

# The software for security professionals

Software tool for the control of X-ray systems as well as the rapid analysis and and evaluation of X-ray images in the security sector (e.g. EOD / IOD)







# Professional acquisition and control software

for generating digital radiographic images with X-ray or gamma radiation &

**for fast analysis and evaluation** of the images

*ORsecure* is a professional acquisition and control software for radiographic testing (RT) with X-rays in the context of object protection, personal security as well as border control and airport security.

The X-ray software is designed for the use of mobile X-ray generators and digital image sources.

The system is intuitive, can be operated via touchscreen, contains many helpful features and offers professional image processing. These powerful image processing procedures allow material- and application-specific optimisation and thus guarantee X-ray images with the highest image quality.

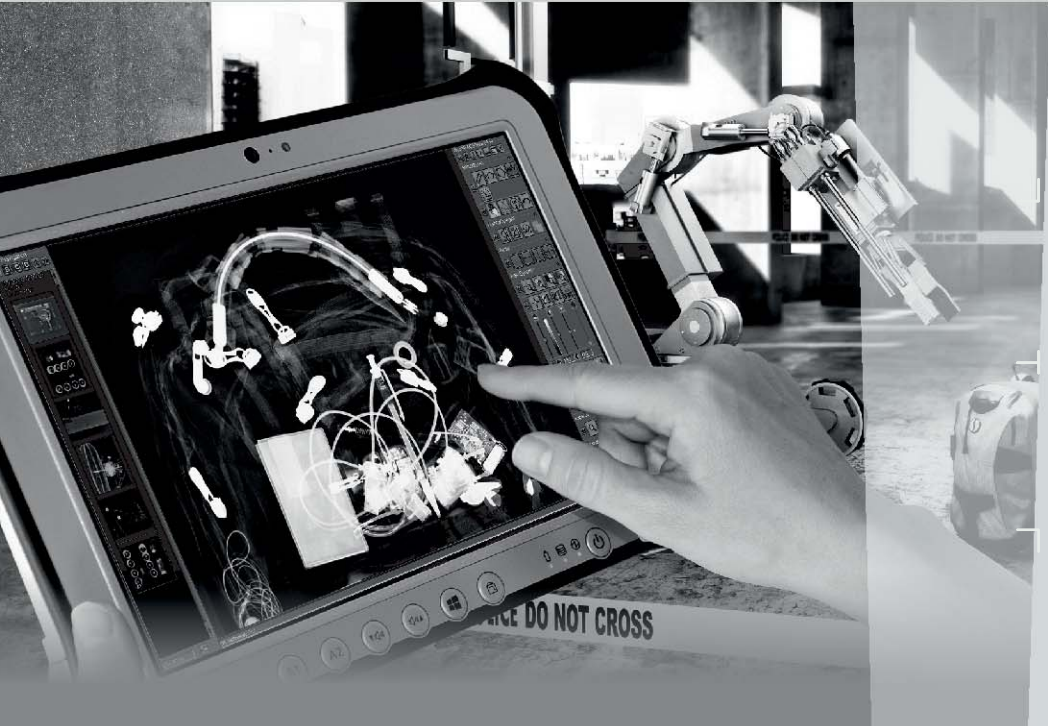
**This enables you as a user to make the right decision in just a few seconds, even in stressful situations.**

*ORsecure* is therefore the "heart" of your X-ray system - regardless of whether this involves retrofitting existing X-ray systems, completely new systems including generator control or suitcase solutions with portable / mobile X-ray generators.





Adding photos to the test images to document the inspection and saving them in DICOS format



Fast and efficient operation via touchscreen guarantees an optimal workflow



Capture recurring examination procedures as macro

# Optimal workflow

The easy-to-use software offers many advantages:

- **Modern graphical user interface** (GUI) adaptable to almost any language
- **Touchscreen operation** – to ensure a quick and efficient workflow
- **Free configuration** of the **test objects** already contained in the system (specifications for test exposures incl. X-ray setting values)
- **Secure and fast acquisition** of ad hoc inspections without detailed prior planning
- Allows **switching between the planned examinations** of a safety-relevant object
- Enables the subsequent **addition of images to object examinations**
- Capture recurring inspection sequences as macros
- Photos can be assigned to document the situation on site and saved in DICOS format
- Possibility of **controlling** the digital RT system **via a wireless remote control** incl. displaying the work list, previewing the captured image to check the exposure and much more.



operator: ORsecure  
Ad hoc / 15.02.2018  
backpack, central station

Objects		
Photo	Big Parcel	Street Floor
Tiny object	Small Bag	Trunk
Small object	Big Bag	Multi Exposure, Huge Object
Midsize object	Small Suitcase	
Large object	Midsize Suitcase	
Huge object	Big Suitcase	
Trunkage	Backpack	
Small Parcel	Welding Box	
Midsize Parcel	Abandonment Case	

plan edit exposure

photo DAP 0 KVp 0mAs

backback DAP 150 KVp 0mAs

finish study print study

1

ORsecure offers predefined plannings that can be adapted to your recurring property inspections.

operator: ORsecure  
Ad hoc / 15.02.2018  
backpack, central station

25

Exposure

Ready...

plan edit exposure

photo DAP 0 KVp 0mAs

backback DAP 150 KVp 0mAs

finish study print study

2

ORsecure fully controls your Golden Engineering Generator. The software allows easy setting of the pulses and triggering of the exposure. [optional]

operator: ORsecure  
Ad hoc / 15.02.2018  
backpack, central station

E: 2740  
Dt: +9.3

100% 100% 100% 100%

plan edit exposure

photo DAP 0 KVp 0mAs

backback DAP 150 KVp 0mAs

finish study print study

3

ORsecure provides a quick preview image and allows easy access to important tools, e.g. to check exposure or access the internal viewer.

# Procedure of an inspection of security-relevant objects

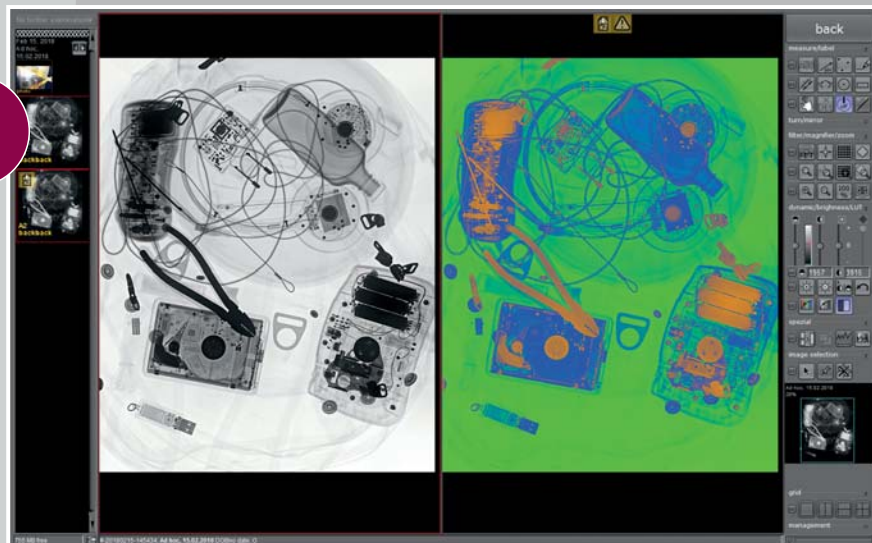
4

The software saves your individual planning values. Complex processes can be saved as macros and do not have to be planned individually.



5

ORsecure offers predefined examinations adapted to your recurring workflows – full support for touchscreen control



6

Extensive search functions and display of the result list

operator: admin

Study List

object x-ray lists management

ORsecure

client last name, first name, object description, description, accession number, object ID>

Not finished	Today 09/28/2018	All
Extinguisher / Germany, Rostock	10/10/2016	
portable fire extinguisher	1	
Side airbag / Germany, Rostock	10/10/2016	
side airbag in car door	1	
Weld, Al Mg 4,5 Pipe D76x5mm / Shipyard, B...	05/04/2015	
	2	
Weld, E36 plate 300x250 / Shipyard, Hamburg	05/04/2015	
	1	
Turbine blades / Rostock, Germany	10/11/2013	
	4	
Motorbike / tire / rim	09/27/2013	
	2	
Cisco Router / Rostock, Germany	09/26/2013	
	4	

Finish study | Display in viewer | Send | Print | Create CD | New study for object | More





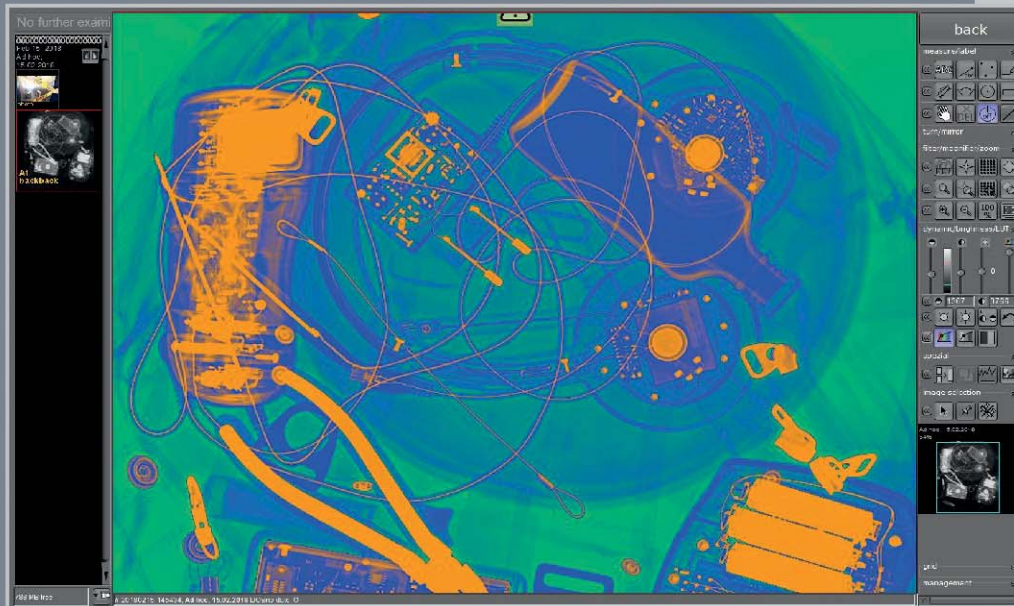
# Image processing

## Automatic image optimisation for perfect images

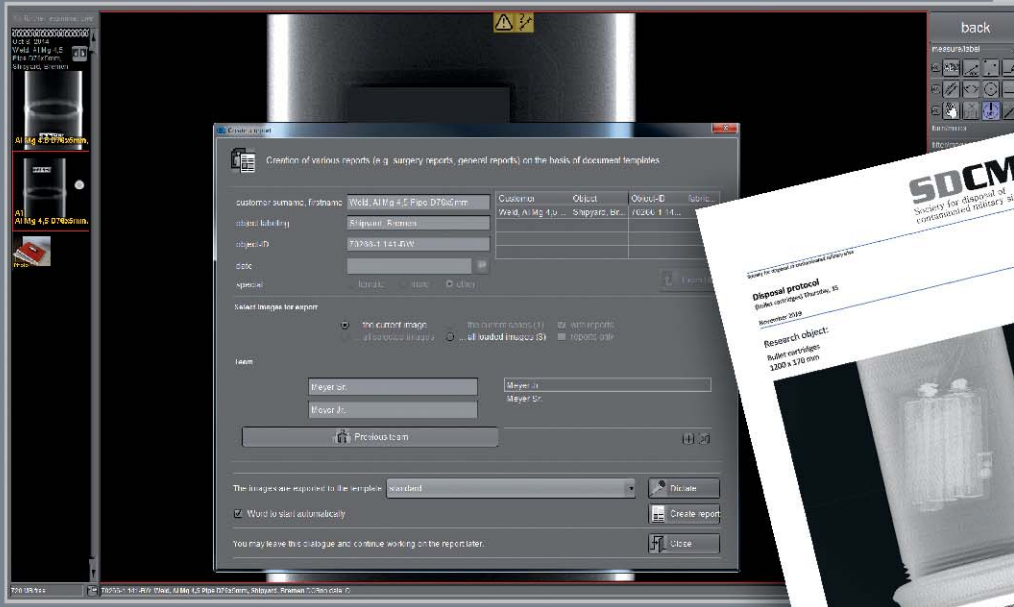
- Perfect images at all times – generally no adjustment required
- Integrated software for
  - **ADPC – automatic dead pixel correction**  
Automatically eliminates dead pixels – this reduces the need to calibrate the flat panel
  - **AIAA – automatic image area analysis**  
Automatically analyses each image and applies the most suitable image processing algorithms
  - **MFLA – multi frequency level analysis**  
Analyses each image on various frequency levels for ideal sharpness and high contrast
  - **ANF – automatic noise filter**  
Algorithm for optimal noise reduction
  - **IBC – intelligent brightness control**  
Automatically displays the image at the ideal level of brightness
  - **ACO – automatic contrast optimisation**  
Automatic contrast equalisation across the entire image
- Professional image processing adaptable for individual object inspection according to specific customer requirements
- Very good detail recognition and image quality for fast evaluation
- Noise suppression



**Integrated ORsecure-Viewer:** Allows the evaluation of radiographic within the acquisition software and offers numerous tools (e.g. comments, annotations, image manipulation, etc.)



**Helpful tools** (e.g. false colour display (pseudo colour), intelligent image inversion etc.)



**Reporting tool** helps with the easy creation of safety reports

# Image analysis

## Professional evaluation and image processing with the integrated viewer

Completely integrated *ORsecure* viewer for image diagnosis, further processing and storage of images in an SQL database incl. image manipulations and filter, export options, layout adjustments, freely configurable user interface and much more:

- Measure grey values, plot grey value profiles
- Stepless zoom, panning, cropping, magnifying glass function
- Measurement of distances, angles, areas, wall thicknesses (calibrated and uncalibrated), labelling and marking, e.g. arrows, free text, ellipses, rectangles, etc.
- Adjustment of window/level values, gamma correction
- Noise reduction, sharpness filter, high-pass filter
- False colour display (pseudo colour), intelligent image inversion
- Provision of many additional functions, e.g. image comparison (subtraction), stitching (optional), etc.
- Expandable to a networked DICOS image management system (PACS)

## Image export

- Worldwide distribution of images to colleagues and customers via ORCA
- Images can be exported in **JPEG, TIFF, BMP** and **DICOS** formats – also anonymised
- Images can be printed with Windows OS printers as well as laser imagers via DICONDE Basic Print
- Creation of USB sticks for customers with free web-based viewer or virtual customer CD (code generation for online access to images via cloud )
- If required, external archiving can be realised via the *ORCA*® Cloud
- Built-in **email tool** for image distribution – no external email application necessary
- Image distribution to multiple recipients via image management systems and DICOS store



Individual adaptation of the graphical user interface according to the specifications of the OEM partner



Complete control of X-ray generators and X-ray systems from various manufacturers



Wide range of operations (e.g. drug trafficking at the border / airport) with orderly and user-optimised workflow through simple and user-friendly user interface

# OEM: Software wanted?

Who can profit from the professional acquisition and control software **ORsecure** by OR Technology?

OEM partnerships provide numerous benefits to manufacturers who are interested in combining their X-ray systems with our *ORsecure* software under a chosen brand name. The software helps all manufacturers **reduce their development costs** and significantly **shorten the time to market readiness for digital solutions**.

*ORsecure* is THE software for the complete integration of X-ray generators, X-ray detectors, image processing, image management and PACS incl. cloud computing in one application.

The system is openly programmed and can be **customised to the specifications of the OEM partner**. The Look & Feel can be adapted to the existing CI/CD.

*ORsecure* is a professional acquisition and control software for X-ray images generated by various X-ray detector systems (DR) and CR units (imaging plate reader). The software also controls the operation of X-ray generators and X-ray units manufactured by various companies, thus ensuring an efficient and orderly workflow. The user-friendly and straightforward visual interface functions via touchscreen and mouse.



The **stitching module** creates a single image from separate digital X-ray images. The images are loaded, correctly aligned and merged to one image.

# Upgrad options

Which options can be added to the **ORsecure** software?

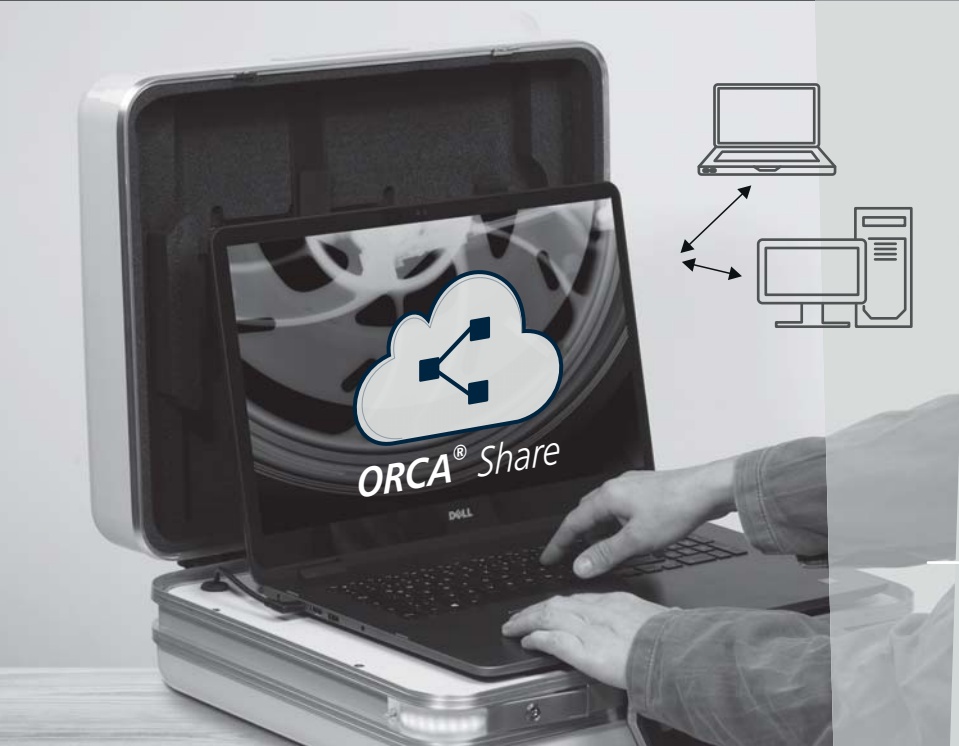
[optional]

ORinspect may not only be used as a software for the acquisition and evaluation of X-ray images, but can also be upgraded to a MiniPACS or even to an Enterprise Multi Modality PACS. Thousands of installed workstations in over 120 countries (cross-sector - as of 02/2022) prove that our customers are satisfied.

A single workstation system with installed *ORinspect* software can be upgraded with the following options:

## Extended viewer functionalities

- **Generator control** transfer of the test parameters for the X-ray image to the generator (for already integrated generators)
- Automatic and manual **stitching** (correct alignment and stitching of multiple images)
- Creation of test reports in MS Word with integrated images
- Connection of several monitors for the evaluation of the X-ray images/radiographs
- **Statistical evaluation**
- And many more ...



### Benefits of DICOS cloud *ORCA*<sup>®</sup>

**Minimal expenditure:** *ORCA*<sup>®</sup> does not require investments in the expensive server and data infrastructure.

**Scalability:** The amount of memory required when using *ORCA*<sup>®</sup> is determined by the demand.

**Long-term security:** *ORCA*<sup>®</sup> archives data on many individual European servers in professional and air-conditioned data centres. Server technology is continuously updated.

**Accessibility:** *ORCA*<sup>®</sup> stands out by being highly accessible. Since data is saved with multiple redundancy, *ORCA*<sup>®</sup> guarantees more continuity than a mere server solution.

**Environmentally friendly:** *ORCA*<sup>®</sup> is sustainable – through the optimised use of resources and their distribution.

**Location-independent:** *ORCA*<sup>®</sup> guarantees access to archived patient data – worldwide.

**Simplicity:** *ORCA*<sup>®</sup> allows easy data access from any computer – from your workplace, from the comfort of your home or from any other computer or tablet PC.

**Stress-free:** *ORCA*<sup>®</sup> deals with everything – no need to struggle with loose network cables, removed hard drives or software problems.



# Modules & Features

## **ORCA**<sup>®</sup> – Filesharing and archiving with the DICOS cloud [optional]

The cloud archiving of security-relevant data from digital imaging and communications is a sensitive issue in the security industry. Cloud solutions have already proven themselves in industrial non-destructive testing (NDT). However, a special cloud also enables you to simplify the IT infrastructure in the security sector – taking into account the highest security standards - and only pay for the capacities that are actually used (pay per use).

**Get a second opinion from an expert who is not on site immediately in a dangerous situation.** Connect to specialist units and staff via our cloud and streamline your workflows to enable consistent, accurate documentation.

This **ORCA**<sup>®</sup> cloud supports you, for example, in the management of material-specific information as well as the tracking of trace detection signatures and allows for a central threat assessment in compliance with all rules and procedures, which we can customise for you.

**ORCA**<sup>®</sup> offers two application options:

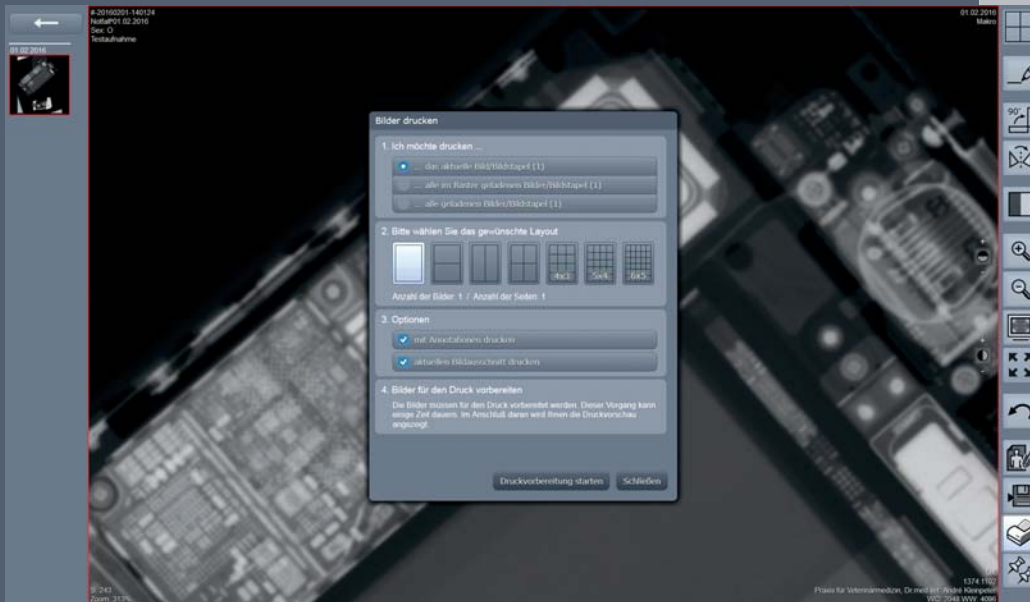
→ **ORCA**<sup>®</sup> *Archive*: Safe, long-term archiving of DICOS images with intelligent usage of internal databases



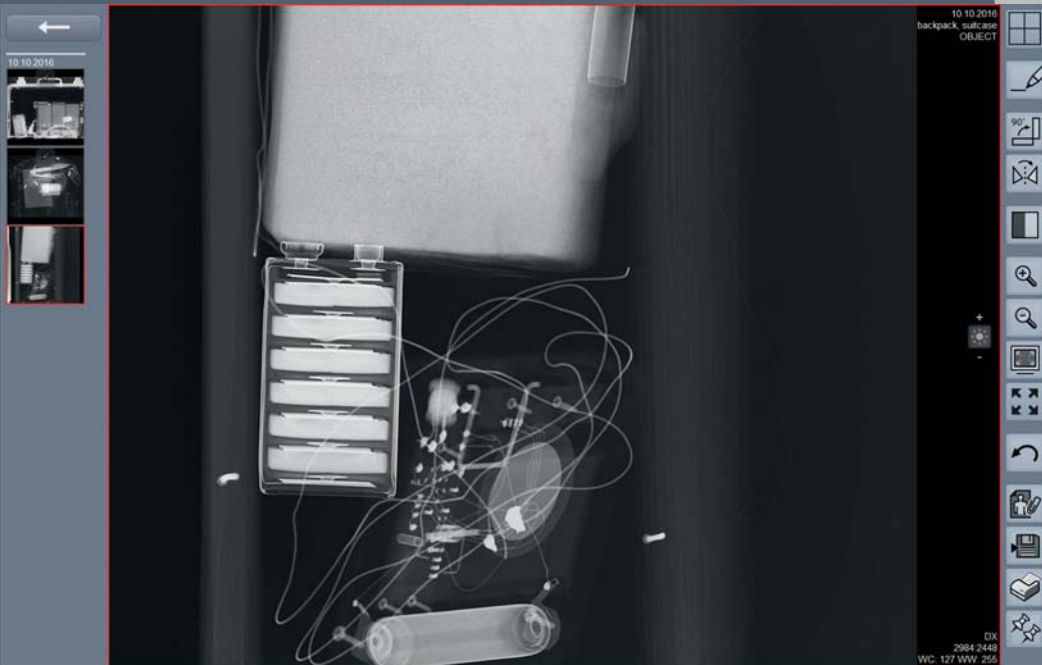
→ **ORCA**<sup>®</sup> *Share*: Communication platform (exchange of images and test reports) with manufacturers, engineers, contractors and security personnel



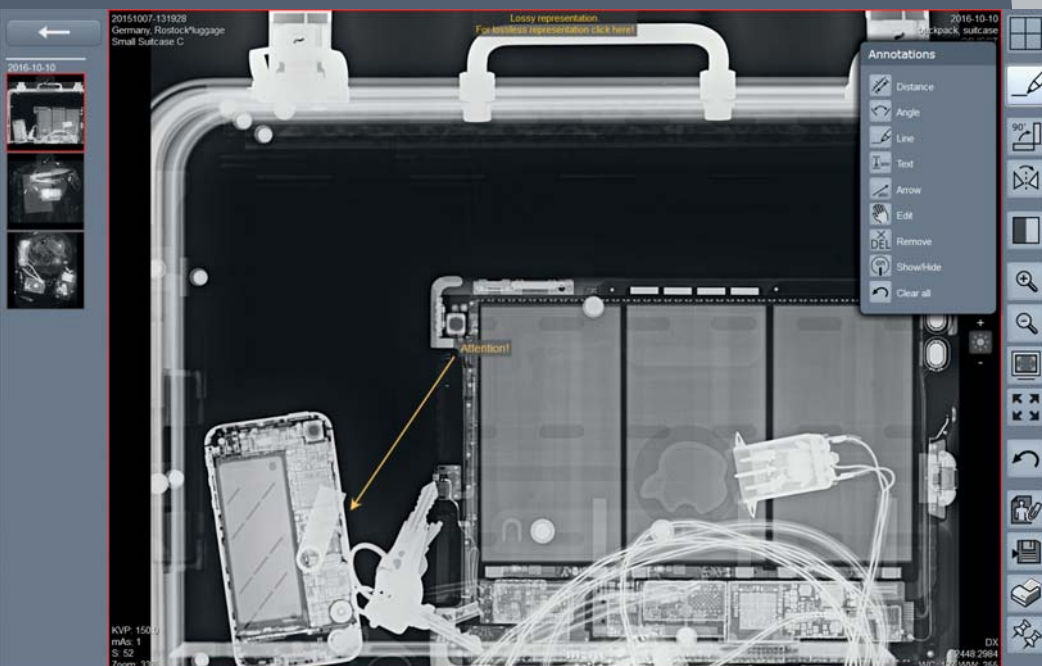
Data is exclusively archived on European servers with the relevant safety certificates.



Printing images and documents



Various functions for image editing: invert, adjust brightness/contrast, zoom in/out.



A variety of annotations are available: Drawing in elements, performing measurements, drawing lines and arrows, etc.

## ORCA<sup>®</sup> basic functions of the DICOS cloud

ORCA<sup>®</sup> View is a web based image viewer offering file sharing capabilities (email with integrated address book, image anonymisation, etc.), print and export functions, as well as all basic functions for viewing and analysing images:

- Image annotation in various colours (e.g., arrows, text)
- Measurement (e.g., length, angle)
- Recording of inspections incl. the possibility to create different inspection templates
- File attachment
- Image comparison using different grids
- Image rotation and mirroring
- Brightness and contrast adjustment, image inversion, zooming in / out
- Full screen and fit image modes
- Image panning
- Image series scrolling
- Document and image export
- Document and image printing



#### The main advantages at a glance:

- The web-based viewer offers an important range of functions of a professional *dicosPACS*<sup>®</sup> viewer:
  - Image annotation in various colours (e.g., arrow, text)
  - Measurement (e.g., length, angle) evaluation reports including custom report templates
  - File attachment
  - Image comparison using different grids
  - Image rotation and mirroring
  - Brightness and contrast adjustment
  - Image inversion, zooming in / out
  - Full screen and fit image modes
  - PAN (Image panning)
  - Image series scrolling
  - Document and image export
  - Printing of images and documents (only on PC) and many more ...
- High flexibility through compatibility with various internet browsers, including Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, Safari 5, Safari for iPad and Android browser
- Supports full screen mode
- Intuitive operation
- Supports the multi-touch operating technology (e.g. zoom in and out with two fingers)
- Allows accessing the *ORsecure* oder *dicosPACS*<sup>®</sup> database without any additional modules
- High loading speed with modern streaming technology

Further information about *dicosPACS*<sup>®</sup> *MobileView* is available here:



# Modules & Features

The web-based viewer for displaying DICOS images on mobile devices or PCs [optional]

The web-based viewer *dicosPACS*<sup>®</sup> *MobileView* is one of the numerous extension modules of the inspection software *dicosPACS*<sup>®</sup> (Digital Imaging and Communication in Security). The viewer allows image access in DICOS quality from any end devices such as tablet computers, ultrabooks or PCs via an internet browser – regardless of the number of installed workstations. Almost browser-independent, it offers viewing of X-ray image material, photos, process information, comments and other documents on mobile devices, in your working environment. The user can access all image and document material via the *dicosPACS*<sup>®</sup> system from anywhere in the world via a network connection.

The viewer also offers text capture and export of images and texts. Documents can also be attached and exchanged.

*dicosPACS*<sup>®</sup> *MobileView* can be installed in addition to existing *dicosPACS*<sup>®</sup> viewing modules. It is irrelevant whether the software is used on a network PC (pure viewing workstation) or / and on a mobile end device. Via a network connection, e.g. VPN access of a used mobile end device to the central *dicosPACS*<sup>®</sup> system, there is worldwide access to all image material.

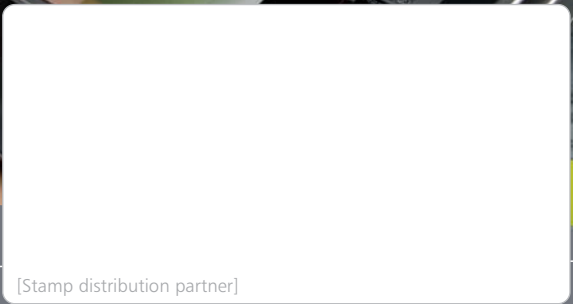
# OR Technology

[www.or-technology.com](http://www.or-technology.com) | **X-perts in X-ray**



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[Stamp distribution partner]



Further information about OR Technology is available: