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Star-P gains new ultra-fast imaging capabilities

WALTHAM, Mass., Jan. 13, 2009 – Interactive Supercomputing Inc. (ISC) today added powerful new imaging capabilities to its [Star-P®](#) technical computing software. The new version features a built-in image processing function library that boosts users' productivity by executing functions up to 30 times faster than competitive tools.

The Star-P imaging function library was developed with the help of Anona Labs, an Israeli software company specializing in advanced image processing technologies for interactive numerical analysis environments. The library is ideal for use in life sciences, defense and any other application involving complex imaging problems with high computational requirements or with extremely large data sources, such as medical imaging, microscopy, surveillance and biometrics.

With this new built-in library, scientists, engineers and analysts can process extremely large image data sets and perform complicated imaging analysis on high performance computers (HPCs) with great speed and ease. Star-P enables users to create applications on their desktops using familiar mathematical tools - such as [MATLAB® and Python](#) - and then run them instantly and interactively on parallel HPCs. Problems that can take hours to run in MATLAB or other environments on the desktop can often be run in minutes with Star-P's image processing function library.

“Our goal is to combine ease of use with exceptional performance. The inclusion of high performance imaging functions reduces the time our customers spend on development and improves the resulting performance of their applications,” said David Rich, ISC vice president of marketing. “Imaging applications in life sciences and national security are almost always time critical. We all want solutions to problems in these fields to be found quickly.”

Star-P's new image processing function library has a full set of functions for image manipulation, analysis, digital imaging, computer vision, and digital image processing. Its built-in capabilities

include image file I/O, color space transformations, linear filtering, mathematical morphology, texture analysis, pattern recognition, image statistics and others. All functions interoperate seamlessly with Star-P math functions including data-parallel FFT and other functions important for large scale parallel image processing. Key image processing functions include:

Color Transformation – Used to convert between standard color spaces such as RGB, YUV, HSV, NTSC as well as device-independent spaces such as CIE XYZ, CIE Lab, CIE Luv and others. Transformation can be applied directly to 8bit or floating point data.

Geometric Transformation – Spatial coordinate transformations of gray and color images can be performed. Users can tap predefined transformations such as resizing, rotation, affine and perspective transformations, or define the coordinate transformation themselves.

Linear Filters and Image Transforms – Pre-defined filters such as Gaussian smoothing, high-pass, Sobel derivative and many others can be applied.

Mathematical Morphology – Morphological operations on binary and gray level images can be used. Standard operations such as erosion, dilation, opening and closing as well as more advanced operations such as skeleton, morphological reconstruction, distance transform, connected components labeling and others are available.

Image Enhancement – A collection of functions allow you to: apply noise reduction filters, such as median and adaptive (Wiener) filter; generate synthetic noise; and apply histogram equalization. Motion blurred and out-of-focus images can be improved using various deconvolution methods.

Image Analysis – These tools allow users to extract information from images. They can compute the pixel level histogram and co-occurrence matrix; analyze local properties and textures using non-linear filters such as standard deviation filter and entropy filter; use Hough transform for line detection; use normalized cross correlation and sum of square differences for image registration.

The new Image Processing Function library is available immediately as part of Star-P version 2.7.

About Anona Labs

Anona Labs Ltd. is a young company specializing in advanced image processing techniques by using the advantages of modern hardware. Anona Labs Ltd. currently focuses on bringing faster

and better image processing capabilities to interactive numerical analysis environments.

<http://www.anonalabs.com>

About Interactive Supercomputing

Interactive Supercomputing (ISC) launched in 2004 to commercialize Star-P, an interactive parallel computing platform. With automatic parallelization and interactive execution of existing desktop simulation applications, Star-P merges two previously distinct environments - desktop computers and high performance servers - into one. Based in Waltham, Mass., the privately held company markets Star-P for a range of biomedical, financial, and government applications. For additional information, visit www.interactivesupercomputing.com.