- The project you loaded has reached the state Analyzed. Therefore you have been directed to the subsequent workflow step.

Report for Digital Preservation of Console Video Games (SNES)

Report creation date: 17.07.2008 11:09:56

Display Changelogs

Plan name	Digital Preservation of Console Video Games (SNES)
Current state	Analyzed
Plan description	Data for SNES preservation from the diploma thesis "Digital Preservation of Console Video Games"
Responsible planners	Mark Guttenbrunner
Organization	Vienna University of Technology

- Basis
- Sample Records
- Requirements
- Alternatives
- Go-Decision
- Experiments
- Evaluation & Transformation
- Results: Weighted multiplication
- Results: Weighted sum
- Recommendation

Identification code

Document types   Digital Data from Cartridges of Super Nintendo Entertainment System (SNES) video games (Binary Streams)

Mandate

Planning purpose   The library has the legal obligation to preserve every published console video game like national libraries are obliged to preserve publications on paper and offer possibilities to display these games to the public.

Designated community   The target audience are visitors of the library. It is not necessary to publish the collection online. Access to games from the library collection to experience the games original look & feel should be possible for the public. Access to original media shall not be necessary to avoid damage to rare specimen.

Applying policies   For legal reasons only games physically in the possession of the library are preserved.

Relevant organisational procedures and workflows

Contracts and agreements specifying preservation rights

Reference to agreements of maintenance and access

Plan relations   No previous attempts to preserve these kinds of documents have been made.

Triggers

Trigger	Comment
Changed Environment	New formed legal obligation to preserve video games.

Samples description: 3 games are selected for every system: - One of the best selling games for the system, as those are usually of the biggest public interest. This should be a standard game without special enhancements like overlays, special controllers or specially needed accessories. - A game with special overlays or special controllers, as it is more difficult to preserve the look & feel for these kind of games than for others. - A game using an accessory expanding the capabilities of the system. This additional hardware can either be applied to the system itself or on the media. If no hardware extensions are available, one of the last games for the system is selected. Those are usually the hardest to preserve as developers are able to utilize a system most at the end of its product cycle.

Collection profile

Collection ID:	
Description:	Physical collection of Cartridges for the Nintendo SNES which have been transfered to binary streams.
Type of objects:	Digital Data from Cartridges of Super Nintendo Entertainment System (SNES) video games (Binary Streams).
Number of objects:	1000
Expected growth rate:	Slow. Occasionally new games can be added to the librarie's collection.

Name	Short name	Description	Original environment	Data	Object-format
Super Mario World	SMW	A popular game selected for the system. It was the first game for the system with Nintendo's famous character the plumber "Mario". It was also one of the	Super Nintendo Entertainment System (SNES) (PAL)	No data	**PUID:** **Name:** **Version:** **mime-type:**

Name	Short name	Description	Original environment	Data	Object-format
		best sold games for the system.			
Super Scope	Super Scope	No games for this system used overlays, so a game with a special controller was selected. Super Scope is a game which was shipped with a light gun shaped like a rocket launcher.	Super Nintendo Entertainment System (SNES) (PAL)	No data	**PUID:** **Name:** **Version:** **mime-type:**
Star Fox	Star Fox	Various games for the Nintendo SNES used special hardware on the cartridges to support the systems processing power. This game uses a chip that assists the systems central processing unit with 3D calculations.	Super Nintendo Entertainment System (SNES) (PAL)	No data	**PUID:** **Name:** **Version:** **mime-type:**

Expand All | Collapse All

Node	Weight	Total weight	Single	Scale	
▼Objectives	1	1			

▼ Process Characteristics	0.1	0.1				
▶ Usability	0.4	0.04				
▶ Configurability	0.6	0.06				
▼ Costs	0.1	0.1				
▶ costs for preserving media	0.3	0.03	☑	Ordinal	industry standard optical drive, non-optical direct connect, non-ind	
▶ fraction of games supported	0.3	0.03	☑	Positive number		
▶ total number of games supported	0.4	0.04	☑	Ordinal	less than 10, 10-100, 101-500, 500-2000 or more than 2000	
▼ Object Characteristics	0.4	0.4				
▶ object interpretable	0.1	0.04	☐	Boolean	Yes or No	
▶ speed	0.15	0.06	☐	Positive number		
▶ Interactivity	0.2	0.08				
▶ Sound	0.2	0.08				
▶ Graphics	0.25	0.1				
▶ Network Support	0.1	0.04				
▼ Context and Data Characteristics	0.2	0.2				
▶ Metadata	0.4	0.08				
▶ reference to console video game system	0.3	0.06	☑	Boolean	Yes or No	
▶ reference to application	0.3	0.06	☑	Ordinal	not available, without system configuration or with system configu	
▼ Infrastructure	0.2	0.2				
▶ Scalability	0.25	0.05				
▶ Stability	0.3	0.06				
▶ Legality	0.1	0.02				
▶ Media	0.25	0.05				
▶ Additional Accessories	0.1	0.02				

**Importance factors
comments:**
Description:
Attached files:

Name	Description	Reason for considering	Config settings	Necessary resources
ZSNES 1.51	SNES Emulator	Only emulators that have seen at least one release in the last 6 month or that have been released in stable final versions are evaluated. If no emulator exists which meets this criterion, the latest released emulator is evaluated. Only emulators for personal computers running on a Microsoft Windows or Linux operating system or on a virtual machine on one of these operating systems are evaluated. For every system a maximum of 3 emulators are evaluated. If more than 3 emulators meet the criteria defined here,	default configuration like in release package of ZSNES 1.51	

Name	Description	Reason for considering	Config settings	Necessary resources
		the ones which have been in development longest are considered. Alternatives are selected by using the publicly most popular and best rated emulators according to a world wide web research. Dedicated emulators as well as emulators supporting more than one system are chosen if available. Only emulators that are known to be able to launch commercial games are selected. ZSNES is one of the most popular emulators for Nintendo SNES.		
SNES9X 1.51	SNES Emulator	Only emulators that have seen at least one release in the last 6 month or that have been released in stable final versions are evaluated. If no emulator exists which meets this criterion, the latest released emulator is evaluated. Only emulators for personal computers running on a Microsoft Windows or Linux operating system or on a virtual machine on one of these operating systems are evaluated. For every system a maximum of 3 emulators are evaluated. If more than 3 emulators meet the criteria defined here, the ones which have been in development longest are considered. Alternatives are selected by using the publicly most popular and best rated emulators according to a world wide web research. Dedicated emulators as well as emulators supporting more than one system are chosen if available. Only emulators that are known to be able to launch commercial games are selected. SNES9X is one of the most popular emulators for Nintendo SNES.	default configuration like in release package of SNES9X 1.51	
MESS 0.119	Multisystem Emulator	Only emulators that have seen at least one release in the last 6 month or that have been released in stable final versions are evaluated. If no emulator exists which meets this criterion, the latest released emulator is evaluated. Only emulators for personal computers running on a Microsoft Windows or Linux operating system or on a virtual machine on one of these operating systems are evaluated. For every system a maximum of 3 emulators are evaluated. If more than 3 emulators meet the criteria defined here, the ones which have been in development longest are considered. Alternatives are selected by using the publicly most popular and best rated emulators according to a world wide web research. Dedicated emulators as well as emulators supporting more than one system are chosen if available. Only emulators that are known to be able to launch commercial games are selected. MESS is the multi system emulator for Nintendo SNES which supports the most other systems as well.	default configuration like in release package of MESS 0.119	
VLC 0.8.6c	Video Approch - making videos of the games running on original hardware	The video is captured in the original resolution as used on a standard TV with the original frame rate that the system produces. As a container format MPEG-4 Part 14 (or short MP4) is used as it allows the use of metadata tags and is a common standard. The open source VLC media player1 release 0.8.6c is used to play-back the recorded videos.		
Museum approach	keeping original hardware and software			

Decision: GO

Reason: As the original system as well as all needed original media are not available, the museum approach is not applicable and will not be evaluated.

Action needed: no action needed

Alternative	Experiment description	Run description	Experiment

			data uploaded
ZSNES 1.51	Each experiment is carried out on a HP Compaq Business Notebook nc6120 personal computer for running the simulation or emulation programs. A system without dedicated graphic card was used to test the independence of special hardware. Hardware specifications of the used personal computer: - Intel Pentium M 750 1.86 GHZ Processor - Mobile Intel 915GM Express chipset for graphic and sound system - 1.5 GigaBytes main memory - DVD-ROM drive - serial, parallel, FireWire, USB2.0 and Ethernet network interfaces - 15" TFT-active matrix display with a maximal resolution of 1024 x 768 and 24 bit color resolution (16.7 million colors) - digital joystick connected to USB-port - analog joystick connected to USB-port Configuration options: The Windows 32bit versions of alternatives are tested, if more than one version exist that would run on the system used for the experiments. For every sample record the default settings of the tested preservation alternative are used to carry out the experiment. The default settings are the settings as set in the release version downloaded from the alternative's homepage listed in the tables in Appendix D. Game settings are set according to the region and video display frequency needed by the game. Necessary add-ons for the sample record are activated (if necessary and possible).	For every alternative menu options and configuration possibilities are reviewed for the usability aspects of the requirements. Next a short review of the source code (if available) is performed to evaluate the figures concerning the infrastructure aspects. Selection screens, 3D and 2D game sequences (if applicable) are tested for the audible and visible aspects. The preserved alternative is compared to either the original image on a TV screen produced by the original system if available or to a video recording of the original game. The test is performed using the standard PC controls (mouse, keyboard) as well as the digital or analog PC joystick (whichever resembles best the original controller of the system) to evaluate the interactivity aspects of the game. Every game is played at least 5 minutes to detect glitches along the playing progress. The same tests are performed on the original system to compare the gaming experience.	No
SNES9X 1.51	same as for ZSNES 1.51	see ZSNES 1.51	No
MESS 0.119	same as for ZSNES 1.51	see ZSNES 1.51	No
VLC 0.8.6c		For the video approach the visible and audible aspects of a recorded sample of the gameplay is compared with the original system.	No

Evaluation & Transformation Results

Usability > game start

Results

Alternatives	Single
ZSNES 1.51	only through user interface
SNES9X 1.51	only through user interface
MESS 0.119	through command line or user interface
VLC 0.8.6c	through command line or user interface
Alternatives	**Single**

Transformer

Ordinal Value	Target Value
only through command line	-> 3.0
only through user interface	-> 1.0
through command line or user interface	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	5	
VLC 0.8.6c	5	

Usability > encapsulated details viewable

Results

Alternatives	Single
ZSNES 1.51	encapsulation not supported
SNES9X 1.51	encapsulation not supported
MESS 0.119	encapsulation not supported
VLC 0.8.6c	no

Transformer

Ordinal Value	Target Value
encapsulation not supported	-> 1.0
no	-> 3.0
yes	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	3	

Configurability > game configuration

Results

Alternatives	Single
ZSNES 1.51	auto-detection by preservation solution
SNES9X 1.51	auto-detection by preservation solution
MESS 0.119	command line
VLC 0.8.6c	encapsulation in record

Transformer

Ordinal Value	Target Value
menu only	-> 1.0
command line	-> 2.0
auto-detection by preservation solution	-> 3.0
configuration file for record	-> 4.0
encapsulation in record	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	3	
SNES9X 1.51	3	
MESS 0.119	2	
VLC 0.8.6c	5	

Configurability > global system preferences

Results

Alternatives	Single
ZSNES 1.51	configuration file
SNES9X 1.51	configuration file
MESS 0.119	configuration file
VLC 0.8.6c	configuration file

Transformer

Ordinal Value	Target Value
menu only	-> 1.0
command line	-> 3.0
configuration file	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	5	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	5	

Costs > costs for preserving media

Results

Alternatives	Single
ZSNES 1.51	processing hardware on media
SNES9X 1.51	processing hardware on media
MESS 0.119	processing hardware on media
VLC 0.8.6c	industry standard optical drive

Transformer

Ordinal Value	Target Value
industry standard optical drive	-> 5.0
non-optical direct connect	-> 4.0
non-industry standard optical drive	-> 3.0
non-processing-hardware on media	-> 2.0
processing hardware on media	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Costs > fraction of games supported

Results

Alternatives	Single
ZSNES 1.51	100.0
SNES9X 1.51	100.0
MESS 0.119	100.0
VLC 0.8.6c	100.0

Transformer

Threshold	Target value
0.0 percent	-> 1
20.0 percent	-> 2
40.0 percent	-> 3
60.0 percent	-> 4
80.0 percent	-> 5

Threshold stepping: Linear

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	5	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	5	

Costs > total number of games supported

Results

Alternatives	Single
ZSNES 1.51	500-2000
SNES9X 1.51	500-2000
MESS 0.119	more than 2000
VLC 0.8.6c	more than 2000

Transformer

Ordinal Value	Target Value
less than 10	-> 1.0
10-100	-> 2.0
101-500	-> 3.0
500-2000	-> 4.0
more than 2000	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	4	
SNES9X 1.51	4	
MESS 0.119	5	
VLC 0.8.6c	5	

Object Characteristics > object interpretable

Results

Alternatives	1	2	3
ZSNES 1.51	Yes	Yes	Yes
SNES9X 1.51	Yes	Yes	Yes
MESS 0.119	Yes	Yes	No
VLC 0.8.6c	Yes	Yes	Yes

Transformer

Ordinal Value	Target Value
Yes	-> 5.0
No	-> 0.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Object Characteristics > speed

Results

Alternatives	1	2	3
ZSNES 1.51	0.0	0.0	0.0
SNES9X 1.51	0.0	0.0	0.0
MESS 0.119	0.0	0.0	100.0
VLC 0.8.6c	0.0	0.0	0.0

Transformer

Threshold	Target value
100.0 deviation in percent	-> 1
80.0 deviation in percent	-> 2
40.0 deviation in percent	-> 3
20.0 deviation in percent	-> 4
0.0 deviation in percent	-> 5

Threshold stepping: Steps

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	1	3.67	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Arithmetic mean

Recreated Controls with Standard Personal Computer Hardware > controls resemble look of original controller

Results

Alternatives	1	2	3
ZSNES 1.51	N	N	N
SNES9X 1.51	N	N	N
MESS 0.119	N	N	N
VLC 0.8.6c	no controls supported	no controls supported	no controls supported

Transformer

Ordinal Value	Target Value
Y	-> 5.0
N	-> 1.0
no controls supported	-> 0.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	1	1	1	1	
SNES9X 1.51	1	1	1	1	
MESS 0.119	1	1	1	1	
VLC 0.8.6c	0	0	0	0	

Aggregation mode: Worst result

Recreated Controls with Standard Personal Computer Hardware > response delay

Results

Transformer

Transformed Results

Alternatives	1	2	3
ZSNES 1.51	short delay	short delay	short delay
SNES9X 1.51	short delay	short delay	short delay
MESS 0.119	short delay	short delay	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Ordinal Value	Target Value

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	3	3	3	3	
SNES9X 1.51	3	3	3	3	
MESS 0.119	3	3	5	3	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Recreated Controls with Standard Personal Computer Hardware > feel of original gaming experience

Results

Alternatives	1	2	3
ZSNES 1.51	well playable	well playable	well playable
SNES9X 1.51	well playable	well playable	well playable
MESS 0.119	well playable	well playable	not acceptable
VLC 0.8.6c	not acceptable	not acceptable	not acceptable

Transformer

Ordinal Value	Target Value
not acceptable	-> 1.0
fairly playable	-> 2.0
well playable	-> 4.0
perfectly recreated	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	4	4	4	4	
SNES9X 1.51	4	4	4	4	
MESS 0.119	4	4	1	1	
VLC 0.8.6c	1	1	1	1	

Aggregation mode: Worst result

Controller Feedback > audible

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > visual

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > force

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Recreated Controls with Game Hardware > look

Results

Alternatives	1	2	3
ZSNES 1.51	controllers resembling original controller supported	controllers resembling original controller not available	controllers resembling original controller supported
SNES9X 1.51	controllers resembling original controller supported	controllers resembling original controller not available	controllers resembling original controller supported
MESS 0.119	controllers resembling original controller supported	controllers resembling original controller not available	controllers resembling original controller supported
VLC 0.8.6c	controllers resembling original controller not supported	controllers resembling original controller not available	controllers resembling original controller not supported

Transformer

Ordinal Value	Target Value
controllers resembling original controller not available	-> 1.0
controllers resembling original controller not supported	-> 3.0
controllers resembling original controller supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	1	5	1	
SNES9X 1.51	5	1	5	1	
MESS 0.119	5	1	5	1	
VLC 0.8.6c	3	1	3	1	

Aggregation mode: Worst result

Recreated Controls with Game Hardware > response delay

Results

Alternatives	1	2	3
ZSNES 1.51	short delay	considerable delay	short delay
SNES9X 1.51	short delay	considerable delay	short delay
MESS 0.119	short delay	considerable delay	short delay
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
considerable delay	-> 1.0
short delay	-> 3.0
delay not noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	3	1	3	1	
SNES9X 1.51	3	1	3	1	
MESS 0.119	3	1	3	1	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Recreated Controls with Game Hardware > feel

Results

Alternatives	1	2	3
ZSNES 1.51	controllers resembling original controller supported	controllers resembling original controller not available	controllers resembling original controller supported
SNES9X 1.51	controllers resembling original controller supported	controllers resembling original controller not available	controllers resembling original controller supported
MESS 0.119	controllers resembling original controller supported	controllers resembling original controller not available	controllers resembling original controller supported
VLC 0.8.6c	controllers resembling original controller not available	controllers resembling original controller not available	controllers resembling original controller not available

Transformer

Ordinal Value	Target Value
controllers resembling original controller not available	-> 1.0
controllers resembling original controller not supported	-> 3.0
controllers resembling original controller supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	1	5	1	
SNES9X 1.51	5	1	5	1	
MESS 0.119	5	1	5	1	
VLC 0.8.6c	1	1	1	1	

Aggregation mode: Worst result

Controller Feedback > audible

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > visual

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > force

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Overlay Support > response delay

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
considerable delay	-> 1.0
short delay	-> 3.0
delay not noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Overlay Support > look

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported but necessary for game play	-> 1.0
not supported and not necessary for game play	-> 2.0
supported but not necessary for game play	-> 4.0
supported and necessary for game play	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Overlay Support > feel

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
not usable	-> 3.0
usable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Standard Controller > supported

Results

Alternatives	1	2	3
ZSNES 1.51	supported with special hardware	supported with special hardware	supported with special hardware
SNES9X 1.51	supported with special hardware	supported with special hardware	supported with special hardware
MESS 0.119	supported with special hardware	supported with special hardware	supported with special hardware
VLC 0.8.6c	not supported	not supported	not supported

Transformer

Ordinal Value	Target Value
not supported	-> 1.0
supported with special hardware	-> 3.0
supported without special hardware	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	3	3	3	3	
SNES9X 1.51	3	3	3	3	
MESS 0.119	3	3	3	3	
VLC 0.8.6c	1	1	1	1	

Aggregation mode: Worst result

Standard Controller > response delay

Results

Alternatives	1	2	3
ZSNES 1.51	delay not noticeable	delay not noticeable	delay not noticeable
SNES9X 1.51	delay not noticeable	delay not noticeable	delay not noticeable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
considerable delay	-> 1.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Alternatives	1	2	3	Ordinal Value	Target Value	Aggregation mode: Worst result
MESS 0.119	delay not noticeable	delay not noticeable	not applicable	short delay	-> 3.0	
VLC 0.8.6c	not applicable	not applicable	not applicable	delay not noticeable	-> 5.0	

Controller Feedback > audible

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > visual

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > force

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Alternatives	1	2	3
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Ordinal Value	Target Value
supported	-> 5.0

Aggregation mode: Worst result

Special Controller > supported

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not supported	not applicable
SNES9X 1.51	not applicable	not supported	not applicable
MESS 0.119	not applicable	not supported	not applicable
VLC 0.8.6c	not applicable	not supported	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported with special hardware	-> 4.0
supported without special hardware	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	1	5	1	
SNES9X 1.51	5	1	5	1	
MESS 0.119	5	1	5	1	
VLC 0.8.6c	5	1	5	1	

Aggregation mode: Worst result

Special Controller > response delay

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
considerable delay	-> 1.0
short delay	-> 3.0
delay not noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > audible

Results

Transformer

Transformed Results

Alternatives	1	2	3	Aggregated	Comments

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > visual

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Controller Feedback > force

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Interactivity > additional items supported

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Music > quality

Results

Alternatives	1	2	3
ZSNES 1.51	like original	like original	near perfect
SNES9X 1.51	like original	like original	like original
MESS 0.119	like original	like original	no music supported
VLC 0.8.6c	like original	like original	like original

Transformer

Ordinal Value	Target Value
no music supported	-> 1.0
errors not acceptable	-> 2.0
errors acceptable	-> 3.0
near perfect	-> 4.0
like original	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	4	4	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	1	1	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Music > synchronous to video

Results

Alternatives	1	2	3
ZSNES 1.51	no errors noticeable	no errors noticeable	no errors noticeable
SNES9X 1.51	no errors noticeable	no errors noticeable	no errors noticeable
MESS 0.119	no errors noticeable	no errors noticeable	not applicable
VLC 0.8.6c	no errors noticeable	no errors noticeable	no errors noticeable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
severe errors apparent	-> 1.0
small errors noticeable	-> 3.0
no errors noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Sound Effects > quality

Results

Alternatives	1	2	3
ZSNES 1.51	like original	errors acceptable	near perfect
SNES9X 1.51	like original	errors acceptable	near perfect
MESS 0.119	like original	like original	no sound effects supported
VLC 0.8.6c	like original	like original	like original

Transformer

Ordinal Value	Target Value
no sound effects supported	-> 1.0
errors not acceptable	-> 2.0
errors acceptable	-> 3.0
near perfect	-> 4.0
like original	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	3	4	3	
SNES9X 1.51	5	3	4	3	
MESS 0.119	5	5	1	1	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Sound Effects > synchronous to video

Results

Alternatives	1	2	3
ZSNES 1.51	no errors noticeable	no errors noticeable	no errors noticeable
SNES9X 1.51	no errors noticeable	no errors noticeable	no errors noticeable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	

Alternatives	1	2	3
MESS 0.119	no errors noticeable	no errors noticeable	not applicable
VLC 0.8.6c	no errors noticeable	no errors noticeable	no errors noticeable

Ordinal Value	Target Value
severe errors apparent	-> 1.0
small errors noticeable	-> 3.0
no errors noticeable	-> 5.0

Alternatives	1	2	3	Aggregated	Comments
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Graphics > image quality

Results

Alternatives	1	2	3
ZSNES 1.51	no difference to original noticeable	no difference to original noticeable	no difference to original noticeable
SNES9X 1.51	near perfect	near perfect	near perfect
MESS 0.119	severe errors on whole image	severe errors on whole image	nothing displayed
VLC 0.8.6c	no difference to original noticeable	no difference to original noticeable	no difference to original noticeable

Transformer

Ordinal Value	Target Value
nothing displayed	-> 0.0
severe errors on whole image	-> 1.0
errors noticeable but do not affect gameplay	-> 3.0
near perfect	-> 4.0
no difference to original noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	4	4	4	4	
MESS 0.119	1	1	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Graphics > screen overlay

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Alternatives	1	2	3	Ordinal Value	Target Value	Aggregation mode: Worst result
MESS 0.119	not applicable	not applicable	not applicable	supported manually by loading image	-> 3.0	
VLC 0.8.6c	not applicable	not applicable	not applicable			
				supported by auto-detection	-> 4.0	
				supported through encapsulation	-> 5.0	

Graphics > frame rate

Results

Alternatives	1	2	3
ZSNES 1.51	0.0	0.0	0.0
SNES9X 1.51	0.0	0.0	0.0
MESS 0.119	0.0	0.0	100.0
VLC 0.8.6c	0.0	0.0	0.0

Transformer

Threshold	Target value
100.0 deviation in percent	-> 1
70.0 deviation in percent	-> 2
40.0 deviation in percent	-> 3
20.0 deviation in percent	-> 4
0.0 deviation in percent	-> 5

Threshold stepping: Steps

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	1	3.67	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Arithmetic mean

Graphics > 2D collision detection

Results

Alternatives	1	2	3
ZSNES 1.51	no errors noticeable	not applicable	not applicable
SNES9X 1.51	no errors noticeable	not applicable	not applicable
MESS 0.119	no errors noticeable	not applicable	no 2D objects displayed
VLC 0.8.6c	no errors noticeable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
no 2D objects displayed	-> 0.0
not applicable	-> 5.0
severe errors	-> 1.0
errors noticeable but do	-> 3.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Ordinal Value	Target Value
not affect gameplay	
no errors noticeable	-> 5.0

Graphics > 2D object position placement

Results

Alternatives	1	2	3
ZSNES 1.51	no errors noticeable	no errors noticeable	no errors noticeable
SNES9X 1.51	no errors noticeable	no errors noticeable	no errors noticeable
MESS 0.119	severe errors on whole image	no errors noticeable	no 2D objects displayed
VLC 0.8.6c	no errors noticeable	no errors noticeable	no errors noticeable

Transformer

Ordinal Value	Target Value
no 2D objects displayed	-> 0.0
not applicable	-> 5.0
severe errors on whole image	-> 1.0
errors noticeable but do not affect gameplay	-> 3.0
no errors noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	1	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Graphics > 2D object layer placement

Results

Alternatives	1	2	3
ZSNES 1.51	no errors noticeable	no errors noticeable	no errors noticeable
SNES9X 1.51	no errors noticeable	no errors noticeable	no errors noticeable
MESS 0.119	severe errors on whole image	no errors noticeable	no 2D objects displayed

Transformer

Ordinal Value	Target Value
no 2D objects displayed	-> 0.0
not applicable	-> 5.0
severe errors on whole	-> 1.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	1	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Alternatives	1	2	3	Ordinal Value	Target Value
VLC 0.8.6c	no errors noticeable	no errors noticeable	no errors noticeable	image	
				errors noticeable but do not affect gameplay	-> 3.0
				no errors noticeable	-> 5.0

Graphics > 2D background scrolling

Results

Transformer

Transformed Results

Alternatives	1	2	3	Ordinal Value	Target Value
ZSNES 1.51	no errors noticeable	no errors noticeable	no errors noticeable	no 2D objects displayed	-> 0.0
SNES9X 1.51	no errors noticeable	no errors noticeable	no errors noticeable	not applicable	-> 5.0
MESS 0.119	no errors noticeable	no errors noticeable	no 2D objects displayed	severe errors on whole image	-> 1.0
VLC 0.8.6c	no errors noticeable	no errors noticeable	no errors noticeable	errors noticeable but do not affect gameplay	-> 3.0
				no errors noticeable	-> 5.0

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Graphics > 3D object calculation

Results

Transformer

Transformed Results

Alternatives	1	2	3	Ordinal Value	Target Value
ZSNES 1.51	not applicable	not applicable	no errors noticeable	no 3D objects displayed	-> 0.0
SNES9X 1.51	not applicable	not applicable	no errors noticeable		

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Alternatives	1	2	3	Ordinal Value	Target Value
MESS 0.119	not applicable	not applicable	no 3D objects displayed	not applicable	-> 5.0
VLC 0.8.6c	not applicable	not applicable	no errors noticeable	severe errors on whole image	-> 1.0
				errors noticeable but do not affect gameplay	-> 3.0
				no errors noticeable	-> 5.0

Aggregation mode: Worst result

Graphics > 3D object clipping

Results

Transformer

Transformed Results

Alternatives	1	2	3	Ordinal Value	Target Value
ZSNES 1.51	not applicable	not applicable	no errors noticeable	no 3D objects displayed	-> 0.0
SNES9X 1.51	not applicable	not applicable	no errors noticeable	not applicable	-> 5.0
MESS 0.119	not applicable	not applicable	no 3D objects displayed	severe errors on whole image	-> 1.0
VLC 0.8.6c	not applicable	not applicable	no errors noticeable	errors noticeable but do not affect gameplay	-> 3.0
				no errors noticeable	-> 5.0

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Graphics > 3D texture quality

Results

Transformer

Transformed Results

Alternatives	1	2	3	Aggregated	Comments

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	no errors noticeable
SNES9X 1.51	not applicable	not applicable	no errors noticeable
MESS 0.119	not applicable	not applicable	no 3D objects displayed
VLC 0.8.6c	not applicable	not applicable	no errors noticeable

Ordinal Value	Target Value
no 3D objects displayed	-> 0.0
not applicable	-> 5.0
severe errors on whole image	-> 1.0
errors noticeable but do not affect gameplay	-> 3.0
no errors noticeable	-> 5.0

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Graphics > hardware supported special effects

Results

Alternatives	1	2	3
ZSNES 1.51	no differences noticeable	no differences noticeable	no differences noticeable
SNES9X 1.51	no differences noticeable	no differences noticeable	no differences noticeable
MESS 0.119	no differences noticeable	no differences noticeable	no objects displayed
VLC 0.8.6c	no differences noticeable	no differences noticeable	no differences noticeable

Transformer

Ordinal Value	Target Value
no objects displayed	-> 0.0
not applicable	-> 5.0
severe differences to original	-> 1.0
small differences to original	-> 3.0
no differences noticeable	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	0	0	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Network Support > network protocols

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Network Support > lag for network play

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
considerable delay	-> 1.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Alternatives	1	2	3	Ordinal Value	Target Value
MESS 0.119	not applicable	not applicable	not applicable	short delay	-> 3.0
VLC 0.8.6c	not applicable	not applicable	not applicable	delay not noticeable	-> 5.0

Aggregation mode: Worst result

Network Support > use of original servers

Results

Alternatives	1	2	3
ZSNES 1.51	not applicable	not applicable	not applicable
SNES9X 1.51	not applicable	not applicable	not applicable
MESS 0.119	not applicable	not applicable	not applicable
VLC 0.8.6c	not applicable	not applicable	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported	-> 5.0

Transformed Results

Alternatives	1	2	3	Aggregated	Comments
ZSNES 1.51	5	5	5	5	
SNES9X 1.51	5	5	5	5	
MESS 0.119	5	5	5	5	
VLC 0.8.6c	5	5	5	5	

Aggregation mode: Worst result

Documentation > box artwork available

Results

Alternatives	Single
ZSNES 1.51	No
SNES9X 1.51	No
MESS 0.119	No
VLC 0.8.6c	Yes

Transformer

Ordinal Value	Target Value
Yes	-> 5.0
No	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Documentation > manual available

Results

Alternatives	Single
ZSNES 1.51	No
SNES9X 1.51	No
MESS 0.119	No
VLC 0.8.6c	Yes

Transformer

Ordinal Value	Target Value
Yes	-> 5.0
No	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Documentation > original media available

Results   **Transformer**   **Transformed Results**

Alternatives	Single			Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Documentation > originally supplied additional items available

Results   **Transformed Results**

Alternatives	Single	Transformer		Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Metadata > TV standard information available

Results   **Transformed Results**

Alternatives	Single	Transformer		Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Metadata > video display frequency information available

Results   **Transformed Results**

Alternatives	Single	Transformer		Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Metadata > region lock-out information available

Results   **Transformer**   **Transformed Results**

Alternatives	Single	Ordinal Value	Target Value	Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	Yes	-> 5.0	ZSNES 1.51	1	

Alternatives	Single			Alternatives	Single (=Aggregated)	Comments
SNES9X 1.51	No	**Ordinal Value**	**Target Value**	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Metadata > description of original media available

Results   **Transformed Results**

Alternatives	Single	Transformer		Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Metadata > context details available

Results   **Transformed Results**

Alternatives	Single	Transformer		Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Metadata > necessary system configuration available

Results   **Transformed Results**

Alternatives	Single	Transformer		Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	**Ordinal Value**	**Target Value**	ZSNES 1.51	1	
SNES9X 1.51	No	Yes	-> 5.0	SNES9X 1.51	1	
MESS 0.119	No	No	-> 1.0	MESS 0.119	1	
VLC 0.8.6c	Yes			VLC 0.8.6c	5	

Context and Data Characteristics > reference to console video game system

Results   **Transformer**   **Transformed Results**

Alternatives	Single	Ordinal Value	Target Value	Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	No	Yes	-> 5.0	ZSNES 1.51	1	
SNES9X 1.51	No	No	-> 1.0	SNES9X 1.51	1	

Alternatives	Single
MESS 0.119	No
VLC 0.8.6c	Yes

Alternatives	Single (=Aggregated)	Comments
MESS 0.119	1	
VLC 0.8.6c	5	

Context and Data Characteristics > reference to application

Results

Alternatives	Single
ZSNES 1.51	not available
SNES9X 1.51	not available
MESS 0.119	not available
VLC 0.8.6c	with system configuration

Transformer

Ordinal Value	Target Value
not available	-> 1.0
without system configuration	-> 3.0
with system configuration	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Scalability > plug-in system

Results

Alternatives	Single
ZSNES 1.51	not available
SNES9X 1.51	not available
MESS 0.119	not available
VLC 0.8.6c	available, open specifications

Transformer

Ordinal Value	Target Value
not available	-> 1.0
available, closed specifications	-> 3.0
available, open specifications	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Scalability > modular design

Results

Alternatives	Single
ZSNES 1.51	code modular and one system supported
SNES9X 1.51	code not modular
MESS 0.119	code modular and different systems supported
VLC 0.8.6c	code modular and different systems supported

Transformer

Ordinal Value	Target Value
code not available	-> 1.0
code not modular	-> 2.0
code modular and one system supported	-> 4.0
code modular and different systems supported	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	4	
SNES9X 1.51	2	
MESS 0.119	5	
VLC 0.8.6c	5	

Scalability > portable code

Results

Alternatives	Single
ZSNES 1.51	platform dependent code
SNES9X 1.51	platform independent code
MESS 0.119	platform independent code
VLC 0.8.6c	platform dependent code

Transformer

Ordinal Value	Target Value
code not available	-> 1.0
platform dependent code	-> 2.0
platform independent code	-> 4.0
Virtual Machine used	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	2	
SNES9X 1.51	4	
MESS 0.119	4	
VLC 0.8.6c	2	

Scalability > hardware dependencies

Results

Alternatives	Single
ZSNES 1.51	platform dependent libraries are used
SNES9X 1.51	platform dependent libraries are not used
MESS 0.119	platform dependent libraries are not used
VLC 0.8.6c	platform dependent libraries are used

Transformer

Ordinal Value	Target Value
code not available	-> 1.0
platform dependent libraries are used	-> 3.0
platform dependent libraries are not used	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	3	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	3	

Stability > development procedure

Results

Alternatives	Single
ZSNES 1.51	not commercial but open source
SNES9X 1.51	not commercial but open source

Transformer

Ordinal Value	Target Value
commercial and open source	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	4	
SNES9X 1.51	4	
MESS 0.119	4	
VLC 0.8.6c	4	

Alternatives	Single		Ordinal Value	Target Value
MESS 0.119	not commercial but open source		not commercial but open source	-> 4.0
VLC 0.8.6c	not commercial but open source		commercial but closed source	-> 2.0
			not commercial but closed source	-> 1.0

Stability > in active development

Results

Alternatives	Single
ZSNES 1.51	new version in last year
SNES9X 1.51	new version in last 6 month
MESS 0.119	new version in last 3 month
VLC 0.8.6c	new version in last 6 month

Transformer

Ordinal Value	Target Value
new version in last 3 month	-> 5.0
new version in last 6 month	-> 4.0
new version in last year	-> 3.0
no release in last year	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	3	
SNES9X 1.51	4	
MESS 0.119	5	
VLC 0.8.6c	4	

Stability > community

Results

Alternatives	Single
ZSNES 1.51	official forum >200 active users
SNES9X 1.51	official forum >200 active users
MESS 0.119	official forum >200 active users
VLC 0.8.6c	official forum >200 active users

Transformer

Ordinal Value	Target Value
official forum >200 active users	-> 5.0
unofficial forum available >200 active users	-> 4.0
official forum available <200 active users	-> 3.0
unofficial forum <200 active users	-> 2.0
no forum available or no active users	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	5	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	5	

Legality > recreation level

Results

Alternatives	Single
ZSNES 1.51	low level and no BIOS is needed
SNES9X 1.51	low level and no BIOS is needed
MESS 0.119	low level and no BIOS is needed
VLC 0.8.6c	high level and no BIOS is needed

Transformer

Ordinal Value	Target Value
high level and no BIOS is needed	-> 5.0
low level and no BIOS is needed	-> 4.0
high level and BIOS is needed	-> 2.0
low level and BIOS is needed	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	4	
SNES9X 1.51	4	
MESS 0.119	4	
VLC 0.8.6c	5	

Legality > expected manufacturer approval

Results

Alternatives	Single
ZSNES 1.51	manufacturer in video game business
SNES9X 1.51	manufacturer in video game business
MESS 0.119	manufacturer in video game business
VLC 0.8.6c	manufacturer in video game business

Transformer

Ordinal Value	Target Value
manufacturer out of business	-> 1.0
manufacturer in video game business	-> 3.0
manufacturer no longer in video game business	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	3	
SNES9X 1.51	3	
MESS 0.119	3	
VLC 0.8.6c	3	

Media > supported media type

Results

Alternatives	Single
ZSNES 1.51	byte stream but no original media supported
SNES9X 1.51	byte stream but no original media supported
MESS 0.119	byte stream but no original media supported
VLC 0.8.6c	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
neither byte-stream nor original media supported	-> 0.0
original media but no byte stream supported	-> 1.0
byte stream but no original media supported	-> 4.0
byte stream and original media supported	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	4	
SNES9X 1.51	4	
MESS 0.119	4	
VLC 0.8.6c	5	

Media > byte-stream

Results

Transformer

Ordinal Value	Target

Transformed Results

Alternatives	Single (=Aggregated)	Comments

Alternatives	Single		Value	Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	supported as stand-alone file	not applicable	-> 5.0	ZSNES 1.51	3	
		not supported	-> 1.0	SNES9X 1.51	3	
SNES9X 1.51	supported as stand-alone file	supported as stand-alone file	-> 3.0	MESS 0.119	3	
MESS 0.119	supported as stand-alone file	supported encapsulated in file	-> 5.0	VLC 0.8.6c	5	
VLC 0.8.6c	not applicable					

Media > original media

Results

Alternatives	Single
ZSNES 1.51	not supported
SNES9X 1.51	not supported
MESS 0.119	not supported
VLC 0.8.6c	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported with special hardware	-> 3.0
supported without special hardware	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Media > logical layer information

Results

Alternatives	Single
ZSNES 1.51	hard-coded in preservation solution
SNES9X 1.51	hard-coded in preservation solution
MESS 0.119	hard-coded in preservation solution
VLC 0.8.6c	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
hard-coded in preservation solution	-> 1.0
plug-in system	-> 3.0
encapsulation supported	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	1	
SNES9X 1.51	1	
MESS 0.119	1	
VLC 0.8.6c	5	

Media > special hardware on physical media

Results

Alternatives	Single
ZSNES 1.51	not applicable
SNES9X 1.51	not applicable
MESS 0.119	not applicable
VLC 0.8.6c	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
hard-coded in preservation solution	-> 1.0
plug-in system	-> 3.0
encapsulation supported	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	5	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	5	

Additional Accessories > original accessories supported

Results

Alternatives	Single
ZSNES 1.51	not applicable
SNES9X 1.51	not applicable
MESS 0.119	not applicable
VLC 0.8.6c	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
not supported	-> 1.0
supported with special hardware	-> 3.0
supported without special hardware	-> 5.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	5	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	5	

Additional Accessories > necessary accessories supported

Results

Alternatives	Single
ZSNES 1.51	not applicable
SNES9X 1.51	not applicable
MESS 0.119	not applicable
VLC 0.8.6c	not applicable

Transformer

Ordinal Value	Target Value
not applicable	-> 5.0
Y	-> 5.0
N	-> 1.0

Transformed Results

Alternatives	Single (=Aggregated)	Comments
ZSNES 1.51	5	
SNES9X 1.51	5	
MESS 0.119	5	
VLC 0.8.6c	5	

Evaluation comments:
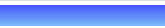
Transformation comments:

Result-Tree with all Alternatives, Aggregation method: Weighted multiplication
Expand All | Collapse All
Objectives

Focus	Name	Result
	▼Objectives	ZSNES 1.51: 2,68 SNES9X 1.51: 2,70 MESS 0.119: 0,00 VLC 0.8.6c: 0,00
X	▼Process Characteristics	ZSNES 1.51: 1,08 SNES9X 1.51: 1,08 MESS 0.119: 1,12

		VLC 0.8.6c:	1,17
X	▶Usability	ZSNES 1.51:	1,00
		SNES9X 1.51:	1,00
		MESS 0.119:	1,57
		VLC 0.8.6c:	1,79
X	▶Configurability	ZSNES 1.51:	2,25
		SNES9X 1.51:	2,25
		MESS 0.119:	2,00
		VLC 0.8.6c:	2,63
X	▼Costs	ZSNES 1.51:	1,11
		SNES9X 1.51:	1,11
		MESS 0.119:	1,12
		VLC 0.8.6c:	1,17
X	▶costs for preserving media	ZSNES 1.51:	1,00
		SNES9X 1.51:	1,00
		MESS 0.119:	1,00
		VLC 0.8.6c:	1,62
X	▶fraction of games supported	ZSNES 1.51:	1,62
		SNES9X 1.51:	1,62
		MESS 0.119:	1,62
		VLC 0.8.6c:	1,62
X	▶total number of games supported	ZSNES 1.51:	1,74
		SNES9X 1.51:	1,74
		MESS 0.119:	1,90
		VLC 0.8.6c:	1,90
X	▼Object Characteristics	ZSNES 1.51:	1,76
		SNES9X 1.51:	1,76
		MESS 0.119:	0,00
		VLC 0.8.6c:	0,00
X	▶object interpretable	ZSNES 1.51:	1,17
		SNES9X 1.51:	1,17
		MESS 0.119:	0,00
		VLC 0.8.6c:	1,17
X	▶speed	ZSNES 1.51:	1,27
		SNES9X 1.51:	1,27
		MESS 0.119:	1,22
		VLC 0.8.6c:	1,27
X	▶Interactivity	ZSNES 1.51:	1,19
		SNES9X 1.51:	1,19
		MESS 0.119:	1,12
		VLC 0.8.6c:	0,00

X	▶ Sound	ZSNES 1.51: 1,31 SNES9X 1.51: 1,33 MESS 0.119: 1,10 VLC 0.8.6c: 1,38	
X	▶ Graphics	ZSNES 1.51: 1,50 SNES9X 1.51: 1,47 MESS 0.119: 0,00 VLC 0.8.6c: 1,50	
X	▶ Network Support	ZSNES 1.51: 1,17 SNES9X 1.51: 1,17 MESS 0.119: 1,17 VLC 0.8.6c: 1,17	
X	▼ Context and Data Characteristics	ZSNES 1.51: 1,00 SNES9X 1.51: 1,00 MESS 0.119: 1,00 VLC 0.8.6c: 1,38	
X	▶ Metadata	ZSNES 1.51: 1,00 SNES9X 1.51: 1,00 MESS 0.119: 1,00 VLC 0.8.6c: 1,90	
X	▶ reference to console video game system	ZSNES 1.51: 1,00 SNES9X 1.51: 1,00 MESS 0.119: 1,00 VLC 0.8.6c: 1,62	
X	▶ reference to application	ZSNES 1.51: 1,00 SNES9X 1.51: 1,00 MESS 0.119: 1,00 VLC 0.8.6c: 1,62	
X	▼ Infrastructure	ZSNES 1.51: 1,26 SNES9X 1.51: 1,28 MESS 0.119: 1,31 VLC 0.8.6c: 1,33	
X	▶ Scalability	ZSNES 1.51: 1,28 SNES9X 1.51: 1,29 MESS 0.119: 1,41 VLC 0.8.6c: 1,36	
X	▶ Stability	ZSNES 1.51: 1,48 SNES9X 1.51: 1,54 MESS 0.119: 1,59 VLC 0.8.6c: 1,54	
X	▶ Legality	ZSNES 1.51: 1,13 SNES9X 1.51: 1,13	

| | | MESS 0.119: | 1,13 | |
| | | VLC 0.8.6c: | 1,14 | |

X	▶Media	ZSNES 1.51:	1,29	
		SNES9X 1.51:	1,29	
		MESS 0.119:	1,29	
		VLC 0.8.6c:	1,50	

X	▶Additional Accessories	ZSNES 1.51:	1,17	
		SNES9X 1.51:	1,17	
		MESS 0.119:	1,17	
		VLC 0.8.6c:	1,17	

Result-Tree with all Alternatives, Aggregation method: Weighted sum
Expand All | Collapse All
Objectives

Focus	Name	Result		
	▼Objectives	ZSNES 1.51:	3,28	
		SNES9X 1.51:	3,31	
		MESS 0.119:	2,68	
		VLC 0.8.6c:	4,65	
X	▼Process Characteristics	ZSNES 1.51:	0,28	
		SNES9X 1.51:	0,28	
		MESS 0.119:	0,36	
		VLC 0.8.6c:	0,48	
X	▶Usability	ZSNES 1.51:	0,40	
		SNES9X 1.51:	0,40	
		MESS 0.119:	1,52	
		VLC 0.8.6c:	1,76	
X	▶Configurability	ZSNES 1.51:	2,40	
		SNES9X 1.51:	2,40	
		MESS 0.119:	2,10	
		VLC 0.8.6c:	3,00	
X	▼Costs	ZSNES 1.51:	0,34	
		SNES9X 1.51:	0,34	
		MESS 0.119:	0,38	
		VLC 0.8.6c:	0,50	
X	▶costs for preserving media	ZSNES 1.51:	0,30	
		SNES9X 1.51:	0,30	
		MESS 0.119:	0,30	
		VLC 0.8.6c:	1,50	
X	▶fraction of games supported	ZSNES 1.51:	1,50	
		SNES9X 1.51:	1,50	

		MESS 0.119:	1,50
		VLC 0.8.6c:	1,50
X	►total number of games supported	ZSNES 1.51:	1,60
		SNES9X 1.51:	1,60
		MESS 0.119:	2,00
		VLC 0.8.6c:	2,00
X	▼Object Characteristics	ZSNES 1.51:	1,76
		SNES9X 1.51:	1,75
		MESS 0.119:	0,91
		VLC 0.8.6c:	1,80
X	►object interpretable	ZSNES 1.51:	0,50
		SNES9X 1.51:	0,50
		MESS 0.119:	0,00
		VLC 0.8.6c:	0,50
X	►speed	ZSNES 1.51:	0,75
		SNES9X 1.51:	0,75
		MESS 0.119:	0,55
		VLC 0.8.6c:	0,75
X	►Interactivity	ZSNES 1.51:	0,60
		SNES9X 1.51:	0,60
		MESS 0.119:	0,47
		VLC 0.8.6c:	0,51
X	►Sound	ZSNES 1.51:	0,79
		SNES9X 1.51:	0,86
		MESS 0.119:	0,44
		VLC 0.8.6c:	1,00
X	►Graphics	ZSNES 1.51:	1,25
		SNES9X 1.51:	1,18
		MESS 0.119:	0,31
		VLC 0.8.6c:	1,25
X	►Network Support	ZSNES 1.51:	0,50
		SNES9X 1.51:	0,50
		MESS 0.119:	0,50
		VLC 0.8.6c:	0,50
X	▼Context and Data Characteristics	ZSNES 1.51:	0,20
		SNES9X 1.51:	0,20
		MESS 0.119:	0,20
		VLC 0.8.6c:	1,00
X	►Metadata	ZSNES 1.51:	0,40
		SNES9X 1.51:	0,40
		MESS 0.119:	0,40
		VLC 0.8.6c:	2,00

X	▶reference to console video game system	ZSNES 1.51: 0,30 SNES9X 1.51: 0,30 MESS 0.119: 0,30 VLC 0.8.6c: 1,50
X	▶reference to application	ZSNES 1.51: 0,30 SNES9X 1.51: 0,30 MESS 0.119: 0,30 VLC 0.8.6c: 1,50
X	▼Infrastructure	ZSNES 1.51: 0,70 SNES9X 1.51: 0,74 MESS 0.119: 0,83 VLC 0.8.6c: 0,87
X	▶Scalability	ZSNES 1.51: 0,73 SNES9X 1.51: 0,78 MESS 0.119: 1,08 VLC 0.8.6c: 0,92
X	▶Stability	ZSNES 1.51: 1,12 SNES9X 1.51: 1,28 MESS 0.119: 1,42 VLC 0.8.6c: 1,28
X	▶Legality	ZSNES 1.51: 0,35 SNES9X 1.51: 0,35 MESS 0.119: 0,35 VLC 0.8.6c: 0,40
X	▶Media	ZSNES 1.51: 0,80 SNES9X 1.51: 0,80 MESS 0.119: 0,80 VLC 0.8.6c: 1,25
X	▶Additional Accessories	ZSNES 1.51: 0,50 SNES9X 1.51: 0,50 MESS 0.119: 0,50 VLC 0.8.6c: 0,50

Recommended alternative for this preservation plan:　　SNES9X 1.51

Reasoning:　　SNES9X has the best result if Weighted Sum AND Weighted Multiplication are considered, VLC and MESS have to be discarded (no interaction on VLC and not all objects interpretable on MESS)

Release 1.3 **beta** - Institute of Software Technology and Interactive Systems: « off-ice bears »