

www.vricg.tv



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 *KarismaCG & Solutions*  
Real-Time 3D On-Air Graphics



## Overview

Visual Research Inc. is a specialized manufacturer of professional on-air graphics solutions for the broadcast industry. Established in 1995, VRi is famous for providing high-quality and cost-effective real-time broadcast graphics solutions with convenient production environments. From a basic character generation to full 3D real-time graphics production, VRi graphics solutions offer an outstanding quality to over hundreds of TV stations throughout the world where various VRi products are being used in many broadcasting television programs.

## Why VRi?

### ▪ Young and Innovative People

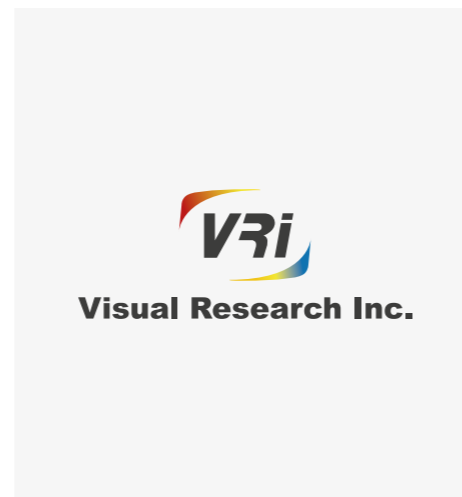
Enthusiastic people in free and modern enterprise culture innovates technology to bring the utmost satisfaction to the customers.

### ▪ Persistent Effort on Improvement

VRi is continuously making creative efforts to improve broadcast workflows for operator's usability, using up-to-date technology to develop better quality products.

### ▪ High Reliability

VRi's products developed with a deep understanding of the broadcasting environment have proven performance and stability by broadcast specialists.



## Sales Network



## Partners



## Overview

KarismaCG is an all-in-one creation and playout solution for real-time on-air graphics optimized to the needs of today's broadcasters. KarismaCG's enhanced functions and powerful graphic engine will be ideal for you moving to the next level of broadcast graphic quality and performance.

## Key Benefits

- Built-in 2D/3D, text, animation, effect creation
- Easy creation of 2D, 3D and animation effects
- Productive and time-saving user environment
- Proven performance and stability
- Creation and playout in one machine
- Wide ranges of hardware compatibility
- Providing SDK
- Various add-on solutions

## Key Features

- Ease of use 2D/3D graphic creation tools
- Import of variety of video, and 3D model files
- Vast 2D styles
- Customizable 2D/3D effects
- Key-frame animation and timeline
- Supports SD, HD, 4K and stereoscopic 3D playout
- 16 layers of scene play in real-time
- Supports Matrox, AJA, Blackmagic, Bluefish444 I/O boards



### Rich and Sophisticated 3D Graphics

KarismaCG assists users in creating high quality on-air graphics in order to generate a remarkable expression with built-in 2D and 3D objects, realistic materials as well as imported 3D modeling files. KarismaCG is also equipped with key-frame based animation and a variety of sophisticated effects.



### Real-Time Performance and Stability

KarismaCG is embedded with a highly optimized graphic engine that is utilizing up-to-date hardware technology to playout 16 layers of scenes simultaneously and process millions of polygons in real-time without sacrificing stability.



### Convenient and Easy Creation

KarismaCG provides useful toolset and library, and has intuitive user interface to the designers so they can manage creation work in easy and simple way. All users, even first-time users, can create better graphics output quickly with fun.



### Extreme Efficiency and Productivity

KarismaCG has many useful functions on CG graphics creation with an extensive library of templates, time-saving editing tools, and shortcut keys that let designers focus creative work more. KarismaCG's easier batch process helps import of huge text from file, process on multiple project work to edit all the scenes simultaneously.

## Built-in 2D/3D Composition

KarismaCG offers users built-in 2D and 3D composition features. It provides 2D text, shapes, and also path for custom object creation. 2D objects are decorated with cool 2D style system or can be converted into 3D object with bevel, lathe or loft. In 3D, there is built-in 3D text and parametric creation on box, sphere, cylinder, pyramid, donut, etc.



## Import Various File Types

KarismaCG imports various image file types such as PNG, JPG, TGA, PSD, and AI files. Users can import and control PSD file, by each layer and can import AI file as vector outline to edit and convert it into 3D object. For composing more complex scene, KarismaCG can import 3D model from 3DS, DAE, FBX, OBJ file with meshes, lights and camera including materials and animation that are already set in 3D modeling software such as 3DS Max or Maya.



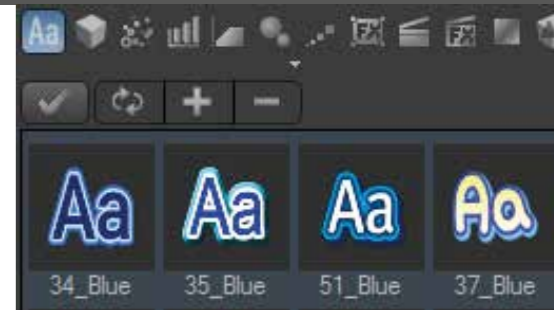
## Realistic Material Use

KarismaCG provides the users to set the materials and texture for the 3D elements by diffuse, specular, transparency, reflection, refraction, etc. to give realistic look to the objects, for example, plastic, metal, wood, and glass. Image and video files and also live input video texture mapping are possible to the each side of objects and combination with point, directional, spot lighting, and phong shading enable realistic expression.



## Variety of Libraries

KarismaCG provides many kinds of libraries in style, object, particles, chart, bevel, material, animation, effect, scene, texture, gradation, etc. These abundant library resources make users have more efficient time management and enjoy the built-in templates. Moreover, users can build their own library set to greatly improve work efficiency.



## Convenient Key-Frame Animation

KarismaCG provides a high level customizable key-frame based animation to deliver a powerful motion graphics. Including position, rotation, and scaling, most of object attributes can be key-framed and controlled on the track-based timeline and spline editor that offer full control over every aspect of animation. With typing animation, multi-animation, and path animation, these help the users to create richer visual motion graphics.



## Various Effects

KarismaCG has customizable transition effects to scene and object (wipe, particles, paper curl, distortion, blur, etc.) and various effect objects such as particle system, lens-flare, and reflection plane. Those are considered as an object and can be controlled and animated. Especially, particle system is a great feature to express like a real flame, water, explosion, fireworks, snow, and rain.



## Playback

KarismaCG not only supports HD formats but also 4K 60p and 3D stereoscopic real-time playback with various video I/O board types (Matrox, AJA, Blackmagic, Bluefish444). 16 multi-layer simultaneous playback is possible, and these layers can be controlled independently and conditionally.



## External Real-Time Data Link

Connectivity to other external data source is important in real-time on-air broadcasting environment. KarismaCG utilizes external data source via ODBC, TXT, RTF to update required data field of designed CG templates in real-time. It also updates text, color, font and size in the scenes from the linked RTF file and the data can be updated with transition effects or scrolled on the screen.



## Automation and SDK

KarismaCG can be automated by remote controlling via serial cable or TCP/IP network without operator and its graphics engine provides as component so that developers use it to develop their own customized application.



## Non-Linear Editing Workflow

KarismaCG's NLE integration is suitable to non-linear editing system as it is based on file and time-code use to support CG sequence production workflow. In/out timecode and sequence information can be created within NLE system such as FCP or Edius, and it can be imported into KarismaCG with XML or EDL file format. On KarismaCG, users can design easily while watching the original video that is set as a background. The designed CG can superimpose on background video, then either it can be rendered to a final video file or can be taped out by VCR where KarismaCG controls.



## Overview

KarismaCG SDK is a development toolkit for creating customized broadcast graphics applications for events such as news, live sport, election graphics, and so on. This SDK enables users to build their own and unique graphics display for their needs. KarismaCG graphics engine can be used to control playout as well as creating real-time data driven multi-layers of 2D/3D text, graphics objects, key-frame animations, and 2D/3D transition effects with COM programming interface. With KarismaCG, users can create graphics layouts and tag data fields for later data updates by application.

## Features

- Two types of SDK remote control KarismaCG API and stand-alone 3D engine module
- COM based programming interface
- Supports C#, VB, C++ and Java programming language
- Practical example code and materials
- KarismaCG designed CG template based workflow
- Fully control KarismaCG features
- Change 2D/3D text's content font and style
- Modify shape and geometry attributes
- Control key-frame animation and effect
- Update on-air object in real-time



## K3DEngine

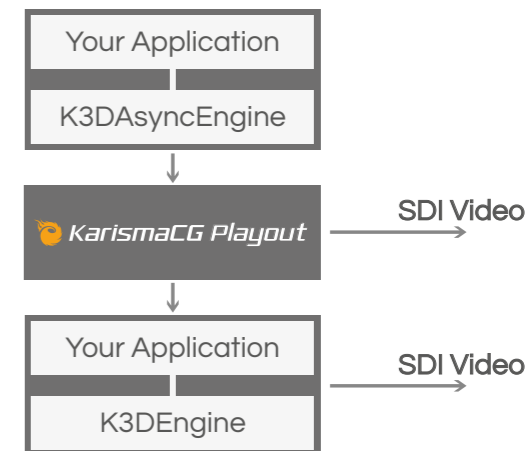
K3DEngine is a development tool for creating stand-alone customized broadcast graphic applications. K3DEngine will enable you to build your own and unique video and graphics display in order to fit your needs. K3DEngine can be used to create real-time data driven multi-layers of 2D/3D texts, graphics, key-frame animations and 2D/3D transition effects using COM programming interface.



Template File

## K3DAsyncEngine

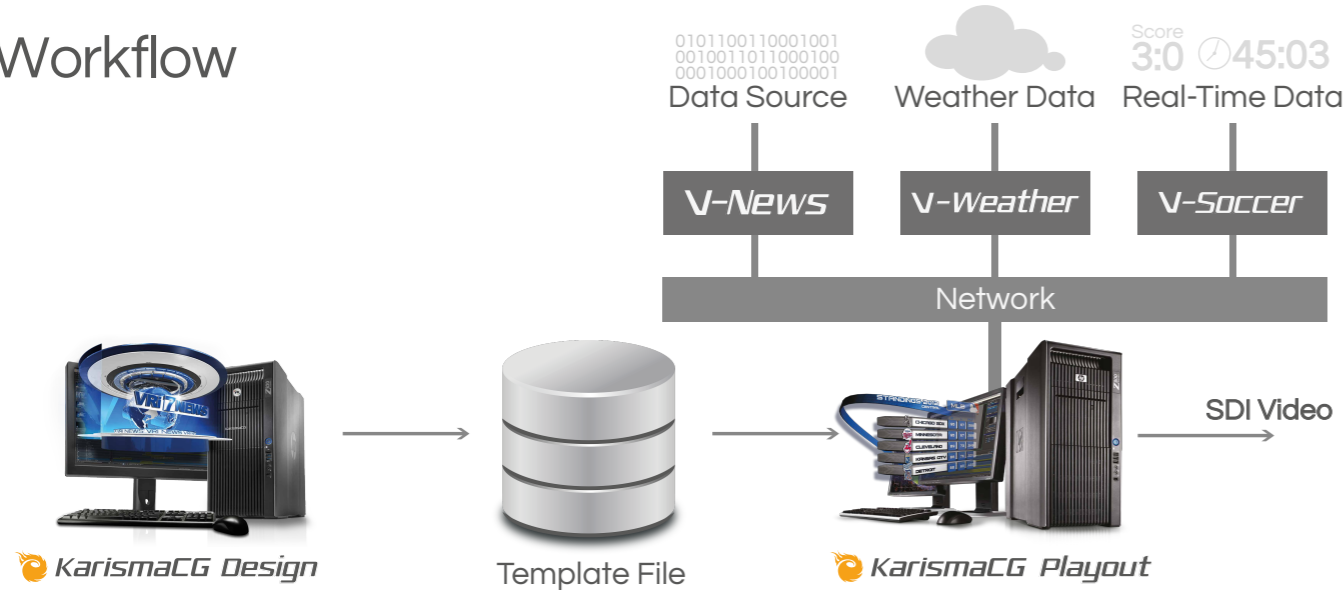
K3DAsyncEngine is a simple interface to control KarismaCG via TCP/IP network. It can conduct KarismaCG to load CG template and change the contents and animation. Developer can use this API to develop custom broadcast graphic applications. KarismaCG is used to design CG template and used as a playout server.



## Overview

Most of broadcasting environments require not only every-day-based product, but also event based solutions such as news, weather, election, sports, home-shopping. Various template based solutions are provided as KarismaCG add-ons to give more variety. With KarismaCG's great performance and graphics with easy-to-use user interface, it attracts the users who are looking for a specific solution for their needs.

## Workflow



## Overview

V-News is an add-on live news graphic solution, optimized to news graphics that is everyday live broadcast. This solution can display up to three news headlines and other multiple contents that is individually controlled. It also intelligently gathers information from web page, or RSS feed for a continuous retrieval of news headlines. V-News is a solution with the ability to playout breaking news instantly during live news broadcasting.

## Features

- Remote control KarismaCG via TCP/IP network
- Template based graphics
- Multiple lines of crawl
- Reversed crawl and scrolling speed adjustment
- Logo inserter and scheduler
- Analog and digital clock inserter
- Font style and color adjustment
- Position adjustment
- Graphic and animation file import
- Text file import
- RSS feeds



## Overview

V-Weather is an add-on live weather graphic solution for live weather broadcast and controls KarismaCG via network. It can retrieve weather data automatically from external data sources (Microsoft Excel, or text file) and/or allow the operator to make changes to data. Operator can apply those data to the designed templates in KarismaCG. The user interface of V-Weather is intuitive that operators can playout the complex weather graphics with a simple operation.

## Features

- Remote control KarismaCG via TCP/IP network
- Regional/nation-wide weather
- 5 and 7 day weather
- Marine weather
- Satellite images
- Variety of weather icons
- Retrieves weather data from Microsoft Excel, TXT, XML file
- Independent multi-layer play control
- Sequenced image and video clip playback
- Real-time 2D/3D transition effects



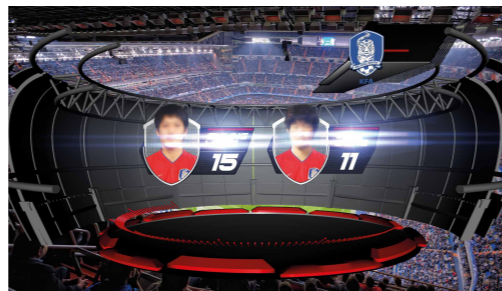


## Overview

V-Soccer is a live soccer broadcast application that simply corresponds to the various situations during soccer match. V-Soccer automatically retrieves the data or manually put the information of game progress and player profile from TXT file or web, and the operator can apply those data to the templates designed in KarismaCG. V-Soccer's easy user interface is suitable to various situations during soccer match such as change in ball possession percentage and giving yellow card, so a sole operator is enough to manage graphic playout during whole soccer game.

## Features

- Remote control KarismaCG via TCP/IP network
- Player roster (imported through TXT file)
- Player records (imported through TXT file)
- Player on/off
- Yellow/Red cards
- Ball possession calculation in percentage
- Timer (90 minutes display)
- Penalty kick score record/display
- Independent multi-layer playout control
- Sequenced image and video clip playback

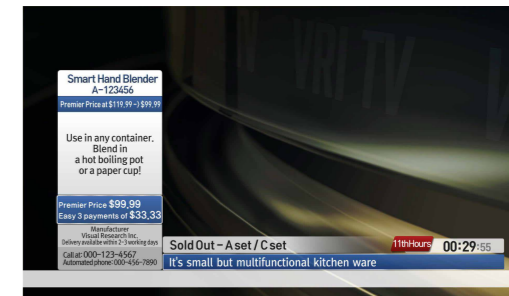
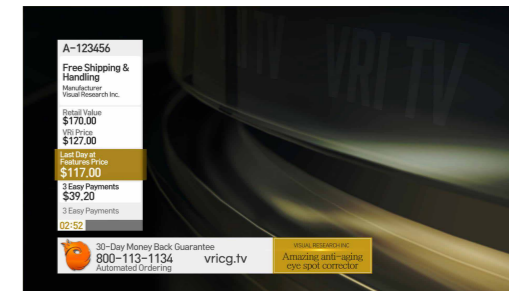


## Overview

V-HomeShopping is a TV shopping application for KarismaCG to present the products in effective ways with a good handling of the live TV shopping graphics. It controls up to 16 different multi-layers of graphic contents that can be controlled independently in either manual or automatic. Moreover, KarismaCG assists users to react in simple operation to changing conditions during TV shopping broadcasting with convenient functions, such as automatic mode to display the changing information of products.

## Features

- Remote control KarismaCG via TCP/IP network
- Easy control user interface
- Logo, clock, timer, countdown
- Multiple scroll
- Template based graphic
- Various layout and conditional playout
- Independent playout control of up to 16 different multi-layers
- Manual/Automatic play control of each layer
- Sequenced image and video clip playback



Features	Deluxe	Premium	Supreme	NPS	4K
Built-in 2D/3D Text, Shapes, Path and Geometries	•	•	•	•	•
Clocks(Counter, Timer, Digital Clock)	•	•	•	•	•
Import Images(TGA, JPG, BMP, PNG, AI, PSD)	•	•	•	•	•
2D Styles(Edge, Shadow, Glow, Gradation, Texture)	•	•	•	•	•
Lights(Point, Directional, Spot) and Phong Shading	•	•	•	•	•
Realistic Material Shader including Reflection and Refraction	•	•	•	•	•
Key-Frame Animation and Timeline User Interface	•	•	•	•	•
Object and Scene 3D Transition Effects (Wipe, Fade, Ripple, Particle, Distortion, etc)	•	•	•	•	•
Table based 3D Chart Drawing	x	•	•	•	•
Import 3D Model Files(DAE, OBJ, 3DS, FBX)	x	•	•	•	•
Camera Animation	x	x	•	•	•
Particles System and Lens-Flare Effects	x	x	•	•	•
External Data-Link(ODBC, TXT, RTF)	x	x	•	•	•
Timecode based CG Edit and NLE Integration	x	x	x	•	x
Multi-Layer Layout	<b>4</b>	<b>6</b>	<b>16</b>	<b>16</b>	<b>16</b>
Supported Video File Formats	VRV, Sequence Image		AVI,MXF,MOV,MP4,WMV,VRV, Sequence Image		VRV, Sequence Image
Network Automation Server	Option				

Component	Description	
System	CPU	Intel Core i5, i7, Xeon Quadcore 2GHz or higher
	RAM	4GB or higher
	VGA	nVidia GeForce GTX or Quadro
	PC Monitor	1280x1024, 1920x1080 or higher
	OS	Windows 7 x32, x64
	Video Boards	Matrox DSX mio2, LE2, SD AJA Xena 2K/KONA 3/KONA 3G AJA Xena LH/Kona LH/Kona LHe Plus Blackmagic Decklink CG Extreme 3 BlueFish444 Epoch
	Video I/O	I/O
Video Output		1920 x 1080i @ 25, 29.97, 30fps 1920 x 1080p/PsF @ 23.98, 24, 25, 29.97, 30fps 720p @ 50, 59.94, 60fps 576i @ 25fps 486i @ 29.97fps
Genlock		HD/SD input or black burst/tri-level sync
Video Input		AES/EBU, Sampling rate @ 48khz 8 stereo embedded audio I/O