EVIDENT

Release notes

PRECiV

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PRECiV V1.2 Release notes

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
R-3540	Line Profile Measurement functionality is available in PRECiV	It is possible to measure line profile with PRECiV 1.2 * Horizontal line * Multiple horizontal lines * Export active chart to Excel * Export active chart to text * Export active chart to workbook * Results are displayed in "Geometric Measurement Results" tool window ("Measurement and ROI" tool window)	X	o	o	o	
R-3541	Simple 3D Measurement functionality is available in PRECiV	It is possible to perform simple 3D measurement in PRECiV 　* Horizontal 3D Profile Line 　* Vertical 3D Profile Line 　* Arbitrary 3D Profile Line 　* 3D Profile Line Measurement 　* 3D Profile Measurement Options 　* Export 3D profile to chart 　* Export to 3D profile to Excel 　* Export to 3D profile to text 　Export measurement results: 　* Export to workbook 　* Export to Excel 　* Export to text 　* Create Excel report	x	◊	o	o	Motorization 3D acquisition
R-3542	Motorized stage support for conventional microscopes in PRECiV	Motorized stage support to software packages and solutions: Support of the following stage controllers (motorized) for PRECiV: - Märzhäuser Tango Desktop - Märzhäuser Tango PCIe - Märzhäuser Tango mini - Märzhäuser EK Pilot - Chuoseiki QT-ADM3 / QT-BMM3 - Prior ProScan II - Prior ProScan III - Prior ProScan OptiScan ES101 - Objective Imaging OASIS Blue 4i - LUDL (LEP) MAC 6000 Coded stage support software packages and solutions:	x	◊	◊	x	Motorization 3D acquisition

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		Support of the following coded stage controllers for PRECiV: - Märzhäuser SensorReady 3D - Märzhäuser Profiler SCD System calibrations: Add the following system calibrations related to motorized stage support: - Stage limits calibration - Stage overview area - Camera-to-stage rotation calibration - Parfocality calibration - XY objective shift calibration					
R-3543	Monochrome camera DP23M is selectable in PRECiV	* DP23M is available in PRECiV packages * Images can be acquired with the camera * All camera settings of the DP23M can be controlled via PRECIV UI	o	o	o	x	
R-3544	Customized Software Solutions can be used in PRECiV	Customized Software Solutions produced by ETCE Customized Solutions Group can be used in PRECiV 1.2. Line up solutions - Series of customized solutions that can be offered to expand PRECiV functionalities. - Sold as PRECiV article code On Demand solutions - Solutions that are created according to specific customer requests - Cannot be reused to other customer easily Customized Software Solutions are protected by a specific license key.	x	o	o	o	Line-up solutions

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
R-3546	Deep Learning (Neural Networks Training) is available in PRECiV	The Neural Network solution is now available, as an additional solution, in PRECiV 1.2. It is provided in all PRECiV supporting languages. The solution is available for PRECiV versions Core, Pro and Desktop. The solution is not available for PRECiV Capture. With the Neural Network Solution the customer trains a neural networks to segment and classify objects. The trainings can easily be prepared and monitored via the dedicated Neural Network layout. Train neural networks The new Neural Network Layout offers an easy to use batch interface in order to run several training jobs in a queue. This enables the training of networks over night or the weekend. The system creates neural networks at dedicated time points (check points) of the training that can be saved for later use. A training can be paused, resumed and continued with further iterations. A network can be configured with a number of input channels and can be trained to identify up to 15 distinct classes and one background class or up to 16 distinct classes without an explicit background class. Manage Neural Networks: Neural networks can be managed for example they can be exported and imported. The details of the training related to the network can be reviewed and the network information like	x	◊	◊	◊	Neural Network Training

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		name, description or channel assignment can be edited. Precondition The training of Neural Networks requires a powerful NVIDIA GPU that supports CUDA operation. Please check the product information for latest update on GPU compatibility.					
R-3547	Trained Neural Networks can be used in Count & Measure	Neural network processing * Add filter "Neural network processing" (precondition for "probability layer segmentation") * Add deep learning segmentation methods to Count and Measure user interface of PRECiV * The solution Count and Measure allows the image processing with a previously trained neural network (inference) even without the solution neural network training. The following segmentation methods are added to the Count and Measure solution: * Probability Layer Segmentation * Neural Network Segmentation The input for the segmentation is created via the training solution of deep neural networks. * Extension of split button in sub-group Count and Measure in 2D Measurement tab * Add "Count and Measure on Layer" Note: The training of the neural network can only be done with the solution Neural Network Training, potentially on a different workstation. Count and Measure does not enable Neural Network training.	x	◊	◊	◊	Count & Measure

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R-3548	Trained Neural Networks can be used in Materials Solutions	It is possible to use trained Neural Networks in Materials Solutions - Phase analysis - Porosity - Particle Distribution The selection of Neural Network segmentation is available in the Thresholding step	x	◊	◊	◊	Porosity Particle Distribution Phase analysis
R-3549	PRECiV 1.2 can be installed on Windows 11-64 bit computers.	All Controlled Devices and Software functionalities are working with Windows 11 - Windows 11 Pro 64 bit - Windows 11 Enterprise 64 bit	o	o	o	o	
R-3550	PRECiV 1.2 report functionalities are compatible with Microsoft Office 2021	Office 2021 LTSE (local Office version for enterprises) can be used for : * Word report * Excel report * Power Point report	x	◊	o	o	Report
R-3551	Labelling for Neural Network Training is available without special solution in PRECiV 1.2	Labelling Images for Neural Network Training: It is possible to create labels for Neural Networks training in PRECiV 1.2 Core, Pro and Desktop Images with labels can then be re-used for training Neural Networks in another workstation.	x	o	o	o	
R-3552	New function for Interactive Training of Neural Networks	It is possible to use the functionalities "Interactive Training" for neural network training * Button to switch to new page "Interactive Training" is available in Processing tab > Neural Networks.	x	◊	◊	◊	Neural Network Training

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		* New page "Interactive Training" is available It is possible to use Semantic and Instance segmentation for Neural Network training E.g. * Semantic segmentation: for phase analysis * Instance segmentation: for particle analysis The hierarchies are introduced and the decision for instance segmentation of individual classes is available in the Training Labels tool window. Hierarchies are * available in the Training Labels TW * visualized in the training label overlay * persisted with the image * used in C&M * Details are provided for the training * Images created before (incl. multiclass/multi-label) can be used for training (at least users are notified about a possible change of data)					
R-3553	Stereo-microscopes can be configured with pre-defined zoom steps	The System provides predefined lists of manual zoom magnifications for the following Olympus stereo microscopes: - SZ51: 0.8x, 1x, 2x, 4x - SZ61: 0.67x, 0.8x, 1x, 2x, 4x, 4.5x - SZX7: 0.8x, 1x, 1.25x, 1.6x, 2x, 2.5x, 3.2x, 4x, 5x, 5.6x - SZX10: 0.63x, 0.8x, 1x, 1.25x, 1.6x, 2x, 2.5x, 3.2x, 4x, 5x, 6.3x - SZX16: 0.7x, 0.8x, 1x, 1.25x, 1.6x, 2x, 2.5x, 3.2x, 4x, 5x, 6.3x, 8x, 10x, 11.5x If the User selects one of these stereo microscopes in the Device	o	o	o	o	

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		List dialog, the System uses the corresponding predefined list of zoom magnifications in the Device Settings dialog.					
R-3554	Display on-screen magnification in PRECiV	The magnification of the image related to the display on the computer screen is now visible as overlay. * Size of monitor is automatic detected * User can select the size of the monitor * The system calculates the on-screen magnification of the current image and displays it as image overlay element	o	o	o	o	

R-3555	Motorized X,Y acquisition processes available in PRECiV	It is possible to automatically acquire images of a sample which is larger than one field of view.
		
		  * Selection of automatic panorama mode
		  * Create and manage scan area (one scan area only):
		   * Select position
		   * Delete position
		   * Load/Save position
		   * Rectangular scan area using stage
		   * Circular scan area using stage
		   * Rectangular scan area using map image
		   * Circular scan area using map image
		   * Polygonal scan area using map image
		  * Display information on the created scan area and allow modification of the size of rectangular and circular scan area by entering values in the corresponding input fields:
		
		* The functionality shall only be available if the current device configuration contains a motorized XY-stage
			x	◊	◊	x	Motorization

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
R-3556	Movie acquisition in PRECiV	It is possible to acquire movies in PRECiV. The functionality is accessible from sub-group "Frame Series" of tab "Acquisition" of PRECiV:	x	◊	o	x	Motorization

R-3557	Time-Lapse acquisition in PRECiV	With the acquisition of time lapse images it is possible to monitor changes of a sample over a longer period of time.
		
		* Defining settings for time lapse acquisition:
		  * recording time, interval, cycles, start delay
		  * It is possible to fix some of these settings
		  * Settings are persisted over application sessions
		* Acquisition of time lapse images using these settings
		* Process can be paused/resumed and stopped by the user
		* The progress of the process is displayed in status area
			x	◊	◊	x	Motorization

R-3558	Motorized Z acquisition processes available in PRECiV	Acquisition and visualization of 3D images is possible in PRECiV * visualize the image with extended focus * visualize the 3D surface of the sample * perform simple 3D measurements * visualize and perform measurements on individual frames of a Z-stack image A 3D image is an image that contains height information (height map). Automatic EFI/3D The System provides functionality to acquire EFI images in automatic mode (optionally with height map) in addition to Instant EFI. The functionality shall be available if the current device configuration contains a motorized Z-axis.	x	◊	◊	x	Motorization 3D acquisition

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution

		* Selection of the EFI mode (Instant/Automatic) only if current device configuration contains motorized Z-axis
		* Definition of the Z-range for acquiring the EFI/3D image:
		  * Top/Bottom position
		  * Range
		* Definition of step size of Z movement (automatic: fast/fine/manual)
		* Option to create a height map (already available in Acquisition Settings > EFI)
		* Start acquisition with selected range and other settings defined in the UI
		
		 z-stack
		
		* Definition of the Z-range for acquiring the EFI/3D image:
		* Top/Bottom position
		* Range
		* Definition of step size of Z movement (automatic/manual)
		* Start acquisition with selected range and other settings defined in the UI					

R-3559	Sample navigation (map image) tool window available in PRECiV	The map image is an overview image of the sample acquired using image stitching.
		 Inside the map image the position of the live image is highlighted by a rectangle.
		 The creation of a map image of the sample is a precondition for using it it for stage navigation and defining scan areas or XY-positions for acquisition processes and stage paths in the Materials Solutions.
		
		 For motorized stage only:
		  * Automatic creation (tornado scan):
		    * Tornado scan starts at current stage position
			x	◊	◊	x	Motorization 3D acquisition

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution

		* Continue in steps of one more cycle
		   * Automatic creation stops automatically when stage limits are reached
		   * Automatic creation (meander scan):
		    * Definition of map image area via coordinates of rectangle
		   * Automatic creation of map image can be stopped by user					

R-3560	Acquisition of images at multiple X,Y positions using motorized stage	It is possible to acquire single images and/or panorama images at previously defined positions of the position list or defining new positions and scan areas.
		A combination of XY-positions and panorama images with EFI/3D is possible (only if the device configuration contains a motorized Z-axis).
		
		  * Functionality to define, modify and delete positions (synchronized with list on left hand side)
		  * Functionality for loading/saving/importing/exporting positions
		  * List of positions
		   * Positions are the same as in position list on left hand side
		   * Table on the right hand side is extended by more columns:
		    * Acquire: positions can be marked as to be acquired
		    * XYZ-positions
		    * Type (single position, rectangle, circle, polygon)
		    * A selected position can be updated, i.e.
		     * type can be changed (only rectangle and circle)
		     * size can be changed (only rectangle and circle)
		     * XYZ can be adapted
			x	◊	◊	x	Motorization 3D acquisition

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
R-3561	Color camera LC35 is selectable in PRECiV	The 3.5 MPixels camera LC35 is selectable in PRECiV	o	o	o	o	
R-3562	PRECiV supports macro recorder and player	It is possible to perform sequences of operations automatically with and without user interaction. This allows easier and faster operation and better reproducibility of operations. Recording and executing macros as a sequence of operations. * Record macros of the basic operations: * Image processing commands (e.g. image filters, image mode change, bit depth change, crop) * Execute recorded macros: * Without user interaction * With user interaction (modification of parameters of the operations) * Batch processing (execute macros on several input documents)	x	o	o	o	
R-3563	PRECiV can display tile view, layers with height information and surface view	PRECiV version 1.2 will allow the acquisition of multidimensional images (Z-stack images, time lapse images, movies) and 3D images (EFI images with height information). It is possible to: * display the frames of multidimensional images side by side in a tile view * display the Surface view for 3D images * display the different layers for 3D images Tile View for multidimensional images * The Tile View can be activated/deactivated via the navigation bar of the image	x	o	o	o	

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
		* The existing Tile View is used Surface View for 3D images * The Surface View can be activated/deactivated via the navigation bar of the image * The existing Surface View is used * The existing Surface View tool window is automatically displayed in the Left Area of the PRECiV UI when the Surface View is active and it gets hidden when the Surface View is not active (there is a setting in the Options dialog controlling the automatic display) Display of height layers for 3D images * The functionality is available in the navigation bar of the image					
R-3564	New Image Processing functions in PRECiV 1.2	PRECiV 1.2 offer new Image processing functions Combination of two images via arithmetical and logical operations: * Add * Subtract * Multiply * Divide * AND * OR * XOR * Minimize * Maximize Combine images: * Combine frames into Z-stack image * Combine frames into a multichannel image * Combine frames into a time lapse image * Combine color images * Create an image with extended focus based on acquired Z-stack images (Offline EFI)	x	o	o	o	

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
		* Create a panorama image by stitching multiple acquired images (Offline Panorama) Separate images: * Separate Z-slices * Separate time frames * Separate channels * Separate RGB channels * Separate HSV channels Convert images: * Option to convert an image into a multichannel image					
R-3565	Provide One Time Migration licenses for Stream customers	It is possible for Stream customers to install a PRECiV 1.2 license Package license: * Customer using a full license Stream 2.2/2.3/2.4 can purchase a corresponding one time update for migration to PRECiV 1.2 and higher * Stream 2.1 licenses are not eligible for upgrade to PRECiV * Customer using Stream 2.5 can upgrade to PRECiV with a separate upgrade license * Customers upgrading to PRECiV from Stream Basic, Essentials or Motion will get an upgrade 'kit' that includes up to two solution licenses Solution licenses: * existing Stream solution licenses can be used for their respective PRECiV counterpart, but ONLY in conjunction with an OTU license * All database solutions cannot be migrated and are not in scope * With a Floating License Server, Stream solution licenses can be used in conjunction with ANY PRECiV package license (not just upgrades)	o	o	o	o	

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		Customers with a basic license of 2.1 or lower cannot migrate to PRECiV with a OTU license.					
R-3566	Update Standards for Cast Iron Materials Solutions	Update the standards provided by the Materials Solutions "Cast Iron" to the newest released standards. List of affected standards 1) EN ISO 945-1:2018 2) ASTM A247-17 3) JIS G5505:2013 (compacted vermicular) - Change name to EN ISO945:2019, hide second standard combo box, when EN ISO 945:2019 is selected: UI, workbook, report - Change name to ASTM A247-19: UI, workbook, report - Change name to JIS G5505:2020 (compacted vermicular) replaces the old version JIS G5505:2013	x	◊	◊	◊	Cast Iron
R-3567	Update Standards for Non-Metallic Inclusion Materials Solutions	The materials solution NMI and IWF is updated. List of affected standards 1) ASTM E 45-18 2) DIN 50602:1985 Detailed Changes: 1) ASTM E 45-18 a) Update the standard name: ASTM E45-18a method A in IWF: UI, workbook, report b) Update the standard name: ASTM E45-18a method D in IC: UI, workbook c) When analyzing images, the resolution of the picture shall be higher than the shortest length to be determined: The standard requires a minimum pixel resolution of 1µm per pixel, add pixel resolution to sample results (UI, workbook and report):	x	◊	◊	◊	Non Metallic Inclusion

Release Note	Title	Description	Capture	Core	Pro	Desktop	Solution
		Add inline warning message with "More Information" button on Settings page of IWF and IC, when the ASTM standard is selected and the pixel resolution is worse (see Coating Thickness). Add "Reject image" button, too 2) DIN 50602:1985: Implement Method K in Inclusion Content The current calculation of inclusions is not changed! DIN 50602 is the basis of the already implemented standard EN 10247:2017 method K and is quite similar to it. Calculate - Number of inclusions of each inclusion type SS, OA, OS, OG per rating number 0-8 and per area - Total area - Second Subtotal for K <index> - Number of sulfides (SS = S) - Number of oxides (OA+OS+OG= O) - Total index K<index> (converted to a polished section area of 1000mm2 and rounded to the nearest whole number) - Overall total index K<index> - No oversized inclusion handling is required, all oversized inclusions should be rated as class 9					