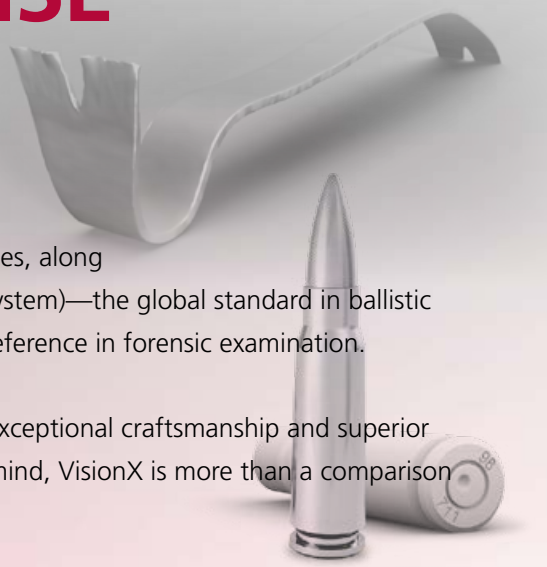
SEE THE DIFFERENCE

VISIONX

COMPARISON MICROSCOPES

WHEN BALLISTICS **EXPERTISE** MEETS MICROSCOPE **SUPERIORITY**



Projectina, a world leader in the design and manufacture of comparison microscopes, along with Forensic Technology, the creator of IBIS® (Integrated Ballistics Identification System)—the global standard in ballistic identification—have combined their areas of expertise and have launched a new reference in forensic examination.

Introducing the **VisionX** comparison microscope.

With exceptional craftsmanship and superior optics, and designed with industry best practices and the examiner's workflow in mind, VisionX is more than a comparison microscope—it's a solution dedicated to helping you solve more crime.

The VisionX comparison microscope provides a high quality, effective user experience and offers outstanding performance that adapts to evolving forensic investigation practices.

Projectina and Forensic Technology have combined their respected optical-imaging expertise and leading forensic analysis technology to develop the new X-Series family of products. The X-Series family includes forensic examination comparison microscopes, document examination systems, and CSI products. The X-Series has been designed with an ongoing commitment to technological leadership and to the law enforcement and forensic agencies and practitioners that continue to push the limits of forensic investigation.

Ultra ELECTRONICS | FORENSIC TECHNOLOGY

projectina®
PART OF ULTRA ELECTRONICS FORENSIC TECHNOLOGY

Ultra Electronics Forensic Technology pioneered automated ballistic identification and analysis nearly 25 years ago, and continues to be a leader in forensic ballistics and firearm identification technologies.

Our Integrated Ballistics Identification System (IBIS®) revolutionized ballistic identification by helping investigators find matches between pairs of spent bullets and cartridge cases.

Ultra Electronics Forensic Technology and Projectina, a world leader in the development and manufacture of forensic science products and high-end optical components are currently partnered with hundreds of law enforcement agencies in nearly 125 countries, providing a wide variety of forensic solutions which are cost-effective and sustainable. We are customer-driven, with a worldwide, 24/7 customer support network and dedicated training facilities.

WITH EXCEPTIONAL CRAFTSMANSHIP AND SUPERIOR OPTICS, AND DESIGNED WITH THE EXAMINER'S WORKFLOW IN MIND, VISIONX IS MORE THAN A COMPARISON MICROSCOPE

THE VISIONX SOLUTION SERVES THE MEN AND WOMEN OF LAW ENFORCEMENT BY BRIDGING THE RESOURCES AND TOOLS REQUIRED TO SOLVE MORE CRIME

VisionX IS NOT JUST ANOTHER COMPARISON MICROSCOPE, IT'S A **SOLUTION** DEDICATED TO SOLVING MORE CRIME

From the crime scene, to the forensic lab, to the courtroom, crime solving success is dependent upon people, processes, and technology. VisionX is the first solution to combine a comparison microscope system with ballistic identification technology, all the while being mindful of the examiner. The VisionX comparison microscope is available in three distinct configurations that range from *standalone*, to *IBIS®-integrated*, to *multiuser supported*.

	Enhanced Optical Viewing and Imaging	Ergonomic Design	Fatigue-Free Operation	Effective Stage Operation	Case Management Databases and Multiuser Support	Secure Sharing of Evidence Characteristics	Multimedia Support (Tablets)	Connectivity with IBIS®	Image Analysis Between Remote Users	Peer-to-Peer Review and Statistical Analysis	Extended Workplace Control
VisionX CONFIRMATION STATION	✓	✓	✓	✓	✓	✓	✓				
VisionX IBIS® CONFIRMATION STATION	✓	✓	✓	✓	✓	✓	✓	✓	✓		
VisionX COLLABORATION STATION	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ VISIONX 1.0 ✓ VISIONX 2.0

VISIONX CONFIRMATION STATION

An excellent tool on its own as an examiner's standalone confirmation station, the VisionX comparison microscope is easy to operate, boasts an innovative design, and has an excellent range of accessories.

VISIONX IBIS® CONFIRMATION STATION

Makes it easier and faster for firearm examiners to perform microscopic ballistic comparisons based on potential IBIS® matches. The VisionX software provides all the high quality viewing capabilities you have come to expect from IBIS®. Access to the IBIS® viewing tools is one click away, and only VisionX seamlessly integrates the ability to confirm hits in a single user experience.

VISIONX COLLABORATION STATION

Extends the functionality of the VisionX Confirmation Station by providing examiners, intra- and inter-agency, the possibility to analyze, review, and report their forensic work via shared images and remote control operation, including peer-to-peer review analysis and statistical views of resource usage.

KEEPING IT **SIMPLE, STREAMLINED, FOCUSED**

THE VISONX COMPARISON MICROSCOPE

Advanced optical module for **clearer simultaneous** binocular and video/photo observation

Simple and streamlined bridge design enabling easy **operational access**, support and maintenance

Motorized magnification changer, objective changer, and optical operating modes

Simultaneous motorized magnification changer range, i.e., **1.3x–243x** for true high-end resolution (including low magnification **1.3x, 2.3x, 4.2x**); objective changer and optical operating modes without the need to refocus; **166 mm (6.5 in)** diameter field-of-view

Integrated control unit and power connection for a variety of lighting options

Mechanically driven left and right object holders and accessories

Tablet option for easy and **quick image reference** and capture, with touch-screen for one-click operation

AND IN CLEAR VIEW OF THE EVIDENCE IS WHAT DOES BEST

Live digital cameras with a range of **high resolution** options, i.e., 5.0–12.5 megapixels

Frame design focused on clean an uncluttered work area satisfying all comfort levels; **maximum clearance** for evidence placement and handling, accessories, and media devices.

Innovative binocular design enabling a vertical adjustment with a constant **30-degree tube axis** and consistent ergonomic comfort for any height examiner

Optimum light and accessory placement options for virtually any size and number of accessories

Unparalleled working distance of **95-233 mm (3.7 – 9.2 in)** for improved evidence handling and operation.

Easy, **interchangeable** stage interface that accepts a multitude of holders and platforms for almost any size of evidence

Simultaneous operation: X/Y/Z powered stage adjustment, X/Y adjustment of **50 mm (2 in.)**, height adjustment of up to **146 mm (5.8 in.)**

Joy-stick and rotary knob for **real-time** coarse/fine X/Y/Z adjustments, touch panel full image left and right, overlay and split-image with laterally adjustable dividing line width and position, and magnification and configuration setting set/preset

AS WITH THE VISIONX COMPARISON MICROSCOPE, THE VISIONX SOFTWARE HAS A

CLEAN AND INTUITIVE DESIGN

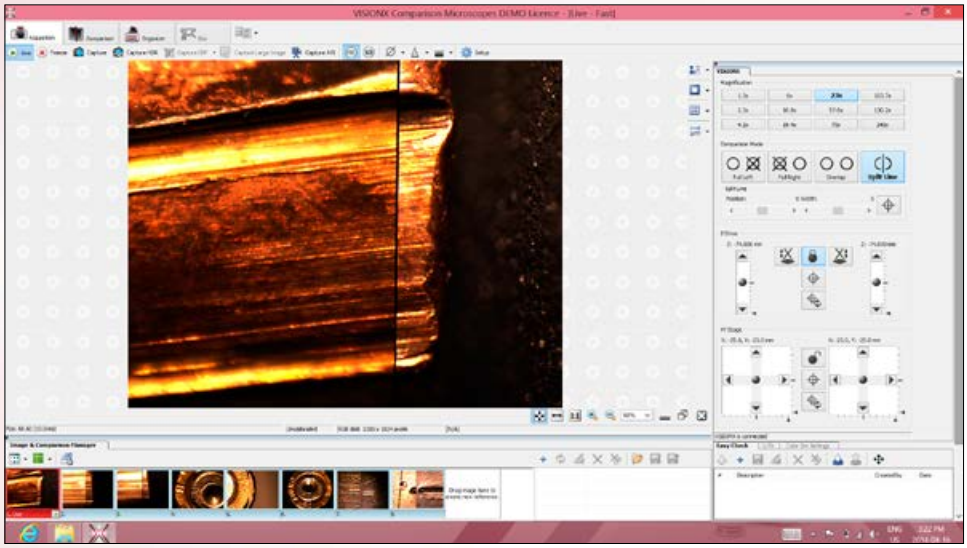
The VisionX software is extremely intuitive—it is easy to use and it has an excellent range of profile and control settings. Its user-friendly interface offers examiners a wide range of configurable preferences allowing for quick parameter adjustments.

Traditionally, the comparison microscope is the core of the examination process, with software interaction typically as the final step. And because everything that the expert does is performed using the microscope, that software needs to become a natural extension of the expert. The VisionX software has been designed to complement the forensic examination process.

The VisionX software provides the ability to inspect and correct images on any media device, including laptops and tablets. Examiners are offered the flexibility to review and report their forensic work at the VisionX comparison microscope station, at their desks, in a shared peer review, or in the courtroom. This flexibility provides a great degree of freedom and results in effective resource sharing which, in turn, provides a better return on the VisionX investment.

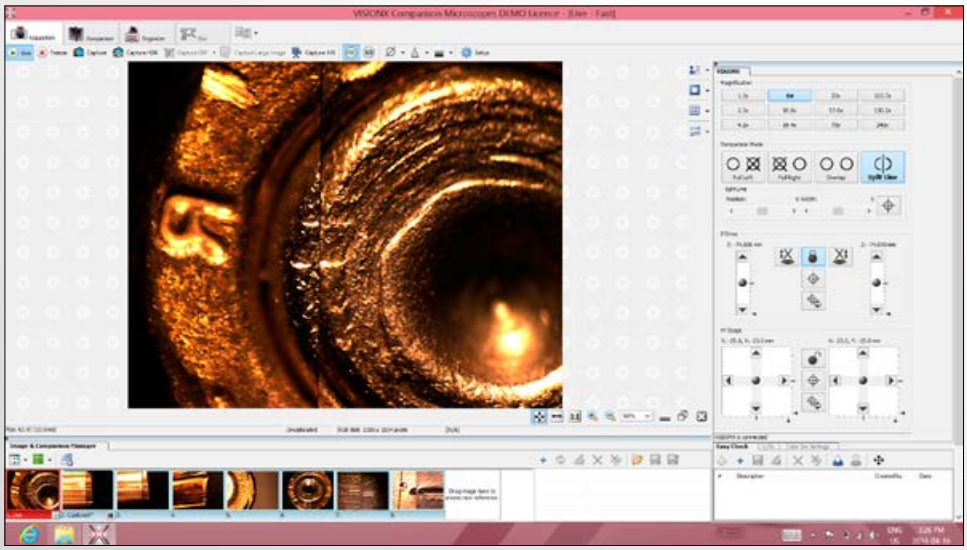
TAKE THE PICTURE

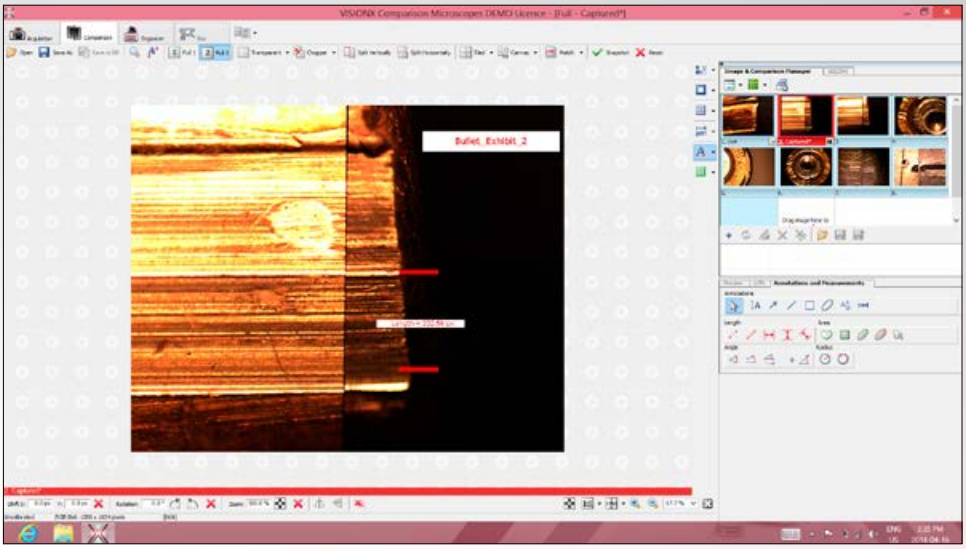
In the Acquisition tab, any image or series of images can be captured as per the evidence object positioning, magnification, focus, and illumination settings. A simple one-touch/click operation logs the images in a strip-like layout for further analysis, annotation, and eventual recordkeeping.



The benefits of the VisionX software include:

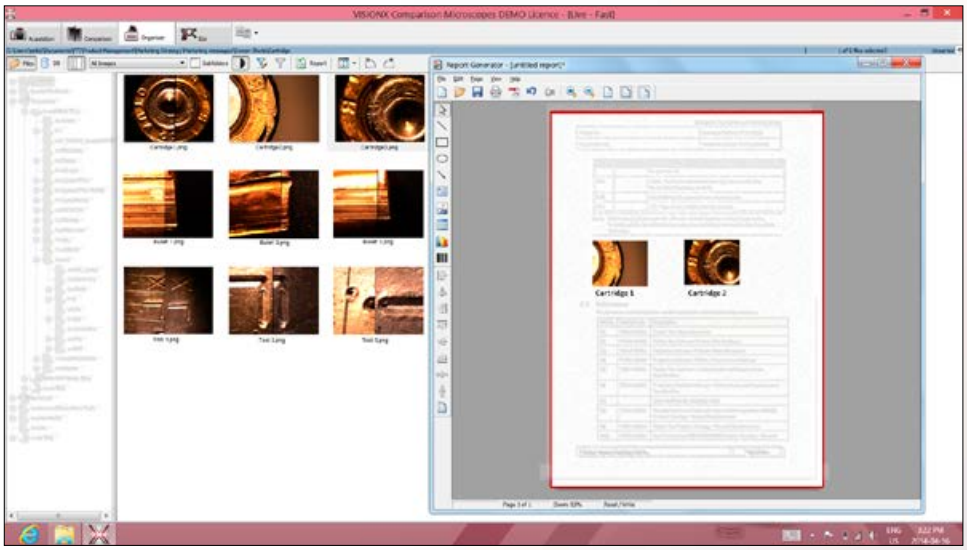
- Simple and direct access to IBIS®.
- Widespread user access extending the workstation desk with options for local or remote operation, collaborative analysis, reporting, and expertise peer support.
- The flexibility for users to work from any media device, whether directly installed on the workstation, laptop, or tablet.





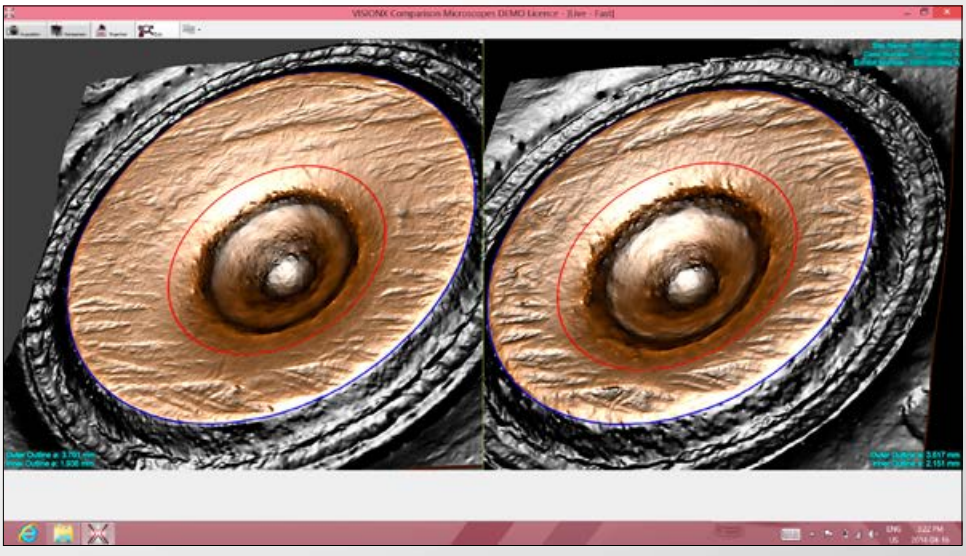
LABEL THE PICTURE

The Comparison tab provides additional analysis and annotation features to better highlight regions of interest for peer review support and recordkeeping. A clean and uncluttered interface layout along with quick access to tools and viewing options help facilitate all analysis and review tasks.



SAVE THE PICTURE

The Organization tab allows for structured image and metadata information recordkeeping, retrieval, and sharing. The report templates are customizable and are tailored to fit the specific processes and established best practices within virtually any law enforcement agency.



CONFIRM A HIT IN IBIS®

The IBIS tab allows firearm examiners to reference hit lists and confirm hits via the same user interface. It consists of a complete IBIS hit analysis feature set and is an alternative to having two independent stations installed and used separately. Furthermore, the VisionX IBIS functionality will extend this analysis across multiple VisionX IBIS Confirmation and Collaboration Stations.

FLEXIBLE, PRECISE, AND SUPERIOR QUALITY ACCESSORIES FOR BALLISTIC AND TOOLMARK EVIDENCE

EVIDENCE HOLDERS

Complementing the unprecedented working space of the VisionX is an arsenal of dedicated holders and clamps that are used to position cartridge cases, bullets, castings, as well as larger pieces of evidence.

Bullet holder

Cartridge case holder

Universal holder

Clamp holder

Ball-mounted platform

Small dish

THE POWER OF **MOBILITY**

TABLET SUPPORT

The VisionX microscope is supported on various devices, offering flexibility for users to work from any media platform, whether directly installed on the workstation, laptop or tablet.

PORTABILITY

No matter where a forensic examination leads, you can take your work with you, from the VisionX comparison microscope, to your office desk, or to the courtroom. The tablet is an ideal medium for creating quick forensic examination presentations and performing peer reviews.

COMFORT

Tablets are sized for easy placement, centered between the VisionX examination and staging areas. Quick glances between the binocular and the screen ensure minimal movement and distraction.

NETWORKING

Since tablets are Internet-ready, their network applications enable you to connect with peers and other experts, to collaborate on difficult cases, and to receive critical information related to the criminal case without ever having to leave your office.

LIGHTING ATTACHMENTS

The true test of any microscope goes beyond ergonomics and accessories. Lighting and the ability to clearly view and measure fine marks and minute traces are paramount. The VisionX comparison microscope includes a flexible, state-of-the-art illumination system that eliminates unwanted reflections and allows for the easy, consistent lighting of objects regardless of shape, size, surface, and structure.

The following lighting options are available: LED light, spotlight, fluorescent light, and ring light.

THE VISIONX COMPARISON MICROSCOPE'S INNOVATIVE

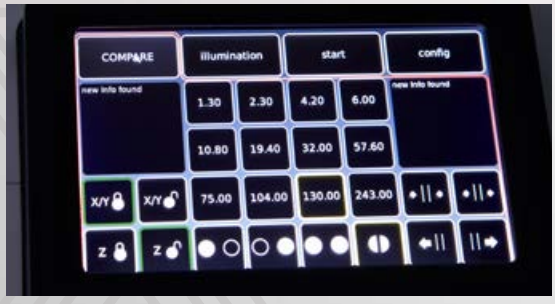
THE USER'S EXPERIENCE AND

The VisionX's ergonomic design and user-friendly controls offer examiners a wide range of adjustable preferences allowing them to spend hours investigating evidence while remaining in a comfortable and natural position.

Presets and profile settings enhance customization levels tailored to individual users. In addition, a novel binocular tube adjustment design with a constant 30-degree tube axis ensures comfort and optimal control for any height examiner regardless of seating preference.

The VisionX modular design permits the easy adaptation of special object holders, illumination systems, and demonstration units, and offers motorized controls, panel display, and multimedia options to suit the needs of forensic examiners.

Foremost in its design is its simplicity and effective examination in every component in the examination process.



Touch-screen controls are intuitively placed near the stage and focus controls. From here, users can change the magnification, hairline options, and view modes.

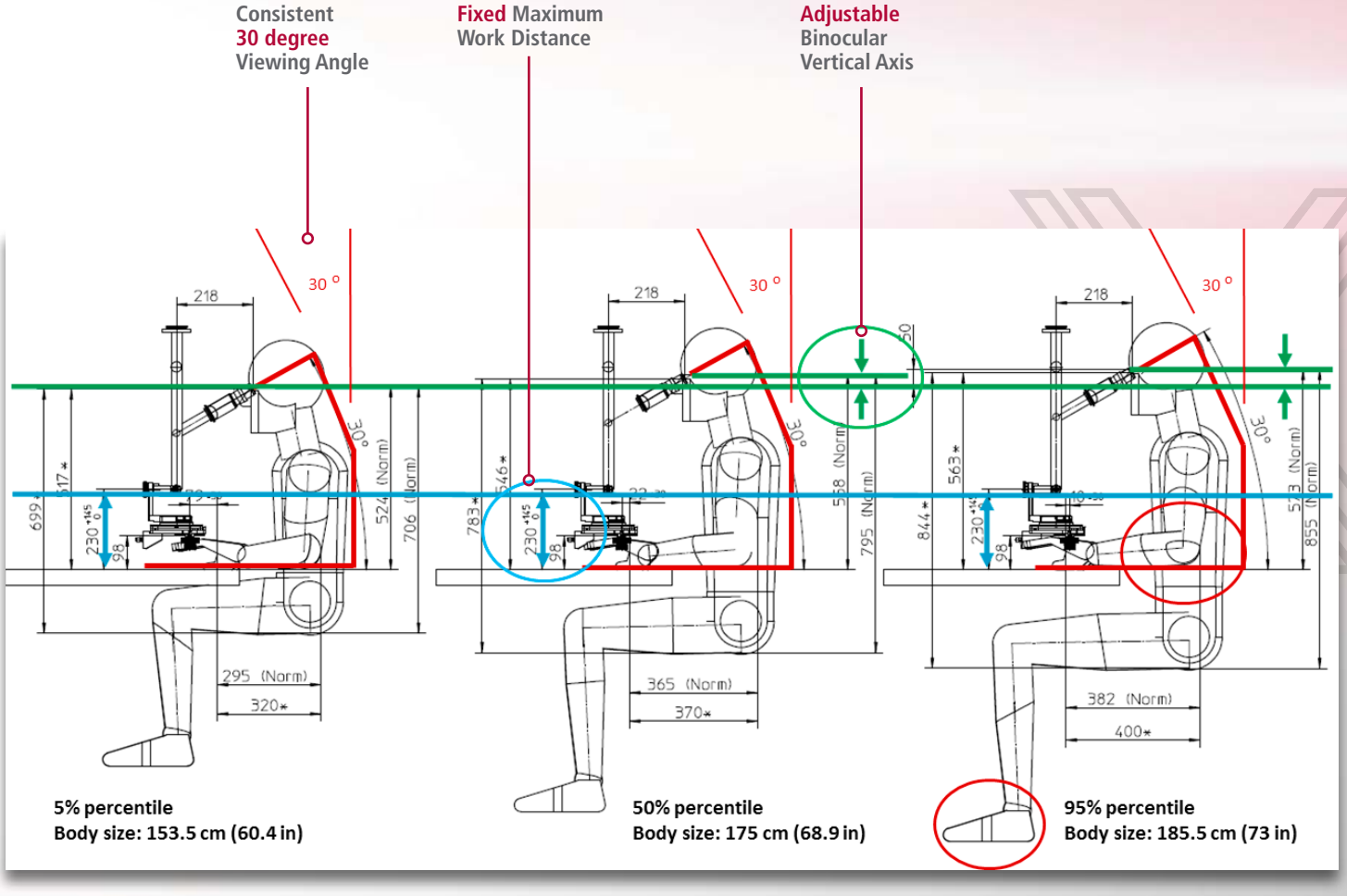
Industry-first design enabling a tube adjustment with a constant 30 degree tube axis – consistent ergonomic comfort for any height examiner

A simple and streamlined design adhering to current industrial trends and minimizing operational, support, and maintenance costs

Design principles focused on keeping your work tasks simple and the work area free of clutter, while satisfying all comfort levels

DESIGN IMPROVES COMFORT

To address the challenges for consistent ergonomic and operational comfort, design principles based on the Ergonomiestudie Tischmikroskope: Unternehmensbereich Mikroskopie Carl Zeiss (Ergonomics Study of Table Microscopes: Carl Zeiss Microscopy Division) laid the foundation for the VisionX ergonomic platform. The study* states that for the best seating position (including arm, hand, shoulder, neck, and head positioning), a lens tube height adjustment in the z-axis with a constant viewing angle of 30 degrees allows for optimal comfort. An industry first, the VisionX binocular and optical design ensures that table and chair height adjustments make for perfect ergonomics for all examiner heights, without compromising work area distances and operation—foremost and critical to difficult examination cases.



Arms/wrists comfort - upper arms perpendicular to the floor, elbows close to the body (not winged or sticking out), forearms parallel to the floor; wrists straight

Back comfort - individual sitting completely upright, leaning the entire body slightly forward with the lower back and shoulder blades supported by the chair and/or lumbar support cushion

Legs comfort - ensuring feet firmly on the floor or a footrest, with even pressure applied by the chair to the back of the thighs

*Henssler & Schultheiss Productdesign. (2002)

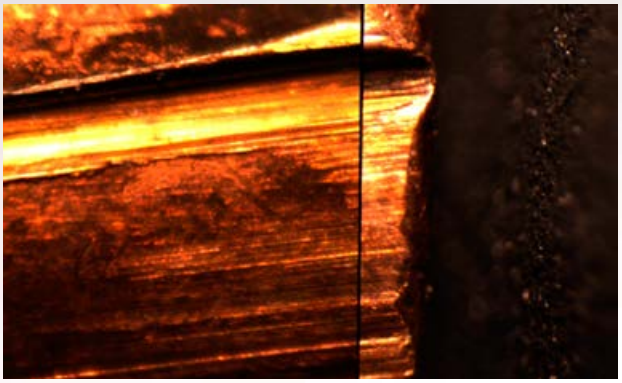
VisionX will make it EASIER AND FASTER for firearm examiners to perform hit confirmations by SIMPLIFYING the ballistic identification process

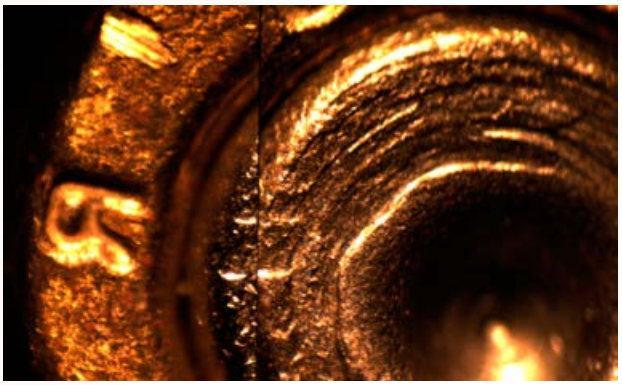
VisionX makes it easier and faster for firearm examiners to perform microscopic ballistic comparisons based on potential IBIS® matches. IBIS® is an automated ballistic identification system that streamlines the hit confirmation workflow and simplifies the ballistic identification process.

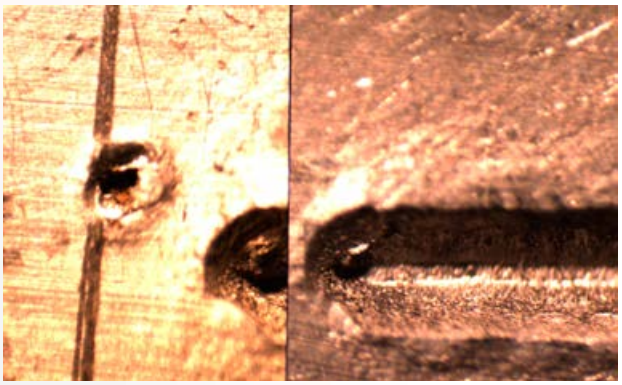
The VisionX software provides all the high quality viewing capabilities experts have come to expect from IBIS® on the VisionX platform. It extends the power of IBIS® viewing tools to the VisionX platform thus making bullet and cartridge case hit confirmations more intuitive, quicker, and easier. Access to the IBIS® viewing tools is one click away, and only VisionX seamlessly integrates the components of the key critical tasks of the hit confirmation cycle into a single user experience.

With the VisionX comparison microscope and software solution, in conjunction with IBIS, the examiner can:

- View two cartridge case or bullet exhibits from IBIS in the side-by-side view.
- Assist in the physical comparison of a potential match based on IBIS hit images as the starting point.
- Guide difficult comparisons based on revealing IBIS images, including a cartridge case's firing pin impression or a bullet's full, in-focus, circumference.







WHAT IS IBIS?

IBIS links firearm-related crimes by matching bullets or cartridge cases fired from the same firearm.

1. IBIS digitally captures the unique microscopic markings found on fired bullets and cartridge cases.
2. A numerical signature is extracted from each significant region of interest.
3. The signatures are automatically compared in order to find matching candidates on the IBIS network.
4. The most likely matches are ranked for visual comparison by firearm examiners.
5. The experts focus their efforts on the confirmation of matches.
6. IBIS data can also contribute to actionable information that can assist investigations.

PART OF THE PROCESS

By Pete Gagliardi

The successful outcome of a criminal investigation depends upon a number of diverse stakeholders. For example, in the real world of criminal investigation there are many interdependent contributors—among them are first responders, evidence collectors, investigators, forensic experts, and prosecutors.

These stakeholders must be able to effectively manage the many handoffs required to develop and move crucial information in the form of investigative leads and evidence from the crime scene to the courtroom.

Technology can help people speed up and sustain their processes and make them more productive. Speed is critically important, the longer it takes to identify a criminal, the more opportunities they will have to shoot and perhaps kill again.

Just as each leg of a three-legged stool depends on the other two to do its part to carry the load, a properly balanced combination of people, processes, and technology is required to solve crimes and stop criminals in a timely manner. In The 13 Critical Tasks: An Inside-Out Approach to Solving More Gun Crime, we identified the required tasks and best practices to help maintain a timely and proper balance of people, processes, and technology. A number of these critical tasks falls into the hands of the firearm and the toolmark examiners.

THE 13 CRITICAL TASKS – AN INSIDE-OUT APPROACH TO SOLVING MORE GUN CRIME

Ultra Electronics Forensic Technology has a long history with the many law enforcement and forensic agencies and practitioners that lead the way in designing and implementing best practices.

The following three critical tasks provide the foundation for VisionX's contribution to the 13 Critical Tasks value chain and complement the overall hit confirmation process:

- Reviewing correlation results: Identify potential hits via automated ballistic identification systems as a reference or starting point.
- Confirming hits: Confirm hits via physical evidence analysis according to agency protocols.
- Communicating hit information: Report and review results, and provide

The VisionX comparison microscope is more than just a tool —it represents a new technology leg in the three-legged stool to better support firearm and toolmark examiners by helping them speed up their crime solving processes. For the firearm examiner, this means increased efficiency and effectiveness when reviewing IBIS correlation results, confirming hits, and communicating crime solving information to investigators. For the toolmark examiner, this translates into improved viewing of the impressed and striated markings, thus optimizing the likelihood of achieving conclusive results.

At Ultra Electronics Forensic Technology and Projectina, we believe that technology is key to winning the war on crime—for without new and faster ways to generate actionable information, we are hobbled, left blindfolded and bound with one hand tied behind our backs.

The VisionX comparison microscope was designed to help firearm and toolmark examiners see more, know more, and share more, and do it faster than ever before to stop criminals and prevent them from re-offending and causing more harm.

projectina®
PART OF ULTRA ELECTRONICS FORENSIC TECHNOLOGY

Ultra ELECTRONICS | FORENSIC TECHNOLOGY