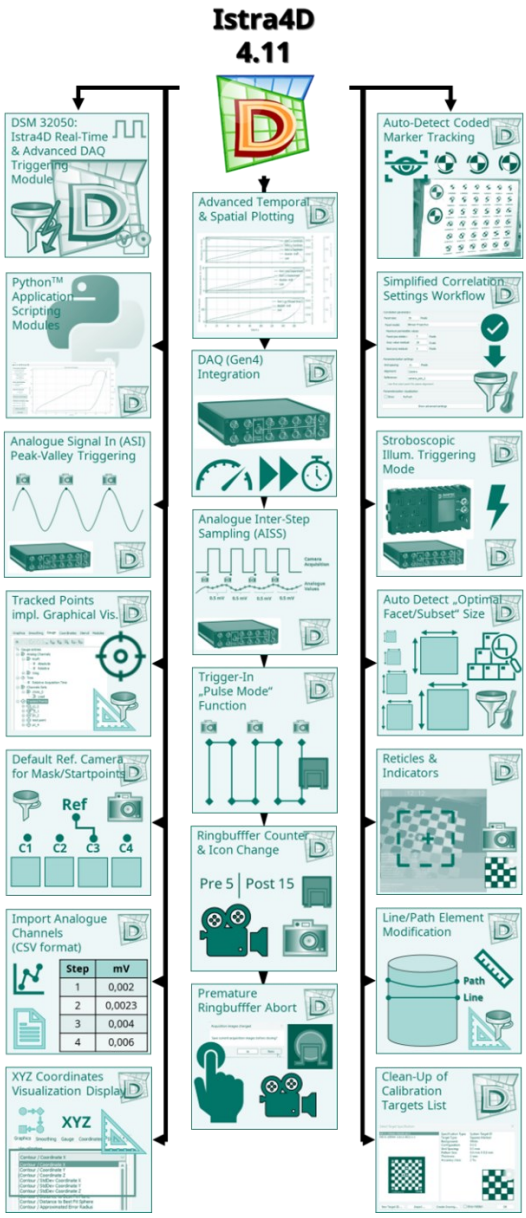
Istra4D V4.11

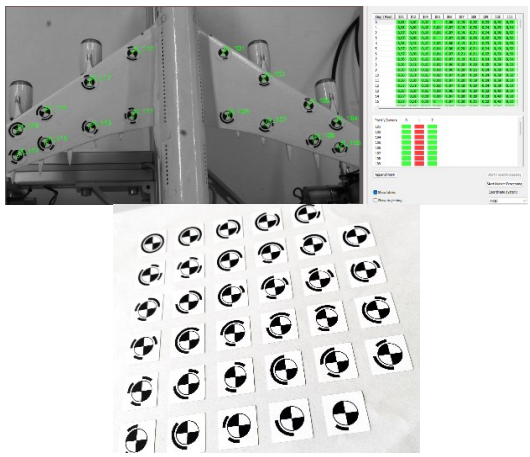
Release Note

Dantec Dynamics is pleased to announce the release of **Istra4D V4.11**!
V4.11 is packed full with 20 new features & functionalities for everything from; camera triggering, measurement acquisition, correlation evaluation (& point tracking), and (post-processing) graphical visualization. There are features in the new **V4.11** that are applicable for every type of DIC system!



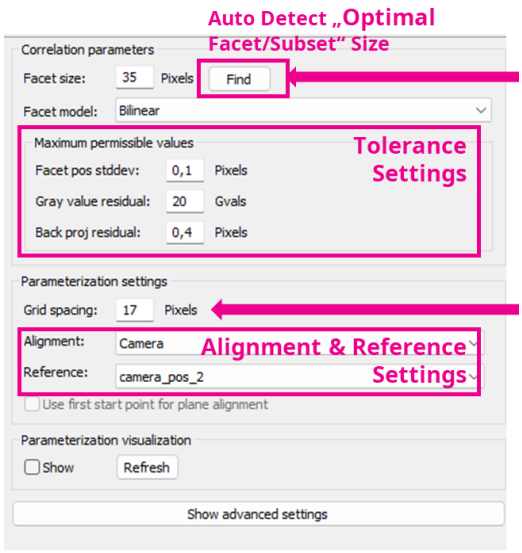
New features include:

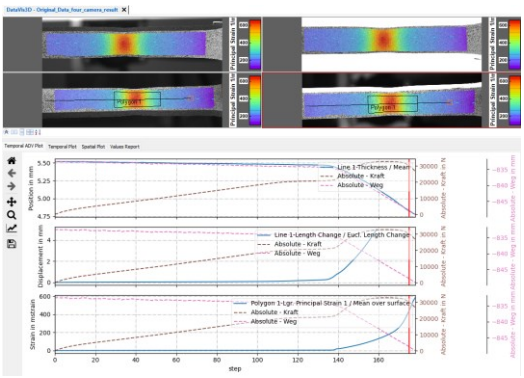
- **Correlation Evaluation (& Point Tracking)**
  1. Auto-Detect „Coded-Marker" Tracking
  2. Simplified Correlation Settings Workflow
  3. Auto Detect „Optimal Facet/Subset" Size
  4. Default Ref. Camera for Mask/Start-Points
- **Graphical Visualization**
  5. Advanced Temporal & Spatial Plotting
  6. Python™ Application Scripting
  7. Implementation of Tracked Points in Graph. Vis.
  8. Line/Path Element Modification
  9. Import Analogue Channels (CSV format)
  10. XYZ Coordinates Visualization
- **Acquisition & Triggering**
  11. Incorp. of the Real-Time Corr. Evaluation Module
  12. New DAQ (Gen4) Controller Integration
  13. Analogue Inter-Step Sampling (AISS)
  14. Stroboscopic Illumination Triggering Mode
  15. Analogue Signal In (ASI) Peak-Valley Triggering
  16. Ringbufffer Counter & Icon Change
  17. Premature Ringbufffer Abort
  18. Trigger-In „Pulse Mode" Function
  19. Reticles & Indicators
- **General**
  20. Clean-Up of Calibration Targets List



In **Istra4D V4.11, point tracking** can now be performed using **coded-markers** via **automatic recognition**! With the new coded-marker tracking functionality up to 36-different coded-markers can be: automatically identified, quickly tracked & accurately measured, without user intervention. Users can now perform „Point Tracking" measurement applications, such as; motion & vibration analysis, with greater confidence, ease-of-use, and much more flexibility. Through simply adhering ready-made markers to the test object surface, just like a „placing a sticker", a speckle pattern does not need to be applied. Everything is embedded and ready to track, within the marker.

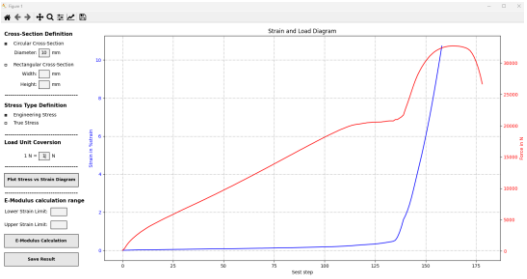
In **Istra4D V4.11**, with the **Simplified Correlation Settings Workflow**, users can now correlate data quicker and with greater ease. Only two parameters are required for adjustment, being the facet/subset size & grid spacing. Additional options include the; tolerance setting values for the start-point search, and finally, the alignment & reference settings (used for 3-camera and multicamera setups). With the **Auto Detect „Optimal Facet/Subset" Size**, users do not need to manually assess and subjectively guess the appropriate facet/subset size for a measurement – anymore! This process is/was arguably the most complicated task/procedure when performing DIC measurements. Istra4D now automates the assessment and suggests the optimal facet/subset size for the speckle pattern presented via the "Find" function.

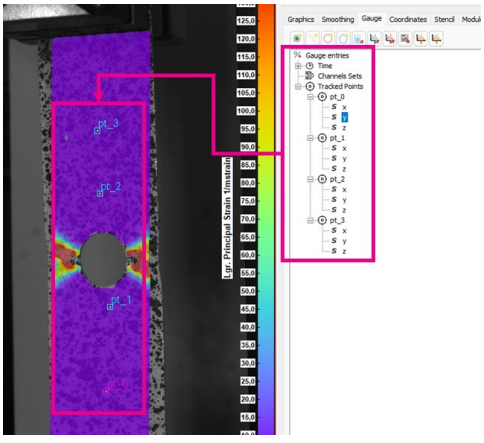




In **Istra4D V4.11**, **advanced temporal & spatial plots** can be made within the Graphical Visualization for both full-field DIC and tracked point data. Advanced plotting allows users to plot analogue data together with multiple, different gauge types (i.e. point, line, circle, polygon) in position, displacement & strain subplots. Users can also zoom in/out, change the axis, edit the legend, modify the plot curves, customize the scale, and export data from the plot. With **Advanced Temporal & Spatial Plotting**, users can better visualize and evaluate more (complex) data. The ability to customize plots allows important information to be displayed with more prominence.

In **Istra4D V4.11**, **Python™** can now be used as a **scripting language** for **application modules**. Not only can users use SciLab™, but Python™ can also be used for further evaluation of DIC data, specifically for: external variable plotting, data evaluation, and animations. Using any evaluated gauge variables, further evaluation and analysis can be performed using Python™ scripting.





In **Istra4D V4.11**, any point or marker that has been successfully identified and tracked within the Point Tracking function, within the Correlation Evaluation, will be automatically transferred to the **Graphical Visualization** as a new „**Tracked Point" Gauge Marker**. As such, users can evaluate discrete point/markers and full-field DIC data, together, within the graphical visualization or each can be evaluated separately. The advantage of feature is that discrete points/markers that are typically used for (global) motion & vibration analysis measurements can be assessed together with full-field DIC data usually used for (local) strain measurements.

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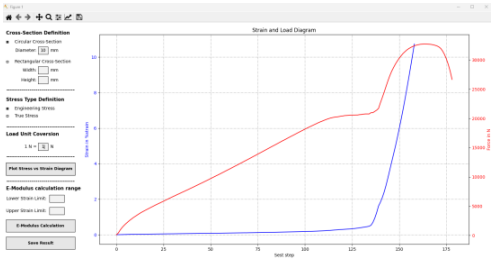
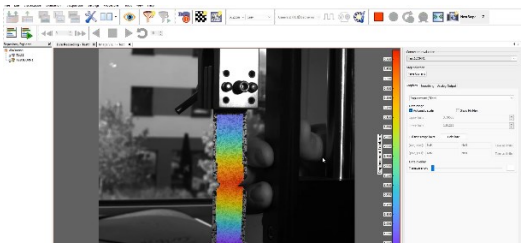
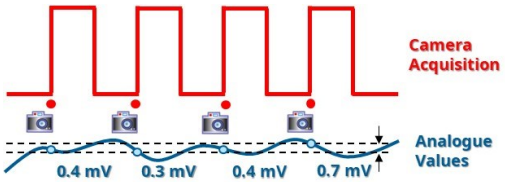
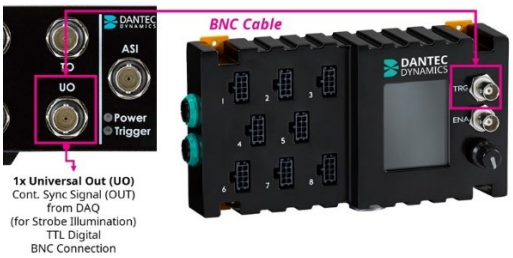




In **Istra4D V4.11**, the **"Real-Time" correlation evaluation module** (DSM 32015) has been incorporated into the DSM 32050. Real-time correlation allows users to correlate (& visualize) data, online, in-situ, during a live measurement acquisition. (As opposed to performing the correlation and visualization in the offline mode). Data can be exported in the real-time mode via the DAQ Gen4 through the Analogue Outputs (AOs).

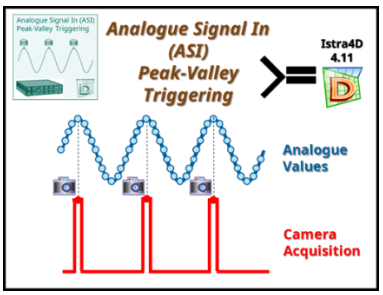
In **Istra4D V4.11,** with the DAQ Gen4 series, a sampling and management of AI data functionality has been developed, known as „**Analogue Inter-Step Sampling (AISS)**". **AISS** gives users the possibility to filter and clean AI data signals for the improvement of measurement data quality & reliability.





In **Istra4D V4.11,** with the DAQ Gen4 series, **strobe (stroboscopic) pulse illumination triggering** can be performed via the Universal Out (UO). The UO is a continuous, synchronization signal (OUT) from the DAQ that is used to send a TTL trigger which is synchronized to the camera acquisition frame rate (for both the internal and external clock) to an external controller, specifically the X-Illumination Controller.

In **Istra4D V4.11,** with the DAQX Gen4 series, a new functionality for using an analogue signal as an external clock source has been developed known as the „**Analogue Sync In (ASI) Peak-Valley Triggering**". One Analgoue Sync In (ASI) port allows an external analogue device (typically, a load cell or LVDT) to be read-into the DAQX Gen4. A trigger can be executed exactly at the peak or valley of the analogue signal.



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