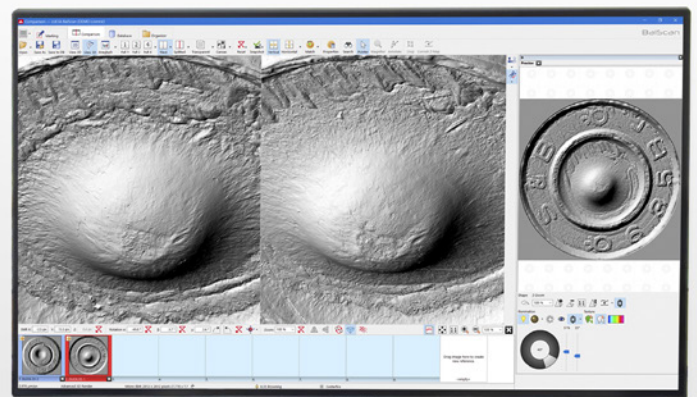
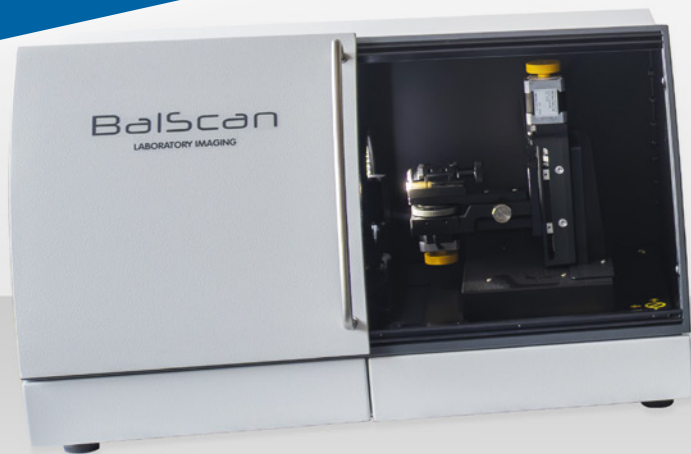




BalScan

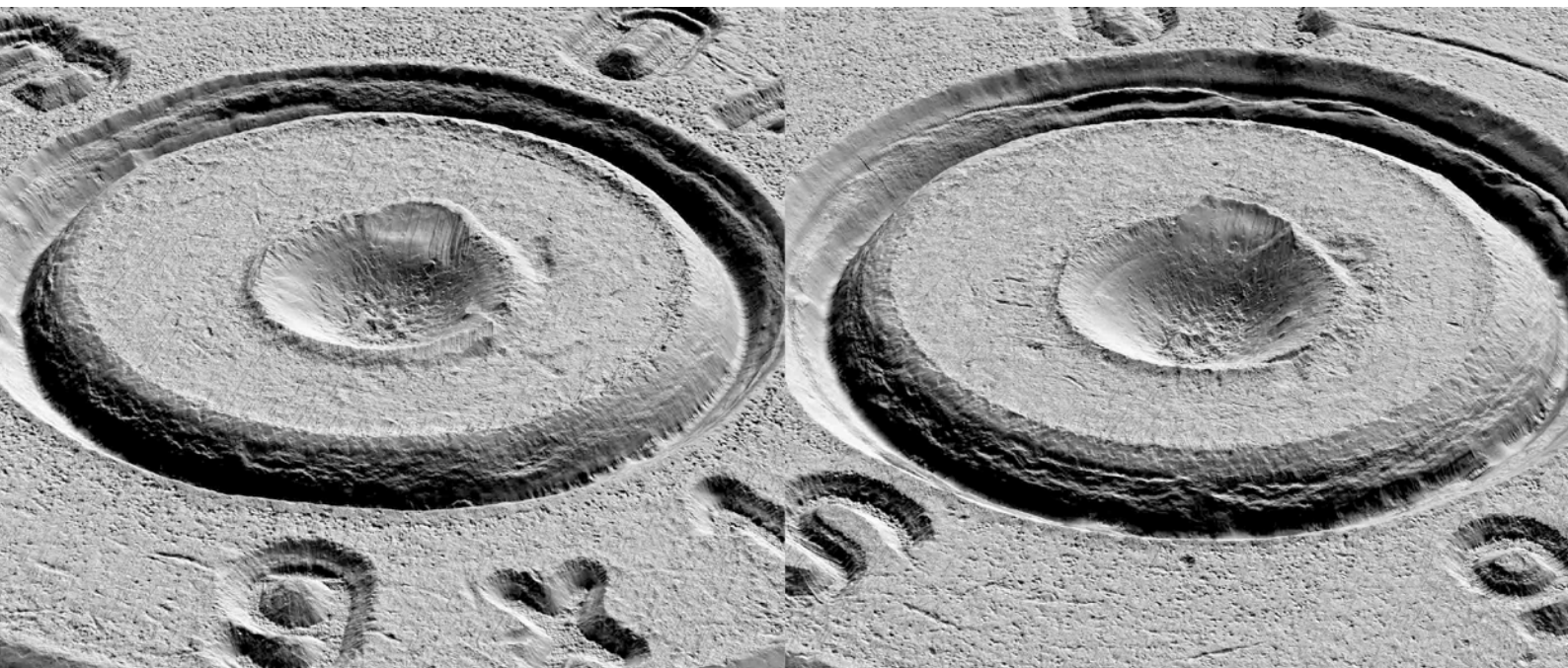
Automated ballistic identification system.



BULLETS • CARTRIDGE CASES • FIREARM PARTS

AUTOMATIC SCANNING • VIRTUAL COMPARISON MICROSCOPY • DATABASE SEARCH

LOCAL OR DISTRIBUTED DATABASE SOLUTION • REPORT GENERATION



BALSCAN OVERVIEW

The BalScan system by Laboratory Imaging offers a comprehensive solution for ballistic experts. It features high-quality hardware and modern software, which is regularly updated with new advanced functions.

- Semi-automated scanning process.
- Modern, fast, and intuitive software.
- 3D images with a resolution of 8340 PPI.
- Automatic database search and correlation.
- Robust mechanical construction.
- 2.8 MP Monochromatic state-of-the-art CMOS camera.
- A large number of accessories: universal cartridge case (CC) holder; quadruple CC holder for quick routine scanning; a set of different-sized bullet holders for calibers ranging from small-bore rifle ammunition to 12-gauge shotgun shells.



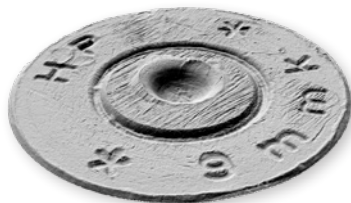
Universal CC holder.



Quadruple CC holder.



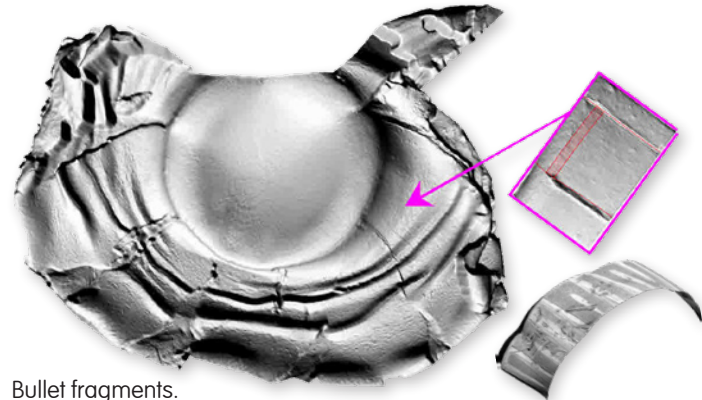
Bullet holders (15x).



CC bottom.
Scan time: 45 s
File size: 31 MB



Deformed bullet.



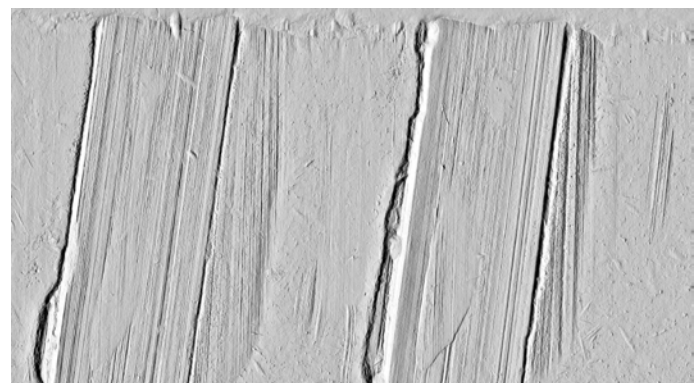
Bullet fragments.



9 mm Bullet surface.
Stripe width: 5.8 mm
Scan time: 3:15 min
File size: 72 MB



.45 CC bottom.
Scan time: 50 s
File size: 45 MB



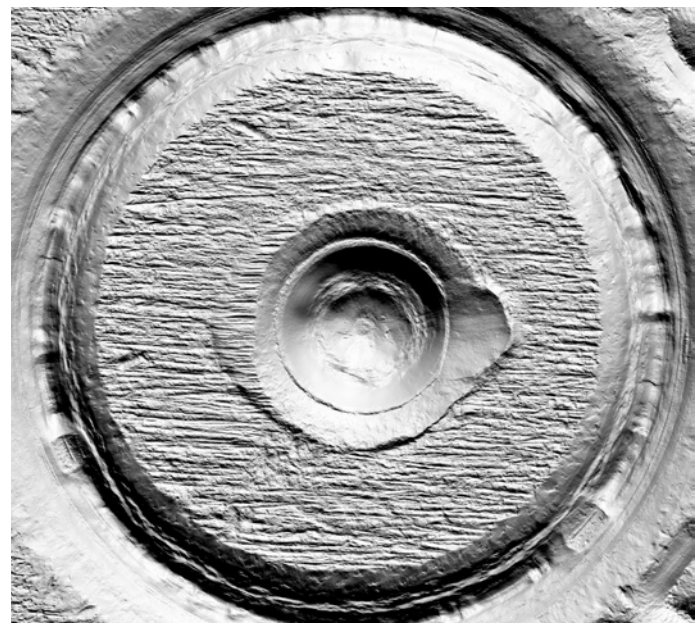
Bullet detail.



.45 bullet surface.
Stripe width: 8.99 mm
Scan time: 9:15 min
File size: 138 MB



9 mm CC surface 1 FOV rim.
Stripe width: 5.8 mm
Scan time: 9 min
File size: 82 MB



Firing pin detail.

VIRTUAL COMPARISON MICROSCOPY

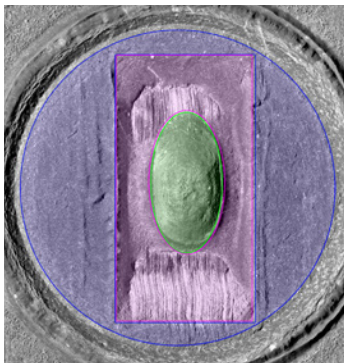
Lucia BalScan software enables easy and comfortable work thanks to several 2D/3D/texture-free comparison modes:

- Split line (including curves or polylines),
- Canvas/Tiled (up to 16 images at once),
- Transparency,
- Region and more.

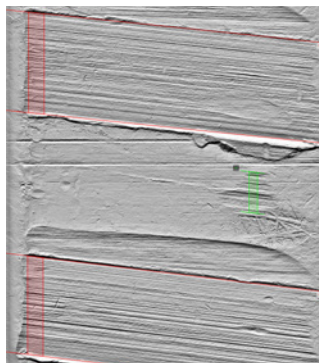
For already scanned images, users can adjust the angle, intensity, and position of the lighting. This illumination can also be synchronized between images, similarly to working with a comparison microscope.

MARKING OF DISTINCTIVE AREAS

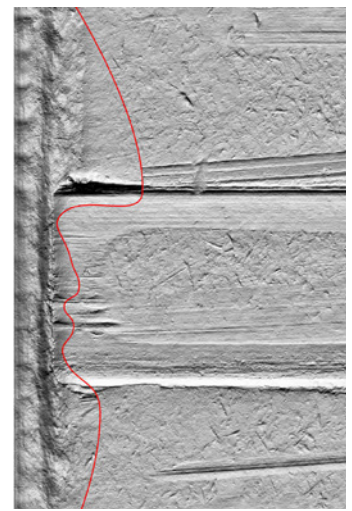
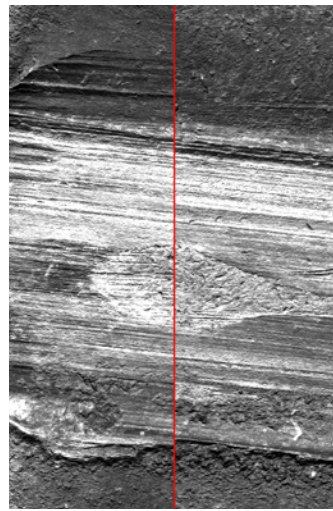
Characteristic ballistic areas, such as land impression marks on bullets and breech face marks, firing pin marks, and ejector marks on cartridge cases (CC), can be defined on digitized evidence. These marks can be identified using the Autodetection function, where the software will mark them for you, or they can be marked manually by an expert.



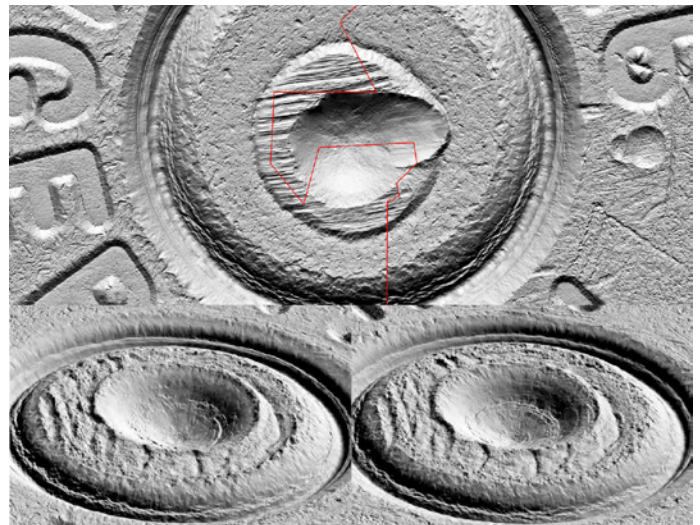
Characteristic ballistic areas on CC bottoms.



Characteristic ballistic areas on bullets.



Split and polyline comparison of two land impressions (texture-free on the left).



3D splitted and polyline comparison.

AUTOMATIC ALIGNMENT OF COMPARED IMAGES AND DATABASE SEARCH

LUCIA BalScan software has its own implemented module for database search which is based on 3D data correlation of characteristic areas of the digitized evidence. The software uses advanced algorithms and 3D data analysis to achieve maximum reliability. This search module will offer the user a hit list of candidates for the match based on the correlation score.

Hit list of candidates based on the calculated correlation score.

Search No.	Search Image	Search In	Start Time	Duration	Image count	Status	Hit list
3390	H 01	Database of 'Criminal cases'	09.09.2024 14:55:16	00:00:16	2 148	Finished successfully	Clear hit list
3389	P245-B2		09.09.2024 15:16:34	00:00:05	845	Finished successfully	Clear hit list
3384	P301 S2a		09.09.2024 15:16:34	00:00:06	845	Finished successfully	Clear hit list
3381	P301 S2a		09.09.2024 15:16:34	00:00:06	845	Finished successfully	Clear hit list
3382	G 02		09.09.2024 15:16:34	00:00:06	845	Finished successfully	Clear hit list
3380	P229 S1-3D		09.09.2024 15:16:34	00:00:06	845	Finished successfully	Clear hit list
3379	B2 m07		09.09.2024 15:16:34	00:00:06	845	Finished successfully	Clear hit list

Database search history.

Comparison results preview with similarity map.

Statistical data about the hit list of candidates.

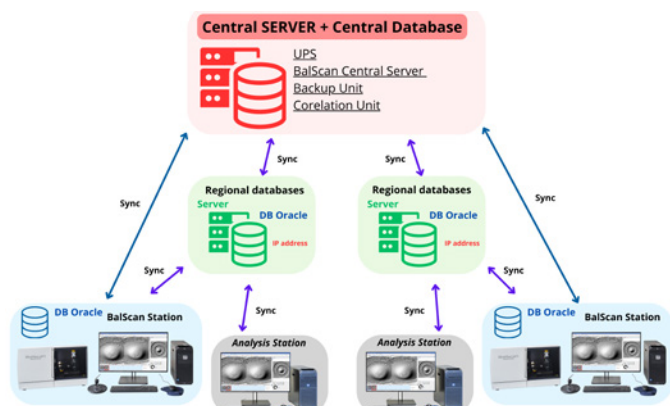
DATABASE STRUCTURE

- Fully customizable structure.
- Based on Oracle Database.
- Includes management of users, calibers, criminal cases or registered firearms and provides detailed filtering and search capabilities.
- BalScan system provides administrator tools to monitor system performance and information about database history to see audit information.

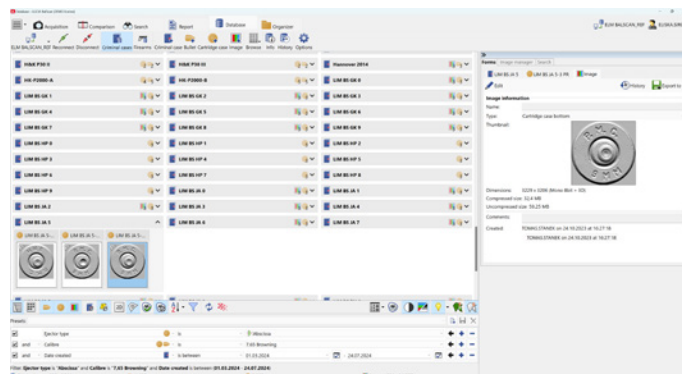
The BalScan system can be designed as a solution for small laboratories or as a national system with a central database connected to several regional databases from different parts of the country, with the capability to synchronize schemas through automatic data transfer.



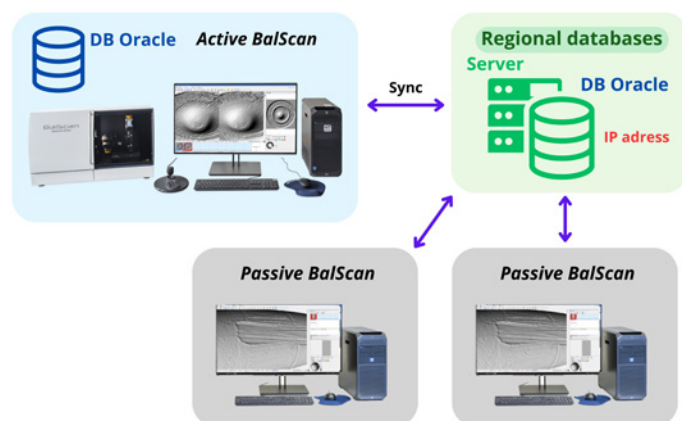
Standalone solution for small laboratories.



Distributed / national solution.



LUCIA BalScan Database window.



Centralized solution.

EASY TEAMWORK

Four Eyes Principle

The database enables experts to consult, collaborate, and review examination results with colleagues from other laboratories. Comparison snapshots allow for the quick reopening of all images participating in the comparison, preserving their exact positions and views as they were at the moment of saving.

Compatibility

Compatibility with other software is guaranteed by the ability to export and import X3P format images.

REFERENCES

The BalScan system is used in countries around the world. Laboratory Imaging has provided:

- 10+ national database solutions.
- 20+ regional/federal/canton/country database solutions.
- 105+ BalScan devices sold.



CUSTOMER SUPPORT SERVICES

Our forensic specialists offer a range of support options to meet your needs, including:

- Onsite installation.
- Technical support.
- Phone / e-mail support.
- Remote connection.
- Illustration videos, manuals, and Short Guides.
- Comprehensive training in our own Training Facility.

COMPANY

Laboratory Imaging s.r.o., founded in 1991 in Prague, is a company with broad expertise in microscopy, image processing, and analysis. The company develops, produces, and sells high-quality laboratory systems for scientific, biomedical, forensic, and industrial imaging.

