NEW FEATURES & MAINTENANCE POLICY

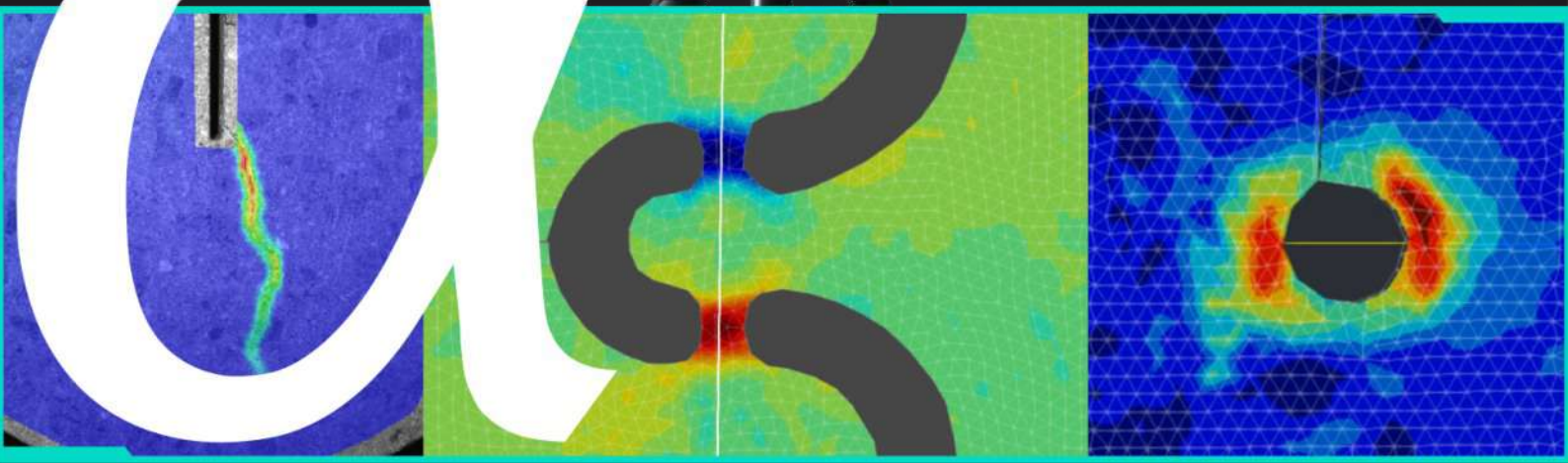
ALPHA 2021

The end of the year 2021 brought a new version of the DIC measurement software ALPHA.
We are eXcited to present new features and improvements.

UPDATE POLICY:

The X-Sight company update policy keeps the ALPHA software stable and relevant. Updates include selected features requested by customers and various tweaks and improvements.

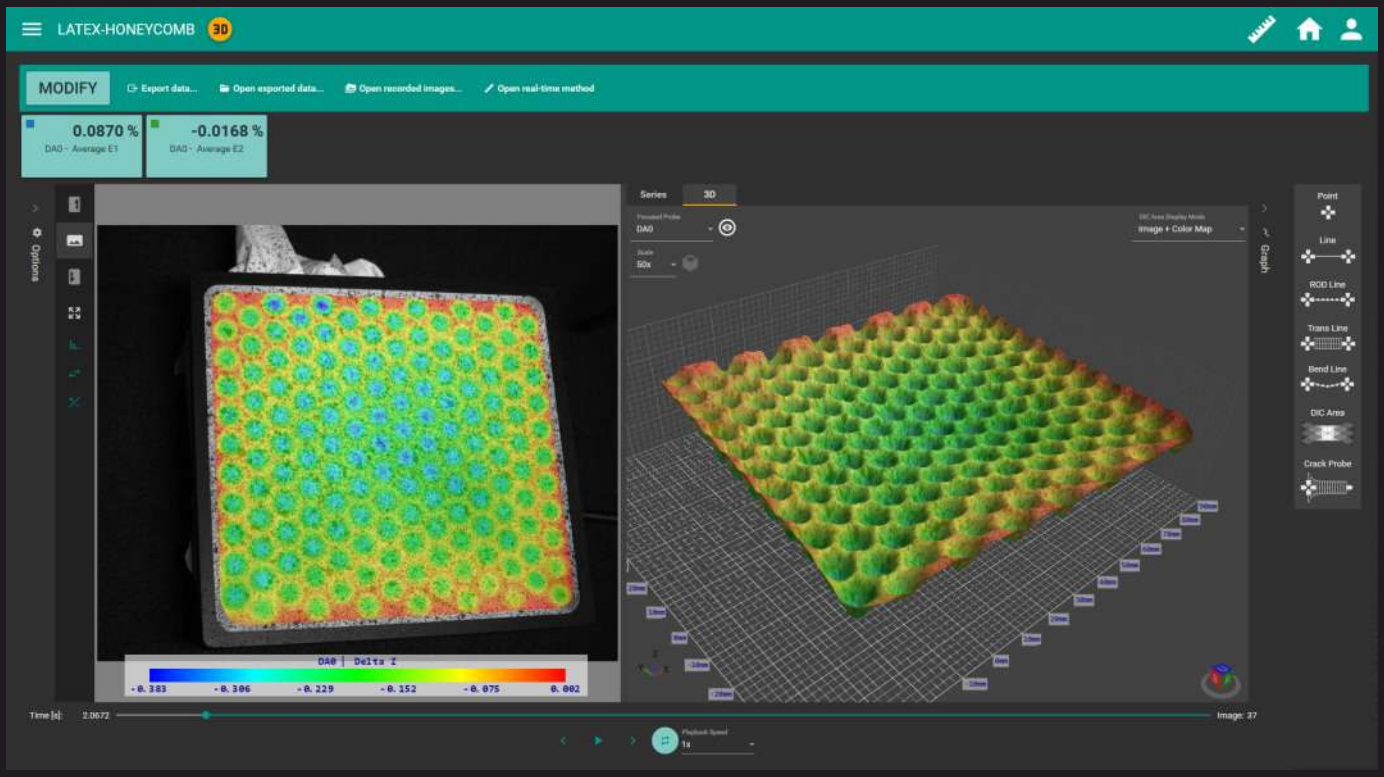
The six-month update plan handles the new year's minor updates and significant summer updates, maintaining the best software quality and software features for the customer satisfaction.



ALPHA 2021

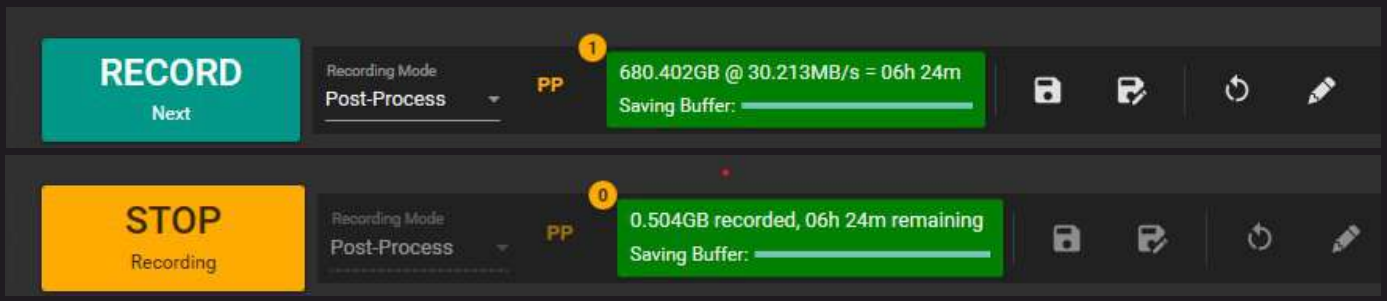
NEW 3D FEATURES

New ALPHA enhances the 3D probes family by implementing Bend Line, Trans Line and Crack Probe. These tools are now available in 3D mode and enable easy measurement of out of plane deformations and compensate for out of plane sample movements.



Common ALPHA real-time engineering tools (the right panel) are now implemented in the stereoscopic mode. All of them can be freely combined in one measurement even with full-field DIC areas.

Additional performance improvement is the recording queue, which has a configurable length using computer memory to avoid dropping the images due to slow disc storage. Users can set up maximum buffer memory and record cautions.



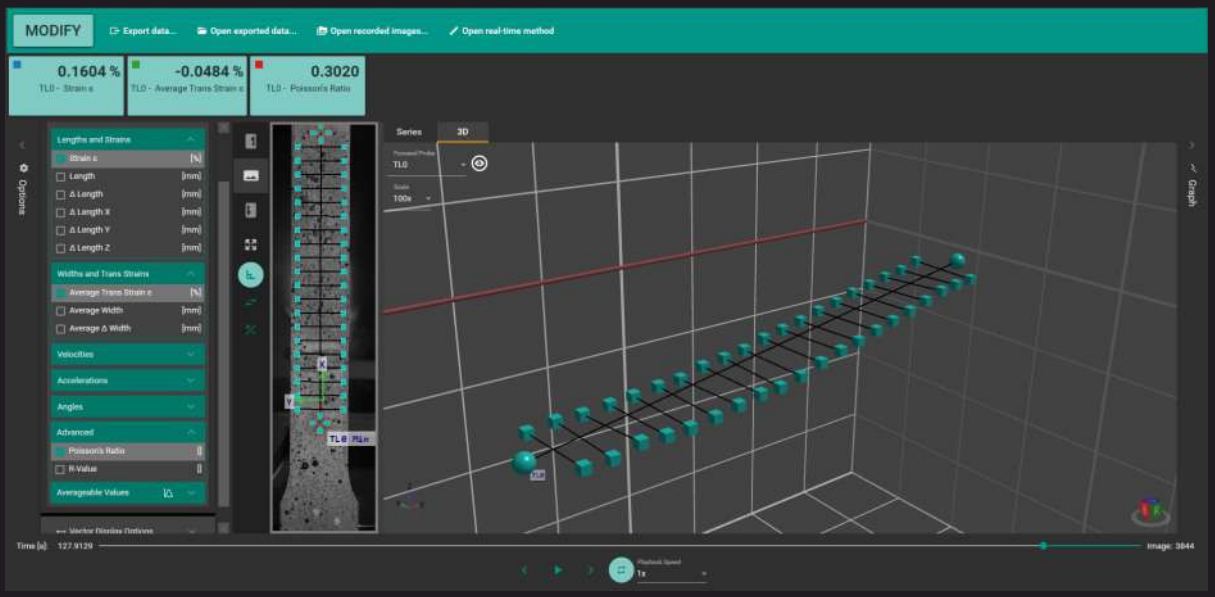
The recording queue is integrated into the SW and used automatically. Remaining disk space, recording time and dropped images are shown in the recording bar.

REAL TIME PERFORMANCE

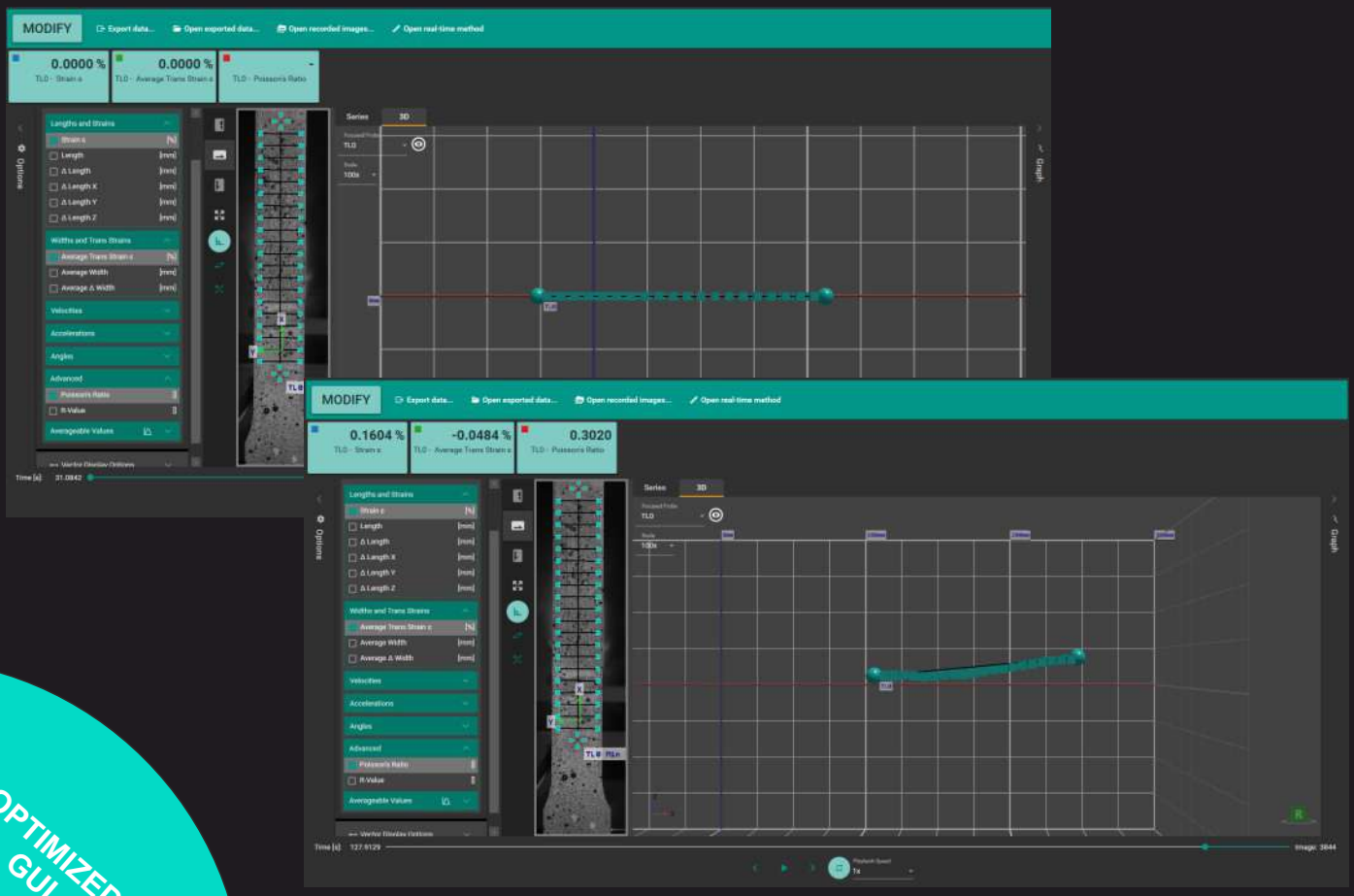
ALPHA 2021

COMPLEX 3D DEFORMATION ANALYSIS

The new 3D tools allows to accurately measure deformations even for experiments where the sample undergo out of plane motion. Even on standard professional/industrial uniaxial tests machines, this feature removes the unpredictable clamping system movement when the sample is loaded.



Poisson's ratio measurement in an experiment, where the loading axis of the machine and its clamps motion are perpenducular to the camera view in the range of 120mq, results in an error of about 14% compared to a 3D measurement



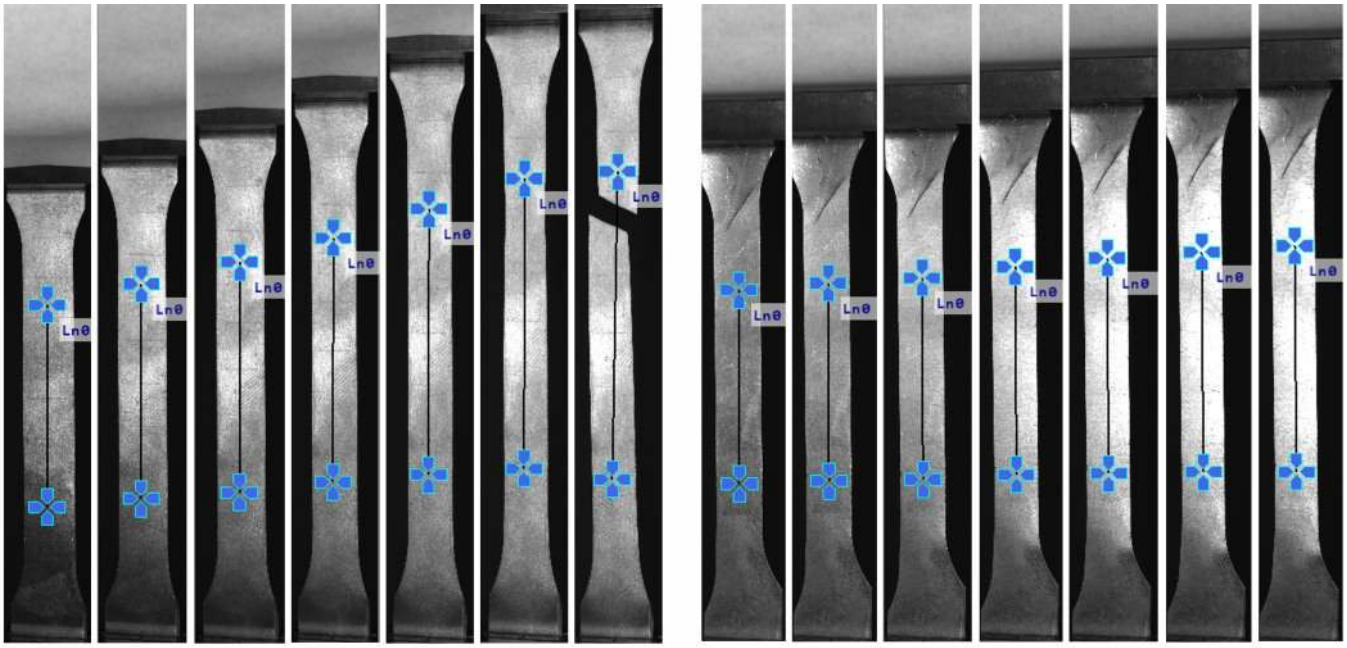
OPTIMIZED GUI

The scale functionality in the 3D chart helps to understand microscopic motions and scale them to visualize delta motion in any axis with understandable shape change.

ALPHA 2021

MEASUREMENT ENHANCEMENTS

The Auto shutter functionality is now implemented in the ALPHA software to measure elastomers, plastics, viscoelastic and other high deformable materials.



The brass sample measurement with and without Auto shutter demonstrates the overexpose impact on the brightness intensity and consequent loss of the sample deformation information. Auto shutter helps the sample measurement under high deformations which used to be limiting for many metal surfaces, plastics, and hyperplastic and hyperelastic materials.

ALPHA 2021 SP
ALPHA 2.1

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ALPHA 2021

EVERY SIX MONTHS NEW FEATURES

ALPHA 2.1. release integrates the following 17 new features:

- Alpha API is extended by new commands and events - alphaSwitchRecord, alphaStopComputation, alphaChangeDistanceToMeasuringPlane, alphaChangeSpecimenThickness, alphaDataComputed and improvements of existing commands - alphaListMethods (alphaMethodInfo), alphaComputeData, alphaExportData, alphaSetLength, alphaSetWidth (availability in postprocess)
- Enhancement of 3D probes family by implementing Bend Line, Trans Line and Crack Probe, which are now available in stereoscopic mode and enable quickly measuring out of plane deformations and compensate the out of plane sample movements.
- Improvement of the functionality for Specimen Thickness / Distance to Loading Axis specified more concisely in method creation wizard and later user-friendly editable via measurement screen
- Improved R-value computation for Trans Line with configurable strain threshold
- New function for the samples changes the brightness of the measured scene due to their deformations (Plastics, Elastomers, Viscoelastic materials, etc.). The Auto shutter functionality is now implemented for all cameras, natively supporting such a feature.
- Improved access of Probes panel, which was accessible only from the measurement set-up, can be accessed directly from the measurement screen.
- Low latency TCP connection improvement to avoid delays (by default) and use datagrams (UDP) for faster communication.
- Implemented option to move Alpha Data Directory to a different location than on system installation disc. This enables to use of data discs, high-speed discs, network locations or external media to store measurement data.
- When the application measures or evaluates data, the progress bars and user prompts are shown in the taskbar for better user orientation.
- Implemented velocity and acceleration parameters for Point and Line probes
- Integration of key acquisition functionality that recording frames can be decoupled from computing data (camera frames are still saved for postprocessing purposes, even if they are not computed for any reason).
- Improved recording queue with a configurable length integrated to a graphical user interface where the remaining memory buffer and other parameters like dropped images are under visual control.
- Improved Torsion Line tool, which now uses expanded search detection area and indicates specimen diameter in the camera image.
- Enhanced functionality of Bend Lines which now have configurable length computation method as an endpoint-to-endpoint distance, the sum of the linear segments' length and length integration of smooth curve.
- Enhanced DIC area export for simple .csv option.
- Enhancement of the computational method option to revert changes to global computation settings, which can be re-set to the factory setting.
- High FPS and image caching are now available for demo cameras (virtual cameras based on the image data in a dedicated folder) for better performance testing and demonstrations possibilities.

ALPHA 2021

RESPONSIBLE SOFTWARE MAINTENANCE

ALPHA 2.1. release integrates the following 24 Tweaks improvements:

- Only active output channels are used in output messages (Digital Output, Mercury API etc.)
- Reference frame is indicated better in post-process entry UI
- Playback speed is restricted to only meaningful values
- Supported OpenGL version is checked at program startup
- Crack Probe parameters have more decimal places
- 3D graph camera pair selection moved to a more suitable location
- Fixed opening methods with dots in their name through API
- Fixed representation of enumeration types in Alpha API messages
- On-screen instructions for DIC area Free Edit
- Improved naming of values in line-based probes in exported files
- Moving line-based probes with mouse preserves L0 value
- 0,1s as a default window for averaging all computed values
- API commands do not cause modal dialogues to show (which would halt any means of the remote control)
- API commands consider yet unsaved changes in camera and image setup
- FLIR (PointGrey Spinnaker) cameras can disconnect and reconnect at runtime without any issues
- Errors during measurement and post-process are correctly reported and recoverable
- Calibration Grid Unit Distance shown in stereo calibrations and restored in UI when doing Modify Calibration
- Progress dialogue is shown when deleting methods and records, exporting data
- Disconnected HASP key waits for it to reconnect
- Removed width correction factor from Torsion Lines
- Verbose Logging option is settings, especially for monitoring outputs
- Configurable decimal separators for exports
- Output parameters enhancement for frame ID and timestamp
- DIC Area custom scale can be now set to a local range