

Release notes for XYZTEC Condor Sigma Software, version 5.10, build 6788

The XYZTEC equipment should be connected and switched on. Make sure to login as a user with administrator privileges prior to starting this installation.

READ THIS CAREFULLY BEFORE INSTALLING THIS NEW SOFTWARE VERSION

- Please note that updating the software on systems with customer specific software changes cannot be guaranteed to work directly. Customer specific hardware or software support cannot be tested prior to release. It is therefore recommended to only update these systems after an image of the system's hard drive has been made, so that it is easy to revert to the exact same situation as before the upgrade. Contact support@xyztec.com for help in case of problems.
- Installation is supported on any desktop edition of Windows 7, Windows 8/8.1 as well as Windows 10 (not the mobile, IoT nor embedded editions).
- There are issues with Windows 8/8.1, some USB 3.0 chipsets and the built-in driver for composite USB devices. These may be solved with the latest firmware for the USB 3 chipsets and running Windows updates until completion.
For this reason it is not advised to update a working Windows 7 system to Windows 8/8.1.
- On systems with both USB 3 and USB 2 ports, connect the Sigma to one of the USB 2 ports.
- Backup the SPCDatabase before performing an upgrade.
- This software minimally requires the .NET 4.5 framework. If not installed the installer will prompt you to install the .NET 4.5 framework either automatically or manually.
- SQL server 2012 SP1 or SQL server 2014.
- For XYZTEC USB device support, our USB device driver kit is required to install.
- When using IDS cameras, please update the driver to version 4.90.1 or newer
- When updating from version 5.5 or before, the device driver for the Visiosens camera needs to be updated as well. Please de-install the current driver first. Then install either 'VFUDriverx64_v2_1_0.msi' or 'VFUDriverx86_v2_1_0.msi'. After installation of this package these will be in the 'Resources\Install\Microsoft' subdirectory of the installation directory (usually in 'C:\Program Files (x86)\XYZTEC\Condor Sigma').

NEW FEATURES AND CHANGES

Version 5.10 - build 6788

1. IDS camera with dome and/or coaxial lights: When changing what lights to switch on at activation, the new configuration will take effect immediately
2. Fixed a problem with automatic file export

Version 5.10 - build 6747

1. Update redistributable DLL for Visiosens cameras.
This fixes a compatibility problem with Windows 10 version 1803 (April 2018 update)
2. Automation more robust

Version 5.10 - build 6725

1. Faster update of test screen
2. Solved null reference exception in automation

Version 5.10 - build 6680

1. Restored visibility of control for contactless cavity (jaw) cleaner

Version 5.10 - build 6662

1. Small improvement in xy table map recording
2. Solved a bug that would cause the system to crash when taking a picture with an IDS camera directly after changing its resolution

Version 5.10 - build 6656

1. Fixed a problem where an obsoleted Sigma firmware configuration would cause communication errors between PC and Sigma

Version 5.10 - build 6635

1. IDS: When upgrading from previous configuration no longer complain about calibration of dimmable lights

Version 5.10 - build 6634

1. Better support for dimmable lights on IDS cameras

Version 5.10 - build 6624

1. Handle corrupt WMI (Windows error) more gracefully
2. Automation: Take picture before/after measurement now uses original camera settings
3. Automation: Matrix location is displayed as a remark

Version 5.10 - build 6611

1. When exiting the application, power to the stages will be reduced
2. When , in automation, an error occurs with a fiducial, matrix or pattern, the automation will be stopped

Version 5.10 - build 6599

1. Automations now stop if optional testing of touchdown functionality fails
2. Results of Probe tests and loop height tests now also appear in grading screen
3. The query screen now shows up to 100 fields

Version 5.10 - build 6583

1. No longer enable IDS camera support by default

Version 5.10 - build 6582

1. Backward compatibility with 2016 style table maps
2. Move back to original position when performing maintenance tasks
3. Warning when driver for IDS camera needs to be updated

Version 5.10 - build 6543

1. Many improvements in automation:
 - Shape based fiducials
 - Display a visualisation of the automation
 - Significant reduction of the number of moves in an automation with fiducials or other image processing functions.
(By default all fiducials will be visited prior to the start of the automation. This reduces the number of moves from tool to camera and back a lot)
 - When opening the fiducial editor or the test image processing the system will move to the correct position under the camera directly
 - Improved image processing. The rotation of the detected region may optionally be ignored. This makes the image processing more stable (less sensitive to the actual position)
 - When teaching image processing, unwanted direction changes are avoided (these used to occur when an object's angle were close to 90 degrees)
 - The editor has advanced selection options
 - Test image processing entries can be tested by clicking the Action button directly in the editor
 - Possibility to move to the position of a fiducial or test image processing command directly from the editor
 - Tool visualisation with tool rotation and tool size. Possibility to change the tool width and

tool depth.

- Matrix visualisation with the possibility to select multiple cells
 - Possibility to show text when waiting for the operator to press a button
 - Better diagnostics by showing the last four messages and improved logging
 - Better sensor selection in the automation editor (only available sensors can be selected, including some less often used force ranges like 250 gf and 5 kgf sensors)
 - Possibility to move the stage to a position by double clicking in the live camera image (with visualisation)
 - No longer show the grading dialog in situations where a measurement result would lead to a fail (due to the SPC rules) in methods with a default (auto) result code. (Grading can always be enforced, by not enabling the auto result code)
 - It is only possible to select fiducials, pattern or matrices that are defined in the parental automation entry
 - Control blow and heat function of a heated cleaner
 - Reversed direction if y-axis and p-axis in joystick controls that were used to find a fiducial's location in automation
2. In the query screen the grouping and sorting is correctly stored and displayed after loading
 3. Making pictures of all measurements no longer depends on the grading settings
 4. Support for a lead frame loader
 5. More accurate positioning by using a camera mounted on the tool position for recording exact positions of a known xy-table map
 6. When configured for remote control (Wafer loader or Secs/Gem) and running an automation, or when unloading a wafer, the 'go online remote' and 'go online local' buttons are disabled
 7. When under remote control (of a wafer loader or Secs/Gem) the joystick buttons will be disabled
 8. Device drivers are signed
 9. Support for IDS camera enabled by default
 10. DSP firmware 5.10.6407 contains the following improvements
 - Possibility to store table map in flash of the Sigma (as opposed to storing it on the computer's hard disk)
 - We now have calibration, xy table mapping and scaling
 - Notify host software when enabling joysticks caused motions to be aborted
 - Restore sample frequency after flashing configuration
 - Different stage mapping (map for each camera)

Version 5.9 - build 6495

1. To prevent a crash of wafers, on machines with a WafTech wafer loader the presence of a wafer will be asserted after a wafer has been put on a machine.

Version 5.9 - build 6480

1. Edit method after changing default method with sensor now edits right method
2. Corrected format error in Secs/Gem configuration file
3. Support for a customer specific recipe name lookup based on barcode
4. Support for user entered area in a method for calculating pressure

Version 5.9 - build 6471

1. Autohooking command would fail in rare occasions

Version 5.9 - build 6463

1. Camera: Dimensions selected rectangle would not be right with resolution < 648 X 486

Version 5.9 - build 6459

1. Worked around timeout problems that sometimes occur when retrieving the position of the p-axis

Version 5.9 - build 6452

1. When a Secs/Gem host changes state to for example 'OffLine' or 'Disabled' this no longer affects the online remote / online local state of the Sigma

Version 5.9 - build 6450

1. The Secs/Gem host will be notified when a recipe/automation is selected manually

Version 5.9 - build 6442

1. When under control of a Secs/Gem host, get waferId and lotId from a PP-SELECT command

Version 5.9 - build 6439

1. Distribution of Secs/Gem related files

Version 5.9 - build 6436

1. W12: Apply vacuum to a chuck before cleaning a wafer (only applies when cleaning a wafer before unloading. Not when cleaning the wafer table).

Version 5.9 - build 6411

1. The procedure to unload a wafer will not start if no vacuum detected
2. The procedure to clean tweezer tips will rotate the tweezer on the p-axis before moving back to the original x, y, z position

Version 5.9 - build 6409

1. The \$Result message to a Rorze EFEM now includes the name of the method used as well as the name of the recipe

Version 5.9 - build 6404

1. When starting a new automation, wait until the previous window had really closed

Version 5.9 - build 6401

1. The procedure to clean a tweezer's cavity returns to the original position high

Version 5.9 - build 6395

1. Procedure to clean wafer (or wafer table) now starts at right position
2. The procedure to clean a tweezer's cavity now also works when joysticks are enabled
3. When handling a request to stop automation, the RMU will be moved up
4. The IDS camera now remembers the last resolution

Version 5.9 - build 6373

1. Solved a bug in storing table maps
2. Possibility to clean the wafer before unloading

Version 5.9 - build 6366

1. Support for pusher with multiple wafer formats
2. Introduced the concept of 'maintenance tasks'. The working of a sensor's touchdown circuit may be tested automatically.
3. Better default travel distance for finding focus
4. First setup for better tooling for the Sigma's production process

Version 5.9 - build 6345

1. Moves to the sensor specific positions named initial/unload/clean from the 'MU setup' screen will now be performed with sensor high

2. In camera parameters, the 'Focus Area' will only be set when explicitly stored before

Version 5.9 - build 6341

2. Repaired a problem around reading a barcode in a form
3. Waftech wafer loader: Send NAK to START request when not online remote
4. When a Waftech wafer loader requests a wafer to be processed manually, this now also works after an automated test.

Version 5.9 - build 6317

1. When under control of an EFEM, the windows with the test result is kept visible until manually closed or when the next (automation) test is started.

Version 5.9 - build 6312

1. Ability to choose focus area
2. Define the focus travel distance
3. Focus parameters will be stored with fiducial parameters in automation
4. Wafer loaders may lock 'online remote' mode
5. Better support for larger camera images
6. Vacuum valves are optionally not switched when the application starts or exits
7. Possibility to plug-in factory specific modules for retrieving an automation (recipe) name from a barcode
8. More robust control of the heated rotation table
9. Framerate of a video recorded with the IDS camera is now set
10. Better display of deflection in graphs
11. Possibility to upload a recipe from a remote host under a different name

Version 5.9 - build 6255

1. RMU firmware 5.9.6255
 - Ability to experiment with max clamp current
 - Ability to test touchdown circuit
2. Field of View can be found automatically
3. Scratch method
4. Solved a bug where sometimes a method would be used that did not appear to be selected
5. Possibility to control the wafer table with only 3 outputs

Version 5.9 - build 6234

1. When assigning a joystick button to the CCC function, releasing the button will stop cleaning
2. The highest available resolution of IDS and Visiosens cameras may be used. (Not always recommended as it will slow down fiducial recognition)
3. The position and size of camera window are persistent
4. Camera windows optionally fit the image in the available space
5. Optionally tests can only be started when sufficient vacuum is detected
6. Fixed a problem with grading on systems without a camera

Version 5.9 - build 6197

1. Camera controls more consistent
2. Improvements in Secs/Gem integration
3. Support for wafer map files generated by HSEB Odin
4. A remote host (wafer loader or Secs/Gem host) may request the value of some 'key parameters', like ShearHeight, TestSpeed.
5. Support for dome light or coaxial light on an IDS camera
6. When using more Sigma bond tester's whose measurement data is stored in one, centralized,

database, one may filter results on a particular bond tester

7. A Rorze wafer loader may disable the Sigma's behaviour to move to unload automatically after a wafer has been processed
8. Eliminated some situations where the head would be moved to a safe z-height despite the fact it was already above the safe z-height.

Version 5.8 - build 6404

1. Procedure to clean wafer (or wafer table) now starts at right position

Version 5.8 - build 6366

1. Default travel distance for finding focus is now 2 * the focal depth (as supposed to 2 * the default focal depth which will be 2 * 30 μm = 60 μm)

Version 5.8 - build 6353

1. When under remote control (of a wafer loader for example) the arrow keys would not be enabled to correct a fiducial error

Version 5.8 - build 6345

1. Moves to the sensor specific positions named initial/unload/clean from the 'MU setup' screen will now be performed with sensor high

Version 5.8 - build 6341

1. Waftech wafer loader: Send NAK to START request when not online remote
2. When Waftech requests a wafer to be processed manually, this now also works after an automated test.

Version 5.8 - build 6339

1. Repaired a problem around reading a barcode in a form

Version 5.8 – build 6320

1. Temporarily communication errors with the SigmaTek PLC are no longer shown as severe errors

Version 5.8 – build 6291

1. Changed the parameters for the autofocus function to use 'Travel distance find focus' instead of 'Focal depth'. This allows more accurate tuning (in the previous version the algorithm would use a travel distance of 2 * FocalDepth, which is not enough when testing warped wafers using a camera with a lens system that has a very small focal depth, like the Navitar.
2. Fixed a little bug that caused the "Double check 'no wafer present'" option to not always be saved
3. SigmaTek rotation table: cache address of ControlRotation1.Cmd (work around of error upon GetLasalIdH)

Version 5.8 – build 6291

2. Changed the parameters for the autofocus function to use 'Travel distance find focus' instead of 'Focal depth'. This allows more accurate tuning (in the previous version the algorithm would use a travel distance of 2 * FocalDepth, which is not enough when testing warped wafers using a camera with a lens system that has a very small focal depth, like the Navitar.
3. Fixed a little bug that caused the "Double check 'no wafer present'" option to not always be saved

Version 5.8 – build 6275

1. Extra logging around rotation table

Version 5.8 – build 6248.30080

1. Ability to configure tool cleaner on output OC1 despite wafer table mark II. The output for the 8"

vacuum circuit should then be disconnected from OC1

Version 5.8 – build 6248

1. Use de-bounce logic for wafer pin up/down detection

Version 5.8 – build 6234

1. When no cameras or mappings are available the grading screen was locked. This has been solved
2. Auto hook across the wire problem has been solved
3. Wire detect did not close the frame grabber correctly. This causes problems after x number of detects
4. The measurement result for the previous calibration measurements was not correct when exporting to Excel. The calibration report has been improved
5. Lower speeds are made possible again. Firmware will now give a warning

Version 5.8 - build 6197

1. Improvements in automation (nested fiducials inside a matrix)

Version 5.8 - build 6192

1. Virtual joysticks: Step size configurable
2. Multiple wire detects in a matrix
3. Improvements in automation (grading run settings)
4. Improvements in wire detect
5. Software would not initialize correctly when an IDS camera was configured but no drivers were installed

Version 5.8 - build 6190

1. Improved xy table map recording
2. If the current position is higher as the RMU rotation position, but lower than the target position, a move from tool to camera would occur at the lower current position

Version 5.8 - build 6169

1. More complete German translation
2. Go online remote is now more responsive

Version 5.8 - build 6157

1. More complete Japanese translation
2. 'Picture run' now also possible for cameras without fixed field of view
3. More reliable feedback of the state of air valves on status bar

Version 5.8 - build 6152

1. When making a backup of the configuration from the service page, also a backup of the SPC database is made. Automation methods will no longer be backed up with the methods
2. When making a backup of the system's configuration, the database will be backed up as well (but only when the application has been started with administrator privileges)
3. Supports a vacuum detect sensor on wafer tables.
Optionally the vacuum detect sensor (when connected to the inputs for safety switch 3) may abort all movements when vacuum is lost (wafer handling).
4. DSP firmware 5.8.6144 contains the following improvements
 - Support for concentricity correction for rotating tools (not yet available in PC software)
 - Optionally aborts all movements when any of the safety switch inputs are enabled and activated
5. RMU firmware 5.8.6136
 - Improvements in locking the head rotation
6. Auto-brightness for IDS camera

7. Parameters for the cleaning process for a tweezer tip's cavity can be changed by the end-user
8. Optional Secs/gem support (upload/download of recipes + start testing under control of a secs/gem host)
9. Optionally improved fiducial recognition using a 3rd part image recognition module (Halcon)
10. Possibility to provide multiple fiducials to find a location (for alignment)
11. Has built-in editor for defining data exports
12. To prevent damage to wafers, moving wafer lifting pins up is only allowed when the stage is in load/unload position (unless operated manually)
13. Reshuffled the items on the status bar slightly
14. Moves to load/unload position and CCC position now occur at the height of the park position (as opposed to RMU rotation position)
15. Move to/from camera now occur one axis at the time

Version 5.8 - build 6081

1. Database version 35: Structural change in the patterns and automations tables
2. Database version 36: Sample numbers are now 'auto-numbering', so that multiple bond-testers may store their data on one, centralized, database
3. Database version 37: The sample table now has a link to tester settings (to allow query on tester serial number, also required when multiple bond-testers store their data in a centralized database)
4. Database version 38: Solves a bug that crept in version 37 (it should be possible to filter on samples without serial number)
5. Database stability improvements
6. IO status will be sent to the Rorze wafer loader asynchronously
7. Support for additional commands from a Rorze wafer loader
8. Customer specific export
9. More advanced fiducial recognition
10. Move to sensor specific position no longer occurs in UI thread
11. Move to load/unload position and move to CCC position now takes place at z-height of park position (as opposed to z-height of RMU rotation position). This because some fabs optimized the RMU rotation position that much that a move to the CCC position could cause the tool to collide.

Version 5.8 - build 6054

1. More robust connection with a SigmaTek PLC
2. In conjunction with a Waftech wafer loader: Optionally move pins up earlier in the process
3. Main menu will be disabled when under control of a wafer loader
4. Improved scaling for IDS cameras
5. Auto resolve function for pairing a tweezer to a sensor repaired
6. In manual mode vacuum for 12" work holder no longer relies on 12" wafer detect switch
7. Re-calculate per-grading standard deviation after re-grading
8. Possibility to reject a measurement

Version 5.8 - build 6033

1. Clean tool or clean tweezer tip cavity may be executed as a result of pressing a button on a joystick

Version 5.8 - build 6030

1. The ability to save tool to camera offset may be denied for some user levels (for example operator level)
2. More reliable feedback of the state of a vacuum switch on the status bar
3. Preliminary support for a rotating stage (0°, 90°, 180°, 270°), using a SigmaTek PLC
4. Wafer Map files are now read culture invariant

Version 5.8 - build 6024

1. Better support of a 8" wafer detection switch
2. When exporting measurement results to a Rorze wafer loader, the unit used is appended
3. Fixed a problem with data export of an automation run in combination with a Rorze wafer loader
4. More data export possibilities. All the data export possibilities are now grouped together in the tree view
5. 1st version of hook concentricity correction
6. DSP firmware 5.8.6016 contains the following improvements
 - Close to lower limit, speed axis of z-axis will no longer be limited in upward direction
7. The display of cameras on the status bar is more scalable

Version 5.8 - build 6012

1. Solved a problem by which in some circumstances calibration or GR&R would be applied on peak force instead of average force
2. Problems with fiducial alignment that occur during automation, may be reported to a wafer loader

Version 5.8 - build 6011

1. Backs-up config.xml before overwriting
2. Repaired a problem with saving camera-tool offset
3. Solved a problem by which in some circumstances calibration or GR&R would be applied on peak force instead of average force

Version 5.8 - build 6010

1. Re-introduced window to 'move to positions relative to reference point'
2. Fixed camera light issue introduced with build 6009
3. Automations may be run multiple times without closing the window

Version 5.8 - build 6009

1. Method specific rotation is applied at the start of a test, no longer directly after homing
2. Support for (Housed) Visiosens cameras with different style of serial number
3. Fixed a problem introduced in build 6005 that would cause the calibration window not to function

Version 5.8 - build 6005

1. Solved memory leak that occurred when monitoring fiducials during automation
2. The application may be configured to start listening to a Rorze wafer loader immediately after start-up
3. Optionally export measurement results to a Rorze wafer loader
4. Solved a bug causing the RMU rotation height to be overwritten by automation
5. Fixed a problem that could cause the user interface to slow down after working quite some time with the automation editor
6. Better error message to Rorze wafer loader when requesting a recipe list before the system is ready initializing

Version 5.8 - build 6001

1. Solved memory leak that occurred when automations were started from a wafer loader

Version 5.8 - build 5997

1. Customer specific data export only renames export files if they are about to be overwritten
2. By default, data export files will be deleted when older than 5 years. This value is configurable.
3. More robust database handling, to prevent errors on creating a new sample under heavy load

(wafer loader controlled)

4. When memory usage exceeds certain limits, warning messages will be sent to the wafer loader. The limits are configurable.
5. DSP firmware 5.8.5996 contains the following improvements
 - Automatic retry when move does not start
 - Extended logging via the PC
 - The axis-timeout error that occasionally occurred with previous versions have never been spotted with this version
6. Fixed a problem that could cause a window with camera parameters to be hidden behind the window displaying the camera image

Version 5.8 - build 5990

1. Added automated retry to work around the problem of 'the underlying provider failed on open' that we sometimes face when starting to test a new wafer under control of a wafer loader

Version 5.8 - build 5989

1. Sigma returns to start position after use of contactless cavity cleaner and opens tweezer with the method's open parameters
2. Repaired scaling error after manual correction of a fiducial in automation

Version 5.8 - build 5988

1. One can no longer enter multiple automation recipes with the same name
2. Automatic retry of axis timeout in some scenarios in automation
3. Possibility to stop updating graphs and stop showing fiducial monitor during automation
4. Optional display of memory usage. When the memory indicator 'Private Bytes' approaches 1 GB one should restart the application to avoid a crash due to 'out-of-memory exception'
5. Integrated customer specific data export in the application. No need to run xyz_sigmaexport.exe for data export. This should solve the issue of missing measurements that may occur in some situations
6. Software should be less vulnerable for database problems like 'the underlying provider failed to open'
7. Retry function in automation no longer stops because of a pending abort flag
8. The Sigma would abort the first movement after the Rorze wafer loader sends a @Abort message (which is part of its manual recovery sequence)

Version 5.8 - build 5981

1. Fixed a bug that made password of the Sigma users unreadable after change of Windows users. For backward compatibility passwords need to be changed one though.
2. Minimum tweezer force is now 300 [gf] instead of 1100 [gf]
3. The arrow keys on a keyboard may be used to control the stage and z-axis
4. The associated function of IO pins may now be modified (this possibility had not yet been implemented with the introduction of extended IO)
5. Wafer map import function now has its own location instead of being tight to tabs in the SPC screen
6. Selection of a different camera is now performed via controls in the status bar, which is always available (previously the camera function would only be available from the SPC screen)
7. Repaired a problem with the use of a rotational fiducial

Version 5.8 - build 5942

1. Faster display of large wafer map files
2. When working with wafer map files of type 'Inf' use of the 'reverse y' option is no longer required

3. Prepared for integration with IDS camera's
4. Prepared for integrated SPC export
5. Improved wire recognition
6. Improved xy table mapping (improves accuracy of stage position under camera)
7. DSP firmware 5.8.5935 contains the following improvements
 - More robust homing procedure around mechanical limits
 - Improved xy table mapping (inverse stage mapping)
 - Digital IO maybe configured to use IO as available on the Sigma as well as on a SigmaTek PLC
8. Support for wafer table mark II
9. Support for IO controlled 'wafer cleaner' and 'wafer pusher'
10. Note that if digital IO has been used before (wafer table, external trigger, blowing debris after a test, contactless cavity cleaner) these need to be re-enabled in the 'Modules' section under 'IO Configuration' in the 'Configuration tester' tab.
11. Improved contactless cavity cleaning process

Version 5.7 - build 6010

1. Support for (Housed) Visiosens cameras with different style of serial number

Version 5.7 - build 5956

1. Better wafer detection at start-up

Version 5.7 - build 5914

1. CondorSigmaExport optionally deletes previous file
2. Solved 3 potentially areas for crashes (automation and grading upon camera error; wafer loader after stopping communication with a wafer loader)

Version 5.7 - build 5893

1. When pressing the button to focus the camera image from the grading screen, focussing now always starts
2. Possibility to detect vacuum when using a wafer table
3. Change to the hysteresis graph. The display of the axis in the distance graph is now displayed correctly
4. Updated the Japanese translation
5. DSP firmware 5.8.5893 contains the following improvements
 - Fixes a problem that could occur when using xy-table map

Version 5.7 - build 5879

1. Positional correction factor can now be set as a pre-set in the method. Currently this is only available for the pull test
2. Fixed sample size switch. If enabled the number of measurements for each sample (sample size) can be set in the method
3. When form selects the method and possibly the sensor and multiple sensors can be used for this method (e.g. when there are 2 pull 100 gf sensors, but one sensor is disabled for the method) the correct sensor is automatically selected. The 'select sensor' dialog is not shown
4. Threshold setting for force graphs to optimize overlaying multiple graphs, force graph size can be changed
5. Improved force graphs
6. Do not preselect result code setting in the software settings. When enabled the software will not remember the latest grading and preselect this. Also, it is not possible to leave the grading screen until a grading is selected
7. Grading screen with options to go to the camera and show test pictures. Also improved grading run that can also show the pictures made during the test
8. Live update of histogram for groups or samples

9. Automatic wire detection: Advanced vision options with optional Image Processing Editor using the Halcon imaging libraries. When available, wire detection can be used in the automation
10. Tool protection checkbox in calibration screen shows if tool protection is active (lifting a larger weight will trigger a tool protection error) or not (calibration mode). To manually lift a weight the tool protection can be disabled
11. Auto focus support for fiducials, making pictures and also for wire detection
12. Automation run is now stored correctly. Also number of measurements and number of fails is stored and shown after running the automation
13. Improved GR&R report
14. Automation now offers edit under camera option
15. Improved automation screen now can show camera image below the automation commands. The camera area is shown partially, but can be enlarged
16. Allows highlighting of dies on a wafer map that have one or more configurable defects. Colour coding.
17. Supports moving to the next/previous defect with one button
18. DSP firmware 5.7.5872 contains the following improvements
 - Close to the z-axis' lower limit the speed in XY-direction is now also limited when moving upwards
19. DSP firmware 5.7.5855 contains the following improvements
 - Tackled the fact that sensor overload errors would be reported when no sensor was being selected
 - Support for a XY-table map
20. More sorting possibilities for automation recipes
21. Improved auto focus
22. Improved grading run
23. Integration with Rorze wafer robot

Version 5.6 - build 5819

1. Measurements with Pull 25 μ m gold wire and Shear 25 μ m gold wire methods would no longer show the peak force as a measurement result
2. Installer now installs Microsoft redistributables
3. Fixed occasional delays for small distances at low speeds (< 10 μ m/s)
4. Automatically take picture after failed measurement

Version 5.6 - build 5792

1. Calibration + GR&R: The default lift detection parameters for sensors \leq 1kgf have changed. Lift detection parameters for the calibration methods are now persistent
2. The default collision detect values for 1 kgf rotating shear and 100 kgf pull have been lowered
3. Grading run now also works for left and right camera

Version 5.6 - build 5773

1. Solved a problem with the probe test

Version 5.6 - build 5772

1. This release solves an issue with the digital filters
2. Form selection in test screen may get out of sync

Version 5.6 - build 5767

1. The hook shift operation, optionally used with a pull test and enabled auto hooking, would sometimes use the wrong angle. That has been solved

Version 5.6 - build 5764

1. Solved issue of empty SPC screen that appeared each first time the first user selected would have non-English language set
2. Better Japanese
3. Error message window is no longer 'top most', i.e. on top of all other windows

Version 5.6 - build 5759

1. Support for contactless cavity cleaner
2. Support more types of Klarf wafer map formats
3. Possibility to take picture automatically after each measurement
4. All options to take a picture after a measurement with a shear method has finished now try to focus on the shear height
5. Automation with randomized matrix
6. DSP firmware 5.6.5752 contains the following improvements
 - Homing more robust
 - Faster positioning of very small movements
 - Support calibration of the position encoders
7. RMU firmware 5.6.5750 contains the following improvements
 - More reliable head rotation
 - Better over-current protection in shear height clamp motor

Version 5.6 - build 5666

1. When exporting a measurement to CSV, time will be exported as well. Metadata will be displayed in other columns instead of the first rows
2. Recorded videos are now marked with a frame rate equal to the actual frame rate at the start of the recording
3. Text in rightmost vertical banner is displayed top-to-bottom for Chinese, Japanese and Korean
4. Deflection and rotational offset are editable by end user too
5. Import of Wafer map file (Klarf and Inf formats). Double click the die to move to. Move to defect positions within a die.
6. Possibility to apply reverse camera-to-tool offset: Find position with the camera and move the tool to that position
7. Sensor overload errors can be cleared automatically if the overload condition disappears
8. Added support of Vietnamese. More complete German translation
9. Loop height measurement remembers touchdown
10. Non-destructive testing methods now use PID control by default
11. Solved a memory leak issue that could cause problems after several hours of automation
12. Fixed a timeout issue that could occur when starting a touchdown
13. Stricter enforcement of work area
14. Removed support of older Visiosens camera drivers (so install the newer version!)
15. Pluggable components (cameras, barcode scanners, wafer loaders, pattern recognition engines etc.) have been moved to the Component subdirectory
16. Integration with Halcon pattern recognition / Machine vision software. The first application is a wire detect algorithm.
17. Possibility to project the rotation angle of the hook on a pull sensor on the camera image
18. Fail limits are shown correctly in the grading screen
19. Rotational offset may be edited (by supervisor) from quick sensor/tool menu (accessible from SPC screen)
20. Possibility to find multiple peak values in a measurement

Version 5.5 - build 5626

1. Save button for camera parameters back in
2. Better wafer present detection (when configured for use with a Waftech wafer loader)

3. When using PID for non-destructive test, allow more time to move the stages before giving a timeout error
4. DSP firmware 5.5.5591 contains the following improvements
 - Homing more robust
 - Better monitoring of the stage temperatures

Version 5.5 - build 5576

1. Compensation factor jig
2. Support RMU with Angular binding
3. Efficiency improvement when controlled by wafer loader
4. No longer show 'field of view' for a camera with zoom lens (microscope camera: field of view does not make sense)
5. A sensor's deflection is editable by a supervisor
6. Support for automated test of electronics (in production factory)

Version 5.5 - build 5554

1. Pressing null-button clears sensor overload
2. Support for modified measurement units
3. When calibrating, z-position can be now moved below work area by joystick

Version 5.5 - build 5547

1. Build 5542 would unnecessarily complain about camera white balance not being set
2. Improvement of auto-hook during automation
3. Improvement in loop-height measurement

Version 5.5 - build 5542

1. Jig shear calibration: Tool should not be clamped after an abort during touchdown detection
2. Tool will no longer be clamped when resolving a sensor overload
3. When a sensor overload has occurred temporarily (for example after changing the tool) it may be cleared by the operator (by clicking the sensor overload button).
4. Japanese translation

Version 5.5 - build 5539

1. Supervisor may change camera parameters
2. Auto-print improvement

Version 5.5 - build 5536

1. DSP firmware 5.5.5536 contains the following improvements
 - More accurate positioning when moving multiple axes simultaneously
 - Separate work area for joystick controlled movements
2. Automation program selectable by barcode reader
3. Selection of sensors/methods by form
4. Measuring height difference between objects (probe test)
5. Positional correction factor (force triangle)
6. Full hook control in automation
7. Improved camera screens
8. Multiple camera support for automation
9. Pull auto hook functionality with hook shift (fine pitch applications)
10. New fail and warning system (SPC warnings)
11. Overlay graphs of multiple measurements
12. Possibility to recalculate measurement results based on a 'Region of Interest'
13. Auto print feature
14. Support for foiled shear sensors

15. Motor drivers generate less heat (more economic motor driver configuration files)

END OF RELEASE NOTES