MediaCybernetics®
From Images to Answers®

LIFE SCIENCES

Image-Pro® PLUS

Powerful and Customizable
Image Processing
and Analysis Software
for Life Sciences

Image Analysis Software for Life Science Research

Image-Pro Plus combines the latest tools for scientific image analysis into one intuitive software package. Reflecting over 20 years of development, evolution, and user feedback, Image-Pro Plus accelerates discovery and includes the tools you need to easily acquire, enhance, process, measure, and share your images.

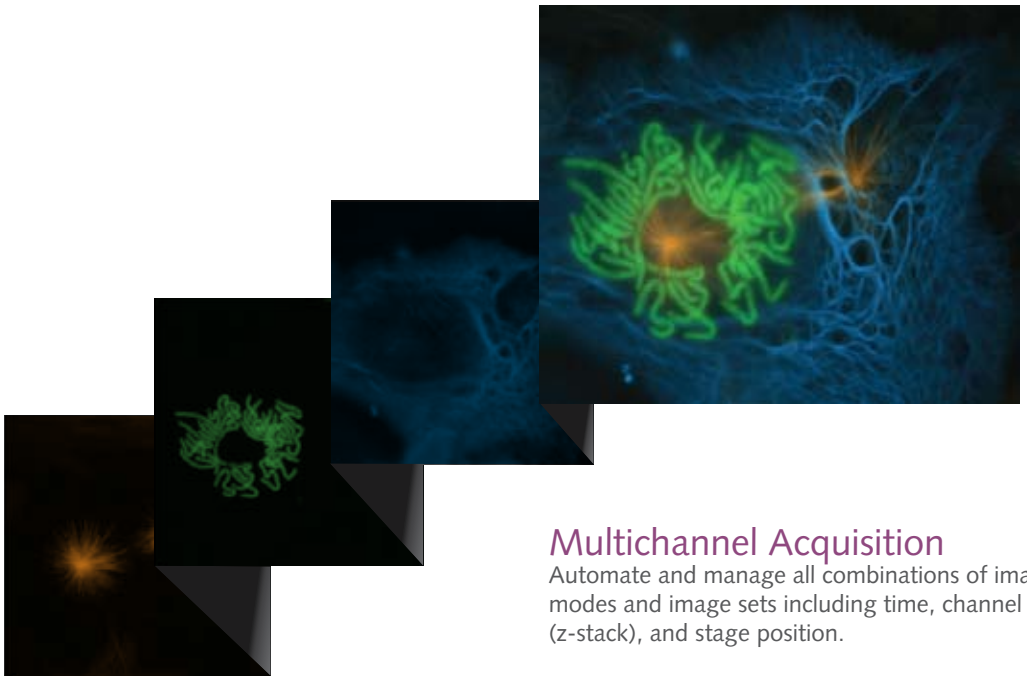
Free Online Tutorials and Webinars

Quickly Acquire Images

Accurate image analysis begins with acquisition. Utilize the full precision of your capture equipment with easy-to-use capture tools. Image-Pro Plus supports a wide range of digital cameras, image capture cards, and other devices.

Automated Microscope Control

Control complex microscopy equipment in a simple, repeatable manner for reproducible results. Automatically control your microscope stage in any X, Y, or Z direction and eliminate the need to manually adjust microscope settings.



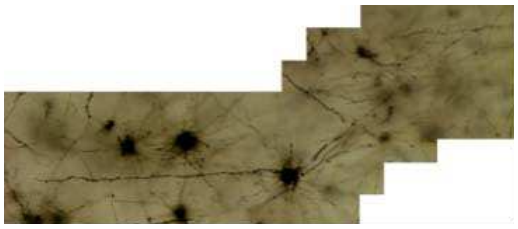
Composite image derived from 16 Z-stack sets from 3 fluorescent channels. Image courtesy of Richard Cole, Wadsworth Center, Albany, NY.

Multichannel Acquisition

Automate and manage all combinations of image acquisition modes and image sets including time, channel (wavelength), focus (z-stack), and stage position.

Time Lapse Acquisition

Investigate changes in live specimens over time by acquiring images at predefined intervals. Play your time lapse images as a movie to view movement and other activities.



Brain cortex cell image captured using Live Tiling. Image courtesy of Joop van Heerikhuize, Netherlands Institute for Neuroscience

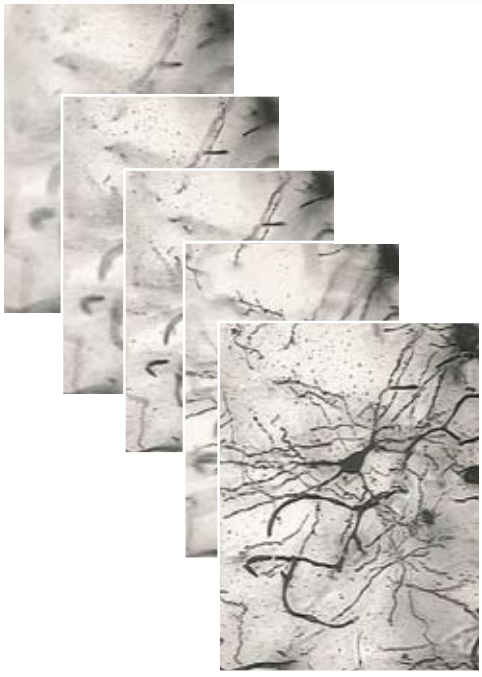
Live Analysis & Measurements

Analyze samples live, without the need to acquire an image. The Workspace Preview feature makes it easy to count objects, apply measurements and interact with online images. The optional Live Tiling and Live Extended Depth of Field tools make it easy to tile large images and perform EDF operations live - while acquiring your images.

"Image-Pro Plus allows us to quantitate these morphological differences and not merely rely on subjective assessments, resulting in data that is more reliable."

Dr. Lawrence L. Kunz, Experimental Pathologist
Nerox Corporation, USA

Process & Analyze



Create a focused image from a series of unfocused z-stacks with Extended Depth of Field. Image courtesy of Michael King, Ph.D., Dept. of Neuroscience, University of Florida, Gainesville, FL, USA.

Process and Manage Multiple Images

Tile together a series of images or align sequence images to see a full representation of your research sample. Use Extended Depth of Field to create a focused image from a series of unfocused images.

Morphology

Use a wide range of morphological filters to precisely segment structures and prepare images for automatic measurement.

Filter and Enhance

Choose from a variety of enhancement and edge filters to filter noise and improve image detail. Use built-in deconvolution features to remove haze and retrieve better data from your images.

Merge Color Channels

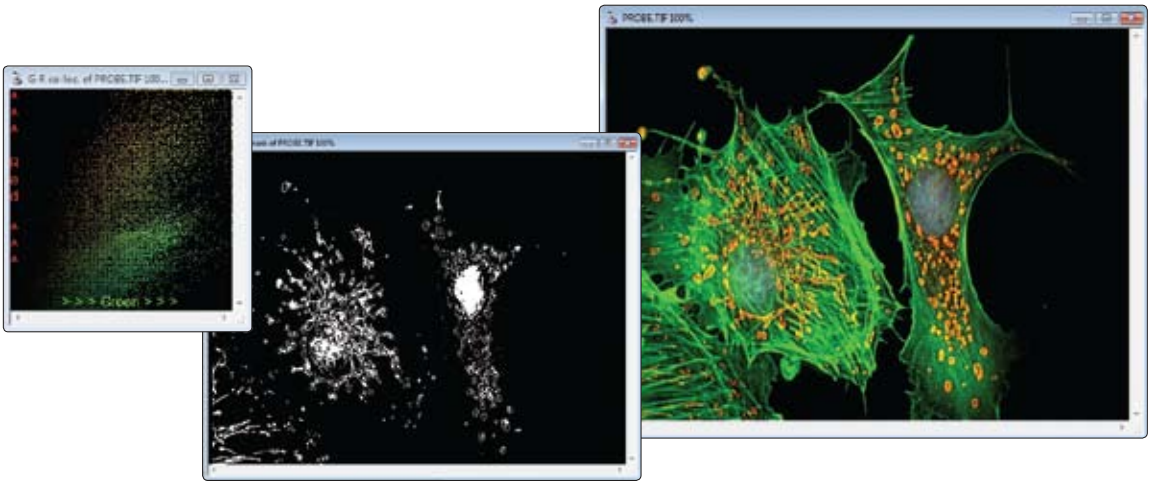
Use the Color Composite feature to merge multiple fluorescent images acquired as monochrome single wavelengths into a color composite image.

Co-localization

Detect co-localization in biological specimens and graphically display the association between the two sets of data in a scatter plot.

Pseudo-color

Use pseudo-color to highlight features of interest in a gray scale image. Use colors to visually amplify specific intensities which are normally difficult to distinguish from their surroundings.



Detect co-localization in fluorescent images. Mouse fibroblast cells - microtubules stained with FITC, mitochondria stained with Texas Red, nuclei stained with DAPI.

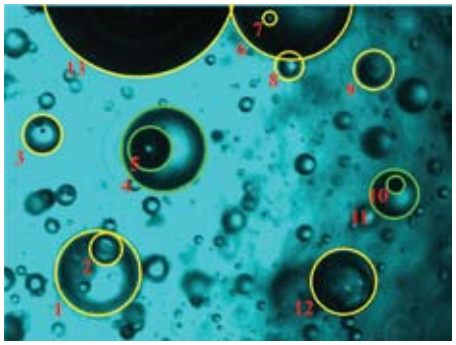
"3D Constructor - On one hand simplicity, on the other hand hidden power."

Bartek Rajwa, Ph.D.
Purdue University Cytometry Laboratories
West Lafayette, IN - USA

Measure & Classify

Count and Classify Objects

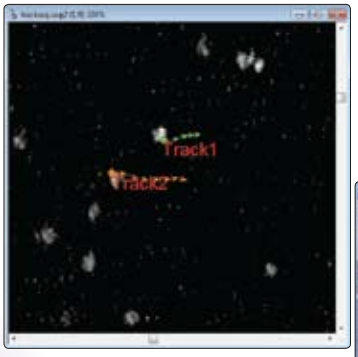
Count and characterize objects using over fifty manual and automatic measurement tools including areas, perimeters, lengths, roundness, major and minor axes, angles, centroids, holes, and population density. Tag objects of interest and easily sort by size or other measurement parameters.



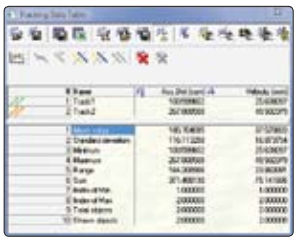
Count and classify objects. Image courtesy of Dr. Gabriel Corkidi Blanco, Centro de Investigacion Aplicada y Desarrollo Tecnologico, UNAM, Morelos, Mexico.

Track Moving Objects

Manually or automatically follow cells or other organisms as they move through time and space. Use correlation tracking to follow objects when image segmentation is difficult or not possible. Track and graph the changing of intensity parameters over time within an area of interest.



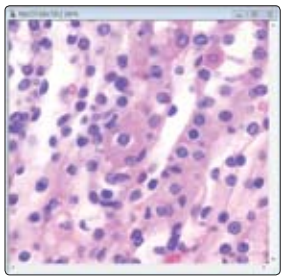
Track and measure the movement of particles.

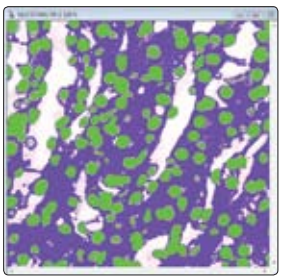


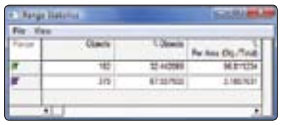
Free Online Tutorials and Webinars

Interactive Measurements

Extract quantifiable data from your images using a variety of measurement options. Metrology tools allow you to measure best-fit line, arc, and circle. Detect edges and derive distance measurements using the Caliper tool. Calibrate and measure the intensity levels within your images.





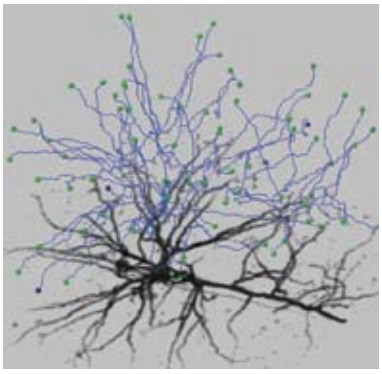


Threshold and measure the percent area of objects.

3D Rendering and Measurements

Explore the depth of your images by visualizing and interacting with them in three dimensions. Measure angles, distances, and volumes to gain a more complete understanding of your specimens.

- 4D Tracking - Track and measure the movement of individual objects in a 4D sequence.
- Neuron Tracing - Visualize and count the number of branches in a neuron as well as the length and volume of each branch.



Dendritic spine tracing of 3D neuron. Image courtesy of Ling Wang and Brendan Brinkman, University of California, San Diego, CA, USA.

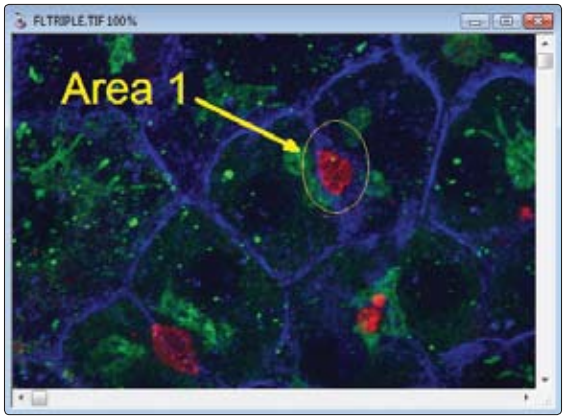
Measure and Visualize Surface Dimensions

Create beautifully illuminated 3D visualizations of your image stacks with the optional 3D Surface Inspector. Explore the depth of your z-stacks with manual measurements and easily create AVI animations.

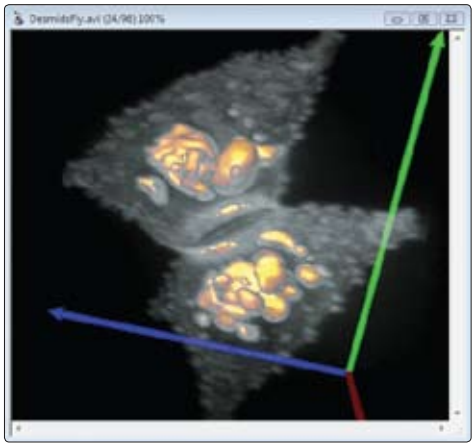
"Automating the measuring process with Image-Pro Plus has allowed us to increase the accuracy and speed of measurements, take many more of them, and output the data to computers with no errors."

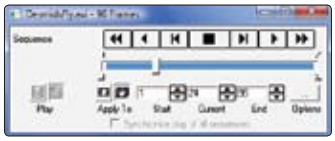
Dr. Bradley Stevens
National Marine Fisheries Service
Kodiak, Alaska, USA

Automate & Share



Point out features of interest and add notes to your images with Annotation tools.





Convert image sequences and 3D renderings to AVI files.

Visualize Image Data

Visualize image data with scattergrams, histograms, and line profiles.

Annotate

Point out features of interest and add text to your images with Annotation overlay tools.

Report and Publish Your Results

Export image data via DDE to Origin® and Microsoft Excel. Create custom reports with images data and text.

Create AVI Movies

Easily convert sequence files and 3D rendered images to AVI files.

Customize Your Workflow

Image-Pro Plus includes a variety of features that allow you to alter the application to fit your workflow. Create a personalized Workflow Toolbar with buttons for your most frequently used tools. Automatically convert your application to Dark Mode for low-light laboratory environments.

Automate with Macros

Image-Pro Plus offers convenient customization tools and a built-in programming language to streamline your imaging research. Save frequently performed operations using the Macro Recording tools and easily edit macros. Use the time-saving macros included in Image-Pro Plus or download macros from the user-contributed Solutions Zone section of our the website - www.mediacy.com.

For more advanced customization, Image-Pro Plus' built-in IP Basic programming engine offers a debugger, full editor, and dialog builder. Use with COM objects such as Microsoft® Word® or Excel®, and integrate and customize macros with Microsoft Visual Basic or Visual C++.

Image-Pro Plus Features Comparison

	Offline Analysis		Online Acquisition & Analysis				
Features by Product	Image-Pro Analyzer	Image-Pro Analyzer 3D	Image-Pro Plus	Image-Pro Plus Inspector	Image-Pro Plus MDA	Image-Pro Plus 3D	Image-Pro Plus AMS
Description	Advanced processing and measurement. Does not include acquisition.	Image-Pro Analyzer with 3D rendering/ measurement.	Single channel acquisition, advanced processing and measurement.	Image-Pro Plus with surface analysis.	Image-Pro Plus with multi-dimensional acquisition.	Image-Pro Plus with 3D and surface analysis.	Image-Pro Plus with multi-dimensional acquisition, 3D and surface analysis.
Applications	Life science imaging, Brightfield/Darkfield microscopy, Medical imaging, Cell counting, Pathology, Histology, Cytology	Fluorescence microscopy, Confocal imaging, 3D rendering & measurements, Neuron tracing	Life science imaging, Brightfield/Darkfield microscopy, Medical imaging, Cell counting, Pathology, Histology, Cytology	Dermatology, Dental medicine, Entomology, Environmental biology, Ophthalmology	Multichannel fluorescence microscopy, Live cell imaging	Fluorescence microscopy, Confocal imaging, 3D rendering & measurements, Neuron tracing	Multi-channel fluorescence microscopy, Live cell imaging, 3D rendering & measurements, Confocal imaging
Image Acquisition & Device Control							
Basic capture			•	•	•	•	•
Scan			•	•	•	•	•
Time-lapse			•	•	•	•	•
Microscope automation			•	•	•	•	•
Filter wheel and shutter control			•	•	•	•	•
Triggered device control			•	•	•	•	•
Port I/O and IO-Pro			Optional	Optional	Optional	Optional	Optional
Multi-dimensional acquisition							
Multi-dimensional experiment configuration					•		•
Multiple wavelength acquisition					•		•
Multiple time point acquisition					•		•
Multiple microscope mode acquisition					•		•
6D acquisition					•		•
Live Preview & Analysis							
Live preview			•	•	•	•	•
Automatic exposure/white balance			•	•	•	•	•
Dynamic auto-range			•	•	•	•	•
Live measurements			•	•	•	•	•
Real-time 2D deconvolution			•	•	•	•	•
Live tiling & Live Extended Depth of Field (EDF)			Optional	Optional	Optional	Optional	Optional
Image Processing							
Annotate	•	•	•	•	•	•	•
Color correction / management	•	•	•	•	•	•	•
Contrast enhancement	•	•	•	•	•	•	•
Apply contrast / invert image	•	•	•	•	•	•	•
Background correction	•	•	•	•	•	•	•
Basic filters	•	•	•	•	•	•	•
Morphological filters	•	•	•	•	•	•	•
3D filters	•	•	•	•	•	•	•
Large spectral filters (4000 x 4000)	•	•	•	•	•	•	•
Extended depth of field	•	•	•	•	•	•	•
Align images	•	•	•	•	•	•	•
Tile images	•	•	•	•	•	•	•
2D AutoQuant deconvolution	•	•	•	•	•	•	•
3D Blind AutoQuant Deconvolution		•				•	•
Image math	•	•	•	•	•	•	•
Test strips	•	•	•	•	•	•	•

	Offline Analysis		Online Acquisition & Analysis				
Features by Product	Image-Pro Analyzer	Image-Pro Analyzer 3D	Image-Pro Plus	Image-Pro Plus Inspector	Image-Pro Plus MDA	Image-Pro Plus 3D	Image-Pro Plus AMS
Image Analysis							
Area / Region of Interest	•	•	•	•	•	•	•
Dye list / image tinting	•	•	•	•	•	•	•
Spatial and intensity calibration	•	•	•	•	•	•	•
Lens list / calibration management	•	•	•	•	•	•	•
Auto-calibration	•	•	•	•	•	•	•
Histogram	•	•	•	•	•	•	•
Line profile	•	•	•	•	•	•	•
Sequence processing	•	•	•	•	•	•	•
Display range	•	•	•	•	•	•	•
Threshold	•	•	•	•	•	•	•
Operations	•	•	•	•	•	•	•
Segmentation	•	•	•	•	•	•	•
Color composite	•	•	•	•	•	•	•
Pseudo-color	•	•	•	•	•	•	•
Bayer interpolation	•	•	•	•	•	•	•
Registration	•	•	•	•	•	•	•
Fast Fourier Transform (FFT)	•	•	•	•	•	•	•
Grid mask	•	•	•	•	•	•	•
Count / size objects	•	•	•	•	•	•	•
Sort objects	•	•	•	•	•	•	•
Classify objects	•	•	•	•	•	•	•
Manual tag	•	•	•	•	•	•	•
Manual measurements	•	•	•	•	•	•	•
Distance & thickness measurements	•	•	•	•	•	•	•
Data collector	•	•	•	•	•	•	•
Caliper (Edge detection)	•	•	•	•	•	•	•
Auto trace	•	•	•	•	•	•	•
Co-localization	•	•	•	•	•	•	•
2D object tracking	•	•	•	•	•	•	•
Surface plot	•	•	•	•	•	•	•
3D Rendering and Analysis							
Basic 3D viewer	•	•	•	•	•	•	•
Advanced 3D rendering		•				•	•
3D measurements		•				•	•
4D object tracking		•				•	•
Volume measurements		•				•	•
Neuron/Filament tracing		•				•	•
Z Profile & Surface Measurements							
Measure Z-profile				•		•	•
Export & Share							
Report	•	•	•	•	•	•	•
Animation/AVI Creation	•	•	•	•	•	•	•
Export data to Excel	•	•	•	•	•	•	•
Automation & Customization							
Customizable menu & toolbar	•	•	•	•	•	•	•
Macro recording	•	•	•	•	•	•	•
Macros / scripting	•	•	•	•	•	•	•
Extensible through SDK	•	•	•	•	•	•	•
IQbase database support	•	•	•	•	•	•	•
Image & batch conversion	•	•	•	•	•	•	•
Image Auditing & Regulation							
Audit trail	•	•	•	•	•	•	•
Image signature	•	•	•	•	•	•	•

Exceptional Service and Support

Training

Our image analysis training courses provide valuable information you can apply towards your imaging research. Whether you are new to Image-Pro Plus or you are an experienced imaging professional, our courses are designed to help you make optimum use of the latest imaging software techniques.

Technical Support

When you register your copy of Image-Pro Plus, you are entitled to 90 days of support through our Technical Support Program. Receive installation and configuration troubleshooting from our Technical Support Engineers via phone or email. Extend your technical support beyond 90 days to receive expert support year-round.

www.mediacy.com

Free Online Tutorials and Webinars

View online video tutorials to pick up quick tips for a variety of features in Image-Pro Plus. You can also attend live imaging webinars or access our online Webinar Library to learn the latest image processing techniques

Collaborative Imaging Forum

The Media Cybernetics Image Analysis Forum is an online community of Image-Pro software users, Media Cybernetics technical staff, and other imaging professionals. Register today to start sharing ideas and learning from the experiences of other imaging software users.

User-contributed Solutions Zone

Explore the Media Cybernetics Solutions Zone website to find a wealth of useful information about Image-Pro Plus. The Solutions Zone is an easily searchable online database of macros, device drivers, plug-in modules, application programs, and development consultants that support Image-Pro Plus and other Media Cybernetics software programs.

Supported File Formats

- Read Support: TIFF, IPW, JPEG, JPEG 2000, EXIF JPEG, Flat (binary), GEL, TGA, BMP, PhotoCD, HDF, QED, FITS, AVI, and SEQ files.
- Stack & Confocal Read Support: SEQ (Image-Pro and StreamPix), STK (MetaMorph), PIC (Bio-Rad Confocal), LSM (Zeiss Confocal), DEB and AVZ (AutoQuant Stack), LEI and LIF (Leica), DM3 (Gatan), DV (DeltaVision), and Fluoview 1000 files.
- Write Support: TIFF, IPW, JPEG, JPEG 2000, Flat, TGA, BMP, EPS, AVI and SEQ files.
- Support for 24-, 36-, and 48-bit color; 8-, 12-, and 16-bit grayscale as well as 32-bit floating point images.

System Requirements

Operating System	Computer	RAM	Storage
Windows® XP Pro (SP3)	750 MHz or better	1GB RAM*	20 GB**
Windows® Vista Business and Ultimate (32 and 64 bit) (SP1) †	2.1 GHz	2 GB RAM*	40 GB**

* 2GB RAM is recommended on all operating systems. 4GB is best on Vista operating systems.
** Suggested storage size for large image files generated by advanced cameras.
† Image-Pro Plus is a 32-bit application. It will run on 64-bit machines.

Specifications are subject to change. Please contact Media Cybernetics or your local reseller for the latest features.

MediaCybernetics
From Images to Answers®

Media Cybernetics, Inc.
North & South America: + 1 301 495 3305
United Kingdom: +44 (0)1628 477025
Europe, Middle East & Africa: + 49 (0)551 797 4712
China: +(86)21 33773539
Asia, Australia, India & New Zealand: + 65 6408 6245
Japan: +81 3 5639 2751

www.mediacy.com | info@mediacy.com