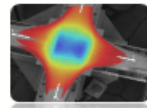
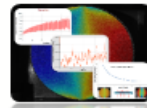
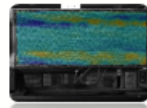
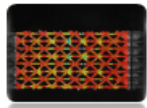
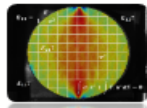
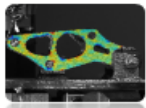


MATCHID NEWS



Metrology Beyond Colors Newsletter 2020/1

January 2020

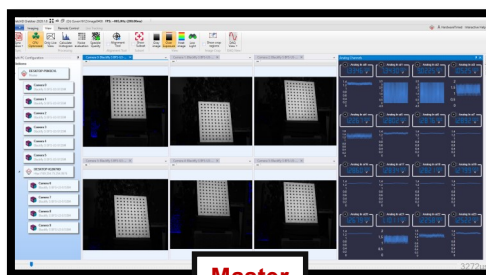
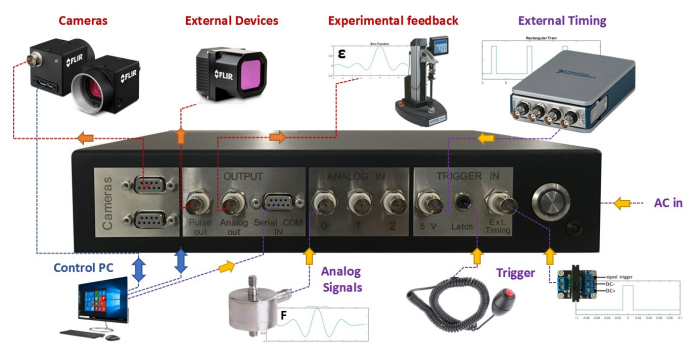
Customized hardware!

MatchID proudly presents its first fully inhouse developed and customized hardware solution. With the MatchID trigger box you can now:

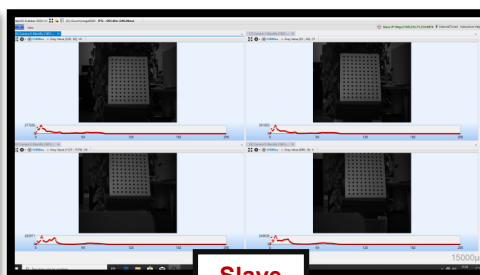
- Synchronize an unlimited number of quasi-static cameras with precise time triggering
- Synchronize and trigger external hardware devices (e.g. IR-camera)
- Synchronize from an external timing source
- Record up to 16 analog signals
- Provide analog output for experimental feedback

The trigger box and our image grabbing platform allow for multiple control PCs, as such synchronizing all cameras at their highest available framerate within a continuous recording mode.

With the release of this first turnkey hardware solution MatchID evolves from a purely software developing company into a full system integrator, hereby incorporating multiple experimental imaging techniques.



Master



Slave



Our brand-new multifunctional trigger box communicating with 10 5MP-cameras at 50Hz and two different high-end workstations that operate in a master-slave configuration. Simultaneously, 16 analog-in signals are captured at every time step.

In This Issue

- Customized hardware!
- MatchID 2020: What's new?
- Discover the App Store
- DIC course 2020
- Modal Analysis on F16
- Meet MatchID
- MatchID is expanding

MatchID 2020: What's new?

MatchID release 2020-v1 includes the following new available features:

Reporting tool

Direct generation of a report document in various formats (word, latex) containing an overview of all statistics and processing settings. Ready for import into your journal publication or engineering report.

Full-batch mode

Full-batch mode processing of our finite-element validation strategy, incorporating image deformation (FEDEF) and FE-validation processing (FEVAL).

MatchID apps

Various apps for advanced custom-made processing.

Thermal integration

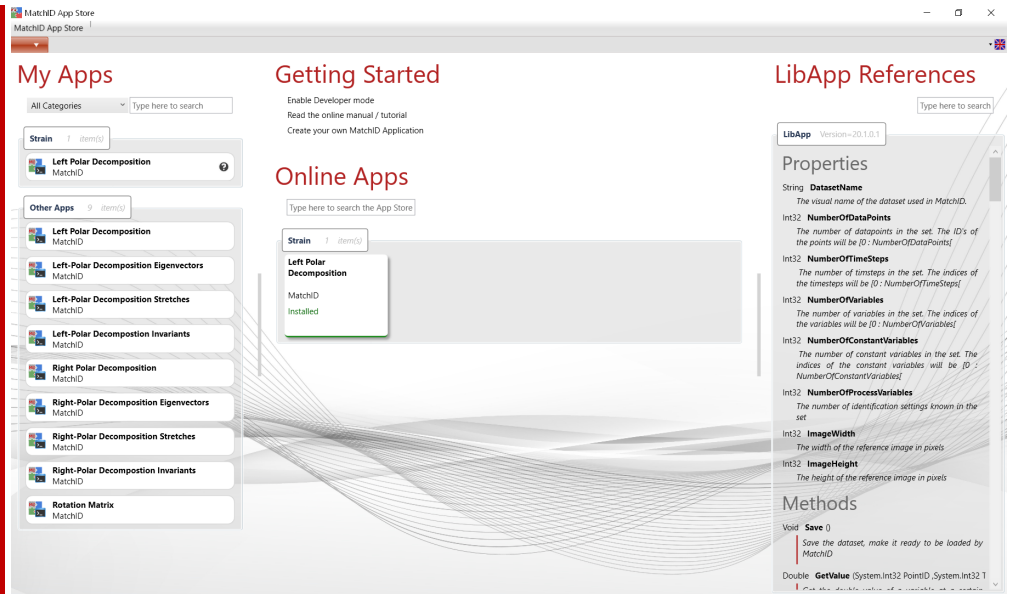
Integration of thermal data with your DIC-data point cloud.

Grid method

The grid pattern does no longer require perfect horizontal/vertical alignment. An angled grid combined with non-integer pitch values gives you much more setup flexibility.

Image Grabber

In case a triggerbox is connected: fatigue grabbing mode capturing images at predefined peak-intervals.



MatchID app-store concept: seamless communication with Matlab, Python and .NET.

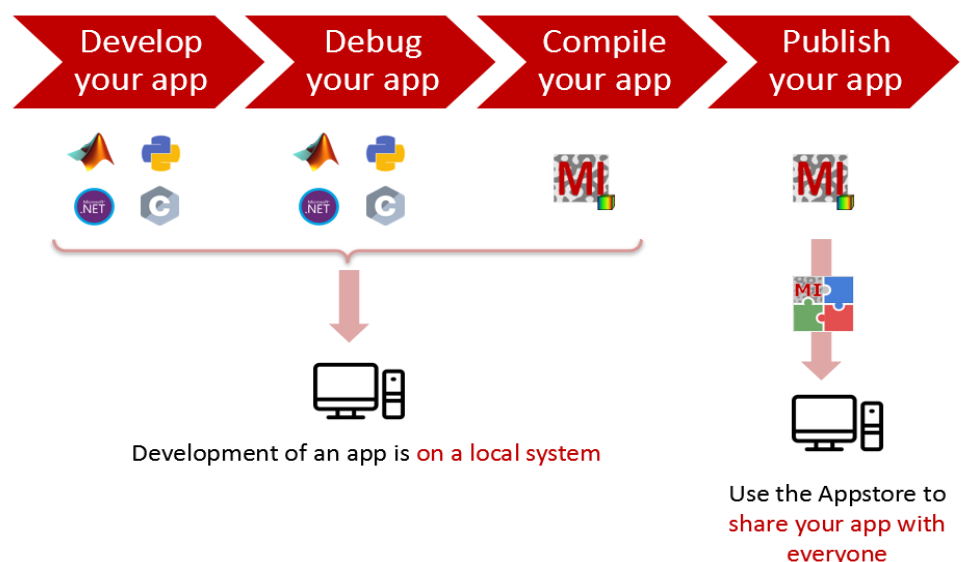
Module in the picture: App Store

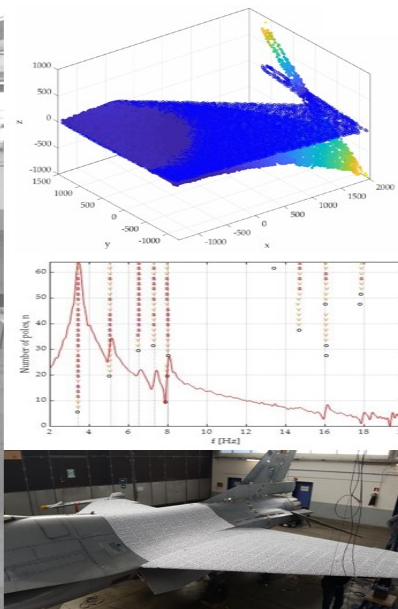
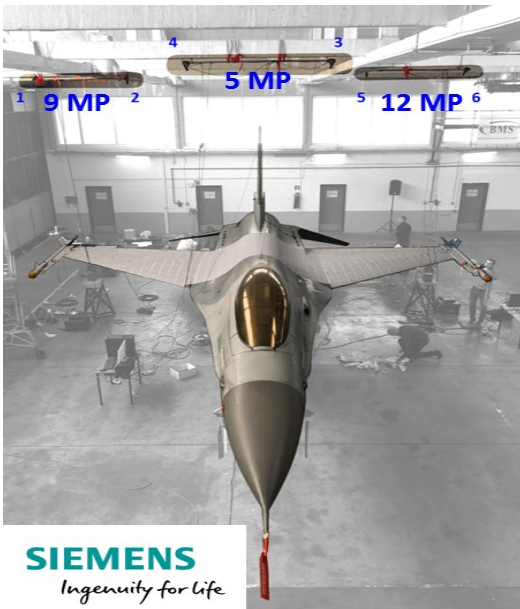
Our App Store aims at providing custom processing of MatchID data outside the MatchID platform. No more need to store your data on your hard disk, reimport them in an external application and deal with annoying file format issues. We have created a seamless data-sharing flow with third party programming languages (Matlab, Python, .NET, ...) enabling you to directly operate on your DIC data without unneeded file exporting. As such, you can develop and debug in your preferred and familiar scripting interface without the obligation to adapt to a new syntax.

Moreover, your developed program can be easily compiled and published as a MatchID application. Accordingly, it will be standardly integrated within the MatchID GUI ready for future usage with other experimental data. Furthermore, since “*sharing is caring*” is key within the MatchID philosophy, you can distribute this application to colleagues or even the entire community via our online App Store.

Have you created an optimized J-integral algorithm, a novel strain formulation, a material model currently not available within MatchID, ... and you want to distribute your knowledge? Do not hesitate to contact us directly, we will be happy to assist with the publication of your app and the necessary documentation. You completely decide on the accompanying terms: open source or compiled format, paid-up or freely downloadable, ...

For more information, please check our next webinar!





DIC course

13-17 July 2020

Gent, Belgium

This pioneering 5-day DIC course, running since 2014, will this year have its 8th edition in Europe. The course is organized by three well-known international experts in the field with a broad experience in a wide range of applications: Prof. F. Pierron, Dr. P. Lava and Dr. P. Reu. Although the course is supported by MatchID, it is platform independent.



Specific focus is on the metrological aspects of the system, with quantitative interpretation of the results and errors. Theoretical lectures are alternated with in-depth experimental labs and data analysis. A maximum attendance of 20 participants will be respected in order to optimize interaction with the instructors. In addition, the lab and data analysis sessions are organized in small groups of two to maximize the learning experience. After completing this course the participants will have acquired a high level of skill enabling them to use the technique in an informed way to produce quantitative results.

<http://matchid.eu/diccourse>



Participants DIC course 2019, Ghent

Modal analysis on an F16 aircraft by combining accelerometers, DIC (6 cameras and optimized pattern) and Siemens Polymax modal decomposition software.

Application in the picture: Modal analysis on an F16 Plane

Siemens Digital Industries Software in Leuven (Belgium) represents the main R&D Center for the Simulation and Test Solutions business segment within Siemens and is responsible for the Simcenter product portfolio. The company is market leader in test and mechatronic simulation solutions. MatchID and Siemens intensively collaborate in the framework of several Flemish regional research projects with the aim to deliver innovative structural dynamics testing solutions.

The unique combination of MatchID and Simcenter Testlab solutions enables the use of DIC for advanced and profound modal analysis purposes with the final objective to achieve a full-field representation of the dynamics of the tested structure. Vibration measurements and Experimental Modal Analysis are often used for design validation of complex mechanical products in automotive, aerospace and other advanced engineering industries. Traditional measurements are performed by means of sensors connected to the structure and with a wired signal transmission to the central data acquisition system. The idea of performing contactless vibration meas-

“The unique combination of MatchID and Simcenter Testlab solutions enables the use of DIC for advanced and profound modal analysis purposes.”

- B. Peeters & E. Di Lorenzo, Siemens ISW



urements using cameras and DIC is appealing because on one side it allows to **reduce the instrumentation time** and, on the other side, **increases the amount of information** obtained during the tests. This can be very useful to reach a better understanding of the structural behavior in certain critical parts. An entire Ground Vibration Testing campaign on a full-scale F16 aircraft involving 6 synchronized cameras of different resolutions generated impressive results when compared to accelerometers and Laser Doppler Velocimetry measurements, illustrating the validity of the methodology. Check our [youtube channel!](#)

Siemens Industry Software NV, Interleuvenlaan 68, 3001, Leuven, Belgium
www.siemens.com/simcenter

Meet MatchID at:

- IMAC XXXVIII February 10–13, 2020 in Houston, Texas USA
- ESAFORM 2020 May 4-6, 2020 in Cottbus, Germany
- The 20th national conference on fatigue and fracture May 8-11, 2020 in Chongqing, China
- SEM Annual 2020 June 8–11, 2020 in Orlando, Florida, USA
- Fatigue et Fabrication additive June 9-11, 2020 in Paris, France

Webinars and Tips & Tricks:

MatchID now conducts **live and open interactive webinars** suitable for anyone with or without any prior DIC knowledge. These webinars take you on a 45min-journey to a specific MatchID product illustrating its capacities towards a plethora of applications.

- Webinar 2020/1: App store, January 22, 2020 at 4pm CET.
- Webinar 2020/2: Trigger box and fatigue, April 22, 2020 at 4pm CEST.

Moreover, short 20mins **tips & tricks** sessions will improve your MatchID product knowledge by illustrating specific handlings and tools:

- T&T 2020/1: Calibration, March 18, 2020 at 4pm CET.
- T&T 2020/2: Dataset concept, May 20, 2020 at 4pm CEST.
- T&T 2020/3: Fiducials, July 8, 2020 at 4pm CEST.

A novel application manager!



Guven Ogus acquired a PhD degree from KU Leuven focusing on Computational Fluid Dynamics and Particle Image Velocimetry.

He is the novel application manager at MatchID, and as such always ready to provide you with solid support towards your experiment, analysis or MatchID product portfolio.

We wish him welcome to the MatchID community!

... and we are looking for more people. Please send us your profile!

Contact Us

MatchID
Deinsesteenweg 94A
B-9031 Gent
Belgium

info@matchid.eu

++32 223 64 41

www.matchid.eu



Partners



China
ltydic.com



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