Next-Generation HCS Image Management

*Signals Image Artist™* is the latest image analysis and management platform for high-content screening (HCS) and cell imaging data. Quickly upload, process, analyze, share, and store vast volumes of data generated by high-content screening and cellular imaging. That data includes live-cell imaging, 3D imaging, phenotypic screening, and cell painting – so you can get answers sooner.

As the only commercially available platform that provides universal high-volume image data storage and analysis, Signals Image Artist supports image data from all major high-content screening and cellular imaging systems. Using high-performance computing combined with object storage, the system provides a multiuser solution that’s scalable to expand with your lab’s changing needs.

**Key Features**
- Fast image data processing and image analysis powered by high-performance computing
- Easy-to-use assay building blocks with integrated AI
- A central location to store all image data with associated instrument metadata
- Compatible with all major HCS and cell imaging systems
- Multiuser solution that can support your entire lab
- Scalable data storage that can expand over time
- Cloud and on-premises options
- Seamless integration with our Opera Phenix® Plus and Operetta CLS™ HCS systems
- Easily transfer data to Signals VitroVivo™ for profiling image data, hit selection, and more

**AT A GLANCE**

With Signals Image Artist, researchers working in HCS and cellular imaging can quickly process, analyze, share, and store all their image data in one place.

**Faster Insights:** Process, access, and analyze the image data, quicker and easier than ever before.

**Scalable Storage:** Industry-standard object storage provides a multiuser solution that can expand with your needs.

**Powerful Analysis:** Easy-to-use building blocks allow for advanced analysis.

[READ MORE]
For HCS and Cellular Imaging Data

HCS and cellular imaging experiments generate tons of image data that need to be managed effectively. This data volume continues to increase as technology enables new, more advanced applications such as phenotypic screening, cell painting, 3D, and organoid imaging.

To help you maximize all this valuable data, Signals Image Artist offers a single, central platform that brings together cell imaging data from a wide range of different sources, enabling you to store, share, analyze, and reanalyze seamlessly.

Image Analysis Designed for Biologists

Whether you’re performing phenotypic screening, cell painting, 3D imaging, live-cell imaging, or more routine assays, Signals Image Artist is designed to make it easy for biologists to perform sophisticated image analysis – even without coding experience.

The software platform’s image analysis building blocks encapsulate many years of knowledge and expertise in cellular imaging and analysis, so that you can focus on the biology. By simply adding together building blocks such as “Find Nuclei” and “Calculate Cell Painting Properties”, users can quickly create image analysis protocols in just a few simple steps.

Furthermore, built-in AI and machine-learning technologies allow operators to train the software to develop image analysis algorithms – you don’t need an expert to do it for you. Using a learn-by-example approach, segmented images can be classified with ease in a few clicks.

This is all powered by high performance computing, so you can get answers faster.

From Images to Insights

With Signals Image Artist, it’s not just about storing beautiful images. It’s about the rich information within those image data sets. Extracting deeper insights moves your research forward, whether that’s understanding a disease or finding the next breakthrough treatment.

Using the platform’s advanced analytics capabilities, you can perform a range of data analysis tasks, including:

- Measure complex and subtle phenotypic responses
- Compare multiple samples, plates, or batches to quality check your results
- Measure kinetics including cell tracking, changes in cell properties, and assessing cell movement
- Cell-painting image analysis and quantification using the dedicated cell-painting building block
- 3D image segmentation and volumetric parameter calculations

For further statistical analysis, you can transfer data into Signals VitroVivo to perform screening data analysis and validation, QC analyses, calculate reliable normalization, multivariate hit stratification, dose response curves, and drug response profiling.

Figure 1. Measure morphologies and volumes in 3D and count nuclei within spheroids.

Figure 2. Phenotypic features can be extracted from images using the Calculate Cell Painting Properties building block.
HCS Workflow

We offer solutions across the high-content screening workflow, from sample preparation to imaging and analysis.

About Signals Research Suite

Signals Image Artist is part of our Signals Research suite that makes everyday assay data analysis more efficient and repeatable. Uncover unexpected insights, advance collaborations, unify data across multiple sources, and scale up – without IT overhead and resources.

Our Signals VitroVivo brings automated workflows to TIBCO Spotfire® and supports a broad spectrum of experiment types, regardless of the assay stage.

To learn more about our Signals Image Artist software, please visit www.perkinelmerinformatics.com