller identification, instead of using a control-by-ID system, Sega is addressing account compatibility issues that might arise with the appearance of new kinds of controllers. The system used by Sega Dreamcast ensures that ways can be found to support new types of controllers as well as the controllers used in today's titles.

In this chapter, a *compatible controller* is one that has the necessary keys (or buttons) for the operation of current applications.

Note: The first part of this chapter focuses on controller configurations for single-controller, single-player games. For information on controller configurations of single-player, multi-controller games and multi-player games, see Single-Player and Multi-Player Games on page 3–5 .

2.1 Minimum Controller Functions for a Sega Dreamcast Title

The guaranteed minimal controller functions for a Sega Dreamcast title are:

- The **A/B** and **START** buttons
- The ten digital keys.

Functions not guaranteed to be present are:

- The **X/Y** buttons of the standard controller.
- The **L/R** trigger.T
- The ten analog keys.

Settings for the minimal keys or buttons that are required to operate an application with the standard controller (see preceding paragraphs) are stored in `IP.BIN` as 16-bit data. (This group of keys includes **A**, **B**, **X**, **Y**, and **START** for soft reset.)

There is no specification that can be used to assign a key on the keyboard to an existing control; for example it is not possible to reassign the setting of the standard controller **A** button to the **Space Bar** on a keyboard. Consequently, operations using a hardware keyboard are limited to key input, with other operations performed by other controllers separately connected.

When more key combinations are offered than the required minimum keys provide, the additional settings should be based on the contents of the initial settings.

The following are controller-related standards for Sega Dreamcast titles:

Required

It is not permissible for a game to stop when an incompatible controller is inserted in the control port.

Under past development standards, applications were not allowed to start or operate when an incompatible controller was used. This restriction has now been relaxed. If an application does not stop and continued operation is possible when a nonstandard controller is inserted, continued operation is allowed. However, if a game allows the use of nonstandard controllers, the application's instruction manual must warn that "operation with incompatible controllers is not guaranteed."

Recommended

If a game makes it possible to operate the Sega Dreamcast with an incompatible controller, buttons or functions on the controller must be equipped with enough keys (or buttons) to ensure correct operation.

2.2 Single-Player and Multi-Player Games

The preceding sections focus on controller configurations for single-controller, single-player games. This section describes controller configurations for both single-player and multi-player games.

2.2.1 Single-User and Multi-User Applications

The standards described in this section apply to games that can be played by one or more persons.

Required

In games that can be played by only one person, as well as in multi-player games, it must be possible to start and operate the game from any of the four front-panel ports (**A** through **D**) to which a compatible controller is connected.

2.2.1.1 Example

The default Sega Dreamcast browser assumes it is possible to create a screen display using either the standard controller or character input from a keyboard. Note that Sega does not impose any standards regarding which port should be used for the standard controller and which port should be used for a hardware keyboard. For example, there is no standard mandating that a standard controller should be connected to port **A** or that a keyboard, if used, should be connected to port **D**.

2.2.2 Multi-Player Games

This subsection describes the standards for a game that can have more than one player.

Recommended

When a game has more than one player, the general rule is that Main Unit port A should be used for player 1, port B for player 2, and so on. In a multi-player, multi-controller game, the first controller should be plugged into the first port, the second controller should be plugged into the second port, and so on, from port **A** to port **D**.

Required

Unless an expansion socket is used (as described in Chapter 12, "Pause,") the number of ports from which games can be started or operated must not exceed the number of users playing a game. (When an expansion socket is used, it doesn't matter if the ports being used exceed the number of players. Even if

you use a memory card to save a game that is being played by only one or two people, it won't cause any problems if an unused expansion socket happens to be plugged in.)

Here are examples of some configurations for multi-player games:

2.2.2.1 Example 1

In a fighting game (a type of game normally designed for either one or two players), it should be possible to connect standard controllers to ports **A** and **B**. Starting or playing from port **D** should not be possible.

2.2.2.2 Example 2

In a four-player fighting game, it should be possible to connect standard controllers to all four ports on the front of the Sega Dreamcast console. Consequently, it should be possible to start and play from all ports with compatible controllers connected.

2.2.3 Checking Control Ports in Mid-Play

This subsection tells what to do when a controller is added after power is turned on.

Required

Even though a compatible controller is not connected to a port when power is turned on, if it is connected before a game begins, it must be properly recognized and enabled for start and operation. So your application must test the ports frequently in the Title Loop before starting a game.

2.2.4 Removing a Controller

This subsection explains what to do when a controller is removed after power is turned on

Recommended

Generally speaking, when a controller is removed from an active port after an application has started (or when a memory card is inserted — see note, below), the application should insert a pause and display an onscreen warning such as, "The controller has been removed or a memory card is being recognized." There are situations, however, in which such a warning cannot be displayed. For example, it might not be possible to display a warning:

- In applications that don't support the creation of pauses using the Pause Function.
- On screens with specs that don't allow pauses. (See Chapter 12, "Pause.")
- When pauses cannot be inserted for because of other technical limitations.

Note: An onscreen warning should also be displayed when a memory card is inserted while an application is executing. It takes the Sega Dreamcast a minimum of about 0.5 seconds to recognize a memory card, and it can take up to about 3 seconds if the Visual Memory battery is depleted. It's important to remember that an application cannot determine whether a controller has been disconnected or whether a VMU has been inserted, so your caution message should not make the user think that a controller has malfunctioned when the real situation is that a memory card has been inserted. (It isn't necessary to display a warning when a VMU is removed, because removal of a VMU doesn't cause any side effects that the user is likely to notice.)

2.2.5 When a Controller is Removed and then Reconnected to the Same Port

The following standards explain what to do when a controller is removed and then reconnected to the same port.

Recommended

If a controller is removed from a port that has been used and a compatible controller is reconnected to the same port, input must be resumed as soon as the second controller is connected.

Reconnecting a different controller is permitted, as long as both controllers are Sega Dreamcast-compatible.

If a controller is equipped with external memory, both the controller and its external memory must be recognized. (Refer to Chapter 15, "Backup.")

2.2.6 Reconnecting a Controller to a Different Port During the Game

The standards in this subsection tell what an application should when a player reconnects a controller to a port other than its original port during the playing of a game.

Required

In an application in which single player uses a single controller, play is not resumed.

Recommended

In the case of single-user, multi-controller game, input should be resumed even on a different port, as long as the controller is compatible.

2.3 Peripheral Support

Follow the guidelines in Chapter 18, *Development Standards for Peripherals*, when developing applications with supported peripherals.

Chapter 3

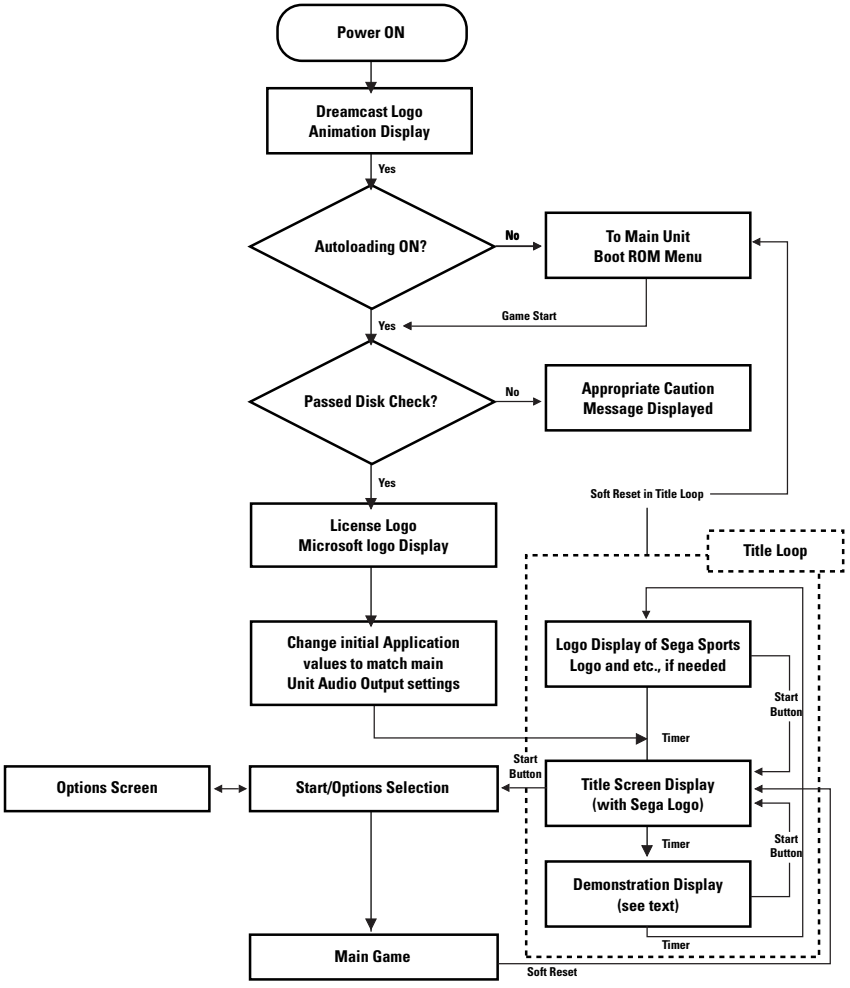
Sequences Before A Game Begins

The Sega Dreamcast Boot ROM includes an "Auto Loading" setting, which when switched ON (the default), bypasses the Boot ROM menu to perform a Disc Check (to check whether a disc is a special Sega Dreamcast disc).

An "Auto Loading" setting is applied even when Auto Loading is switched OFF, as long as the disc lid is closed at power-on.

Figure 1 on page 3–10 shows a standard sequence from a Sega brand example.

Figure: 1 Before Game Starts



3.1 Title Display and Demo

Note: The demo follows the title screen, but often a demo uses a movie such as original animation before the title. In that case, refer to Chapter 5.2.2, and if applicable, 5.2.1, in that order.

For information about the title screen and logo display sequence in a title loop, refer to Chapter 5, *Logo*.

When a soft reset is used to bring up the Boot ROM menu, Autoloading does not execute even when it is enabled (ON), so it must wait for menu screen operations.

When Autoloading is ON, there is no way to force a jump (by any button combination) to the Boot ROM menu after a disc is inserted and the CD door closed, without executing game start.

3.2 Audio Output Settings Upon Loading an Application

Required

Immediately upon loading an application (before the Title Loop starts), the stereo/monaural output setting should be changed to match the Boot ROM settings of the Main Unit.

Even if sound output is not listed in Chapter 9, *Options*, an application internally determines if it is stereo or monaural, so the settings must be changed to correspond to the Main Unit Boot ROM settings on the application side.

Currently, the stereo/monaural output settings are saved on the Main Unit, and should not be saved under any circumstances to the memory card. Refer to Chapter 9.2, *Storing Option Settings*, for more details.

3.3 Application Loading (1ST_READ.BIN)

There is no specified maximum loading time, but application loading should be as fast as possible.

Files used in the Title Screen should not be unreasonably dispersed, because of disc access efficiency. Otherwise, the smaller the file size, the better, in order to shorten load time.

Chapter 4 Soft Reset

4.1 Soft Reset

The Sega Dreamcast Main Unit does not include a hardware **RESET** button, so a player can reset the console only by using a soft reset function or by turning the power off and on. The conditions in section 4.1.1 should therefore be carefully observed.

4.1.1 Soft Reset Timing

Required

When the disc lid is open, "Soft Reset" must be enabled, except in cases of special processing such as executing operations to save or load the memory card.

The recommended item in Chapter 17.3.1, *Soft Reset from the disc Switching Screen*, deals with the special processes mentioned above.

4.1.2 Soft Reset Button Operation

Required

With a few exceptions, a soft reset must occur when the **START** Button is pressed while the **A** + **B** + **X** +**Y** buttons are all held down together. Exceptions include racing controllers, gun controllers and hardware keyboards (for which this operation is impossible), and certain controllers for which such operation is difficult. Note that if you cannot make soft reset possible using the operation described in this stan-

dard, you must make it possible using some other kind of operation, as explained under the next "Required" subheading.

Recommended

With the exceptions noted in the preceding paragraph, a soft reset must also occur if any other buttons are pressed while the **A** + **B** + **X** + **Y** buttons are all held down when the **START** button is pressed.

Required

For controllers such as racing controllers, gun controllers and the keyboard (for which the soft reset operation of pressing the **A** + **B** + **X** + **Y** buttons and the **START** button simultaneously is difficult or impossible), applications must make soft resets possible using the method outlined in Chapter 18, *Development Standards for Peripherals,* or through either a software keyboard or another procedure displayed in a separate menu.

When soft reset is supported using a procedure described in a separate menu, your application is not required to display that menu at all times if that would adversely affect your game. Nonetheless, the soft reset option should be clearly displayed on a suitable menu and made selectable for the user.

To make the Soft Reset option selectable, so that the user can jump to it from the title screen and the Main Unit Boot ROM menu, refer to Chapter 4, *Soft Reset Execution*.

Note: It is important to note that all applications must support soft reset using one of the procedures described in this subsection. This requirement applies to every application, even one in which all buttons (including the **START** button) are independent during game play, and in which it is possible to use multiple buttons simultaneously.

4.1.3 Soft Reset and Controllers (Control Ports)

Required

Soft Reset must be possible from all controllers (ports) in use.

As explained in Chapter 2, *Single User, Single Controller Applications*, operation of an application is disabled for controllers connected to ports that are not being used by the application, so as a matter of course, soft reset is also disabled for those controllers.

4.1.4 Soft Reset Execution

If Item No. 1 or Item No. 2, below, applies to the disc on which you distribute your game, please refer to the appropriate section.

1. *The disc contains a single application*: See section 4.1.4.1, *Simple Application Case*, later in this Chapter.
2. *The disc contains multiple applications on a sampler disc*: See Heading 4.1.4.2, *Sampler disc System Case*.

4.1.4.1 Simple Application Case

Required

Soft reset from the Title Loop must jump to the Main Unit Boot ROM Menu.

Required

Soft reset from the main game (after the application is started) must jump to the Title Screen.

The process for determining whether the main game has started is described in Chapter 6, *Title Screen*.

4.1.4.2 Sampler Disc System Case

Recommended

Soft reset from within each game should cause a jump to the Title Screen of the corresponding main game.

Recommended

Soft reset from the Title Loop of any title should cause a jump to the base Title Screen.

Recommended

Soft reset from the base Title Screen Title Loop should cause a jump to the Main Unit Boot ROM Menu screen.

If the preceding recommendations cannot be followed (that is, if no base Title Screen exists), follow the soft reset requirement described in section 4.1.4.1, *Simple Application Case* above.

For applications that require more than one disc, refer to Chapter 17, *Changing Discs for Multi-Disc Applications*.

4.2 Processing with the Disc Lid Open

This section explains how to handle processing when the disc lid is opened during the main game on a disc. In Chapter 17, *Changing Discs for Multi-Disc Applications* can be applied when the user opens the disc lid in order to switch discs.

4.2.1 Principles when the Disc Lid is Opened

Required

The Main Unit Boot ROM menu must appear when the Main Unit "OPEN button" is pressed and the disc lid is opened. Please note the alternative cases described in 4.2.2, *Exceptions when the Disc Lid is Open*, 4.2.3, *When the Disc Lid is Opened during Saves*, and 4.2.4, *When File Loading Fails from the Disc,*.

When the disc lid is opened, your application must go to the Main Unit Boot ROM menu within ten seconds.

Recommended

When the disc lid is opened and then closed immediately, and the disc is not accessed, it is difficult to detect that the disc lid has been opened. However, in this case as well, your application should go to the Main Unit Boot ROM menu as quickly as possible.

4.2.2 Exceptions when the Disc Lid is Open

Required

For games with data that require the changing of discs, a manual user mode for opening and closing the disc lid is accommodated, and your application must be designed in such a way that the disc lid can be opened and closed only from this mode.

A warning must be displayed requesting the user to change back to the original game disc when finished with this mode. After the original game disc is inserted, a Disc Check must be carried out. This option is limited to times when it is necessary to change discs for game elements.

Refer to Chapter 17.4, *Switching Discs During Game Play*, for multi-disc applications.

For reasons other than this (for example, to insert another disc as background music), opening the disc lid must be prohibited.

4.2.3 When the Disc Lid is Opened during Saves

Required

When executing saves, do not go to the Main Unit Boot ROM main screen until that save is finished. (This requirement is imposed to avoid the loss of the file being saved). Go to the main screen as soon as the save is finished.

4.2.4 When File Loading Fails from the Disc

Recommended

Do not go to the Main Unit Boot ROM main screen when displaying a message warning the user that a file load error has occurred, as explained in Chapter 16.2, *When File Loading Fails from the Disc*, even if the Main Unit disc lid is opened.

Chapter 5 Logos

When the power to the Sega Dreamcast console is turned on, the Sega Dreamcast animated logo appears, and then a Sega logo is displayed. This second logo is called the *Sega License Logo*. The Sega License Logo must appear on materials manufactured by Sega or sold with permission from Sega.

Microsoft also has a license logo called the Microsoft Logo. In addition, there are other logos designed to show that an application is made by Sega. They are called Sega *Logos*.

Products manufactured by licensees are permitted to display *application logos* (equivalent to the various Sega logos for Sega products). Display of such logos by licensee brands is optional. However, the Sega License Logo must be visible on all Sega and Sega licensee products. On products that are developed using Windows CE for Dreamcast (formerly called “Dragon”), the Microsoft Logo must also be displayed.

5.1 Sega License Logo and Microsoft Logo display

Display of the Sega License Logo and Microsoft Logo (where applicable) cannot be cancelled. Graphics for both these logos are stored in the `IP.BIN` file on the application disc.

To create the `IP.BIN` file, use the `IP MAKER` tool provided by Sega. The `IP MAKER` tool supplies the graphics required to reproduce both the Sega License Logo and the Microsoft Logo.

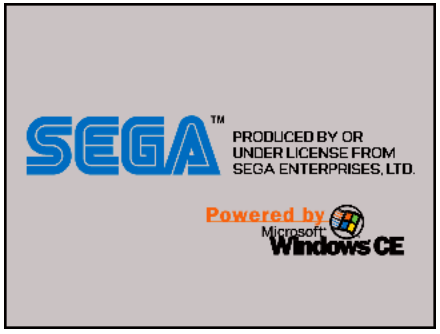
Alteration of the Sega License Logo and/or the Microsoft Logo in any way is prohibited.

5.1.1 Logo Standards for Titles Developed with Windows CE for Sega Dreamcast

Required

As soon as power is turned on, the Sega License Logo display must appear on the screen. In titles developed using Windows CE for Dreamcast, the Microsoft logo must appear along with the Sega License Logo (see the following screen shot). To display these two logos simultaneously, enable both “Sega License Logo” and “Microsoft Logo” on your application disc’s `IP.BIN` file.

Figure: 1 Sega License Logo and Windows Logo on the same screen. (The gray tone in the illustration appears lighter when output to a TV screen.)



5.1.2 Titles Developed without Using Microsoft Windows CE for Dreamcast

In titles that have been developed without the use of Windows CE for Dreamcast, the Sega License Logo must appear on the screen as soon as power is turned on. To display the Sega License Logo, enable "Sega License Logo" in your application disc's `IP.BIN` file.

Figure: 2 Sega License Logo without the Microsoft Logo.

Figure: 3 A title screen with Sega logo.

5.2 Displaying Other Logos

In the Sega Development Standards, "Other Logos" include those listed in this section.

5.2.1 License Logo Display

Logo displayed according to a library licensing agreement for Sega Dreamcast.

Standardized

Professional baseball team's logo, original logo, etc.

5.2.2 Library Logo Display

Logo displayed according to a library licensing agreement for Sega Dreamcast.

Standardized

See Chapter 24, *License Acknowledgment when Using Libraries and Patents*

5.2.3 Team Logo Display

Logo displaying the development team's name.

Standardized

Sonic Team Logo, AM2 Logo, etc.

5.2.4 Series Logo Display

Logo displayed in games of the same genre.

Standardized

Sega Sports Logo, Patch Logo, etc.

5.2.5 OEM Logo Display

Logos of OEM companies, except for manufacture and sales permit licensers.

Standardized

Logos of OEM companies

5.2.6 Sequence for Displaying Screens

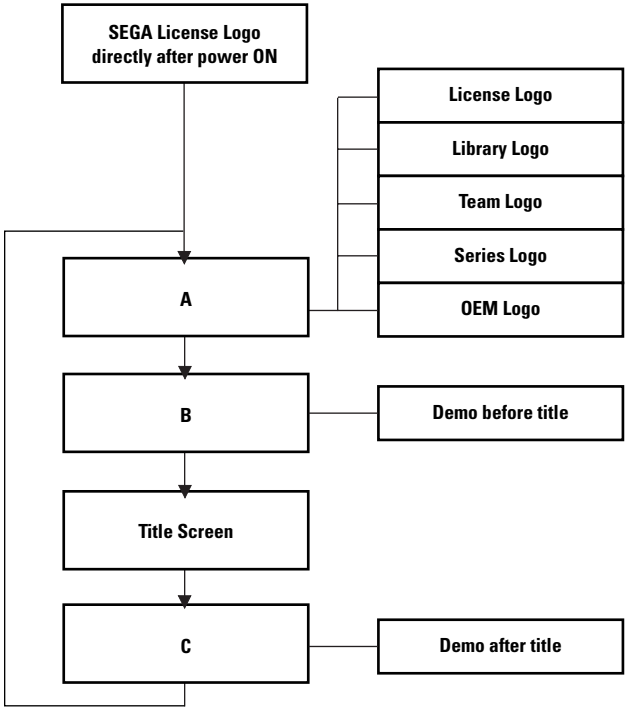
Required

After the Sega License logo is displayed, display any other logo screens. Display each screen for at least two seconds.

Recommended

Although the order of demo logos and other logos is application dependent, it is usually most appropriate to display license logos first, followed by library logos, team logos, series logos, and OEM logos (block A):

Figure: 4 Example of a title loop following rules of sequences for displaying screens



In the preceding diagram, **A** stands for "Other Logos." **B** stands for "Demo before Title," and **C** stands for "Demo after Title." Depending on whether the items in **A**, **B**, and **C** exist, the displaying order varies with each application.

After the final logo is displayed, the first demonstration sequence (block B) can begin. This sequence can be a movie or sample game play. Then, the Title Screen should appear. If the Title Screen is left unattended for a long period of time, the program can optionally play another demonstration or movie sequence (block C) before cycling to the logo display sequence.

Note: Depending on which middleware libraries your title uses, some logos are required to be displayed. See Chapter 24, *License Acknowledgment when Using Libraries and Patents* for details.

5.2.7 License Logo and Library Logo Display

Required

To display the license logo and library logo, observe the following standards:

1. Follow the rules outlined in the contract document regarding the content of logo display.
2. The order of logo display and the possibility of skipping screens is defined in the terms of the contract document.
3. To display the library logo, refer to Chapter 24, *License Acknowledgment when Using Libraries and Patents*
4. When you need to display a license logo that is not regulated in the related contract document, we recommend you prepare a detailed display of the contents and send it to the Sega Legal Department for consultation to avoid possible problems of rights infringement.

5.2.8 Team Logo and Series Logo Display

Required

To display a team logo and series logo, observe the following standards:

1. When creating a team logo or series logo, obtain approval for its use and register the trademark.
2. When using the logo, use only the logo in **A.** When using the logo, attach detailed specs of the logo display for the parties involved and send it to the Sega Legal department.
3. Obtain approval from the company in charge of the logo.
4. When displaying the logo, do not use the words “Presents”, “Presented by” or “Produced by” together with the team or series logo to avoid complications of rights ownership.

Note: Official logos for ADX, MPEG Sofdec, and Duck TrueMotion are available from Sega of America Developer Technical Support and in the R8.1 Development Software Kit CD.

5.2.9 OEM Logo Display (except manufacture and sales permit licensers)

Required

When displaying OEM logos other than manufacture and sales permit licensers, these are the standards to follow:

1. When you want to display an OEM logo, the logo display content is regulated in the development contract document.
2. If there is no regulation in the contract document, as a principle, any OEM logo display is disallowed.
3. However, even with the conditions of (**2.**), when absolutely necessary, logos can be displayed by attaching detailed specs of the logo display for the parties involved and bringing it to the Sega Legal Department.

   The OEM company name is displayed in the main position, with the logo display in the secondary position.

- Add “In cooperation with”… to the display area of the OEM company name.

Chapter 6 The Title Screen

In the following descriptions, the Title Screen is defined as the "Game Start Screen." The period before the START button is pressed at this screen is referred to as "Before Game Start," and the period afterward is called "After Game Start."

Also, the conditions after a game has been started are referred to as "during the main game."

Required

The Title Screen displays the Title Logo, "PRESS **START** BUTTON" and a copyright, unless specified otherwise by contract document or difficulty (such as a movie title) to display the copyright because of lack of space.

If "PRESS **START** BUTTON" is displayed in any language other than English, express the idea that pressing the start button will start the game as simply as possible.

6.1 Title Logo Display

Required

If transition to the next screen is not initiated by user input, display the Title Logo for about two seconds.

6.1.1 Advancing to Next Screen

Required

Advancing to the Main Game or Start/Option screen should occur only when the **START** button is pressed at the Title Screen.

If the **START** button is not pressed, proceed to the next screen of the title loop after a short time has elapsed, as mentioned in Chapter 3, *Sequences before Game Start*.

Chapter 7 Demos

In the following guidelines, a *Story Demo* is an explanation of the game story mainly using movies, etc., and a *Play Demo* is an automatic demonstration of actual game play (the main game).

7.1 Screen Display

Required

During the Play Demo sequence, "PRESS **START** BUTTON," and/or "DEMO PLAY," should be displayed on the screen to clearly distinguish from the main game (after game start).

Note: Story demos are not reflected in the above-mentioned required item.

7.2 Advancing to the Next Screen

Required

Pressing the **START** button during either the Play Demo or Story Demo should immediately bring up the Title Screen.

If the **START** button is not pressed, end the demo after a short time has elapsed, and proceed to the next screen of the title loop.

Chapter 8 Start/Option Selection

8.1 Difference from the Title Screen (Game Start Screen)

Required

The Start/Option Selection screen exists separately from the Title Screen.

If a "Menu" selection such as Start/Option is needed, it should appear when the **START** button is pressed at the Title Screen. Objects other than the Menu can be used and combined as needed.

8.2 Start Menu Selection Limitations

Required

According to the controller connection state, items that are unusable should be displayed in the menu, but not be selectable.

If a second controller is not present, "vs" mode should be grayed out.

If the phone line is not plugged in, the network selection should be grayed out.

8.3 Advancing to the Next Screen

Recommended

Pressing the **START** button should advance to the main game or option selected in each menu.

Chapter 9 Options

- Try to make it as easy as possible for the user to set and change all options either before or (if possible) during gameplay.

Recommended

Options should be provided whenever possible, unless they would destroy the character of the game or if the game is a transplant of an original that has no options.

Reference Example

In race or action games where it would disturb the user to have the Start/Option button bring up the Options Screen and then return to the title, such as in an adventure game, the options can be set by an Options command from within the game.

9.1 Options

Reference Example

The following options are standard for arcade transplants and others.

LEVEL (of difficulty)	EASY >NORMAL< HARD
PLAYERS (number of)	1 2 >3< 4 5
CONTROL (button setting)	
RAPID (continuous shooting)	>ON< OFF
AUDIO (output setting)	>STEREO< MONAURAL
SOUND (test)	>BACKGROUND01<
Initialize Settings (return to initial settings)	
EXIT	

Prohibited Terms

"Default" or "Reset" to refer to the initialization of settings and the initial settings.

Required

Considering the many users who play on monaural TVs, the Stereo/Monaural selection should be provided whenever possible.

Recommended

All "in game" control button functions (except the Start button) should be able to be configured/adjusted by the user.

Recommended

In a 2 player game each user should be able to independently configure control button functions

9.2 Storing Option Settings

Recommended

Option settings should be backed up (saved) if possible.

Required

If the option settings are to be backed up according to the above, the Stereo/Monaural setting should not be saved.

On the Sega Dreamcast, the Stereo/Monaural settings are saved in the Main Unit, considering the case where the same data is to be used to play in another environment.

Recommended

Despite the existence of the backup data, the option settings should be retained after soft reset.

9.3 Stereo/Monaural Audio Output Settings

The initial Stereo/Monaural setting should match that in the Boot ROM as mentioned in 3.1, *Audio Output Settings Upon Loading an Application*.

Required

When the user changes the value of the voice output setting on the application option screen, the Main Unit Boot ROM setting should also be set to the same value before the option screen is exited.

Wait until the user confirms.

As used in the procedures of 3.1, 9.2 and 9.3, the Stereo/Monaural setting refers to Main Console setting, and other option settings refer to the saved data (if present).

9.4 Proceeding to the next screen

Recommended

When EXIT is selected and any action button is pressed, or when a **Start/Option** button is pressed from any location in the Options Screen after a **Start/Option** setting, operation should revert to the **Start/Option** Selection screen instead of to the Sega (or Licensee) Logo and Title Screen.

Chapter 10

Main Game Screen Display

10.1 Important Item Display Limitations

Required

Important displays such as score and remaining units should not appear within 8 pixels horizontally or 16 pixels vertically from the game screen (for 320x240 pixel displays).

Required

Important displays such as score and remaining units should not appear within 16 pixels horizontally or 32 pixels vertically from the game screen (for 640x480 pixel displays).

Recommended

As the display width is monitor dependent, confirm adequate visibility on several monitors. Also, insofar as possible, make the screen display position transferable with option items.

10.2 Consistency of Terminology

Recommended

To avoid confusion, do not use the same term in the main game with different meanings. For example, the use of the word “Tournament” should be consistent with “Tournament Mode.”

10.3 Display of Voice Messages

Recommended

In applications that use voice messages during game play, when it is extremely difficult to clear a game without voice information, the same message should be displayed on the screen as text. However, displaying messages during movies is difficult, and therefore is not necessary.

If the message display would be inconsistent with the character of the game, the package or manual should contain a disclaimer such as “This game may be unsuitable for the hearing impaired.”

10.4 Compatibility with Old TVs (Sync Interval Compatibility)

Required

To maintain compatibility with the sync interval in older TVs, applications should avoid suddenly switching the screen from black to white. (If such switching is necessary, take measures such as inserting gray between the extremes and lowering the brightness of the white.)

When using a controller, the above measure is not possible on the hardware, and is an exception.

However, as much as possible, don't insert an extremely bright color before a flash or change colors suddenly.

10.5 Persistent White Display

Required

Screen display of more than 0XC0 (75% brightness) should not be allowed to persist for a long time (more than 300 seconds), or cover more than 2/3 of the screen.

Sega Dreamcast image output is set to 800mV, to display bright white briefly, so if 0XC0 (not only white, but also yellow or other colors) is displayed for a long time on an NTSC/PAL TV, the screen phosphor could be burned. However, there is no problem displaying 0XFF (100% bright white) briefly and in small screen regions.

We suggest using values below 0XC0 for large screen regions in applications where screen simulations are likely to be frozen.

Currently, even the Boot ROM has the background white display corresponding to 0XC0.

The standard brightness of the white color used for the screen flash when using the gun controller is 0x90; for a VGA monitor, it is 0xC0.

The brightness of the white color used for the screen flash is closely related to gun performance and may be hard on your eyes. You may want to lower the brightness of the flash to make it easier on your eyes, but so doing shortens the detection range of the peripheral device. The degree of brightness depends on the type and manufacturer of the monitor on which you view it, but in general, VGA monitors have a lower degree of brightness than a TV monitor. Taking the above conditions into consideration, the brightness of the flash is 0x90 for a TV screen, and 0xC0 for a VGA monitor.

Recommended

If a persistent screen can be expected when a player takes no action for a long time, and especially if the application display colors are not fixed (Example: web browser), or if the above recommendations for white display are not (or cannot) be followed, prepare a screen saver and cause it to activate when a player takes no action for 300 seconds.

It is up to the application whether the screen saver is an “After Dark” type or simply a reduction in screen brightness.

The same procedure should be followed during Pause time, so please refer to 12.3, *Screen Saver Function During Pause* as well.

Chapter 11

Score/ High Score/ Number of Players

11.1 Score / High Score Indication

Below is an example of how score and high score information should be displayed:

```
"SCORE"
"PLAYER 1/PLAYER 2" or "1P/2P"
"HI SCORE", "HIGH SCORE" or "TOP SCORE/TIME", etc.
```

11.2 No. of Players Indication

Recommended

The“Player” currently being operated by the user should not be counted in an indication of the number of remaining players.

When the number of remaining players is indicated as two, we recognize that there are two remaining players in addition to the player currently being operated by the user. So if one player loses and the game is over, the number of remaining players is indicated as 0.

11.3 High Score Retention

Recommended

Be sure that the high score is not initialized by a soft reset during main game play.

This applies except for the case of returning to the Main Unit Boot ROM Menu, such as a soft reset from the Title Loop.

Required

If a VMU device is present, the application must make use of the card to save game data. The minimum save-game support should be for game preferences and high scores.

Chapter 12 Pause

Required

A pause capability should be provided except when not needed due to the character of the game, and to allow time for an application to obtain matching service (19.3 Matching Service Functions) when connecting to a network.

Please observe the requirements in 12.1 below when providing the Pause function in an application.

12.1 Pause Operation

Required

The **START** button turns the Pause function on and off.

Recommended

When more than one player is supported, Pause (and Resume) should be possible from the controller at either port **A** or **B**.

Required

When the above condition is enacted to allow Pause from either port **A** or **B**, the Pause function is independent for each port (that is, if the Pause is performed from port **A**, only port **A** can perform the Resume).

12.2 Screen Display During Pause

Required

A word such as “PAUSE” should be displayed while paused. This is to distinguish the Pause from a hang-up from a bug.

Standardized

When a Pause can be initiated by different means than in the 12.1

Required

The display should so indicate the initiator of the Pause, such as “PLAYER 1 PAUSE” or “PLAYER 2 PAUSE.”

12.3 Screen Saver Function During Pause

Required

If the Pause function causes the screen display to persist, such that white display of more than 75% brightness would occur for a long time (more than 300 seconds), or cover more than 2/3 of the screen, a screen saver should be provided and should start automatically if the Pause persists for more than 300 seconds.

Sega Dreamcast image output is set to 800mV, to display bright white temporarily, so if 0XC0 (not only white, but also yellow or other colors) is displayed for a long time on an NTSC/PAL TV, the screen phosphor could be burned. However, there is no problem displaying 0XFF (100% bright white) for short periods and in a small screen region.

It is up to the application whether the screen saver is an ‘After Dark’ type or simply a reduction in screen brightness. (Refer to the partial sample program in the SDK.)

Provide a screen different from the main game for the Pause Screen, and ensure that it does not include white display of more than 0XC0 (75% brightness).

12.4 Pause Limitations

Required

A Pause must not be allowed during display of the Logo screen, Title Screen or Demo screen, and should not consist of a blank screen.

12.5 Pause Sound

Recommended

Sound should be muted during Pause.

Note: In past development standards, the rule "When background music is interrupted by a Pause, it should be resumed from the same point upon Resume, except when this is impossible such as during DA, ADPCM and ADX play" was given, but in this version of development standards, this is no longer applicable.

12.6 Hiding Commands During Pause

Recommended

If a game provides a Pause function, it should be possible to clear the "PAUSE" (or other) indication by the **X+Y** buttons to allow for debugging and photographing screen images for print media.

12.7 Processing from Pause Screen

Standardized

In games such as a race game, a menu should be provided to allow the user to select "Retry the Course," "Retire" and "Resume" from the Pause screen. However, the START button is used to turn the Pause on and off, so the menu and other selections must be controlled by the ten keys and an action key.

Chapter 13 Continue

Recommended

A Continue function should be provided when the game is over, except when the game's character does not require it.

13.1 Continue Indication

Recommended

The user should be able to choose whether to continue or not, by either a "YES/NO selection system" or a "Countdown system."

13.2 Continue Operation

Recommended

With a Countdown system, the **START** button should determine whether to continue. Please do not use other buttons.

13.3 Advancing to the Next Screen

Recommended

If Continue is not selected, operation should return to the Title after a specific period with (of course) the Countdown system, or the YES/NO selection system.

Chapter 14 Ending/Credit Scroll

14.1 Operation at Ending/Credit Scroll

Required

In case of displaying library logos (such as True Motion and CRI MPEG Sofdec) during ending/credit scrolling, it should not be possible to skip forward. Also, follow the rules in the contract document regarding skipping screens when displaying license logos.

When library logo and/or license logo display is not included in the Ending/Credit scroll display, the application side can decide whether or not to allow screen skipping.

However, even if license logo display is not included in the Ending/Credit scroll, enable “Soft Reset” during the Ending/Credit scroll, as mentioned in 4.1.1, *Soft Reset Timing*.

14.2 Advancing to the Next Screen

Required

After Ending/Credit Scroll finishes, the game should advance to the Title Screen with a timer or by the action of the Accept or Start button.

14.3 Character Set Consistency

Character usage (font/language/character set) should be as consistent as possible.

Chapter 15 Backup

This Chapter applies to applications which save information to the Visual Memory Unit (VMU).

The content of a backup is called a file (save file) to maintain consistency of the names. Please note that this convention may require changes to the display during games.

Required

If a VMU device is present, the application must make use of the card to save game data. The minimum save-game support should be for game preferences and high scores.

15.1 Save File

Required

The save file for a Dreamcast application must always be registered. (Please make sure the “Back up” section of the Master ROM Release form has been completely filled out.)

Create a file name that is easily recognizable and bears an intuitive resemblance to the name of the game.

15.1.1 Save File Name

Required

Only 1-byte upper-case English letters, numbers, underscore and period may be used. Spaces are not allowed. (See grayed part of Figure 1, *Usable characters for file names and VMS Comments,* on the next page.)

Required

File names must be exactly 12 characters.

Required

When multiple files are saved by one game, the first 9 characters of each file name must be the same (only the last 3 may differ).

In the Boot ROM file menu, the first 9 characters determine files associated with each game. Consequently, if these characters are not the same, the files are not recognized as belonging to the same game, and the batch copy function will not work.

Recommended

If saves are possible at various stages, the last 3 characters of the file names should be sequentially numbered, and other files (key configuration data, additional game options, etc.) should use alphabetic characters for the last 3 characters.

The backup library handles file names as case-sensitive; lower-case characters are disallowed.

Standardized

Game Option File	DRAGOON3.SYS
Typical Game Save File	DRAGOON3.001
	DRAGOON3.002
	DRAGOON3.003

Recommended

Do not allocate unnecessary save files.

There is no limit to the number of files that may be created for a game.

15.1.2 VMU Comments

Although the Boot ROM comments described in Section 15.1.3 are displayed in the File Control Menu, only the file names and VMU Comments are displayed in the VM file mode, so the VMU Comments should contain descriptions of the files.

Required

VMU Comments shall consist of up to 16 single-byte ASCII characters (20 to 7D and A0 to DF).

Character 7E (tilde) should not be used as it does not represent a character in VMU.

Figure 1 Usable characters for file names and VMS Comments

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P	'	p				-	タ	ミ		
1			!	1	A	Q	a	q			。	ア	チ	ム		
2			"	2	B	R	b	r			「	イ	ツ	メ		
3			#	3	C	S	c	s			」	ウ	テ	モ		
4			$	4	D	T	d	t			、	エ	ト	ヤ		
5			%	5	E	U	e	u			・	オ	ナ	ユ		
6			&	6	F	V	f	v			ヲ	カ	ニ	ヨ		
7			'	7	G	W	g	w			ァ	キ	ヌ	ラ		
8			(	8	H	X	h	x			ィ	ク	ネ	リ		
9			)	9	I	Y	i	y			ゥ	ケ	ノ	ル		
A			*	:	J	Z	j	z			ェ	コ	ハ	レ		
B			+	;	K	[	k	{			ォ	サ	ヒ	ロ		
C			,	<	L	\	l	¦			ャ	シ	フ	ワ		
D			-	=	M	]	m	}			ュ	ス	ヘ	ン		
E			.	>	N	^	n	~			ョ	セ	ホ	"		
F			/	?	O	_	o				ッ	ソ	マ	°		

Note: Characters in the gray scale area represent those that can be used for the name of the file to be saved.

Recommended

The status at game save time or the game name should always be written as a VMU Comment.

Standardized

- (Game screen indication)
- (Name of saved game)
- (Game mode name)
- (Player name), etc.

15.1.3 Boot ROM Comments

Required

Boot ROM comments may consist of up to 32 single-byte or 16 double-byte upper-case English characters (double-byte characters display as 24x24 dots with the Boot ROM, and single-byte characters as 24x12 dots).

Required

The game title (or a shortened form of the title, if necessary) is written as a Boot ROM Comment.

Display of “Game name + game status” is also possible.

15.1.4 Sorting Rules

Required

When preparing multiple types of data to sort in the same game and changing the sorting order of save data in the same game, use sort data such as “Same game sort data + 01, 02" so as not to confuse the sorting order with another game.

15.1.4.1 Example

```
“DreamPassport01”, “DreamPassport02”
```

Note: Be especially careful when creating a sequel to avoid confusing sort data with the previous application.

15.1.4.2 Example

```
"DreamPassport01/2", "DreamPassport02/2"
```

15.1.5 Save File Icon

Required

Each application should have its own unique icon.

The unique icon allows each application's save files to be recognized in the Boot ROM File Control Menu.

15.1.6 Visual Comments

Required

When preparing Visual Comments, observe the rules outlined in "23. *Ethics Considerations*" to avoid improper ethics in the comments.

Recommended

Visual comments may be made in 16- or 256-color mode.(Do not use the 32k color mode.)

A Visual Comment in the 32k color mode would occupy about 16 blocks, requiring extra time to save and load. As the image size is small, there is little advantage to the 32k color mode, so it is better to save the user's time.

The 32k color mode requires about 16 blocks, 256 colors about 9 blocks, and 16 colors about 5 blocks. Whether or not a Visual Comment is provided is determined at the application side.

15.1.7 File Size

Recommended

Please take into account that file sizes are rounded to the nearest block. When saving several saved game files, calculate the file sizes individually. It is recommeded that saved data be integrated into a single file.

Required

For files where the size will grow over time, allocate the maximum number of blocks at the start. For example, if level one data takes two blocks to store the game progress, but level two takes four blocks, then you should allocate four blocks for all level data. In this case, when the data to be saved is smaller than the number of blocks allocated, do not save filler data in the empty space.

If an application is to save its progress during use (or if the size change is extreme), please contact Developer Technical Support.

15.1.8 VMU Volume Icon

Standardized

When saving the Visual Memory volume icon (saving with the file name `ICONDATA_VMS`) in an application (when the application has that function), it is permissible to overwrite it if a Visual Memory volume icon already exists.

15.1.9 Other Data to Save

There are no requirements or recommendations for the following 2 files.

- CD Label Data
  (Place 0GDTEX.PVR in the root directory of the GD area)
- Visual memory screen display color data
  (information about Visual Memory color can be stored)

15.2 Memory Card (Visual Memory Unit) Selection

Refer to the list of 1., 2., or 3. for each application and jump to the appropriate choice.

Note: If you support multiple memory cards (VMUs), one of the choices below must be selected as a method of implementation.

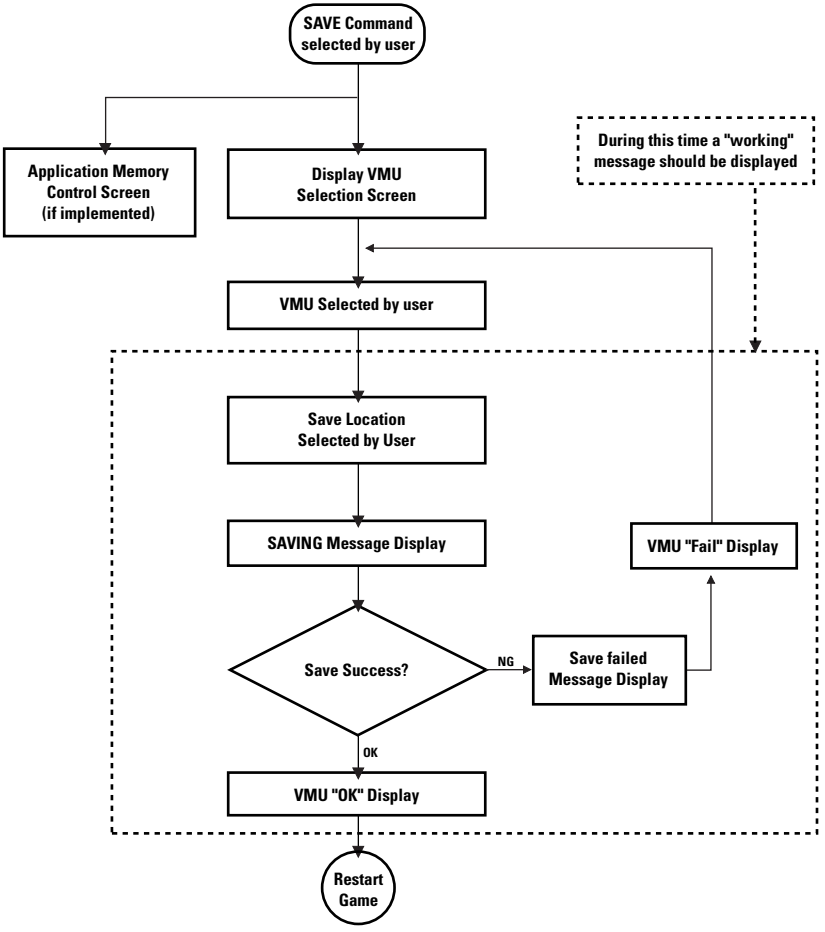
1. The application has a memory card selection screen at save (load) time, and multiple memory cards inserted in expansion sockets are supported (Go to section 15.2.1).
2. Once a memory card inserted in a specific expansion socket has been selected in an application that can't be revised due to auto save, that specific memory card is used (throughout the game) (Go to section 15.2.2).
3. Only the memory card inserted in a specific expansion socket in a specified port can be used for save data such as HI SCORE or key configuration, or no memory card selection screen is included (Go to section 15.2.3).

15.2.1 Applications that have a memory card selection screen when saving

Applications that have a memory card selection screen when saving (and loading), and support multiple memory cards inserted in expansion sockets (Fig. 2)

In this case, the user selects the memory card at each save.

Figure 2 Save Flow



Note: The memory management screen is the screen in the application that has the Main Unit Boot ROM file management menu functions.

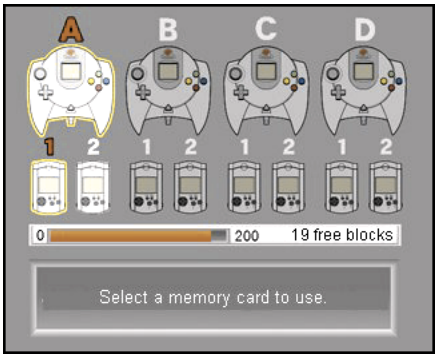
Standardized

Memory Card Selection Screen

15.2.1.1 Screen status

- The standard controller is connected to Port **A** only.
- Visual Memory cards are inserted in expansion sockets **1** and **2** of the standard controller connected to Port **A**.
- The Visual Memory card is inserted in expansion socket 1 of the standard controller currently connected to Port **A** is selected.

Figure 3 Memory card select



Required

Regardless of whether the port (controller) is being used (compatible), or not used (compatible), make the memory card inserted in either expansion socket selectable.

Required

When allowing the user to select the port and expansion socket for a memory card, the user's selection (for example, Port A Expansion Socket 2) should be clearly indicated.

Required

Hot swapping (inserting and removing with power on) of memory cards must be supported (except during actual save operations).

However, access to Visual Memory cannot be done when using the gun controller. For that reason, this rule does not apply, but include it anyway so as not to confuse the user.

Recommended

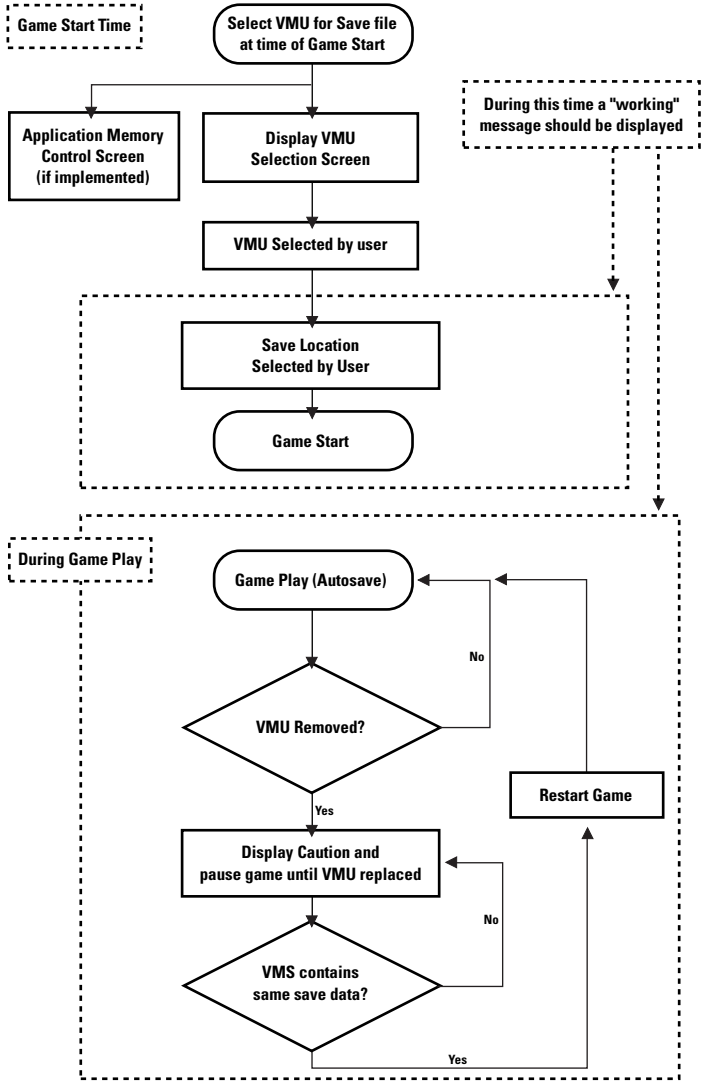
Once a memory card has been loaded and saved, the next time the memory card selection screen is displayed, it should appear in the same state as the previous time the Visual Memory was selected.

Note: Particularly in controllers planned for the future, keyboards will not be provided with an expansion socket. So if a keyboard is used, it should be possible to save to a memory card inserted at another port or on another controller. At that time, saving should be possible even if an unused or incompatible controller is connected.

15.2.2 Non-revisable Autosaves

With an application that performs autosave that can't be revised, once a memory card inserted in a specific expansion socket has been selected, that specific memory card is used (throughout the whole game) (see the following illustration)

Figure 4 Save Flow



In this case, the memory card for the save file is selected when starting the game, and the save file is overwritten during the game.

Required

Regardless of whether a port (controller) is used (compatible), or not used (compatible), make the memory card inserted in either expansion socket selectable.

Required

When allowing the user to select the port and expansion socket for a memory card, the user's selection (for example., Port **A** Expansion Socket **2**) should be clearly indicated.

Required

If a memory card is removed during the game, play must be paused and a message displayed asking that the memory card be replaced at the time of saving. If a memory card having the same save file (identical time stamp and checksum) as that removed is reinserted, the game resumes.

15.2.3 Specific Ports for Save Data

Only the memory card inserted in a specific expansion socket is used in a specific port for save data such as HI SCORE and key configuration and the memory card selection screen is not included.

In this case, when high score or key configuration data is changed, the application can freely write to the single existing memory card.

In this version, control is relaxed, so the application side can decide the "specific expansion socket in the specific port."

However, it is necessary to indicate clearly to the user such messages as "Save to the memory card inserted in the expansion socket in the port?" and "What expansion socket in which port should I insert the memory card in?"

Required

Except for during actual saves, memory card hot plugs (removing and inserting a memory card with the power ON) should be supported.

However, access to Visual Memory is not possible when using the gun controller. For that reason, this rule does not apply, but include it anyway so as not to confuse the user.

15.3 Memory Card (Visual Memory) Initialization

Required

Initialization of memory cards should not be handled at the application side.

Currently, all visual memories are shipped in the fully initialized state. If reinitialization is needed, it should be done from the File Control Menu of the Boot ROM.

15.4 Executing Save

Required

Except in the case of autosaving, a caution message such as “Saving, do not turn Power off” should be displayed on the TV screen while a save is in progress.

It can be assumed that data may be lost if power is turned off or a reset performed while saving, so the caution message is important.

Also, even when using auto save, display a message on the TV screen such as “Executing save. Do not turn off the power” as a warning when save time lasts for more than one second.

Required

Soft reset capability must be disabled while a save is executing.

Required

When a save operation fails to complete correctly, a caution message such as “Save could not complete correctly” should be displayed.

Required

Except when using auto save, display a warning such as “A file with the same name already exists. OK to overwrite? (YES/NO)” to make overwrite selectable for the user when the user selects save to overwrite a file with the same name.

Required

Before overwriting a VMU Executable Game file (A game that is designed to run on an undocked VMU) in a Sega Dreamcast application, a caution message such as "A VMU Game is installed. Okay to overwrite? (YES/NO)" and allow the user to make the choice.

No particular message display is needed during 15.2.2, *Autosave* or when 15.2.3, *High scores, etc.* are saved.

15.4.1 Saving When Activating Autosave

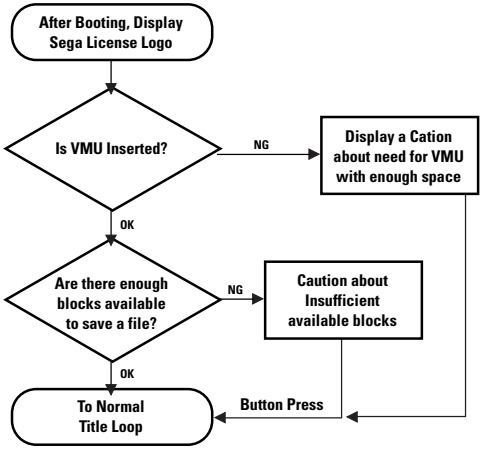
Recommended

If an option is provided to activate Autosave to save key configuration and other settings to a file during a game, activating Autosave should cause the application to check whether a file is already present, and if so, a caution message such as "Current settings will be overwritten. Okay?" should be displayed.

15.5 Caution Messages

When a memory card is not inserted, or the memory card lacks the required amount of save space, display a warning indicating the difficulty in proceeding with the game directly before executing save. (Fig. 5 shows reference examples.)

Figure 5 Caution Screen



The rules for each case are as follows:

Required

When no memory card is installed, indicate the required space (number of blocks) and display a warning message such as “A memory card with at least xx blocks of space is required for saving. Cancel save? (YES/NO)”.

Required

When there is not enough free space (blocks) on an inserted memory card, indicate the lack of empty space (number of blocks) and display a warning message such as “There are not enough free memory blocks. XX empty blocks are required for saving. Cancel save? (YES/NO)”.

Check all installed memory cards to determine if any memory card has enough space (blocks).

Required

After displaying one of the warning messages “Empty space not sufficient,” “Memory card not inserted,” or “Memory card not present in the assigned location,” make it possible to continue to game (even though saving is not possible).

Required

For the times when one of the above-written messages “Empty space not sufficient” or “Memory card not inserted” or when auto saving with 15.2.2 or 15.2.3 are displayed, a warning message such as “A memory card with at least xx blocks of space is required for saving. The game can continue, but saving will not be possible. Continue game? (YES/NO)" should also be displayed.

Also, after displaying the warning message, if a memory card is inserted, auto save (warning screen sequence) should be restarted.

When a warning message is displayed once, it is not necessary to display the message again unless power to the main unit is turned off, except in cases when the memory card is inserted as mentioned above.

Required

If the save location of high scores and configuration data is assigned to Port **A** extension socket 1 according to 15.2.3, the port and expansion socket should be indicated in the caution message, such as “A memory card is not inserted in Port **A** Extension Socket 1. Please insert a memory card at this location to save High Score.”

15.6 Memory Control Screen

Required

When an application has a memory management screen, the commands “Delete all files” and “Initialize” cannot be displayed.

By not providing a command to erase all files, the problem of the user accidentally using it during memory control is avoided.

15.7 Loading Saved Files

Required

When loading a save file, either display a message such as “Loading...” or indicate to the user in some other way that the save file is loading.

Required

The integrity of a loaded file must be checked, and if damaged, a caution message such as “the file did not load correctly” should be displayed.

Display can be done before loading.

Required

In the case where a file does not load correctly, it should not be immediately erased (the damaged file may be necessary later for customer service purposes).

The flow processes of file loading described in 15.2.1 and 15.2.2 are shown in Figures 6 and 7, respectively.

Figure 6 File Loading Flow Process

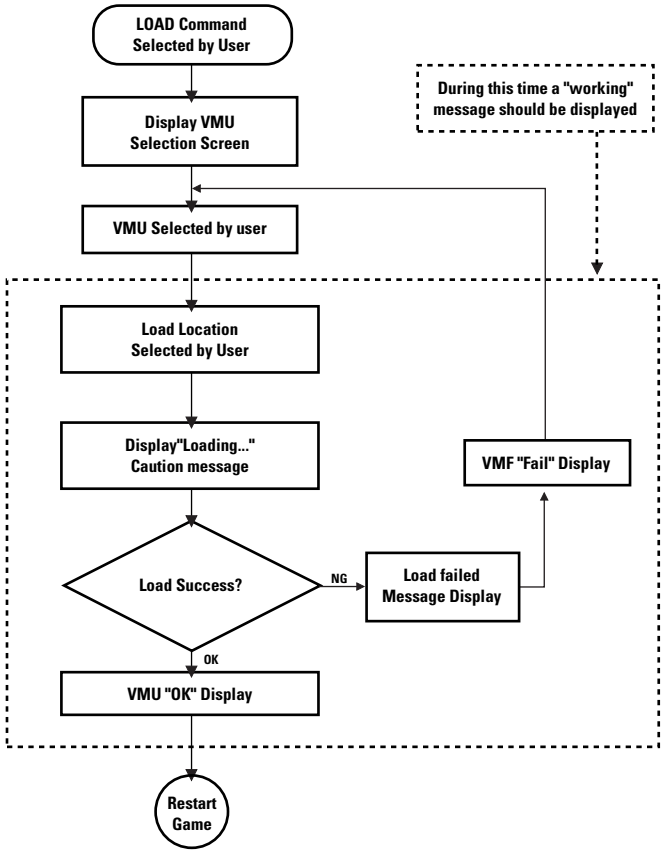
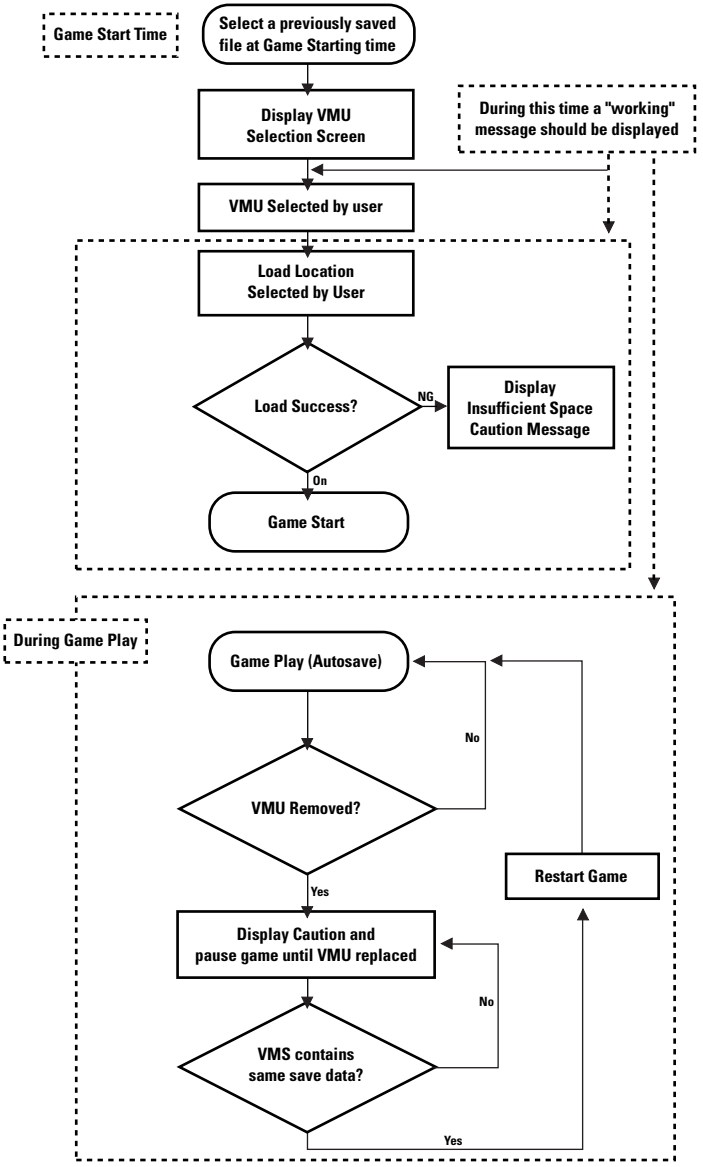


Figure 7 File Loading Flow Process



15.8 Copy Prohibited Files

Required

The application should not copy files in which the copy-protection attribute is set. (However, applications may create such files.)

15.9 VM (Visual Memory) Displays

Recommended

Except in the Autosave case referred to in Section 15.2.2, the results of a save or load should be displayed immediately upon completion by messages such as “OK” or “NO” on the LCD.

Recommended

Except in the Autosave case referred to in Section 15.2.2, and in addition to the above LCD indication, the results of a save or load should be signaled by appropriate audible beeps.

Recommended

When an audible indication is provided as above, the Visual Memory sounds should be able to be turned on and off by a user option (for night use: VM sounds should not be turned off even if TV sound is muted).

Recommended

Except in the Autosave case referred to in Section 15.2.2, after a memory card is selected and until a save or load is completed, a message such as “Selecting...” should be displayed on the LCD when accessing Visual Memory.

Recommended

In the case of a game that saves while being played as outlined in Section 15.2.2, a caution message should be displayed to indicate selecting or saving to the selected Visual Memory.

Note: Depending on the type of controller and expansion socket, whether a Visual Memory Unit should be inserted facing towards or away from the user should be indicated on the display.

15.10 Handling Long Save Times

With Dreamcast, after a save command is issued (but before the save is completed), normal processing is possible.

Based on the above conditions, when a long time is needed for saving, observe the following recommendations.

Recommended

Applications that create large save files with RPG or simulations can return to normal game processing without waiting for saves to finish.

If an application needs to save RAM that changes according to game progress, copy the RAM area to a separate area in RAM and then save the copy. While saving, resume normal processing, but with care to avoid changing the contents of the RAM being saved.

When following the above recommendations, to avoid the situation where the user turns the power off or performs a soft reset due to confusion during a long save, please observe creation standards 15.1 to 15.9 and the following standard 15.10.1.

15.10.1 Display of Return to Normal Processing

Required

(While saving) When returning to normal processing after starting a save, an on-screen indicator (such as a progress bar at the bottom) must be provided to show the user that a save is in progress.

Soft reset and CD door open conditions should be indicated in a manner that is compatible with the normal save indication.

15.11 Visual Memory Single Application Files

Required

When reading Visual Memory single application files to the memory card, if there isn't a block of empty space, inform the user and abort the write.

Recommended

When writing the Visual Memory Single Application file, determine if the memory card has an LCD (liquid crystal display) and when saving to a memory card which doesn't have an LCD, include a message "This is a Visual Memory Single Application file. Even if saved to this memory card, it cannot be executed and played. Save it anyway? (YES/NO)" to make the save option selectable to the user.

(This is in the event that a memory card without an LCD is released, but determining whether or not a Visual Memory has an LCD should be made possible.)

Chapter 16

Loading Files From Disc

16.1 Display during file load from the disc

Required

When loading a file from a disc, display a message such as “Loading...” on the screen when reading takes longer than 10 seconds, or otherwise indicate to the user that the delay is not due to a hangup from a bug.

Recommended

When long reads are generated, display or indicate the above message as much as possible even if file loads from the disc do not take over 10 seconds.

16.2 When File Load from the Disc Fails

Recommended

When file loading from the disc fails, carry out limited retry processing (reading the file again).

Recommended

When a file cannot be read after retrying a limited number of times, display a message indicating to the user that a file load error has occurred.

After displaying the above message, carry out limited retry processing again when the ACCEPT button or **START** button is pressed. This situation is an exception to the rules mentioned in 4.2, *Processing with the Disc Door Open*, and it is not necessary to return to the main screen of the Main Unit Boot ROM. The user can open the Main Unit door and check the disc.

However, at this time, do the same kind of security check as when exchanging game discs.

Standardized

- Display When a File Load Error Occurs
  "Disc cannot be read. Make sure it is not scratched or dirty."
  "Disc cannot be read."

Chapter 17

Changing Discs for Multi-Disc Applications

17.1 Disc Switching Preconditions

When performing a disc check to determine whether a disc is a "Special Dreamcast Disc," this version of Dreamcast does not require that the Main Unit Boot ROM Menu appear.

However, because a soft reset might be needed when subsequent discs in a series are loaded, we believe that the Title Screen and Copyright Display may be needed.

Also, the software creation standards of Chapter 15, *Backup* and other sections should always be followed unless specifically exempted.

17.2 Booting with Discs after the First

Required

Other than the exceptions in 17.2.1, booting should comply with the conditions of Chapter 3, *Sequences Before Game Start*.

17.2.1 Exceptions for Booting from Discs after the First

- Demos
- Start/Option Selection Screen
- Options
- A Title Loop is not necessary if there is no Demo.

17.3 Soft Reset During Game Play

Required

Except as stated in section 17.3.1, a soft reset after starting a game must result in a jump to the Title Screen of the disc currently inserted in the Main Unit (for instance, a reset with Disc 3 installed results in display of the Disc 3 Title Screen).

As described in Chapter 4.1.4.2, *Omnibus System Case*, executing a soft reset from the Title Loop of any disc brings up the Main Unit Boot ROM Menu (the Multi-Player screen in Saturn).

17.3.1 Soft Reset from the Disc Switching Screen

Required

At the disc switching screen, doing a soft reset when the disc lid is open moves the user to the Main Unit Boot ROM screen.

Setting the soft reset jump destination to the Main Unit Boot ROM Menu allows the user to check the title and saved files on the menu if he inserts the wrong disc.

When a soft reset is done before the disc lid is opened on the disc switching screen, jump to the “Disc title screen”.

Recommended

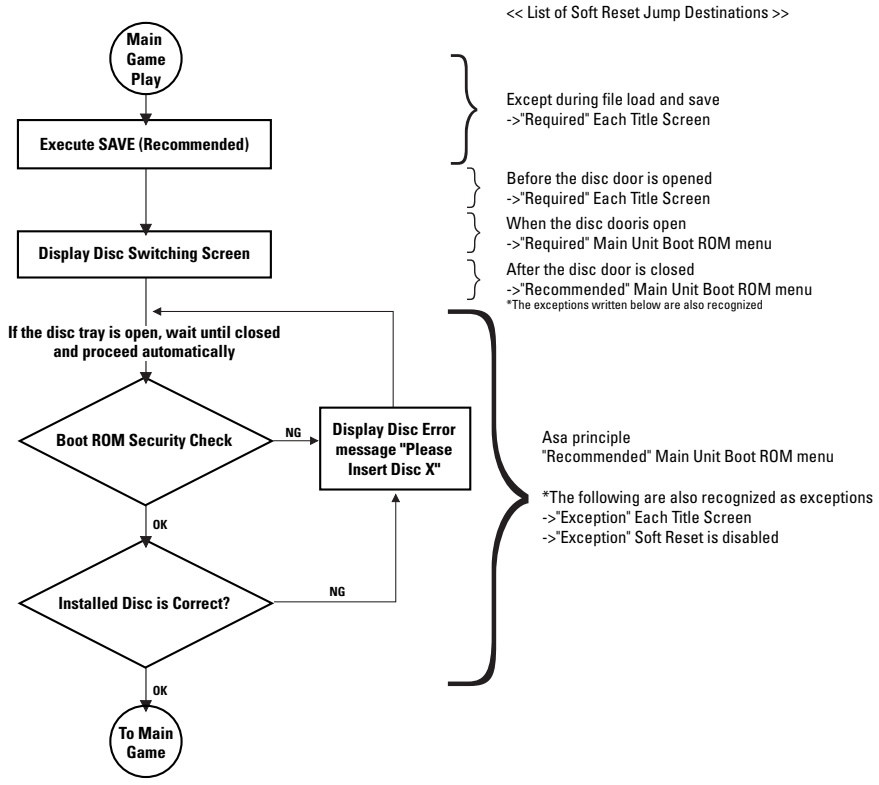
When a soft reset is done from the end of the disc switching screen (when the lid is opened and reclosed) until the beginning of the next main game, jump to the Main Unit Boot ROM menu.

The following exceptions to the above are also allowed depending on the application conditions.

- Jump destination is made the “Disc Title Screen.”
- Soft Reset operation is disabled.

17.4 Switching Discs During Game Play (for example, to Disc 2 when finished with Disc 1)

Figure: 1 Disc Switching Flow



Required

When switching discs, display a message such as, "Press the **OPEN** button to open the disc lid and change the disc. After replacing Disc X with Disc Y, close the disc lid."

Required

After switching discs, always execute the Disc Check routine in the Boot ROM.

Required

When the result of the Boot ROM disc check is NG, display a warning message such as "This is not disc X. Press the **OPEN** button and insert the correct disc. After disc X has been inserted, close the lid" and prompt disc exchange again.

Recommended

After switching discs, the game should resume without displaying boot sequence screens such as the Boot ROM menu, Logo or Title Screen.

Recommended

It should be possible to switch discs from the Disc Switching Screen without having to go to the Boot ROM menu, even if the **OPEN** button is pressed when switching discs.

After switching discs, a soft reset jumps to the Boot ROM menu, from which it is conceivable that the user could start the new disc's game. However, this is not recommended, and so should not be implemented.

Recommended

The user should always be able to perform a save immediately before switching discs (or at least be provided a selectable Save command). For Autosave operation, execute an autosave before displaying the switching caution message.

Considering the particular case where the user turns power off when switching discs, it should be possible to save data so that play can immediately continue when power is next turned on.

Required

When switching discs, if the wrong disc is inserted, a message such as the following should appear: "This is not Disc X for [Application Name]. Press the OPEN button to open the disc lid and replace the disc. After inserting Disc X, close the disc lid."

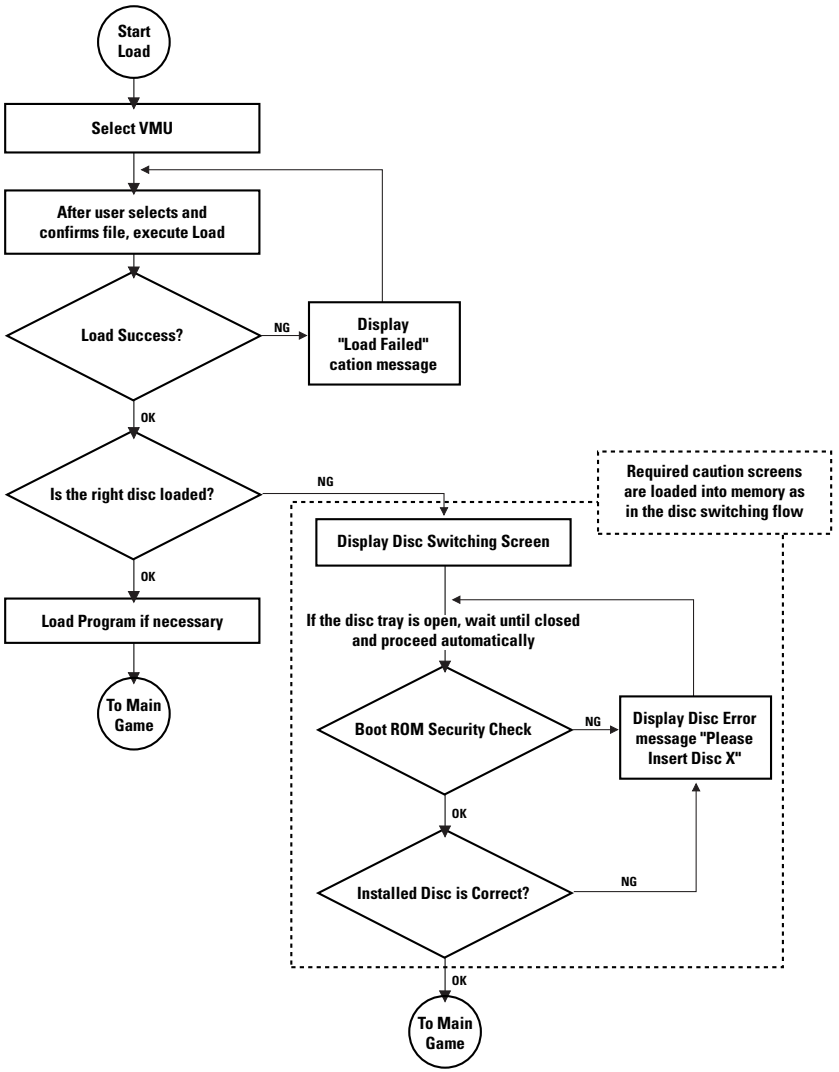
Required

At the start of a disc exchange sequence, the caution screens must be loaded into memory, so that after the user opens the tray and replaces the disc, even if the new disc is unreadable, the caution screens can be displayed correctly.

Because the Main Unit Boot ROM Menu (Dreamcast's Multi-Player screen) is not executed when switching discs, if the correct disc does not load, the caution screens will not be available unless they have been stored in memory beforehand.

17.5 Loading From Multiple Discs (Loading Save Files for Different Discs)

Figure: Sequential Disc Loading



Required

When a save file is loaded for a disc other than the one currently inserted, a caution message must be displayed, such as "Press the **OPEN** button to open the disc lid and replace the Disc. After inserting Disc X, close the disc lid."

Required

After switching discs, always execute the Disc Check routine in the Boot ROM.

Required

When switching discs, if the wrong disc is inserted, a message such as the following should appear: "This is not Disc X for [Application Name]. Press the **OPEN** button to open the disc lid and replace the disc. After inserting Disc X, close the disc lid."

Required

At the start of a disc exchange sequence, the caution screens must be loaded into memory, so that after the user opens the tray and replaces the disc, even if the new disc is unreadable, the caution screens can be displayed correctly.

Chapter 18

Development Standards for Peripherals

18.1 Jump Pack settings

Required

Include an option to toggle the setting ON/OFF for operation of the vibration peripheral, hereafter referred to as the Jump Pack.

This setting should be made selectable.

Required

Stop vibration with the Jump Pack during pause or when transferring to the Main Unit Boot ROM.

In the rules up to now, whether or not to stop vibration of the Jump Pack "during transfer to the Main Unit Boot ROM" was not specially regulated, but from this version, stopping the vibration on the application side is regulated.

Required

When saving to the memory card, stop vibration of Jump Pack.

There is a very slight chance that vibration may cause a momentary power failure in the connector terminal, so stop vibration to avoid damaging the connection.

Recommended

When checking the usable controllers at the start of a game and a Jump Pack is detected to be inserted, include a warning such as "The Jump Pack is operable", or make it possible for the user to select if the Jump Pack should be turned ON with a message such as "Make Jump Pack operational? (YES/NO)".

18.1.1 Current Check of the Jump Pack

Required

- Sega Dreamcast currently uses four control ports, however, should additional ports become available check the current to make sure that it is safe to use the fifth Jump Pack. (Up to four Jum Packs can be plugged into the front of the console, one in each port, without any need to check the current.)
- Allow vibration function for each controller, starting with port **A,** and continuing until the maximum current draw has been reached.
- Disable vibration support for any remaining ports.

Recommended

When the current exceeds the regulated value, an ON/OFF setting for the peripheral should be included with the message "Which Jump Pack should be made operational?"

18.2 Software Keyboard and Hardware Keyboard (Product name "Sega Dreamcast Keyboard")

When a title supports a hardware keyboard, an intruction is necessary to notify the user that a controller must be connected. The hardware keyboard is not a type of controller; like the Saturn keyboard. For example, the standard controller **A** button is not assigned to the **Z** key.

Because the hardware keyboard does not have any expansion sockets, a VMU cannot be inserted into it.

Required

When the hardware keyboard is supported in an application, the software keyboard (or character input screen) should be displayed as an option and the user should be able to input by the software keyboard when the hardware keyboard is not connected.

A software keyboard is enabled when a hardware keyboard is supported by the application.

Required

During hardware keyboard input, allow the user to distinguish which input mode is currently being used.

When displaying the software keyboard screen and input palette screen, the user should know which input is currently possible.

Recommended

Base keyboard rules on these software development standards even when the software keyboard rules are not in effect.

18.2.1 Software Keyboard Layout

Recommended

Base software keyboard layout on the layout of the default Sega Dreamcast browser.

18.2.2 Software and Hardware Keyboard Operation

Recommended

Base software keyboard layout on the layout of the default Sega Dreamcast browser.

Required

Use the special keys on the hardware keyboard, S1 and S2, as the left and right triggers, respectively.

Required

Follow the key input rules below for inputting the following items using operation of the software and hardware keyboards.

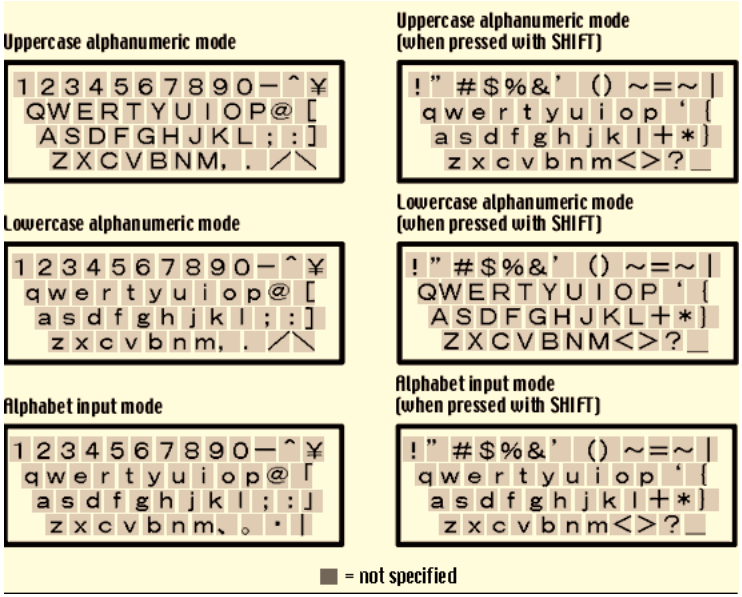
It is not necessary to allocate all the functions defined below.

Note: Make sure to mention applications that use the software keyboard in the "How to Use All Operations of the Software Keyboard" section of the instruction manual.

Software Keyboard Operation (when using the Standard Controller)

Item	Key Input
Accept	A button
Back Space	B button
Software keyboard delete	Y button
Pointing cursor movement	+ key
Page scroll	Analog key

Figure: 1 Compatible input characters for each input mode



Common Operations

Item	Key input
Soft Reset	Ctrl + Alt + Delete
Page scroll (back screen) * for frame pages: frame page scroll	PAGE UP
Page scroll (forward screen) * for frame pages: frame page scroll	PAGE DOWN
Direct input, Switch to Japanese exchange input (FEP ON/OFF)	Alt + half character/full character
Code Input	kanji number
Upper/Lowercase Toggle	Caps Lock

Note: When carrying out a soft reset on a hardware keyboard, key assign of the standard controller is inoperable, so carry out soft reset according to operation based on the PC keyboard reset and CTRL + ALT + DEL.

Operation when characters cannot be input

Item	Key input
Accept input (pointing, menu items, etc.)	Enter
Cancel input (cancel a menu item, etc.)	Esc
Moving the pointing cursor (item selection when displaying the menu items)	Arrows (up, down, right, left)

Operation when characters can be input (not during input character exchange)

Item	key input
Return input (when multiple-line input can be done)	Enter
Output of the character string registered to a function key	F1 - F12
Deleting one character before the cursor	Backspace
Deleting one character after the cursor	Delete
Moving a specified range one character to the left	Shift + <-
Moving a specified range one character to the right	Shift + ->
Moving a specified range one line up	Shift + (up arrow)
Moving a specified range one line down	Shift + (down arrow)
Copy in a specified range	Ctrl + C
Paste in a specified range	Ctrl + V
Cut in a specified range (save to memory and delete)	Ctrl + X
Cancel operation	Ctrl + ,Y
Reconfirming character exchange	Ctrl*{Backspace

Operation during character exchange

Item	key input
Exchange (next candidate)	Space/exchange (next candidate)
Exchange (previous candidate)	previous candidate
Confirming all input characters	Enter
Overwriting exchange input possible for a highlighted phrase	Backspace
Overwriting exchange input possible	Insert
Delete one character at the head	Delete
Cancelling all input characters	Esc
Changing a highlighted phrase to hiragana	F6/Ctrl + U
Changing a highlighted phrase to katakana	F7/Ctrl + I
Changing a highlighted phrase to half-character kanji	F8/Ctrl + O
Entering a highlighted phrase without changes	F9/Ctrl + P/no change
Entering a highlighted phrase in half-character without changes	F10/Ctrl + @
Moving to the next candidate	Space/exchange (next candidate)
Moving to the previous candidate	previous candidate

18.3 Arcade Stick

18.3.1 Arcade Stick Button Settings

Required

Use the **A** and **C** buttons as "Accept" buttons (perform operation), and the **B** button as the "Cancel" button (reject operation).

Allocation of "Accept" and "Cancel" to the respective **A** and **B** buttons is assumed, but that doesn't not mean the **B** button must be removed from key configuration when the accept key is defined by pressing the button to allocate keys in key configuration.

Recommended

Give priority to the **A**, **B**, and **C** buttons over **X**, **Y**, and **Z** buttons.

Recommended

Set buttons to enable action when they are pushed, not when they are released, except for buttons that have special operation, such as those in shooting games.

18.3.2 Arcade Stick Soft Reset Button Operation

Required

When the **START** button is pressed while the **A** button + **B** button + X button + **Y** button are all held down, "Soft Reset" must be put into effect.

18.4 Racing Controller

18.4.1 Racing Controller Button Settings

Required

Use the **A** button as the “Accept” button (perform operation) and the **B** button as the “Cancel” button (reject operation).

Allocation of “Accept” and “Cancel” to the respective **A** and **B** buttons is assumed, but that doesn't not mean the **B** button must be removed from key configuration when the accept key is defined by pressing the button to allocate keys in key configuration.

Required

For the button positions on the racing controller, use the **R**, **L** analog buttons as follows: **R** = accelerator and **L** = brake.

18.4.2 Racing Controller Soft Reset Button Operation

Required

When the **START** button is pressed while the **A** button + **B** button + **X** button + **Y** button are all held down, “Soft Reset” must be put into effect.

18.5 Gun Controller

Refer to the section 10.5, *Compatibility with Old TV's (Sync Interval Compatibility)* and 10.6, *Persistent White Display* when supporting the gun controller in an application.

18.5.1 Gun Controller Button Settings

Required

Use the trigger (**A** button) as the "Accept" button (perform operation), and the **B** button as the "Cancel" button (reject operation).

Allocation of "Accept" and "Cancel" to the respective **A** and **B** buttons is assumed, but that doesn't not mean the **B** button must be removed from key configuration when the accept key is defined by pressing the button to allocate keys in key configuration.

18.5.2 Gun Controller Soft Reset Button Operation

Required

When the **START** button is pressed while the trigger (**A** button) + **B** button are held down, "Soft Reset" must be put into effect.

18.5.3 Calibration Mode

Required

Prepare the calibration mode to adjust the aim of the gun controller in the application.

Recommended

The calibration mode should adjust the aim according to the connected TV, and the user should be able to adjust the calibration mode with option commands during actual play.

Standardized

Contents of the calibration mode

1. On a bright background (in the case of white, at least 0x50), only one target is placed in the center of the screen.
2. When the user aims at the target, a flash goes off in the center of the screen. Using that as a standard, offset is added from the gun controller data.
3. Another flash goes off in the center of the screen for the same target aimed at by the user. This time the flash confirms the position.
4. If there are no problems, calibration finishes. Calibration is only repeated to do the same work as above for the gun controller connected in a port.

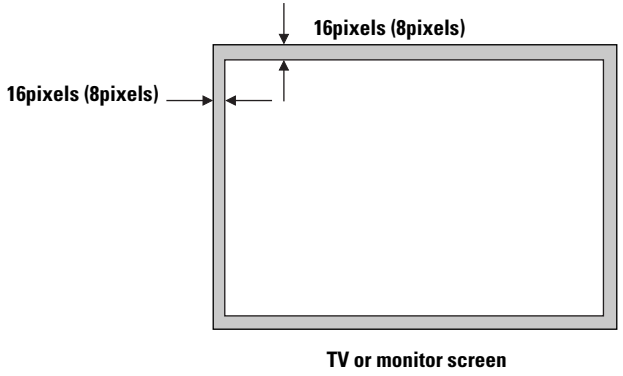
18.5.4 Valid Range

Required

Depending on the TV or monitor manufacturer and the type of monitor, the entire screen may not be displayed at the edges.

For this reason, the margins on all sides on the screen should be at least 16 pixels (for a 640x480 pixel screen) or 8 pixels (for a 320x240 pixel screen) within which the user cannot aim.

Figure:



18.5.5 Gun Controller Supported Games for U.S.

Required

For games that support a gun controller for use in the U.S., display a warning that contains content such as the following.

"This is not a gun controller (use the American product name) sold for use in the United States. Please use a commercially approved gun controller."

Also, don't allow the application to start up when target site data is read for the gun peripheral at application start-up and a gun controller not designed for use in the U.S. is connected.

Required

Also, when a gun controller with a territory code (*see* table below) for places other than the United States is connected during application operation, the gun mode should not be able to be used.

In the United States, the federal government has declared that there are limitations on the colors of toys that resemble guns.

This measure is effected to prevent the importation of real guns alongside the toys from other sales regions by gray importers.

The relationship of sales regions for Sega Dreamcast Gun and gun peripheral target-area codes are as follows:

Territory Code

for Japan sales	global
for North America sales	North America
for Europe sales	global

18.6 Fishing Controller

18.6.1 Fishing Controller Button Settings

Required

Use Trigger (**A** button) as the "Accept" button (perform operation) and the **B** button as the "Cancel" button (reject operation).

Allocation of "Accept" and "Cancel" to the respective **A** and **B** buttons is assumed, but that doesn't not mean the **B** button must be removed from key configuration when the accept key is defined by pressing the button to allocate keys in key configuration.

18.6.2 Fishing Controller Soft Reset Button Operation

Required

When the **START** button is pressed while the **A** button + **B** button + **X** button + **Y** button are all held down, "Soft Reset" must be put into effect.

18.6.3 Vibration funtion within the Fishing Controller

When using the vibration peripheral in the fishing controller, observe the rules outlined in 18.1, *Jump Pack settings*.

Chapter 19 Networking Issues

The following rules apply to two or more player online games using a matching service to connect through a network. The non-communications parts of such games should still satisfy to the standards specified in the other chapters. Sega is in the process of designing specifications for online gaming and many aspects are yet to be determined, so changes will occur with the instructions in this Chapter.

19.1 Network Connections

Required

If there is no user input for a reasonable period (about two minutes for fighting games, and the maximum time determined by the user's web browser of about 15 minutes), the phone line should disconnect, or an optional setting should be provided to allow the user to select time-out disconnect.

The regulation concerning disconnection when there is no input over a period of time is not followed when downloading from the web browser.

Required

When a telephone line connection fails or when the phone is disconnected, display a warning message. Also, as much as possible, clearly state the reason for the failure or disconnection.

Standardized

Phone disconnection due to lack of input: "Connection lost due to lack of input within the time-out period."

Required

When connecting to a network applications like a Web Browser, Mailer, or Chat, confirm the setting data for connecting to an IP address in Main Unit memory and connect based on that setting.

Required

When there is a function to set the IP Address within an application (currently only permission for settings by Dreamcast browser is given), Main Unit memory settings should be adjusted to application settings that are changed.

19.2 Keyboard Input and Compatibility with Hardware keyboards

Recommended

If a networking application requires a long time for user entry, such as for text entry (because a software keyboard may be used), the user should be permitted to enter the text in an offline (disconnected) state.

Recommended

A networking application that requires a long time for text entry should support a hardware keyboard (keyboard controller).

19.3 File Download

Required

When downloading files (that can be saved on the memory card), download and save according to the information of the definition file together with the save file.

Currently, downloadable files on the SEGA Dreamcast Gaming Network (working title) site mention the file name and file size in the definition file if it is the same as the execution file during flagging and saving. Downloading according to definition files (only if there are definition files) makes downloading of regular PC files not possible. When following regularly issued definition files, Visual Memory Single Application files are saved as single application files with the final three spaces in the 12-space file name `"_vm"`.

Required

When downloading files, check the free space beforehand, and if there is not enough space, display a caution message before proceeding with the download, to avoid wasting the users' download time.

Recommended

When downloading single application files on Visual Memory, determine if the memory card has an LCD and if it doesn't, display a warning before downloading begins to avoid having the user make an unnecessary download.

Refer to the section 15.11, *Visual Memory Single Application Files* for the content of the warning display.

19.4 Matching Service Functions

"Return destination when disconnected," "Rule for restarting fighting," "Multi-Player hardware settings," and "Rules concerning play time" provided by matching services will be regulated from now on.

Required

The Pause function should be disabled whenever connecting to the matching service on a network. (This is to not disturb the fighting opponent with a Pause. However, soft reset should be possible.)

Recommended

Because a soft reset or opening the disc lid drops the phone line connection, a caution message such as "Please do not reset the machine or open the disc lid while playing, as it may cause problems for your opponent" should be displayed.

Recommended

Except for applications that require specific backups, game progress should not be dependent upon backing up.

Recommended

Even if there is no user input during a particular time while connected, game progress should proceed. Unnecessary selection items should be minimized.

19.5 About Internal Clock Adjustment During Network Connection

Refer to the specifications in 21.2, *Internal Clock Adjustment During Network Connection*.

Chapter 20

Rules for Sega Dreamcast–Specific Disc Single/High Density Area

On the Dreamcast-specific disc, the inner ring, referred to as the "Single Density Area" and the outer ring is referred to as the "High Density Area".

20.1 DA Regulations in the Single Density Area

Required

In the single-density area of the Dreamcast-specific disc, DA (except for non-sound) should be input as voice data. DA sound should be made to run even if the specific-disc is put in a non-Dreamcast CD player.

Recommended

Use the `warning.da` file provided in Release R8 of the Sega Dreamcast Software Development Kit to warn users that attempt to play the GD-ROM on a standard CD player.

Prohibited Terms

"GD," "GD-ROM" (these should just be called "discs")

20.2 Prohibitions of the Writing Area

Required

For security reasons, the Sega Dreamcast program execution code cannot be written to any area other than the Sega Dreamcast-specific disc high-density area. Sega Dreamcast program execution code should not be written to Sega Dreamcast-specific disc single-density area, save data, or Visual Memory special games.

Chapter 21

Internal Clock Functions

- Internal clock adjustment by applications is prohibited as a general rule, except for automatic time adjustment using a time server such as an NTP server with network-related applications.

Chapter 22 Ethics Considerations

22.1 Ethics Inspection

Because Sega Dreamcast software applications are consumer products used in the average home, care should be taken to not include any content that may be offensive to the user, as well as content that may infringe upon the legal rights of a third party. Note that these standards are by no means comprehensive in their scope. Use the guidelines contained in this document along with publications from organizations such as the Entertainment Software Rating Board (ESRB) to judge whether content materials are appropriate for inclusion in your product.

To prevent sales of software considered to be excessively violent (or graphic) in nature to children 13 (or 17) years and younger, Sega requires the display of ESRB software rating labels on the packages of all Sega Dreamcast applications.

Please avoid

- Language in the game that is offensive to prevailing public standards or tastes.
- Encouraging or glamorizing the use of drugs, alcohol, or tobacco.
- Overt political statements.
- Depiction of symbols or groups which are an anathema to racial, religious, national, or ethnic groups.
- Gratuitous or excessive depictions of blood or violence.
- Nudity or sexually explicit behavior.
- The use of alcohol or tobacco company logos or advertisements.

Chapter 23

Trademark and Copyright Infringements

In applications submitted to Sega for publication, take care to avoid disturbing a third party's intellectual property rights or personal privacy or other rights. For example:

- Do not infringe on a third party's copyrights, portrait rights, property rights, patents, trademarks, designs or other rights by using them without obtaining the permission of the maker or owner of the product, character names, photos portraits, designs, marks, music, *et al*, for the use of the owner's property.
- Do not take any uncompetitive action that would infringe upon other property rights of a third party, such as using excessively similar products, characters, designs, and the like.
- Do not defame the character or infringe the privacy of a third party.

23.1 Actual Trademark Examples

The following are examples of actual registered trademarks (including pending trademarks) that must not be used in titles.

- "Role Playing:" Old Classification 24, Koichi Sato, Feb. 28, 1996.
- (SEGA Brand only, as of Dec. 25, 1996) "RPG" is a trademark of Bandai (KK), from whom we have received permission to use. When using it, do not use as a common noun, and do indicate that it is a trademark.
  When "RPG" is used in printed matter, it must be enclosed in single or double quotation marks.
  A notation that "RPG" is a trademark of Bandai (KK) must appear in the bottom margin.

23.2 Examples of Infringement of Intellectual Property Rights

Following are examples of cases that could result in claims by third parties of use of their intellectual property without permission.

23.3 Claims Related to Trade Names and Trademarks

These are examples of actions that could result in claims related to trade names and trademarks:

- In a game, depicting advertising billboards at event sites such as baseball games, auto races and soccer matches that show trade names and trademarks without permission of the owners of those names and marks.
- In auto racing, soccer and other sports games, depicting names of sponsors and their symbols without first obtaining permission.

23.4 Claims Related to Copyrights, Designs and Other Properties

These are examples of actions that could result in claims related to copyrights, designs, and other kinds of properties:

- In an auto racing game, using a photo taken by a third party as a background image during a game without first obtaining permission of the photographer.
- Using characters from movies, cartoons and other productions in a game, either as is or partially modified, without first obtaining permission of the copyright owner or author of the original production.
- In a baseball game, soccer and other sports games, depicting team uniforms without first obtaining permission of the team's association.
- In an auto racing game, depicting an image of a real car without first obtaining permission of the car manufacturer.

23.5 Claims Related to Portrait Rights, Publicity Rights, etc.

These are examples of actions that could result in claims related to portrait rights, publicity rights, and other kinds of properties:

Depicting the face of a famous person as is or in caricature in a baseball, auto racing, soccer or other sports game without first obtaining permission of the person or the managing association. The same condition applies to use of names of famous players or other names without first obtaining permission of the person or the managing association.

Chapter 24

License Acknowledgment when Using Libraries and Patents

Required

When using a software library provided by another company, and when using a patent that is owned by another company, depending on the terms of the licensing contract, that company's logo and trade name must be displayed at the specified location.

For more details, see the following table and its accompanying text.

List of Display Obligation for Licenser Logos and Text

Category	Name	Licenser	Contents	Display Obligation in the Printed Matter				Display Obligation on the Main Game Screen	
				Data	Back Inlay/ Sash	Instruction Manual	CD Label	Data	During the Main Game
Picture Expansion Library	TrueMotion	Duck	Logo	Yes	⊗	⊕(*1)	×	Yes	⊗ (*3)
	CRI MPEG Sofdec	CRI	Logo	Yes	⊗	⊕(*1)	×	Yes	⊗ (*3)
Voice Compress/ Expansion Library	MPEG1/ Audio	Hitachi	No	-	×	×	×	-	×
	ATRAC 2	SONY	Under Negotiation	No	Undecided	Undecided	Undecided	Undecided	Undecided
	Dual Speech	NTT	Sentence	Yes	×	⊗	×	-	×
	CRI ADX	CRI	Logo	Yes	⊗	⊕(*1)	×	Yes	⊗(*3)
Voice Recognition	ASR 1600/C	L&H	Logo	Yes	⊗	⊗	×	-	×
Voice Data	XG lite	YAMAHA	Logo + Test	Yes	×	⊗	⊗	-	×
3D Sound	Q Sound	Q Sound Labs.inc	Logo + Text	Yes	⊗	⊗	⊗	-	×
Font	Fontworks (*2)	Fontworks Japan	Text	-	×	⊗	×	-	×
	NEC Font	NEC	Text	Yes	×	⊗	×	-	×

How to Read the List of Display Obligation

⊗ = required to display

× = not required to display

Text = specific text must be displayed

Logo = specific logo must be displayed

1 (⊕)

In principle, the logo should appear in the back inlay. When it' is shown in the back inlay, it is not required to be in the instruction manual. If the logo can not be in the back inlay for some reason, it must be shown in the instruction manual.

2

Even if Font (Seurat PlusM), which is built-in the hardware on the Boot ROM, is used in the software, it is not necessary to display the Font in the printed matter as long as it appears in the instruction manual for the hardware unit. Font (SHINMOJIDENSETU, etc.) which are used only for applications should be displayed in the software's instruction manual.

3

The logo is required to appear in the "Before game start" sequences. The display of the logo could be either at the opening or ending of the main game. Due to the game sequences, the display is more likely be at the ending. If it is difficult to distinguish between game sequences and ending sequences, the logo should be displayed on the screen as the stuff roll, etc.

24.1 Sample Logos

24.1.1 TrueMotion Logo

24.1.2 CRI MPEG Sofdec Logo

Copyright © 1998 CRI

24.1.3 CRI ADX Logo

Chapter 25

Visual Memory Single Application Creation Standards

Create Visual Memory single application files in the same way as Sega Dreamcast applications, observing the rules outlined in Chapter 22, *Ethics Consideration* and Chapter 23, *Trademark/Copyright Infringement*.

25.1 Controller Button Functions

Required

Use the **A** button for "Accept" (perform operation) and the **B** button for "Cancel" (reject operation).

Recommended

Set buttons to act when pressed instead of when released, except for special operations such as rapid fire in a shooting game.

25.2 Title Display (Title Loop)

The following items constitute the Title Screen (or Title Loop).

Both indications do not have to appear on the same screen because of screen size limitations, etc., but in such cases, both indications must still be displayed. The display is suspended automatically, so they do not have to be in a Title Loop.

Required

Displaying Copyrights:

Observe the rules outlined in Section 6.2, *Copyright Display* and Chapter 23, *Trademark/Copyright Infringement,* when creating copyright displays.

(SEGA Brand only) official material is displayed as

```
"©_SEGA_ENTERPRISES,_LTD.,_1999"
_= space
"© [Official company name][Year of release]"
```

However, when display on the visual memory is difficult due to lack of hardware display space, the following can be used.

```
"©_SEGA_1999"
_= space
```

Required

Display the copyright on the title screen.

25.3 Game Start

Required

Pressing the **A** and **B** buttons together from the Title Display/Loop (27.2) starts the main game (game start).

Required

"Press **A+B**" should be displayed on the Title Screen.

25.4 Single-Unit Applications Using Visual Comments for Save Files

Required

An executable file should not rewrite its own Visual Comment.

Even the smallest Visual Comment requires almost 5 blocks, so having the executable file rewrite even a single block of Visual Memory would probably cause an unacceptably long delay and significant increase in power consumption, and the rewrite process could not be guaranteed to finish normally.

25.5 Processing When Power is Low

Required

When a low-voltage interrupt occurs, the application should finish storing any data and other processes, and then immediately display a caution message such as “Please replace the batteries,” and disable any further input from the mode buttons or other keys.

Note: After the application detects low voltage, the only operation that should be accepted is operation of the mode buttons to protect the data.

25.6 Visual Memory Single Application File Name Registration

Note: File names of Visual Memory Single Applications must be registered, just like Sega Dreamcast application save files. (Please make sure the “Back up” section of the Master ROM Release form has been completely filled out.)

The documentation requirements for the executable file's name, icon and etc. are the same as for the save file. See 15.1, *Save File*.

Required

The last three characters of a 12-character single-application file name should be `'_VM'`.

25.7 Interconnecting Visual Memories

25.7.1 Before Connecting

Recommended

When interconnecting Visual Memories while an application is executing, please display a caution message such as “Waiting for Connection...” to indicate the status to the user.

Recommended

While the above “Waiting for Connection...” (or similar) message is displayed, allow return to the previous menu either after a time-out period or by the user pressing the **B** button.

25.7.2 While Connected

Recommended

While the memories are interconnected, please display a caution message such as "Now exchanging data..." to indicate the status of the connection.

25.7.3 Finishing the Connection

Recommended

When finished with the connection, please display a caution message such as "Please separate the VMs" to indicate that the exchange is finished and the Visual Memories may be separated.

25.7.4 Prohibiting Continual Connection

Recommended

Connection for data exchange should be minimized, and the application should prompt for Visual Memory separation as soon as an exchange is finished.

25.8 Connecting Visual Memory to the Main Unit Controller

Recommended

When Visual Memory is inserted in a Main Unit controller in game mode (executing a game on Visual Memory), mode switching should be able to be done on the software side to be able to use it as a memory card.

For safety, leave a description in the Visual Memory instruction manual "Switch to the clock mode or file mode and connect."

25.9 Writing Prohibitions to a Visual Memory Single Application

For security reasons, writing Sega Dreamcast program execution code to the Visual Memory Single Application area or save data area is prohibited. Refer to 20.2, *Prohibitions of the Writing Area*.

Chapter 26 Image and Animation Restrictions

Required

A very small number of individuals may experience seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns or backgrounds on a television screen or while playing videogames could induce a seizure in such individuals. Certain conditions may induce undetected seizure symptoms even in persons who have no history of prior seizures or epilepsy.

Because of this possibility, an appropriate seizure warning should be included on videogame packaging.

The following guidelines have been provided by NHK (Japan Broadcasting Co.), and should be used as a guideline for precautionary measures:

- Prepare an option that can toggle light ON/OFF when flashing lights appear.
- Display a warning message like the one below at the beginning of a game.

These guidelines are examined in more detail in the next section, “NHK (Japan Broadcasting Co.) and Japan Civil Broadcasting Union Guidelines."

Note: Third-party companies should take care to ensure that their titles comply with these guidelines. We hope that each company takes the responsibility to ensure that their games comply with the guidelines.

26.1 NHK (Japan Broadcasting Co.) and Japan Civil Broadcasting Union Guidelines

1. The rate of blinking of an image or light generally should not exceed three times per second, in addition to the following points:

- Bright red colors must be handled especially carefully.
- Further to condition 1, if a faster blink rate is necessary it should not exceed five times per second, and in this case, the change in screen brightness should be no more than 20% and total blink time should be less than two seconds.

2. Rolling of high contrast screens or sudden screen changes of more than 20% brightness should generally be limited to no more than three times per second.
3. Avoid allowing a regular pattern (stripes, spirals, concentric circles, etc.) to occupy most of the screen.

Chapter 27

Applications for Operation on European Systems

Required

Software designed for operation on European systems should be compatible with a 21-pin RGB cable (15kHz RGB output mode).

One potential problem is that in France, many television sets use 15kHz RGB skate cables, while not many are equipped with PAL video input jacks.

For this reason, unless 15kHz RGB is consciously supported via software, it may not be possible to use the Sega Dreamcast system in many households in France.

If you have questions about technical problems regarding Sega Dreamcast compatibility with TV sets in Europe, you may find answers at:

e-mail: edts@soe.sega.co.uk

…or Sega of America Developer Technical Support website at:

http://www.dts.sega.com/NextGen

Chapter 28

Glossary: Consistency of Terminology

Sega Dreamcast related terminology in screen displays and the operating manual such as “backup” should appear as in the table below. Displays during the game should use only common terms such as “Main Unit” and “Controller,” and avoid trade names such as “Sega Dreamcast.”

28.1 Sega Dreamcast Unit Terms

Sega Dreamcast

Official name of console

Console / Main Console

Informal reference to console

Game Disc

This is the game GD-ROM

Audio CD

Standard audio CD

POWER Button

Turns on the Dreamcast unit

RESET Button

There is no Reset button on the Sega Dreamcast

OPEN Button

OPEN Button, used to open unit for disc insertion

LED

Light Emitting Diode, used to indicate use or status of the console

AV Connector

Audio/Video Connector

Serial Connector

Serial Connection device

Expansion Connector

Expansion Connection device

Connector 1

Control Port A or Port A

Connector 2

Control Port B or Port B

Connector 3

Control Port C or Port C

Connector 4

Control Port D or Port D

Disc Lid

Disc Lid for Sega Dreamcast main unit. Opens to insert or remove a game disc

Disc Tray

(not used)

28.2 VMU Memory Card

VMU

Official name of Memory Card (Visual Memory Unit)

Memory Card

Informal reference to VMU

File(s)

A saved-game file or files on the VMU

Icon

Icon representing a saved-game file on the VMU

Block

Saved-game block (file size reference)

LCD Display

Graphical display

Speaker

Speaker for beep

Directional Pad

Mini directional pad

A, B Buttons

Buttons

Sleep Button

On/Off

Mode Button

Switch modes

Note: VMU is either inserted in control pad, removed from control pad (stand-alone), or connected head-to-head.

28.3 Dreamcast Controller

Dreamcast Controller

Official name of controller

Controller

Informal reference to Dreamcast controller

Analog Directional Pad

Analog portion of controller

Digital Directional Pad

Plus-shaped pad

Left / Right Triggers

Analog triggers

A, B, X, Y Buttons

Buttons in diamond arrangement

Start Button

Triangle shaped button

Slot 1

For VMU memory card

Slot 2

For VMU or vibration pack

Note: In general, the same buttons will be present on all types of peripherals… use the same name to refer to these, where applicable.

28.4 Jump Pack

A vibration peripheral that fits in Slot 2 of the Dreamcast controller

28.5 Arcade Stick

Arcade Stick

Name of arcade/fighting controller

Joystick

Digital joystick

A, B, C, X, Y, Z Buttons

Arcade buttons

Start Button

Small start button

28.6 Steering Wheel

Steering Wheel

Analog steering wheel

Gas Lever

Right analog lever

Brake Lever

Left analog lever

A, B, +, –

Red buttons (+/- equivalent to X/Y)

Start Button

Small start button

28.7 Gun Controller

Gun controller

Light gun controller

Lens

Light sensor

Trigger

Digital trigger

Directional Pad

Plus-shaped pad

B, Start Button

Small buttons

28.8 VGA Adapter

VGA Connector

VGA output

S-Video Connector

S-Video output

Composite Video

Standard composite output

Stereo Mini-Jack

Headphone-style jack

28.9 Modem

Modem

56K modem

Phone Jack

Port for phone line

28.9.1 Other Peripherals

Fishing Controller

"Get-Bass" pack-in special controller for fishing games

Keyboard

92 key keyboard

Speech Input Device (SIP)

Head-mounted microphone device

Flight Stick

3rd-party designed analog flight simulation style stick

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