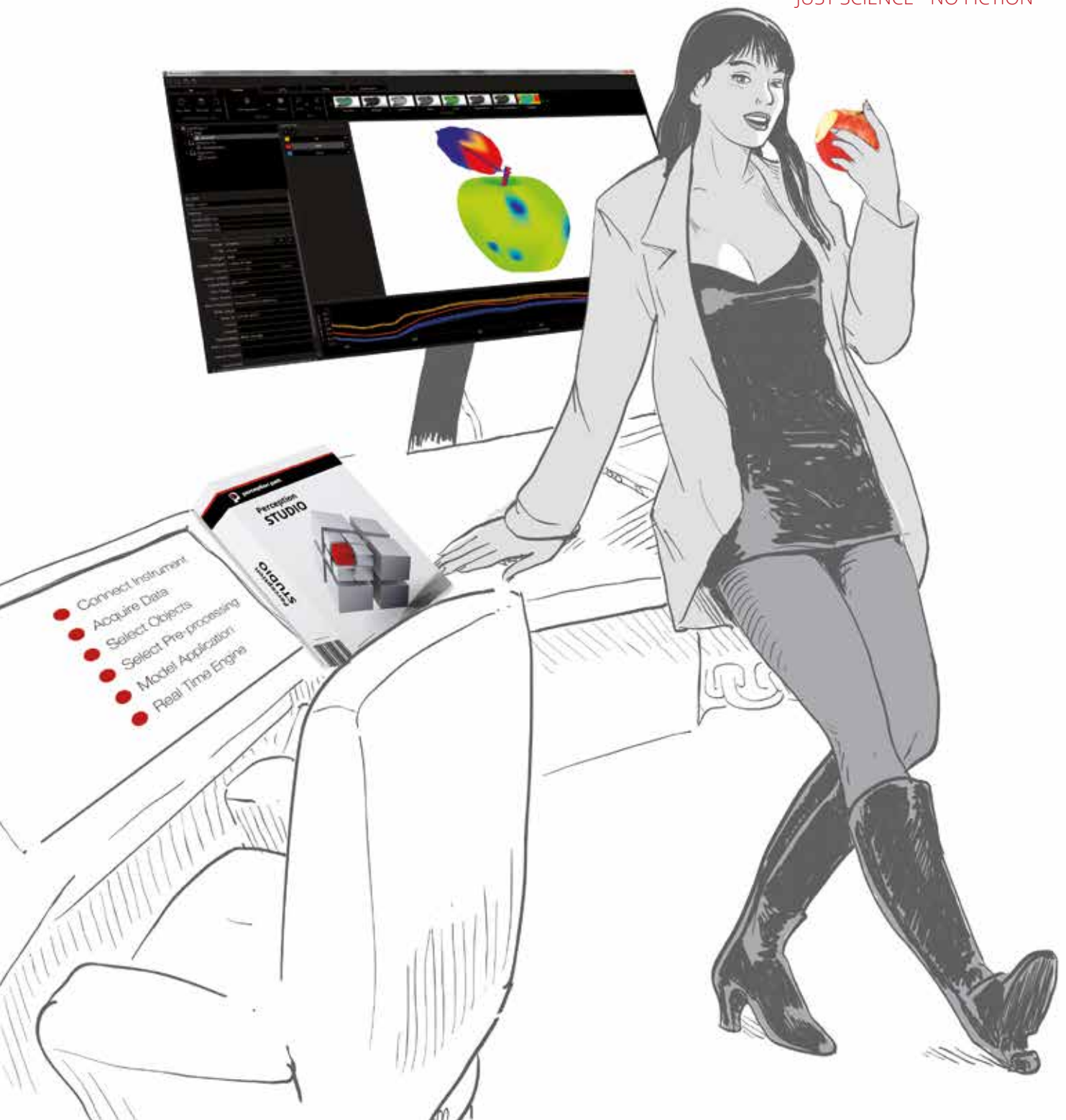


PERCEPTION STUDIO

JUST SCIENCE - NO FICTION





Perception Park is an Austrian company passionate about Hyperspectral Imaging. We focus on hyperspectral data processing solutions for industrial inline applications.

We are committed to delivering the highest performance, extendibility and compatibility. This gives our customers freedom, independence and individuality in their development activities and opens up endless possibilities for new applications, while saving development time and money.

Our systems are well established in food processing, pharmaceutical, recycling and mining industries.



The Perception STUDIO is an easy-to-use software suite for the industrial use of hyperspectral cameras and for the application of Chemical Colour Imaging. The Perception STUDIO is the first tool that enable the machine vision community to apply hyperspectral cameras without the need for experts of spectroscopy and chemometrics.

In a visually guided workflow the Perception STUDIO gives full control of the application development and provides a direct feedback on every action set. By plug & play the Perception STUDIO takes fully care about camera integration, standardization and calibration.

The Perception STUDIO supports industrial interface standards and provides full compatibility to your solutions. By using our real-time engine applications are directly compiled for high-speed applications like sorting.



Chemical Colour Imaging (CCI) is a unique processing technology that enables the universal, repeatable application of hyperspectral cameras for machine vision. By a visually guided process CCI makes hyperspectral features accessible for vision systems and abstracts, standardizes and calibrates hyperspectral cameras.

KEEP IT SIMPLE

KEEP IT REAL

Perception STUDIO provides an easy-to-use workflow to independently develop new applications in many industries.

FOOD PROCESSING



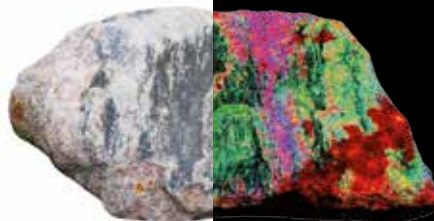
RECYCLING



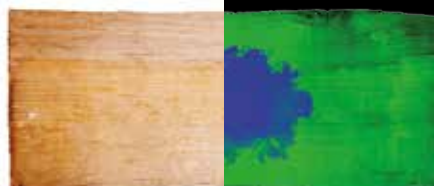
PHARMACEUTICAL



MINING

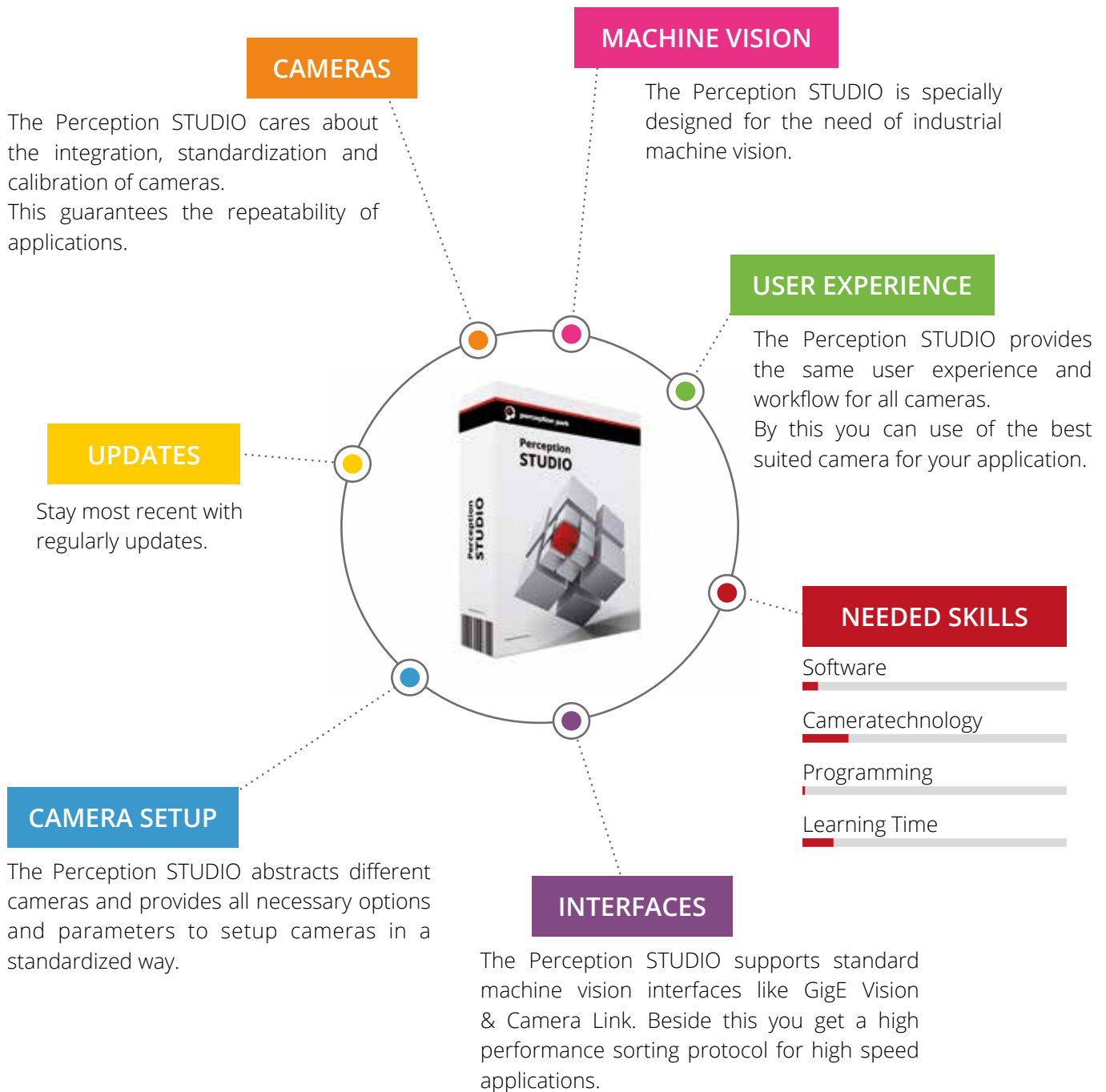


WOOD PROCESSING



THE NEW STANDARD

A visually guided workflow enables full control of applications and provides direct feedback on every action being set. By plug & play the Perception STUDIO takes fully care about camera integration, standardization and calibration.



TOOLS FOR APPLICATION WORK

The Perception STUDIO provides a whole range of tools for the application work. Numerous applications in many fields are now accessible for machine vision.

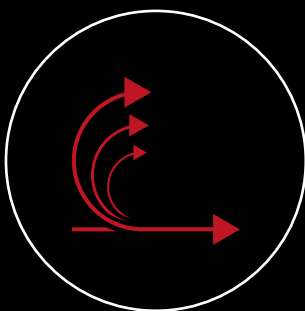


EDIT DATA

The Perception STUDIO provides several tools to handle hyperspectral data and to develop new applications within a visually guided process. You can connect cameras by plug & play, record data, manipulate it and save it in several formats like hsd, mat, ascii or envi.

PRE-PROCESS DATA

The Perception STUDIO provides various pre-processing methods as well as combinations of them. The Perception STUDIO enables you to quickly compare and identify the best suited methods for your application.

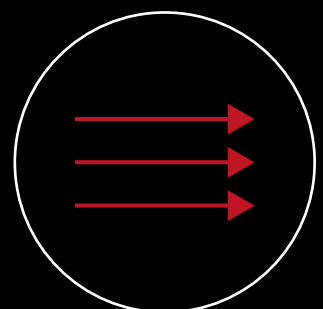


CHEMICAL COLOUR IMAGING (CCI) METHODS

Chemical Colour Imaging (CCI) encapsulates scientific methodology and makes them accessible by an intuitive user experience. For numerous applications CCI methods enable to handle molecular information by machine vision tools. No more need to consult external experts and know-how is protected.

FURTHER METHODS

The Perception STUDIO enables to classify manually or by using our unique 1-CLICK-CLASSIFICATION. This enables to detect unknown and untrained impurities like in sorting applications. Additionally statistical features give deeper insights to hyperspectral data.

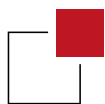


CHEMICAL COLOUR IMAGING METHODS

Chemical Colour Imaging (CCI) encapsulates scientific methodology and makes them accessible by an intuitive user experience. For numerous applications our CCI methods enable to handle molecular information by standard machine vision tools.



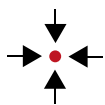
The **Preview** method gives an unsupervised approach to extract information from hyperspectral data. Input are hyperspectral data; output is a colour image.



The **Extract** method extracts principle components unsupervised. By assigning colour channels to principle components Chemical Colour Images are generated.



The **Correlate** method describes the correlation information of pure components in a scene. Spectra can be a mix of various spectral information of pure components. By assigning colour channels to the score images Chemical Colour Images are generated.



Based on expectations the user constrains colours to selected objects of interest. The **Constrain** method autonomously calculates a Chemical Colour Image based on the users input.



The **Design** method enables the user to design filter curves. By applying these to hyperspectral data Chemical Colour Images are generated.

PHOTO



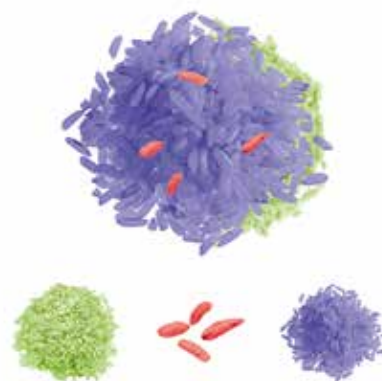
Rice, wood and worms in between

CCI PREVIEW



Dominant spectral information

CCI CORRELATE



Correlation of pure substances.

REAL-TIME ENGINE

PERCEPTION CORE

Our real-time engine - Perception CORE - enables the live translation of camera raw data into molecular information described by a machine vision format like colour data. The communication with client applications is enabled by standard interfaces like GigE Vision or Camera Link.



HIGH-PERFORMANCE SORTING PROTOCOL

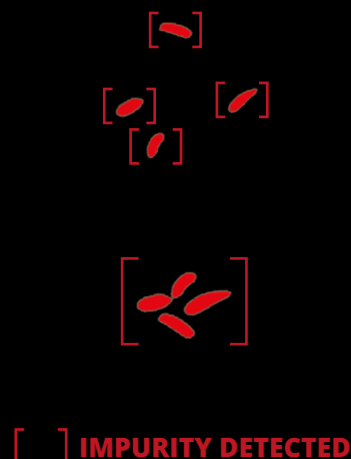
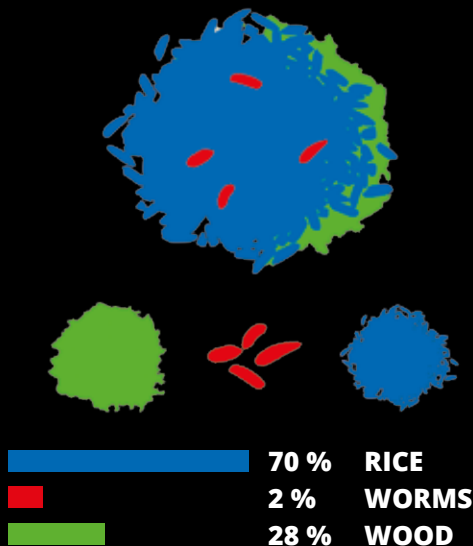
For high speed applications like sorting, we additionally provide a high performance sorting protocol which is very robust and guarantees very low latency.

MULTI-PLATFORM CAPABILITIES

The Perception CORE is available for various high performance data processing platforms like GPUs or NVIDIA Jetson technology.

1-CLICK CLASSIFICATION

The 1-CLICK-CLASSIFICATION enables to distinguish molecular information into classes. Molecular information which do not match a trained class, belongs to an additional class for not taught objects. This enables to detect unknown and untrained impurities in sorting applications.



#1

SAVE 95% DEVELOPMENT TIME

The Perception STUDIO is a configurable software platform. The most relevant spectroscopic and chemometric methodologies are encapsulated and accessible by intuitive workflows. Additionally the Perception STUDIO provides plug & play for cameras. All this makes it unnecessary to develop each application from scratch. Instead the Perception STUDIO enables to develop new applications by simple configurations processes. This saves time and money.

#2

100% REPEATABILITY

The unique algorithms of the Perception STUDIO standardize and calibrate hyperspectral cameras. This enables to replicate applications in any number and reduces the effort for setting up a series machine production.

#3

INDEPENDENT DEVELOPMENT

Encapsulated scientific methods intuitively accessible to everyone allows to develop and configure own applications independently, without consulting experts of chemometrics, spectroscopy and hyperspectral data processing. By this, market and customer know-how remains in-house.

#4

UNLIMITED EXTENDABILITY

Based on our unique hyperspectral operating environment, our solutions are unlimited extendable. A plugin concept allows to add new methodologies, processes and interfaces rapidly. Our customers appreciate to have only one interface for all hyperspectral processes and instruments.

