Release 1.8

This page summarizes information to the release version 1.8 of Perception Park software as well as gives access to available installers.

Content:

Parent page:

- Older releases

Child pages:

- Perception Studio 1.8 Desktop
- Perception Studio 1.8 Offline

What's New?

Extended Connectivity

Direct acquisition from cameras - offline applications enabled
By this new extension of the Perception Studio program, the evaluation of any hyperspectral camera gets as easy as possible. Direct acquisition allows the work with cameras off the production line.
Furthermore, this extension simplifies presentation work on trade fairs and enables the usage of any hyperspectral camera in your laboratory. The camera get connected directly to your PC with the Perception Studio program installed on it. Thanks to a calibration package, the camera as well as working procedures are standardized. Setup the camera as well as your measurement and acquire best corrected and best prepared hyperspectral data.
In case real-time streaming of molecular object information is needed, please see the Perceptions System data processing engine.

Extended camera support: HySpex, Allied Vision and Specim
Benefit from Specim's brand new FX camera technology in the industrial environment. Highest demands are fulfilled by NEOs HySpex hyperspectral cameras. Outstanding resolution capabilities are provided by Allied Vision's GoldEye camera. Due to additional spectral binning, a CCI-compliant GoldEye camera now wins also under demanding industrial conditions.

Extended Functionality

Additional normalization option
Beside the standard normalization known from previous releases, now an advanced normalization method is available in addition.
This allows more freedom to users when challenging application work has to be done.

Case Discrimination modelling
The Case Discrimination is our first classification modelling method. Design the discrimination of objects upon their spectral finger print in Perception Studio's Model perspective. Different to our CCI methods already available, the Case Discrimination modelling method leads to a classification ID (a label) per object pixel. Simple configure your CCI-compliant camera with a case discrimination model and establish industrial real-time applications like sorting of goods, quality tests of LEDs, etc...

Camera Characteristics editor
A new editor enables manufacturers of CCI-compliant cameras to acquire camera characteristics. By this data a calibration package can get generated and shared with users in form of a SetupPackage installer (see below).

Extended Usability

Simplified installation process of cameras
By installation of a SetupPackage now any hyperspectral camera fully get compatible to Perception Park data processing solutions.
Beside the definition of parameters and parameter visibility, additionally calibration information allow the correction of camera disorders and leads to standardization. By this concept, any hyperspectral camera get CCI-compliant through installing its appropriate SetupPackage onto the target hardware (Perception System or your PC with Perception Studio on it).
Modify camera parameters within the Setup perspective, and in case load factory settings to get back to pre-defined settings.

Extended Information Service

Add your example data and tutorial and share it with the community
The Perception Wiki now is extendable by users on their own. Add your example data and/or a tutorial and convince the community by your work.
See article: How to add example data to the Perception Wiki.

Available Installation Versions

Get an installer of your choice from the list below:

- Perception Studio 1.8 Desktop
- Perception Studio 1.8 Offline

All software versions are free of charge during a (demo) period of one month. After activation of your specific PC, the software is available without any bounds to time.

Desktop Version
This software suite enables users to load data like Hyperspectral cubes or example projects into the Perception Studio program, to perform exploratory investigation to hyperspectral cube data and to carry out application relevant information. The Desktop software suite is predestinated for evaluation or analysis purposes of available data.

Offline Version
...in addition allows to setup measurements and to acquire data from a hyperspectral imaging camera. The Offline Suite is typically the best choice for evaluation or analysis purposes of acquired data.

Inline Version
...in addition allows to stream molecular information coded by color information to the client application. The Inline Suite is the standard for the industrial application of devices based on the Hyperspectral technology.

Update History

1.7

1.8.3754

- Release 1.8 - see notes above.

1.8.3786

- Bug "saving projects" fixed
- Some smaller changes

1.8.3892

- Support of Perception Core R1.8 for inline application
- Some UI improvements: setup and view perspective
- Improvement and bug fix on description parameter templates
- Minor Perception Core performance improvement
- GEV-output: precise acquisition start time point secured
- GEV-output: "Sender network adapter" parameter added (available from Add Configuration dialog)
- GEV-cameras: "dropped frames" bug fixed
- Spectra select: bug fix, improvement and erase tool added
- Live view of balanced data added
- "Add configuration" bug fixed: "configuration without balancing images"
- Perception Core: improvement on log text structuring

1.8.3965

Extended Connectivity

- Specim's brand new industrial FX series now supported.
- Support of Perception Core R1.8 for inline application.

Extended Information Service

- Example data Stemmer Imaging Pen added. Thanks to Lars Fermum / Stemmer Imaging.

Improvements & Fixes

- Improvement and bug fix on description parameter templates
- Some UI improvements: setup and view perspective
- Minor Perception Core performance improvement
- GEV-output: precise acquisition start time point secured
- GEV-output: "Sender network adapter" parameter added (available from Add Configuration dialog)
- GEV-cameras: "dropped frames" bug fixed
- GEV-server output: images are now proper oriented.
- Improvement: Much more flexibility through configurable hardware presets on parameter visibility, default values and parameter source, etc.
- Improvement: Not all parameters need to get set on start up anymore. Therefore, 3rd party software can get used to control parameters in advance if needed.
- Improvement: Needed hardware presets get installed along with Perception Software. Therefore, plug-&-play support for Specim's FX camera series guaranteed.
- Spectra select: bug fix, improvement and erase tool added
- Case Discrimination: "mixing stream formats" bug fixed.
- Live view of balanced data added
- "Add configuration" bug fixed: "configuration without balancing images"
- Perception Core: improvement on the log text structure.

Important Changes

The term "Perception Box" is now replaced by "Perception Core".
Take care of all files which belong to this term like PerceptionCore.bat or PerceptionCore.ini or the Perception Core program folder.

Specims FX series supported

We are happy to support this promessing technology by our software environment. Lab work can be done by means of the Perception Studio program or e.g. real-time sorting is enabled by our streaming engine Perception Core.
Thanks to our instrument abstraction as well as standardization routines, plug&play compliance is guaranteed. Thanks to the capabilities of our generic data processing environment, all user interface processes keep the same, regardless of the interfaced camera.
This allows users to save time and to concentrate on their core competences.

FX10
Specims new FX10 camera technology is sure the answer to a lot of applications in industrial environment. Thanks to the spectral range from 400 to 1000 nm, color measurement applications as well as application work based on molecular information in the VNIR range are consequently enabled.
Note: please ensure to have a serial grade camera available. The software might not work proper together with cameras of the pilot series due to functional changes.
Note: Specims aberration correction is enabled per default. Enable or disable it from within the Studios Setup perspective (ensure guru visbility of parameters).

FX17 ready
Compact housing, good imaging properties paired with good spectral sensitivity in the near-infrared range makes the brand new FX17 camera of Specim interesting for industrial application. Thanks to the spectral range from 950 to 1700nm, all standard applications know from industry are enabled.
Note: please ensure to have a serial grade camera available. The software might not work proper together with cameras of the pilot series due to functional changes.
Note: the Perception Software is ready for cooperation with the FX17 camera. Please consult your device supplier on important notes to the camera.
Note: Specims aberration correction is enabled per default. Enable or disable it from within the Studios Setup perspective (ensure guru visbility of parameters).

1.8.4017

Improvements & Fixes

- Improvement of the visualization of feature images: size and background
- Bug fix "GEV output broken on some viewers"
- Update of camera presets for FX series: all trigger parameters now available, set frame rate parameter now available
- Bug fix on the "set framerate for FX series" procedure. To set the frame rate still does not work perfectly - be sure to update the frame rate parameter manually after e.g. a change of the exposure time parameter.
- Bug fix "ENVI import affected by Specims log file"
- Improvement of statistical features method (model perspective): image gallery
- Bug fix "GEV output network card in conflict with Inno-spec cameras"

- Update of Perception Wiki manuals: review and new content added, offline help available for logged-in users (wiki >> download >> documentation)

1.8.4343

New Features

- We are happy to support now the hyperspectral camera EVK Helios G2 NIR1 by Perception Software.
- Parameter presets are exportable and importable from within the Setup perspective. Therefore, now current settings can get saved to file and can get loaded and applied later on if needed.
- Export and import of framegrabber configruation files (CCF) now supported.
- Enlarge sample images by clicking on it in the description section of hyperspectral cubes.

Improvements & Fixes

- Concept on handling camera parameters improved
    - Solely editable parameters (in the Studio program) are stored in a Core configuration. Like exposure time, trigger parameters, etc.
    - Parameters which do not need/have to get and set are defined to be "read-only". Like camera IP, userset selector, etc. If you need to change them, please consider to use a 3rd party tool.
    - A couple of parameters need to get overwritten on start of Perception software. Like sensor resolution, binning parameters, etc.
    - Parameters now are editable by 3rd party tools - Perception software don't overwrites per default all parameters on startup anymore. Excepted a couple of parameters mentioned in the previous point.
    - Consequently, the parameters in the Setup perspective reflect last set values of the camera.
    - A warning is shown when a camera supports less or more parameters than awaited. This can indicate potential conflicts e.g. because of fundamental changes of the camera (e.g. caused by a not supported camera firmware).
    - Hint: as in past, properties of parameters like visibility, default values, value rage, etc. are defined by camera presets which get installed along with Perception software (available in Perception Wiki too).
    - Important: To change back from this version to a previous version, you need to reinstall the older version again. Alternatively, backup the library folder before installation of this version (see importantant notes below).
- Framegrabber parameters now editable
    - Export and import of standard CCF files supported (parameter "Framebrabber Configuration File" added (expert visibility)).
- Improved camera integration
    - Allied Vision G008: set and get of parameters, image format set able, acquisition of data
    - Specim FX: aberration correction get loaded and activated on startup per default, shutter control bug fix, update of interface DLLs
    - Specim FX10: the full spatial width is now provided (1024 pixels) - no binning anymore.
- Setup perspective:
    - Balanced view when import of White and Black image now works.
    - Improvement of White and Black image acquisition procedure.
    - System configurations can get updated even when the spatial roi was changed.
    - Some small improvements
- Explore perspective:
    - Bug fix "aspect ratio"
- Description parameters:
    - Improved visualization of sample images and possibility to enlarge
- Spectra Select:
    - Rename of spectra sets possible again
- Model perspective:
    - Improvement on the algorithm of the CCI Constrain method. Now, constrained colors will match in most cases better than before.
    - Improvement on the parametrization of the CCI Constrain method. Now, the spectra set colors are used as "constrained colors" per default.
    - Improvement on the parametrization of the Case Discrimination method. Now, (slider) values are calculated get calculated automatically.
    - Speed-up of processing (we plan a further speed-up with a coming version).
- Spectra view:
    - equidistant axis tics ensured
    - option to show sample positions (dot-marker) added - see context menu
- Cube view:
    - time slice marker is now per default at the middle position
- Import / Export:
    - Bug fix on the import of ENVI and Matlab files
    - TIF-multi-channel format added
- Perception Studio framework
    - Bug fix "deleting cubes during processing"
    - Projects home path now fixed (mydocuments\Perception Park\projects\ )
- Perception software installers
    - MS redistributables get installed per default.
- CVB integration:
    - Warning when CVB dongle is missing
- Teledyne Dalsa framegrabber integration:
    - Sometimes hang up on start - fixed.

New Content

- Example data set Seal inspection added.
- Example data set Wood partly wet added - thanks to Heinz Fleischhacker/Kestrel Eye!

Important Notes & Hints

- Due to the change of the parameter handling, camera presets are now updated and are not backward compatible.
  In case you like to switch between this new version and a previous version, please ensure to have the correct library folder available.
  Camera parameter presets are stored in

  ```
  %programdata%\Perception Park\library\
  ```

  E.g. backup the library folder before the new version get installed. So you can switch back to an old library when you like to run an old version.
  Hint: When installing Perception Software, the library gets installed/overwritten per default.
- Allied Vision CL033 is not supported with this version of Perception software. Please use a previous version like 1.8.4017 to run this camera. We are very eager to ensure compatibility in future versions again.
- The software now supports the serial grade version of FX17 and FX10. We did our tests with
  - FX10 FPGA sensor rev.: 1.1 build 3 and
  - FX17 FPGA sensor rev.: 1.0 build 7.

  In case you need to run a FX camera of the pilot series, you might need to change the camera interface DLLs. See the page Camera Interface Versions to get more information and DLLs available.
  Hint: In case the software cannot detect your FX camera, most properly it is of a pilot version. Updating the Camera Interface Version DLLs can solve this.
- The status of FX's aberration correction is shown in the Setup perspective. Please note: in case the aberration correction is not valid, the spectral assignment of spectra will not be correct!!
  Therefore, don't miss to check the state of the aberration correction parameter. If it is false (not checked), spectra acquired will not be comparable to other ones since the wavelength assignment will not be ok.
  In such a case we recommend to update the camera so the aberration correction is proper working (indicated by the parameter aberration correction = true in the Setup perspective).
- The installation of Perception software now takes a few seconds more in time. To avoid issues related to missing MS dependencies, we now install all MS dependencies per default along with the installation of Perception software.

Known Issues

- Perception Core: Case Discrimination model cannot get applied if spectral sensor roi width is <= 64.In the Setup perspective ensure to set a spectral width >64.
- Studio Inline: White and Black image cannot get deleted manually (X button next to the parameter in the Setup perspective does not work properly). Workaround: change a parameter which invalidates the balancing (like exposure time). By this both images get deleted.