PD *Pro*

Integrated software for PD testing

TECHIMP
ALTANOVA GROUP

GIS

Cables

Transformers

PD *Pro*

Switchgears

Rotating Machines
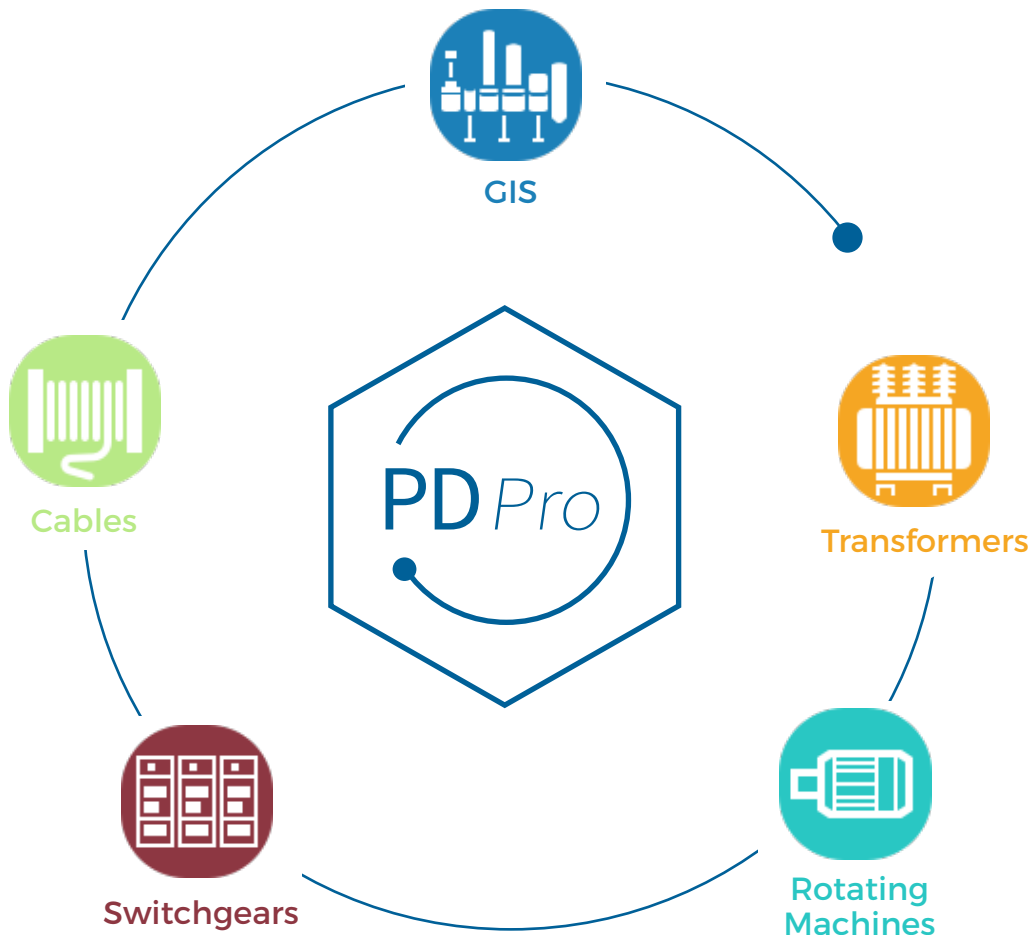
ALTANOVA GROUP
Advanced testing and monitoring solutions

Integrated software for PD testing

Key features

- Integrated software for Partial Discharge testing suitable for all MV & HV equipment

- One software platform designed for all Techimp's PD testing instruments

- Different Licenses for different level of user expertise

- Available in 3 versions:
    1. PDPro Basic - for users with basic level of knowledge of PD testing
    2. PDPro Advanced for in depth analysis
    3. PDPro Quality Control for process control

Cables   **GIS**   **Rotating Machines**   **Switchgears**   **Transformers**

	PDPro Licenses		
	Basic	**Advanced**	**Quality Control**
Data Base	x	x	x
Data Acquisition Base	x		
Data Acquisition Advanced	optional	x	x
Test Plan Editor			x
PD Processing ID Generic	x		
PD Processing ID Advanced	optional	x	x
PD Location (TDR)	optional	optional	optional
Report	x	x	x
IEC 60270	optional	x	x
Software included in Acquisition Units:			
Micro AQUILA	x	optional	
AQUILA		x	
PDBase II			x

PDCheck

PDScope

PDBase II

AQUILA

micro AQUILA

Licences

PDPro **Basic**

PDPro Basic has been developed for technicians with a basic level of knowledge of partial discharge testing.

This license allows the operator to perform measurements in a very simple way, since the software defines the acquisition parameters autonomously, based on the PD activity in the asset under test.

Through the processing mode, the operator is able to understand which type of PD activity occurs in the asset.

Typical measurement results like noise, corona PD, surface PD and internal PD are shown in percentage of the entire PD Pattern respectively sub-patterns separated and filtered by the algorithms of the patented T/F Map.

PDPro **Advanced**

PDPro Advanced is the most powerful working mode, designed for more complex measurements and detailed analysis.

It offers a completely customizable acquisition mode, which gives the operator the complete flexibility to set the parameters to be acquired. This solution gives full control of the instrument's functions and a remarkable flexibility of use.

With its advanced identification processing, PDPro Advance is also able to make a more detailed analysis, according to the type of insulation technology under test (cables, rotating machines, GIS, transformers, switchgears).

PDPro Advanced is suitable for Partial Discharge Testing under IEC 60270.

PDPro **Quality Control**

PDPro Quality Control is the ideal tool to be used for the quality control in the production process of MV and HV equipment manufacturers. This license comes with the same features as PDPro Advanced, and in addition with the Test Plan Editor functionality.

With this function, the user is able to design and save acquisition parameters in a Test Plan, which can be recalled whenever the same test needs to be executed.

Database

Home page

Create a new Registry

Smart filters

PD Pro Database is the section where the operator can:

• Create a new Registry
• Find existing Registry
• Find existing Acquisition
• Find existing Test Plan

The registry can provide a history of measurement sessions where the operator is able to store all the useful information referred to the asset, such as:

• Common data: Customer name, Circuit name, Location, Rated Voltage, Apparatus Serial Number, Manufacturer, Asset type etc..
• Asset Type: Cable, GIS, Transformer, switchgear, Rotating Machine
• Number of phases: to choose between 1 and 3.
• Detection point number and the identification labels per each detection point
• Voltage level: MV or HV

From the registry window, the operator can start a new acquisition or import the acquisitions previously taken, without changing window.

In the window *Query: Acquisition* all the acquisitions saved in the database are listed and the user can:

• Send the selected acquisition to the processing mode
• Show more detail about the selected acquisition
• Export the acquisition (a .pqd file will be created)
• Delete the acquisition
• Open the acquisition window
• Search both acquisitions or registries exploiting the possibility to create and apply smart filters.

An existing test plan can be searched by means of the *Query: Test Plan* icon present in the Techimp PDPro home page.
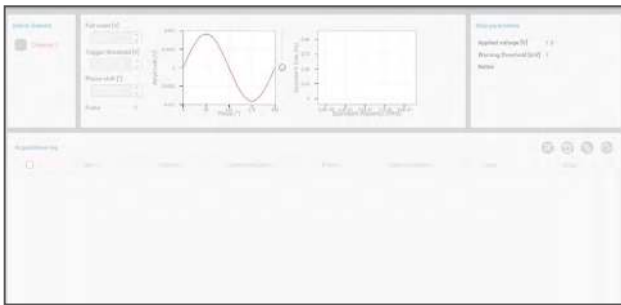
Smart Filters
With the help of smart filters, it is possible to easily find a specific acquisition saved in the database. The operator can utilize the default filters proposed by the software or completely customize the research by the function "More filters" and choose among a large number to filters.
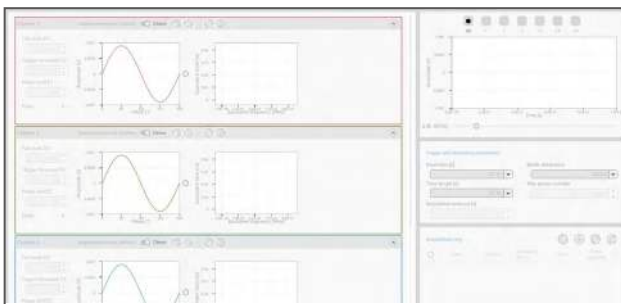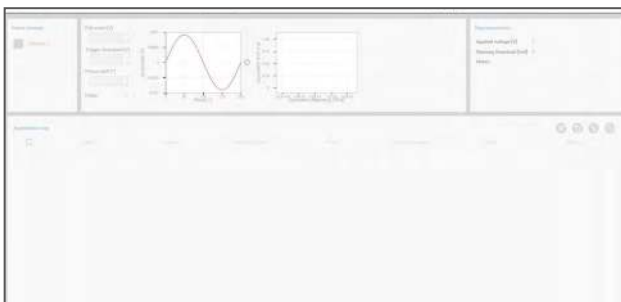
Acquisition

Home: acquisition

The operator can choose an existing registry in which the new acquisitions will be saved or he can create a new registry.

Then, the acquisition wizard guides the operator to the choice of the acquisition mode and the device used.

Three kinds of acquisition mode are available, depending on the type of license: **basic mode, advance mode** and **test plan mode**.

Data Acquisition: Basic Mode

Basic Mode

The Basic Mode is a PDPro function where all acquisition parameters are autonomously defined by the software.

In this working condition, the software selects acceptable values for full scale and trigger threshold based on the real time signal streaming.

Data Acquisition: Advanced Mode

Advanced Mode

The advanced acquisition mode is the most powerful working mode where all the instrument parameters can be manually tuned by expert users, in order to execute more complex tests.

The advanced acquisition mode is a 3 phase system oriented, as it is able to work with up to 3 PD channels simultaneously.



Data Acquisition: Test Plan Mode

Test Plan Mode

This data acquisition mode allows to execute a test plan individually designed by the customer through the "test plan editor".

For continuously repeated PD test, the operator can retrieve the individual test plans saved in the database. PDPro Quality Control will execute the procedure and provide a report containing the acquired data and the results.
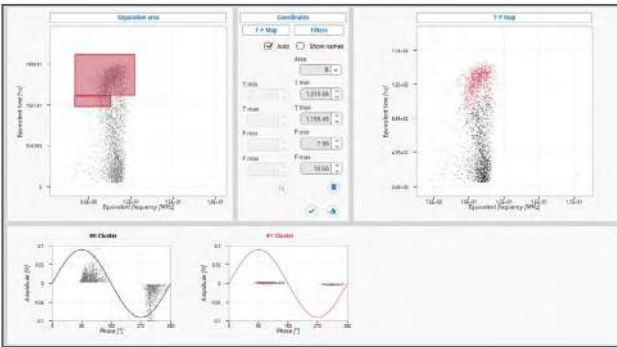
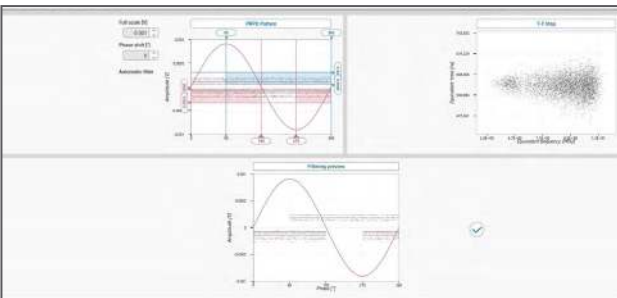This mode is suitable for Partial Discharge Tests according to the IEC 60270.
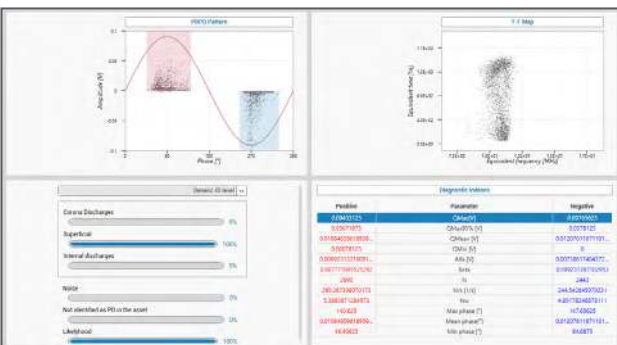
Processing
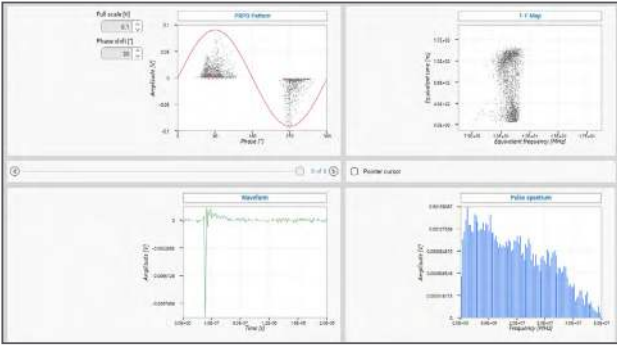
Processing

Time / Frequency Separation

PRPD pattern filter

Identification

According to the type of license, two kinds of processing are available:

- **PROCESSING ID GENERIC**

Through the generic identification processing, the operator is able to easy understand which type of PD activity occurs in the asset. The types of PD phenomena detected could be: noise, corona PD, Surface PD and internal PD.

- **PROCESSING ID ADVANCED**

With the advanced identification processing, the software is able to make a more detailed analysis, according to the type of insulation technology under test (cables, rotating machines, GIS, transformers, switchgears).

Both Processing ID Generic and ID Advanced have the following functionalities:

- Time / Frequency Separation
- PRPD pattern filter
- Identification
- TDR location
- Trends
- PRPD pattern movie
- Report

Time – Frequency Separation
The T/F-Map© is TECHIMP's patented tool able to group high frequency pulses acquired in different clusters depending on the pulse waveform shape and frequency composition.
With the T/F-Map© it is possible to differentiate between noise signals and different multiple PD signals in the clusters of PD signals occurring in the same equipment.
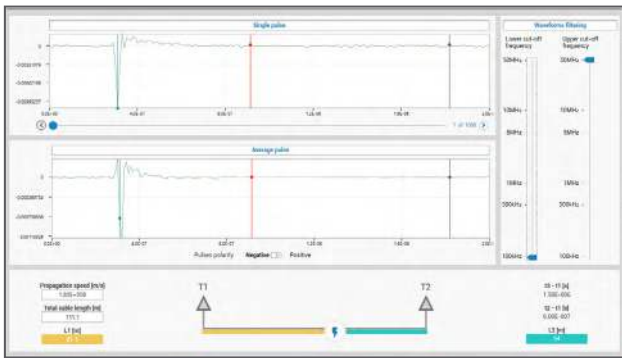
PRPD pattern filter
It is a software feature able to remove, from the acquired PRDP pattern, random pulses that are not related to the PD activity.

Identification
PDPro is equipped with an identification tool that can guide the operator in the diagnosis of the partial discharge activities.
Typical measurement results like noise, corona PD, surface PD and internal PD are shown in percentage of the entire PD Pattern respectively sub-patterns separated and filtered by the algorithms of the patented T/F Map.
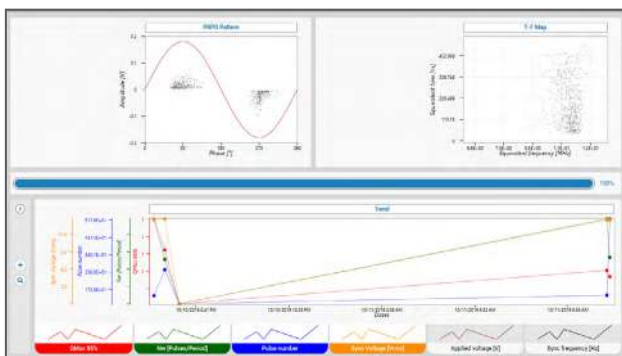Dedicated algorithms are designed for single asset PD activities (generators, cables, etc).

PD Location (TDR)

Trendings

PRPD pattern movie

Report

PD location (TDR)
Time Domain Reflectometry tool identifies the PD pulse reflections and allows the localization of the event by analysis of the Waveform.

Trending
Trending function is designed to study the evolution of the partial discharge activities along one or more testing campaigns. It is possible to visualize the trend of the PRPD pattern key parameters along the time and it includes the function of T/F map separation, those will be applied to the full data set.

PRPD pattern movie
The pattern movie function is a replay of the PRPD pattern construction: it is possible to replay the acquisition in order to focus on sporadic activities and transients.
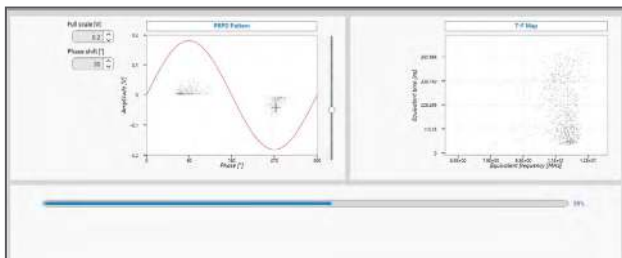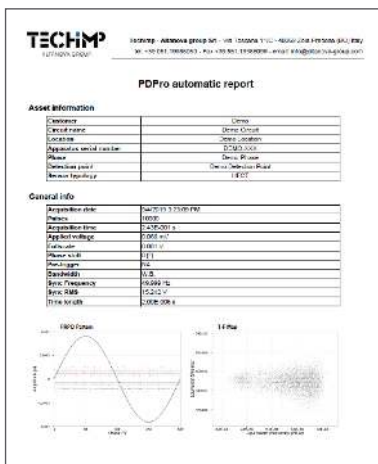
Report
PDPro is able to automatically generate a printable document that includes the PD test details and parameters, as well as the data analysis made by the operator with the separation, filtering and identification tools.
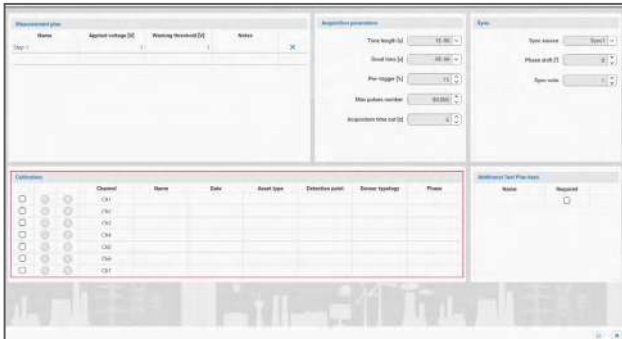The report template can be customized with the company details and more.

Test Plan Editor

The test plan editor allows to create and save the acquisition parameters into a registry, that can be recalled and executed whenever the operator needs to perform the same test.

The Test Plan Editor is included in the PDPro Quality Control License and also available as option for the other licenses.

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