

MascotCapsule® eruption

MascotCapsule eruption is our latest real-time 3D rendering engine, which combines unparalleled advantages of HI: the world's leading 3D rendering engine MascotCapsule, and the world's top-level know-how of our 3D content development studio.

In addition to dramatically improving the processing speed of rendering, MascotCapsule eruption provides flexible and highly scalable functionalities, as well as graphics-oriented development tools. Game developers and content developers can bring a new level of attractiveness and sophistication to contents in a shorter period of time.

- Increases processing speed compared to existing 3D rendering engines, and dramatically increases the number of polygons to be rendered in a single scene
- MascotCapsule eruption library can be implemented on any platforms, and it is capable of supporting various environments including native, Java, etc.
- Supports the 3D accelerators that comply with the industry standard OpenGL ES
- Displays special file formats converted from the data, created in commercial 3D authoring tools

MascotCapsule eruption Contents Showcase

Resident Evil 4 Mobile Edition



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Minna No Golf Mobile 2



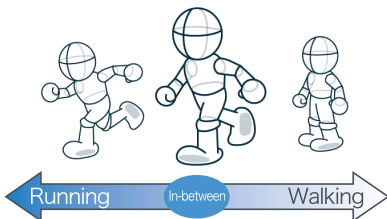
©2008 Sony Computer Entertainment Inc.

Note: Based on the game for PlayStation "Minna no Golf." (Title in North America: HOT SHOTS GOLF; Title in Europe: EVERYBODY'S GOLF)

Features

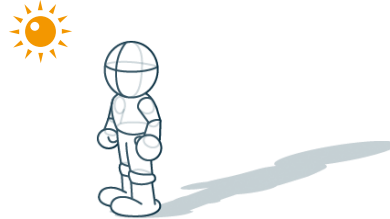
Motion blending

This functionality enables **smooth switching between different movements**.



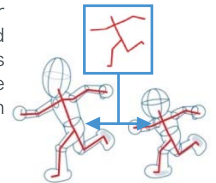
Shadow projection

It projects **realistic and accurate** shadows of the illuminated object.



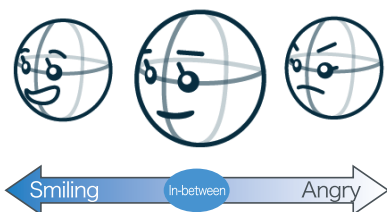
Avatar enhancement

Avatars are playing a greater role in the ever-evolving complexity and diversity of online game communities. Reduction of the development workload is enabled using a variety of avatar management and editing functionalities such as detachable items, animation data sharing, etc.



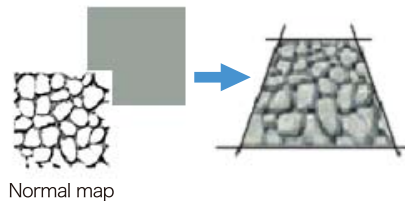
Morphing

This functionality enables smooth changing effects such as **facial animation**.



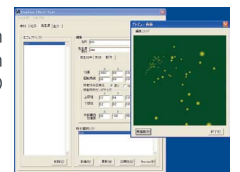
Bump mapping

This method virtually represent an uneven surface.



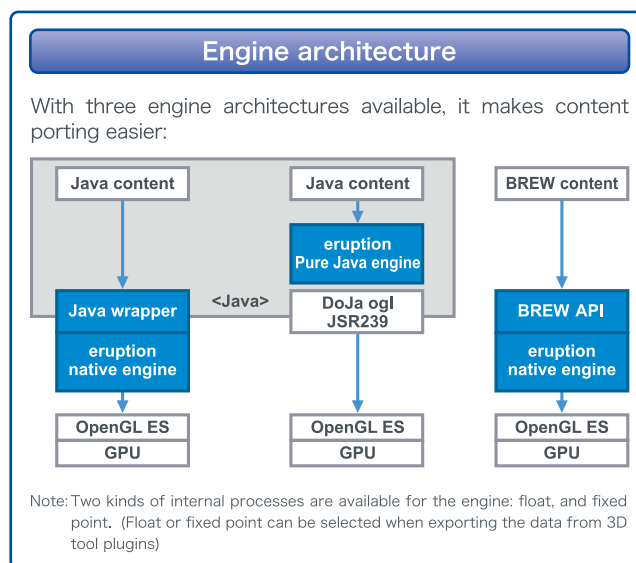
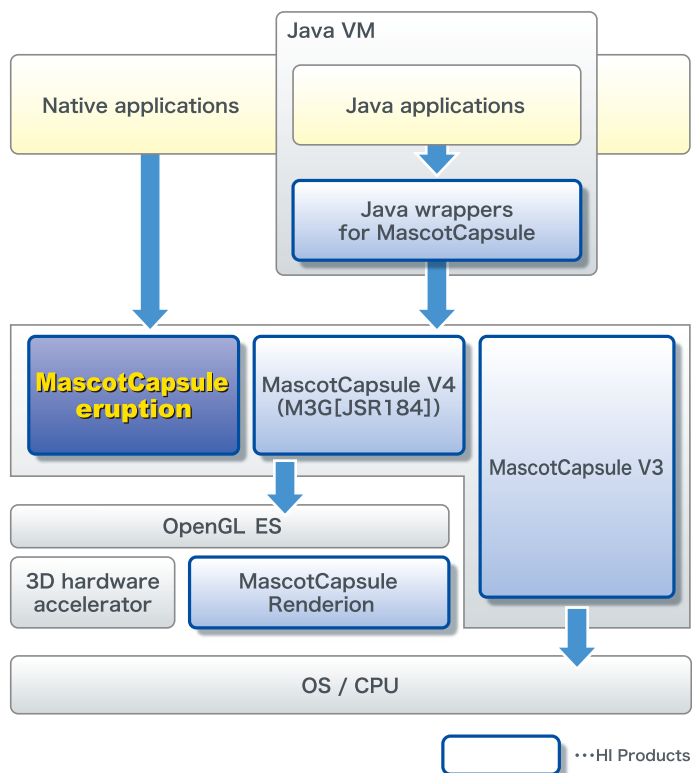
Particle effects tool

This tool enables the preview and easy set-up of the effects such as special effects of splashing water or flying sparks using 2D graphics; confetti effect or numerous pieces of wood blown away by explosion using the 3D model data, etc.



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System Architecture



With three engine architectures available, it makes content porting easier:

Note: Two kinds of internal processes are available for the engine: float, and fixed point. (Float or fixed point can be selected when exporting the data from 3D tool plugins)

Note: BREW is a registered trademark of QUALCOMM Incorporated.

Note: OpenGL is a registered trademark and the OpenGL ES logo is a trademark of Silicon Graphics Inc. used by permission by Khronos. OpenGL ES 1.1 is a subset of OpenGL 1.5, and is a royalty-free 2D/3D graphics API for embedded devices created by removing OpenGL desktop functionality not needed for embedded and mobile devices. Controlled by the Khronos Group industry consortium, it is intended for use in cellular phones, car navigation systems, etc. For more information, visit the Khronos Group website at <http://www.khronos.org/opengles/>.

Functional Specification

● Specification

Operating environment	CPU	ARM: ARM9 or above Freescale: i.MX Series Marvell: XScale Qualcomm: MSM6280/6550/7200/7500, QSD8250/8650 etc. Renesas Electronics: SH-Mobile etc. Texas Instruments: OMAP 32-bit 150 MHz or above is recommended (Capable of running without a floating-point hardware)
	Code size	Approx. 200 KB
	Engine work area	2 MB or more is recommended, including data load area Note: The actual required work area varies depending on the content
3D hardware accelerator		AMD: Imageon Imagination Technologies: POWERVR MBX/MBX Lite/SGX NVIDIA: GoForce SMedia: Glamo TAKUMI: GSHARK Toshiba: T4G/T5G Other OpenGL ES compliant 3D hardware accelerators
OS/platforms		Android, BREW, iPhone, iPod touch, ITRON, Java, Linux, Symbian OS, Windows CE, Windows Mobile
3D authoring tools		3ds Max, Maya, Softimage, LightWave 3D
2D authoring tools		Photoshop, OPTPIX iMageStudio, OPTPIX imesta

● Functionality

Rendering	Parallel projection, perspective projection, perspective correction, two-sided polygon, Z-buffer
Lighting	Multiple lights, light source color, directional light, ambient light, spot light, omnidirectional light
Material	Alpha blending, multiple textures, environment mapping using multiple textures, shadow generation using shadow projection, bump mapping, texture tiling, UV animation, vertex color
Animation/model control	Bone weight, morphing, motion blending, camera/light animation, detachable items, animation data sharing
Special effect	Fog, particle effects

Target product groups for implementation



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