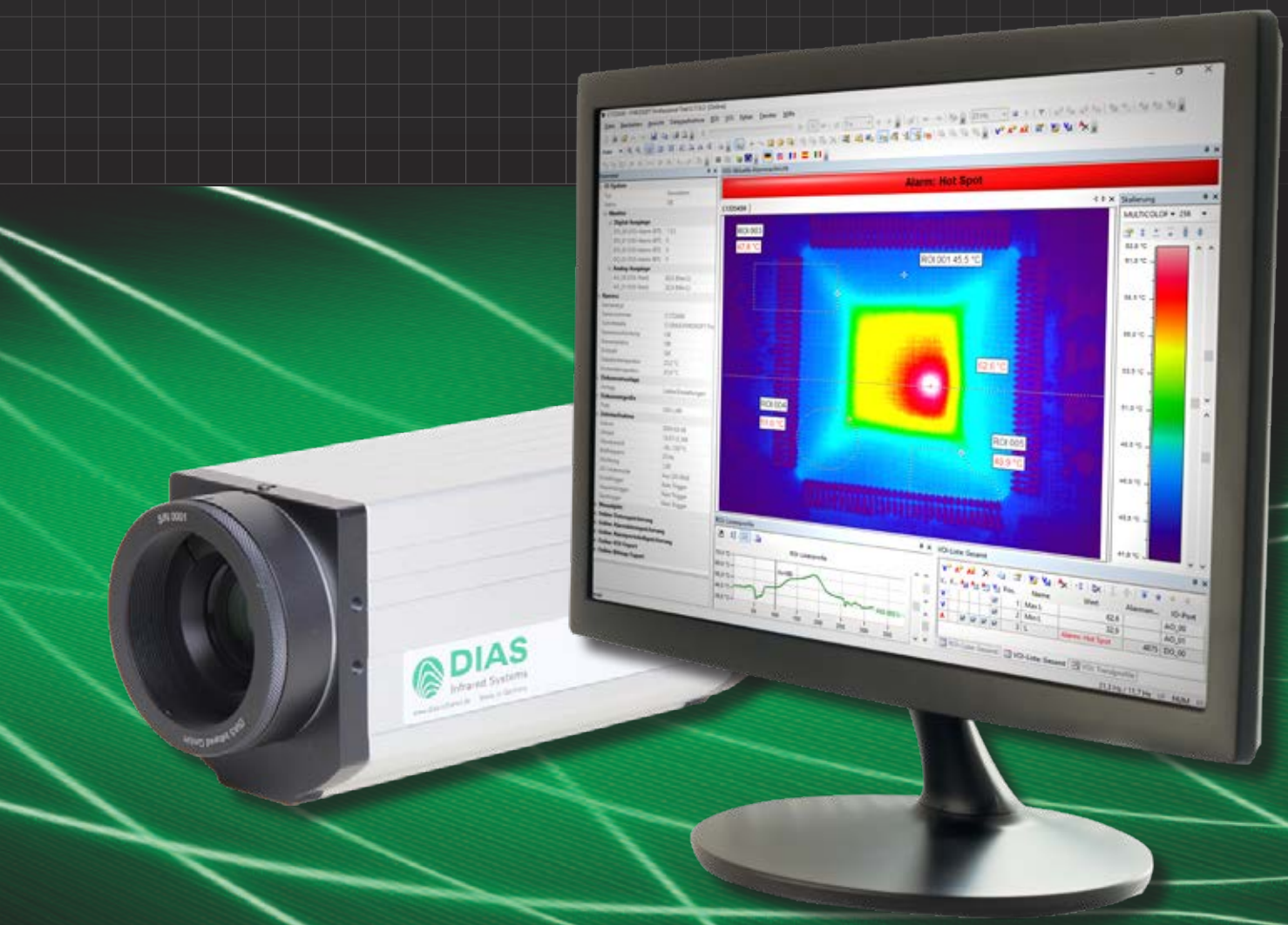
DIAS Infrared Systems

PYROSOFT

Software for DIAS infrared cameras in industry and research & development



Standard and application specific software
Overview & Features

PYROSOFT Compact, Professional, Professional IO

Powerful online and offline software for DIAS infrared cameras

PYROSOFT Compact, Professional and Professional IO are multilingual and universal thermal imaging software tools for all DIAS infrared cameras PYROVIEW and PYROLINE running under Windows®.

PYROSOFT Compact is a free software, which is supplied with each DIAS camera. Organize online data acquisition and data storage, open stored files, analyze individual areas of the image, create reports - all this is possible with **PYROSOFT Compact**.

PYROSOFT Professional is the right choice for extensive measurement projects with extended requirements for data analysis. Various possibilities for the evaluation of image areas, generation of alarms, trend display, report generation and much more allow the comfortable use in research and development.

PYROSOFT Professional IO has additional functions for process integration. Trigger signals, alarm states and measured values can be input and output via an I/O system (PROFIBUS, PROFINET, WAGO, Modbus, OPC, TCP socket or text file). Use **PYROSOFT Professional IO** to connect your DIAS camera to your process. A direct coupling to your PLC is therefore easy to realize.

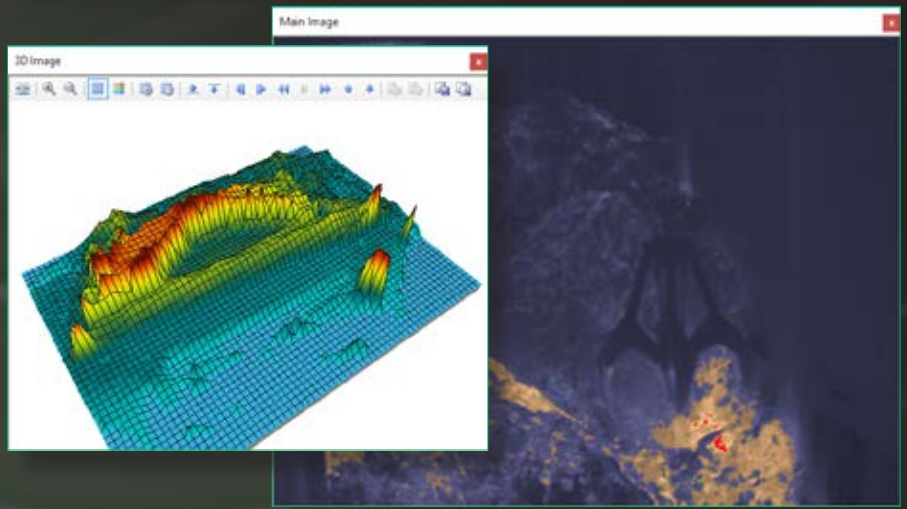
Acquisition + display

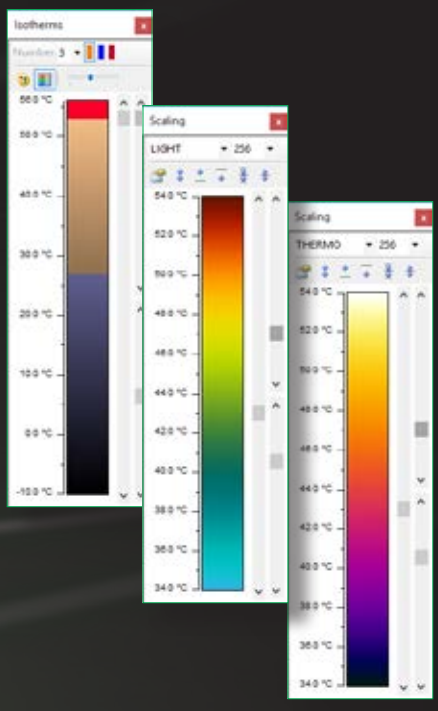
PYROSOFT offers a wide range of views, from the representation of the image values, measurement parameters to the results of the image evaluation in figures and diagrams. You can easily adapt the program interface to your needs. The multi-document structure of **PYROSOFT Professional** and **PYROSOFT Professional IO** allows the simultaneous work with multiple files or cameras.

Camera measurement data is transmitted in real-time via the Ethernet interface to the host PC. On the PC, this data is analyzed by the PYROSOFT software and saved if necessary. Integrated buttons for operation of the camera's motor focus allows convienient focusing of your DIAS camera to the measurement object.

Choose between different color scales for the display of the thermal image in °C, °F, °K or as radiation values. The temperature range displayed in the image is fully adjustable with auto dynamic or manual temperature. The user can also zoom into a region in the displayed image in order to examine fine details using the zoom function.

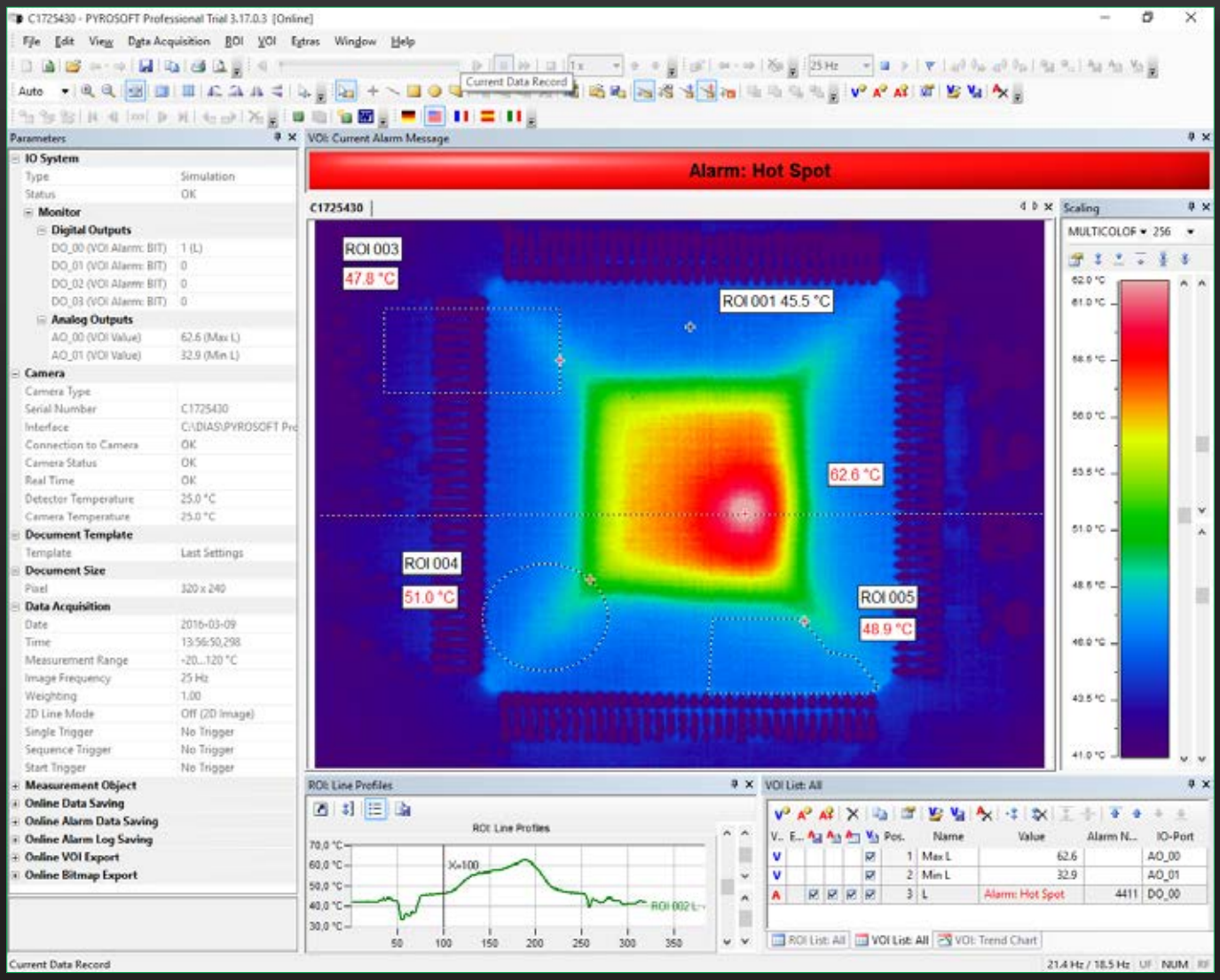
Features
Customizable display of the thermal image
Various color bars and isotherms display
Auto dynamic and manual scaling of temperature scale

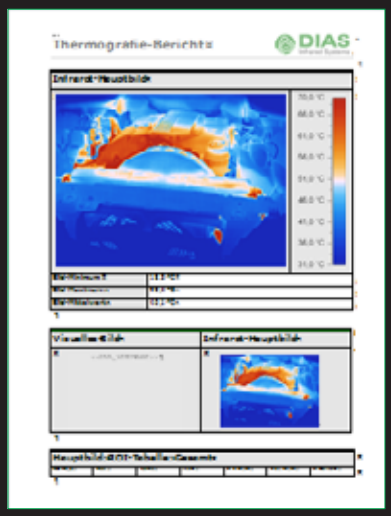


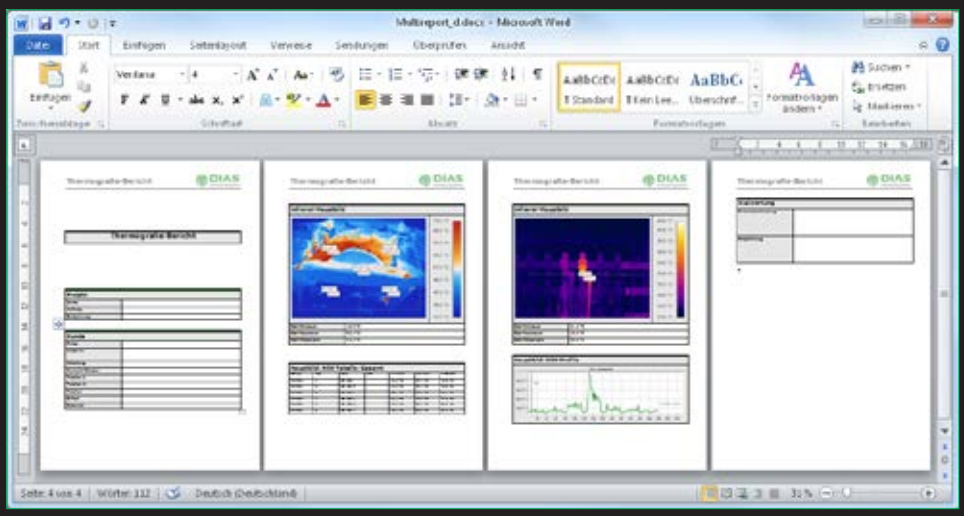


– Standard and analysis software

DIAS Infrared Systems







Analyze + control

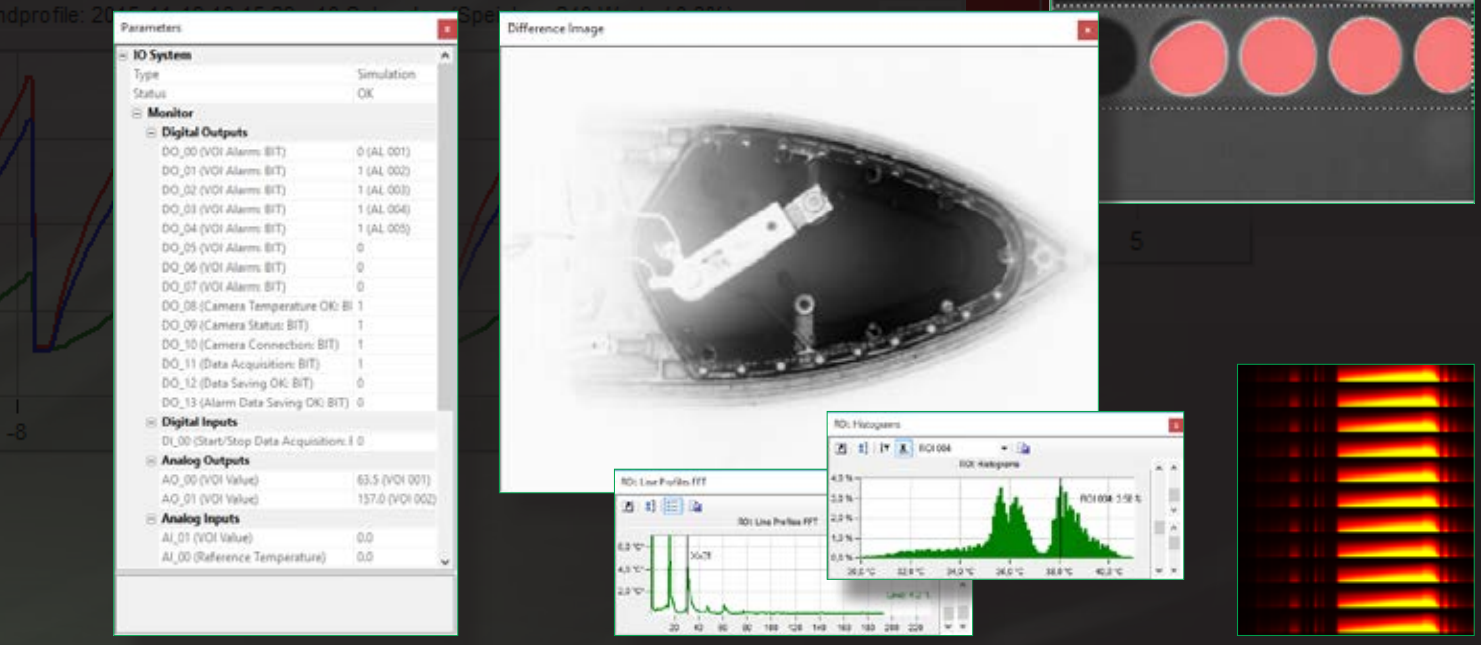
For data analysis of local regions (Regions Of Interest = ROI) points, lines, rectangles, circles/ellipsis and polygons are available. Calculate hot and cold spots within the ROIs, select specific values of emissivity, transmittance and ambient temperature for every ROI and display histograms and automatic partitions within the ROIs.

Define values (**V**alues **O**f **I**nterest = VOIs) from calculated ROI minima/maxima/average values or other values (e.g. histogram, spot, FFT) and display them as temporal trend. Specify alarms with fixed or variable thresholds and alarm combinations to detect critical temperatures immediately and display them offline and online, save and log them.

Analyze dynamic processes by using reference and difference images, filter images and 2D line images, detect temporal trends of temperature distributions on their measurement objects.

By using the configurable IO system in **PYROSOFT Professional IO**, triggers and reference values can be input, and measured values and the alarm states can be output for process control.

Features
ROIs: points, lines, rectangles, circles/ ellipsis, polygones
Calculation of hot and cold spots
Reference, difference, filter and 2D line images
Definition of VOIs from ROI values
Trend, histogram and profile charts
Alarm functions



Evaluation + documentation

Evaluate with the integrated data player recorded sequences, cut and export them as single files, as text, bitmap or video.

Derive from your offline evaluation online document templates for recurring measurement tasks.

Create album files from different recordings and multi-reports for Microsoft Word with thermal images, result lists of the calculation of ROIs and VOIs, profile and trend charts, histograms, difference images and many more objects.

Generate customized report templates for recurring reports so that they can be generated easily and edited as needed.

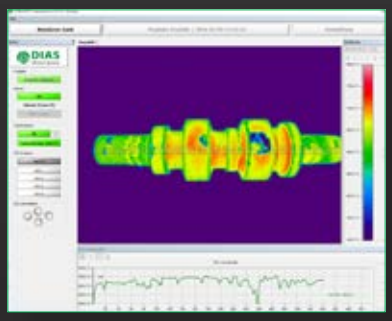
PYROSOFT

Application specific thermal imaging software

DIAS Infrared Systems

PYROSOFT **Automation** and **Automation SC**

Software for the integration of DIAS cameras into automation processes



Use **PYROSOFT Automation** for automated process monitoring and control.

- Data acquisition for one camera
- Online functionality like **PYROSOFT Professional IO**
- Configurable user interface and user rights
- User management with different authorization levels
- Manual or automatic (I/O system/SPS) product switch, e.g. for different component sizes
- Display of status information and alarms
- 24/7 operation

PYROSOFT Automation SC has been developed to monitor an object from different positions (e.g. from front and back).

- Synchronous data acquisition from up to 8 cameras, the data are combined into a joined image
- Online functionality like **PYROSOFT Automation**
- Combined synchronous ROI, VOI calculation and data saving of all 8 cameras
- For large objects, the image resolution can be increased by using several cameras

PYROSOFT **MultiCam**

Software for the data acquisition and image display of up to 8 DIAS cameras

For a better overview: Use **PYROSOFT MultiCam** if you want to keep an eye on several cameras at the same time. The data acquisition and analysis is done in parallel and independent from the other cameras. It is also possible to combine the measurements from different cameras for evaluation.

- Online functionality like **PYROSOFT Professional IO**
- Global VOI for the combination of data from different cameras
- Operation modes „Setup" and „Automatic"
- Display of single images of all cameras
- Overview image of all cameras
- Display of system status and alarm messages
- Overview of the states of the IO outputs

PYROSOFT **Client**

Client application for the monitoring of camera data and status information

For remote access: Use **PYROSOFT Client** to establish a data connection with your PYROSOFT application on another network PC. So you can get the latest camera images and status information. The connected PYROSOFT application acts as server and provides the data.

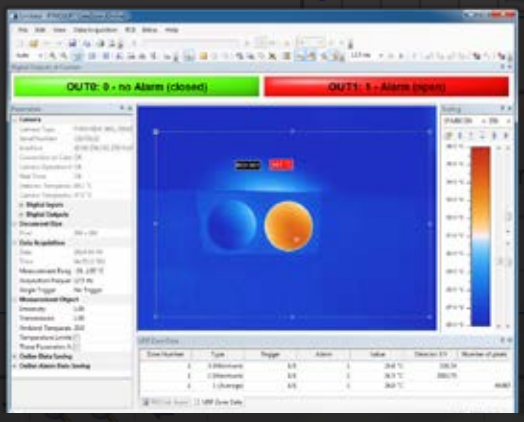
- Client connection to **PYROSOFT Professional**, **Professional IO**, **Automation** or **MultiCam**
- Live transmission of images and status information from the local cameras on the server PC
- Display of single images of all cameras
- Overview image of all cameras
- Display of system status and alarm messages
- Overview of the states of the IO outputs

PYROSOFT

Application specific thermal imaging software

PYROSOFT **CamZone**

Software for the zone programming of a DIAS stand-alone camera



For the configuration of the internal data analysis of your stand-alone camera: Use **PYROSOFT CamZone** to define the position of the evaluation zones and the threshold values for the alarm calculation. You can transfer the parameters directly into the internal memory of the camera. The live display of the camera image and the calculation data allows you to check the configuration directly and adjust it if necessary.

- Define up to 8 zones and the related parameters for the evaluation
- Display of the calculated zone and alarm values of the camera
- Display of the live image
- Display of the status at the digital alarm outputs of the camera
- Online data saving and online alarm data saving

PYROSOFT **FDS**

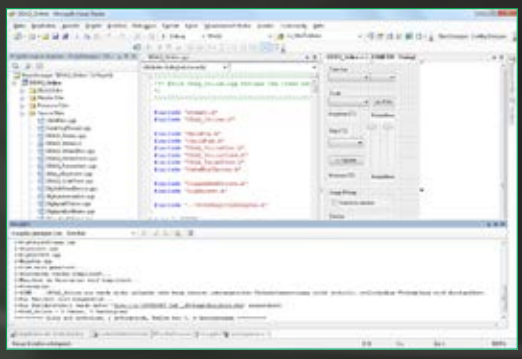
Software for the DIAS early fire detection system PYROVIEW FDS

For fire detection: Use **PYROSOFT FDS** in combination with the intelligent early fire detection system PYROVIEW FDS to be able to react to fires in time. The cameras can be mounted on a pan-tilt head and thus cover the surveillance area in consecutive sectors.

- Real-time fire detection with up to 32 DIAS thermal imaging cameras
- Intelligent alarm monitoring with spot and trend analysis
- Overview of all camera images, views for individual sectors
- Map and panorama with current camera position
- Operation modes „automatic", „manual" and „setup"
- Server-/Client architecture for remote access with **PYROSOFT FDS Client**
- Offline evaluation, event view and report generation with **PYROSOFT FDS Viewer**

PYROSOFT **DAQ**

Programming interface for the integration of DIAS cameras into custom software



For individual applications: Use **PYROSOFT DAQ** to integrate your DIAS camera into your own software. Versatile functions are at your disposal: Configuration of measurement parameters, selection of scaling and color bar, execution of data acquisition, results of image data evaluation, use of file functions etc.

- API (32 and 64 Bit Windows-DLL) for direct data access to the cameras
- Setting of recording parameters and measurement object parameters
- Inquiry of temperature measurement values and camera information
- Bitmap functions for color bars and measured values
- Online and offline functionality

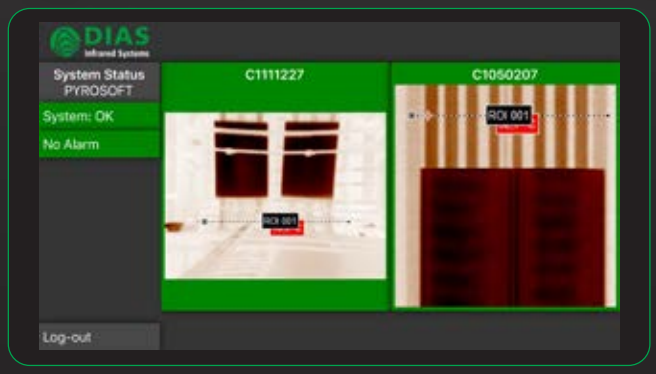
PYROSOFT apps

Powerful apps for mobile access to PYROSOFT systems

Our PYROSOFT apps are available for download from the Google Play Store and Apple App Store. Compatible are all mobile devices from Android 6.0 or iOS 10.0. The apps establish a server/client connection to the software PYROSOFT and request images and data. Prerequisite for the use is a network connection to the PYROSOFT server, e.g. via WLAN or VPN.

PYROSOFT Client (app)

App for online access to PYROSOFT Professional, Professional IO, Automation or MultiCam



The app **PYROSOFT Client** connects to the software **PYROSOFT Professional**, **Professional IO**, **Automation** or **MultiCam** installed on the local server. The connection can be made simultaneously to multiple systems, and different software variants can be combined with each other.

The live images of the cameras are displayed in the overview image or as single camera images. In addition, system status, alarm messages and the states of the alarm outputs are transmitted and displayed.

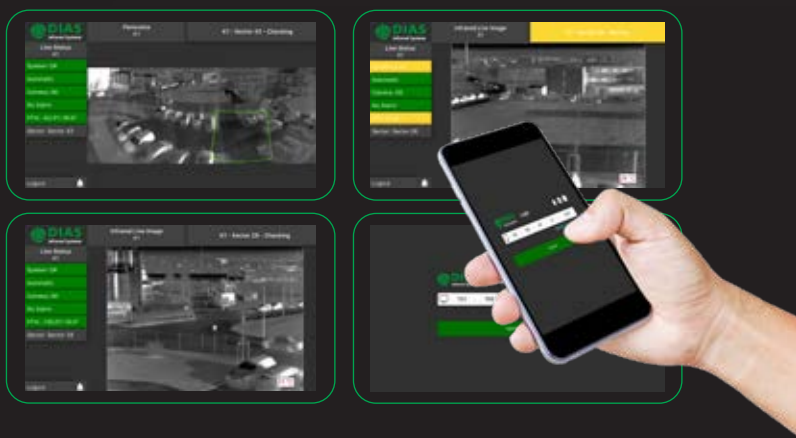
PYROSOFT FDS Client (app)

Monitoring and remote control of PYROVIEW FDS systems

PYROSOFT **FDS Client** is an App, which allows online access to PYROVIEW FDS systems for early fire detection.

So image data and status information can be queried at any time and commands for remote control can be transmitted. In case of a malfunction or alarm a notification is sent by push message or e-mail, so that a fast reaction is possible. By viewing relevant information, the situation can be assessed in advance.

Two user levels (observer/operator) are available.



Features		
• Status information for all lines: – Alarms – Errors – Current sector – Current position of pan-tilt-head – Current selected operation mode • Live infrared images • Panorama images (for **PYROSOFT FDS Server** with panorama)	• Sector images (for **PYROSOFT FDS Server** without panorama) • Maps • Visual live and sector images (for systems using visual cameras) • Change of operation mode (automatic/manual)	• Move to required sector by tapping in the panorama image • Move to required sector by selection from a list • Pan-tilt-head remote control by gestures in live image • Receive push messages in case of alarm or error • Alarm confirmation (for the user level operator only)

PYROSOFT – Function overview

	Compact	Professional	Professional IO	Automation, Automation SC	MultiCam	CamZone
User interface						
Multilingual software for Windows® (from version XP)	✓	✓	✓	✓	✓	✓
Program interface with customized views and layout templates	✓	✓	✓	✓	✓	✓
Multi document structure for multiple documents or cameras		✓	✓		✓	
Use of document templates		✓	✓	✓		
File functions						
Open saved files and sequences	✓	✓	✓	✓		✓
Real-time data saving	✓	✓	✓	✓	✓	✓
Bitmap export (BMP, JPG, PNG)	✓	✓	✓	✓	✓	✓
Video export (AVI, WMV)	✓	✓	✓	✓		✓
Text export		✓	✓	✓	✓	
Functions for image display						
Choice of color bars and scaling including autodynamic	✓	✓	✓	✓	✓	✓
Zoom functions with auto zoom, full image view, rotation and tilting	✓	✓	✓	✓	✓	✓
Display of the visual image	✓	✓	✓	✓	✓	
Display of isotherms		✓	✓	✓	✓	
3D display with auto rotation		✓	✓			
Analysis functions						
Correction of emissivity, transmittance and reflected ambience radiation	✓	✓	✓	✓	✓	✓
Calculation of the emissivity for a pixel from a target temperature	✓	✓	✓	✓	✓	✓
Triggerable difference image display with selectable reference image		✓	✓	✓		
Filter image with temporal and local filter functions		✓	✓	✓		
2D line image		✓	✓	✓		
Online ring buffer (history) for images		✓	✓	✓		
ROI functions ("Region Of Interest")						
Points	5	1000	1000	1000	1000	
Lines	1	1000	1000	1000	1000	
Areas (rectangle □, circle/ellipse, polygone)	1 □	each 1000	each 1000	each 1000	each 1000	8 □
Mark of minimum/maximum (hot/cold spot) for lines and areas	✓	✓	✓	✓	✓	✓
Specific correction of emissivity, transmittance and ambient temperature within a ROI	✓	✓	✓	✓	✓	✓
Self adjusting SUB-ROI with automatic splitting		✓	✓	✓	✓	
Histogram and spot calculation		✓	✓	✓	✓	
FFT calculation for ROI lines		✓	✓	✓	✓	
VOI functions ("Value Of Interest")						
Defintion of VOI values from calculated ROI values, e.g.: maximum, average, difference,...		✓	✓	✓	✓	
Trend display of VOI values		✓	✓	✓	✓	
Definition of VOI alarms with fixed or variable thresholds, teach-in function and hysteresis		✓	✓	✓	✓	
Definition of VOI alarm combinations (OR/AND) from calculated VOI alarms		✓	✓	✓	✓	
Alarm saving, alarm logging, alarm text export		✓	✓	✓	✓	
Alarm counter, acoustic and visual alarm display with customized alarm texts		✓	✓	✓	✓	
Report function						
Integrated report generation with customized templates for Microsoft® Word	✓	✓	✓	✓		
Multi report for album files of multiple documents		✓	✓			
Functions for process interface, industry use, server/client connection						
Input and output of analog/digital values via the IO system Direct bidirectional connection to SPS via LAN (PROFIBUS, PROFINET, WAGO, Modbus, OPC, TCP socket, text file)			✓	✓	✓	
Configurator and monitor for IO system			✓	✓	✓	
Management of products and users				✓		
Product switching via IO system				✓		
Server functionality for the transmission of live images and alarm states to PYROSOFT Client			✓	✓	✓	
Program and test of the stand-alone functionality of a camera						✓

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