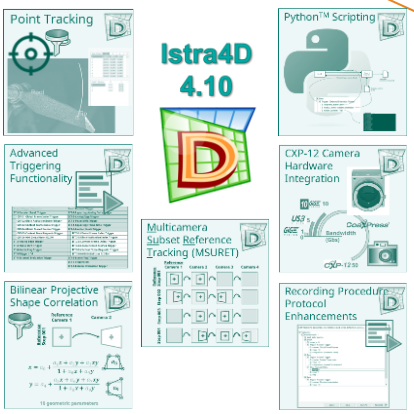
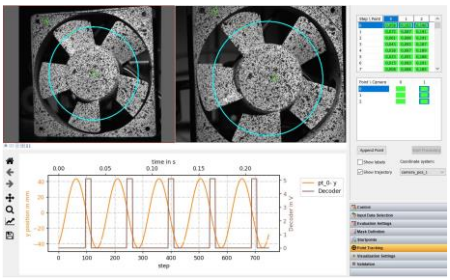
Istra4D V4.10
Release Note

Dantec Dynamics is pleased to announce the release of **Istra4D V4.10**! This new software version is packed full of new features & functionalities for (camera) measurement acquisition, correlation evaluation & post-processing visualization.
New features include:

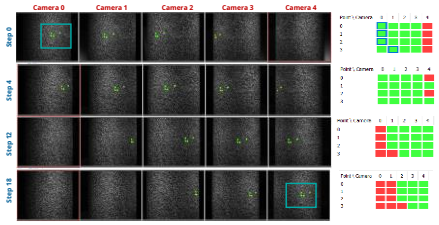
- Point Tracking
- Multicamera Subset Reference Tracking (MSURET)
- Recording Procedure Protocol Enhancements
- Advanced Triggering Functionality
- CXP-12 Camera Hardware Integration
- Bilinear Projective Shape Correlation
- Python™ Scripting, and
- Camera Crosshair Alignment Marking

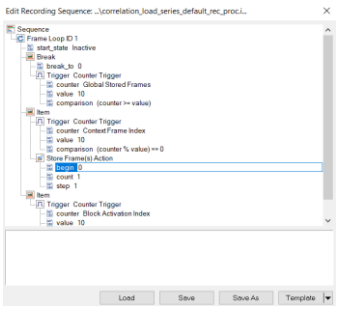




Point Tracking allows users to track an unlimited number of individual subsets/facets as discrete points. Using the DIC algorithm backbone, anything that has a surface feature (ie. a local contrast gradient) can be tracked. Users can make advanced plots of points for absolute position, relative displacement, velocity, and acceleration in Istra4D of one or multiple points. Users can also plot multiple variables using pre-installed Istra4D plotting templates, or you can customize & make your own plots using **Python™ Scripting**. Istra4D Point Tracking is great for motion & vibration analysis, where points of interest are all that is needed.

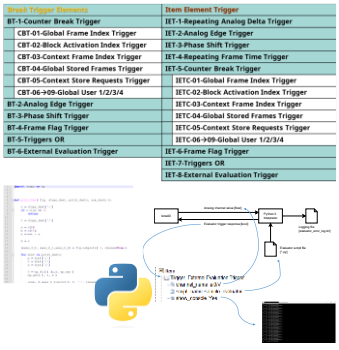
Multicamera Subset Reference Tracking (MSURET) is a feature that allows a subset/facet to be continually tracked throughout the complete multicamera setup, even if the subset is no longer visible in the reference camera pair. As such, a subset can be tracked wherever it goes throughout a test, provided it can be seen. MSURET is an important feature, especially for large, full-scale tests of motion analysis, impact, ballistic, torsion, and fatigue testing.

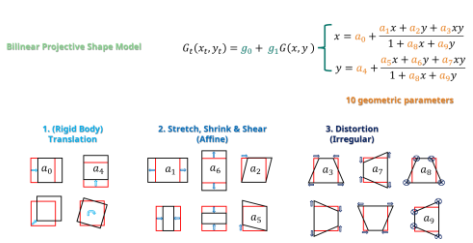




Recording Procedure Protocol Enhancements is an extended functionality of the Istra4D recording procedure that now incorporates an array of user-definable, pre-installed templates. Frame loop blocks can now be; switched between one another, commenced in any order, and even started in parallel. The functionality enhancement now allows for complex testing to be performed, specifically; fatigue, endurance & operational testing, whereby triggered events need to be flexible based on unexpected & random points of specimen failure, but also in the optimized acquisition of data based on long-duration testing.

Advanced Triggering Functionality extends the current options of acquisition triggering within the recording procedure. Triggers can now do more than just respond to analog signals and frame count indexes… A trigger can be set based on a frame loop reaching a specific number of activation intervals. A trigger can be set with count variables that determine which trigger condition is active or inactive based-off another frame block. A trigger can be set based off the activation of an external software/hardware signal. Or even, custom-programmed using **Python™ Scripting** based off recorded signals via the new "*External Evaluation Trigger*".

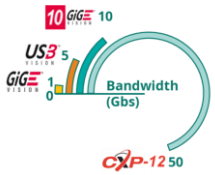




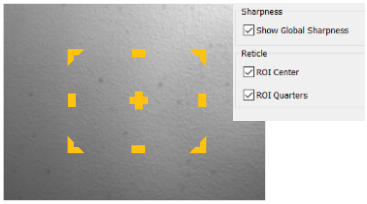
Bilinear Projective Shape Correlation is a new subset/facet shape function that significantly improves the accuracy (reduces the measurement uncertainty), particularly for larger subsets >30px, but also for DIC stereo rigs with a large stereo-angle, and measurements involving full-body movement. The "standard" correlation model that is used for DIC is known as the "Bilinear" subset shape model, which incorporates affine & distortion shape transformations. The issue with this "standard" subset shape model is that the irregular projective distortion of modeling a perspective subset shape between two cameras often does not accurately capture the real subset shape.

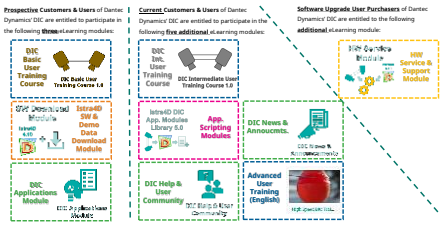
All new **CXP-12 cameras** now run fully integrated with **Istra4D V4.10**. Irrespective of using the recording procedure or ring-buffer recording modes, these 50 Gbps cameras have the highest continuous-mode bandwidth compared to any other type of camera technology. The advantage of these cameras is that they can be used for high-speed testing, both also low-speed quasi-static testing, thus providing a greater application scope than burst-mode cameras.

Article Number	Camera Type	Imaging Sensor	Resolution (Mpx)	Max Frame Rate (fps) @ Full Res	Sensor Size	Camera Mount	Standard/Max Cable Length (m)		Max Multi-Camera Setup
DSM 16500	CXP-12	CMOS	1.1	3515	4/3"	C-mount	5	60	
DSM 16510	CXP-12	CMOS	2	2160	4/3"	C-mount	5	60	
DSM 16520	CXP-12	CMOS	5	700	4/3"	C-mount	5	60	
DSM 16530	CXP-12	CMOS	16	285	4/3"	C-mount	5	60	
DSM 16540	CXP-12	CMOS	25	150	4/3"	C-mount	5	60	



Camera Crosshair Alignment Marking in **Istra4D V4.10** helps users with centering the camera image with respect to the sample. A real-time crosshair alignment marking tool is available that virtually marks the center of the Region-of-Interst (RoI) in the image, and also marks out the middle-quarter sections within the RoI area.





Dantec Dynamics has the approach that training, and support need to be available to anyone, anytime, and anywhere for both current and prospective users alike. The eLearning platform gives users the possibility to access: user training courses, SW downloads, demonstration data, application scripting modules, support, help & support, and also, HW service functions. New to **Istra4D V4.10** is the **DIC Intermediate User Training Course.**

The Istra4D DIC application scripting functionality allows users to initiate custom, numerical computations of application data series. V5 of the application scripting modules includes new features, including; Poisson Ratio Analysis, Strain Tensor Comparison, Point Tracking, Coefficient of Thermal Expansion (CTE) and Warpage, and Operational, Deflection, and Shape (ODS) vibration analysis using STFT.

For more information please contact:
Dantec Dynamics GmbH
Kaessbohrerstrasse 18, 89077 Ulm, Germany
Tel.: +49-731-850-715-00
E-mail: product.support@dantecdynamics.com
Internet: www.dantecdynamics.com

DANTEC DYNAMICS Turn Measurements into Knowledge

Subject to change without notice. Copyright © 2023. Dantec Dynamics. All Rights Reserved

NOVA INSTRUMENTS