



msspektral

X-RAY SCANNING SYSTEMS

Advancing national defense through our company's purpose-built, designed, developed, and manufactured large vehicle scanning solutions.



www.msspektral.com

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ABOUT US

Our mission is to enhance security and defense capabilities by developing and producing cutting-edge **Electro-Optical** and **X-Ray imaging systems**. We are committed to providing **high-performance, reliable, and innovative solutions** tailored to the needs of governmental institutions and private enterprises. By integrating advanced **imaging technologies**, we aim to ensure efficient and effective security screening for critical infrastructures worldwide.

VISION

Our vision is to become a **global leader** in the **defense and security industry** by continuously advancing our **X-Ray imaging technologies**. We strive to provide state-of-the-art scanning solutions that contribute to **national and international security**. With a strong emphasis on research and development, we aim to set new industry standards and expand our global footprint while maintaining our commitment to quality, innovation, and customer satisfaction.

REFERENCES





MOBILE X-RAY VEHICLE & CONTAINER SCANNING SYSTEM



MSX-TT-450263

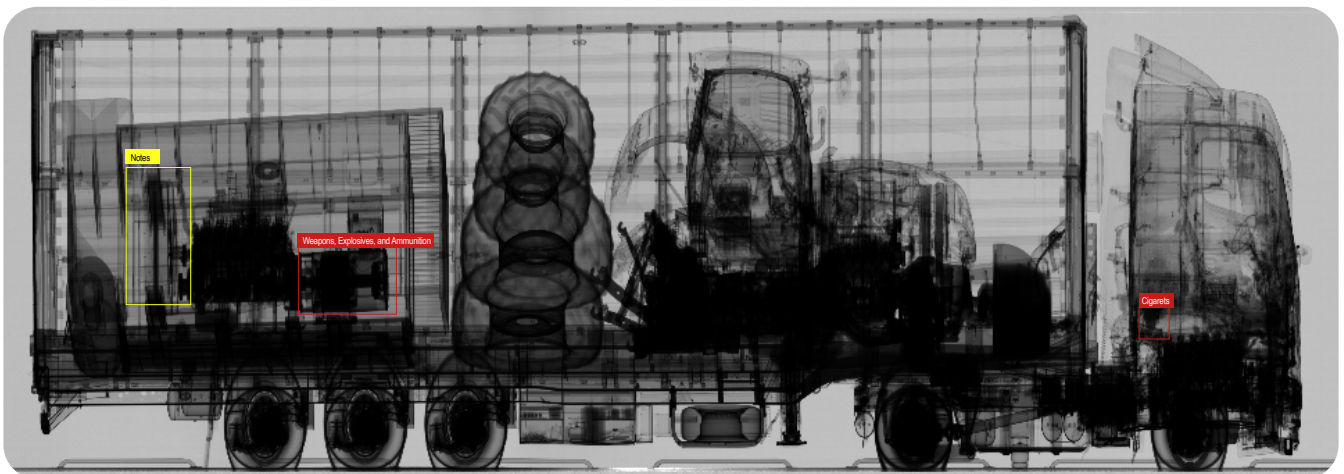
The Mobile X-Ray Vehicle & Container Scanning System offers stationary and drive-through scanning modes, providing flexibility for different inspection scenarios. It uses advanced dual-energy LINAC technology to deliver high-resolution images with strong material penetration.

Ideal for scanning trucks and containers, the system enables fast and detailed inspections. Its durable design ensures reliable performance in tough conditions, while dual-energy imaging helps classify materials effectively.

TECHNICAL SPECIFICATIONS

X-Ray Source	Dual Energy
Scanning Size (H x W)	4.7m x 2.8m (Can be extended upon request)
Radiation Safety	Complies with necessary precautions to ensure safety for operators and drivers
Operating Conditions	-30°C / +50°C 95% Relative Humidity (Non-condensing, can be extended upon request)
Operation Time	24/7 continuous operation
Scanning Capacity	0.40 m/s - 20 trucks (Gantry Mode) Min. 5 km/h - 60 trucks (Portal Mode)
System Integration	All components are placed on the trailer as a single unit
Steel Penetration	High Penetration
Wire Resolution	High Resolution
Material Discrimination	Organic / Inorganic / Mixed
Image Processing	AI Driven Methods and Conventional Methods

SCANNING IMAGE





TRUCK-INTEGRATED MOBILE X-RAY VEHICLE & CONTAINER SCANNING SYSTEM



Nomad-X TH

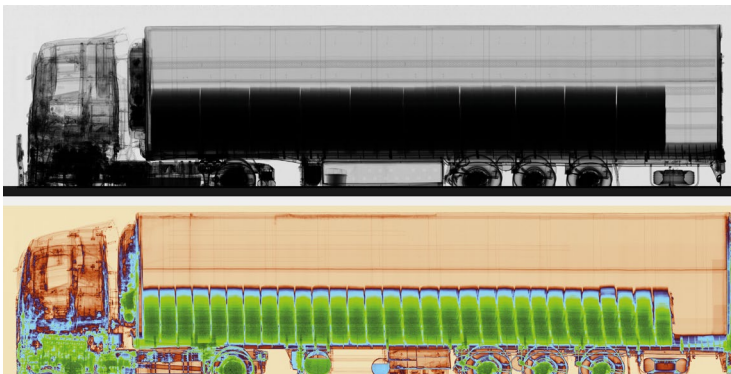
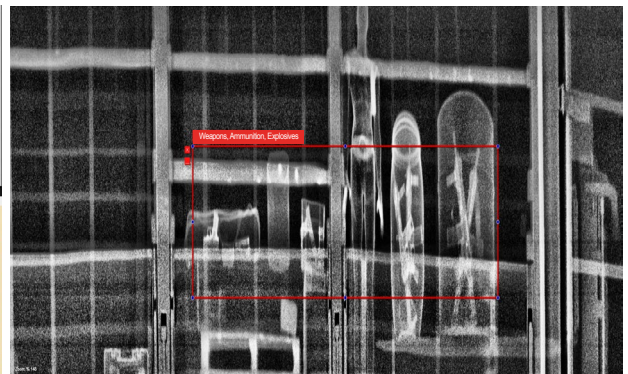
The Truck-Integrated Mobile X-Ray Vehicle and Container Scanning System (NOMAD-X TH) combines transmission and backscatter scanning technologies on a single platform, offering flexibility with both stationary and drive-through scanning modes. Thanks to its high-penetration dual-energy LINAC, it enables detailed detection of organic and low-density materials. This hybrid structure allows multi-layered and high-resolution analysis of vehicles and cargo in a single scan.

The system ensures rapid scanning of trucks, containers, and vehicles while providing detailed inspection of hidden areas through small-angle scanning capability. Equipped with integrated safety systems, a wide scanning area, and a mobile structure suitable for harsh conditions, NOMAD-X TH delivers a high-performance and reliable solution for modern security operations.

TECHNICAL SPECIFICATIONS

Maximum Vehicle Dimensions Suitable for Scanning	18 m L × 3.6 m W × 5.0 m H
Vehicle Scanning Speed	20 vehicles/hour / 24
Truck (System) Transfer Speed	80 km/h
Transmission X-Ray Source	Dual-energy
Transmission Scanning Angles	83°–90°–95°
Transmission Material Penetration	≤ 340 mm Steel
Backscatter Material Penetration	≤ 6 mm Steel
Transmission Spatial Resolution	≥ 4 mm Horizontal / ≥ 4 mm Vertical
Backscatter Spatial Resolution	≥ 20 mm Horizontal / ≥ 20 mm Vertical
Transmission Wire Resolution	≥ 1.5 mm Wire Diameter
Backscatter Wire Resolution	≥ 3 mm Wire Diameter
Transmission IQI	≥ 2% under 100 mm steel
Backscatter IQI	≥ 6 mm (in front of 100 mm plastic)
Radioactivity Detection System	Gamma and Neutron
Material Discrimination	Organic / Inorganic / Mixed
Imaging	AI-Supported & Conventional Methods
Operating Humidity	≤ 95%
Operating Temperature Range	–30°C / +50°C

SCANNING IMAGE





PHANTOM-X

BACKSCATTER X-RAY MOBILE & PORTAL SCREENING SYSTEM



MS-XMTS-BH

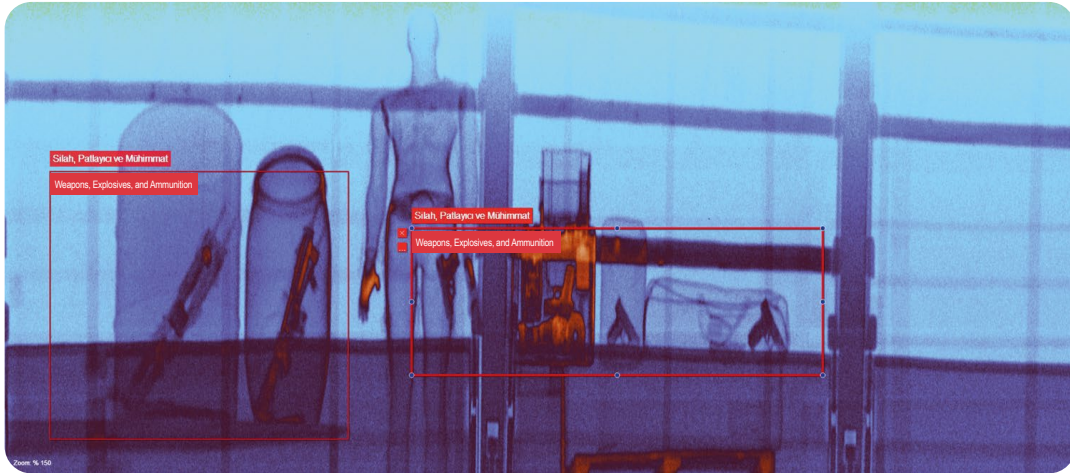
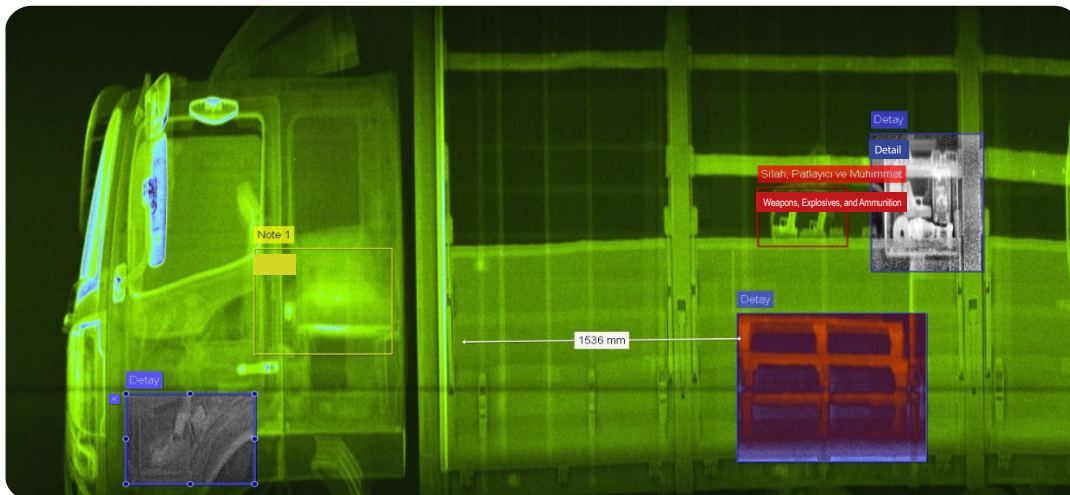
Versatile and user-friendly, our PHANTOM-X system is a mobile scanning solution housed in a standard van, enabling rapid screening of vehicles and cargo.

PHANTOM-X employs advanced Backscatter technology for detailed, sharp imaging that surpasses conventional X-Rays in detecting concealed threats and contraband. Backscatter Technology enables real-time X-Ray scanning.

TECHNICAL SPECIFICATIONS

Scanning	Motion Scan Mode / Portal Mode
Wire Resolution	High Resolution
X-Ray Source	X-Ray Generator
Operating Conditions	-30°C / +50°C 95% Relative Humidity (Non-condensing, can be extended upon request)
Steel Penetration	High Penetration
Scanning Speed Rate	Between 1km/h to 10km/h speed
Durability	High operational availability in harsh environmental conditions
Driving Configuration	Default: Left-Hand Drive (Right-Hand Drive available upon request)
Image Processing	AI Driven Methods and Conventional Methods

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TITAN-X

GANTRY TYPE X-RAY SCANNING SYSTEM



MS-XMTS-470260-G

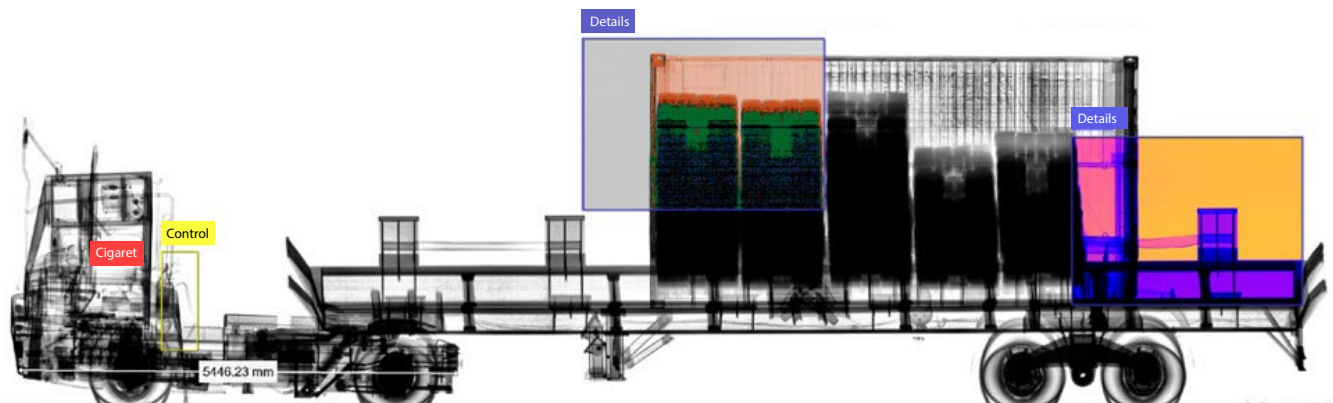
Versatile and user-friendly, our TITAN-X system is enabling rapid screening of vehicles and cargo with the help of X-Ray transmission technology.

TITAN-X employs advanced transmission technology for detailed, sharp imaging that surpasses conventional X-Rays in detecting concealed threats and contraband.

TECHNICAL SPECIFICATIONS

Scanning Size	4,7m (H) x 2,6m (W) x 20m (L) (can be extended upon request)
X-Ray Source	Dual Energy LINAC
Scanning Rate	20 Truck per Hour (Gantry Mode) 100 Trucks per Hour (Portal Mode)
Operating Conditions	-30°C - +50°C 95% Relative Humidity (Non-condensing, can be extended upon request)
Start-up Time	≤15 minutes
X-Ray Dose Rate	≤0,5 µS/hour (out-side exclusion zone)
Smart Features	Advanced threat/contraband detection Advanced system health monitoring
Steel Penetration	High Penetration
Wire Resolution	High Resolution
Material Discrimination	Organic / Inorganic / Mixed
Power Consumption	≤40kVA
Analysis and Collaboration Features	Zoom up to x64 Compare up to 4 images Wide pseudo color schemes Automatic histogram Data access between TITAN systems (*) UFF 2.0 Format
Image Processing	AI Driven Methods and Conventional Methods

SCANNING IMAGE



HYBRID-X

X-RAY SCANNING SYSTEM



Hybrid-X

This integrated system scans passenger vehicles automatically using one **top-mounted transmission** source and **two side backscatter** units for complete image coverage.

With the support of the Conveyor Transport System, scanning is performed automatically without driver presence, improving safety and operational speed.

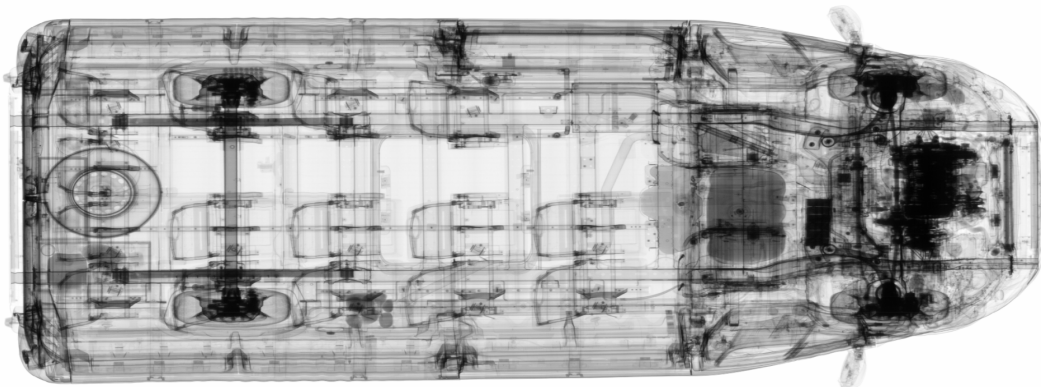
All radiation protections are applied to ensure operator safety during use.

TECHNICAL SPESIFICATIONS

Vecihle Sizes Suitable for Scanning	7m U x 2.5m G x 3m Y
Vehicle Scanning Speed	25 Passenger Car Scans per Hour
Vehicle Transportation Capacity	3500 kg
Transmission Material Penetration	≤ 150 mm Steel
Backscatter Material Penetration	≤ 6mm Steel
Transmission Spatial Resolution	≥ 3mm Horizontal / ≥ 4 mm Vertical
Backscatter Spatial Resolution	≥ 10mm Horizontal / ≥ 10mm Vertical
Operating Relative Humidity	95%
Working Temperature	-20 C° to +55 C° range
Transmission Wire Resolution	≥1.5 mm Wire Diameter
Backscatter Wire Resolution	≥3 mm Wire Diameter
Transmission IQI	15mm ≤ 2%, 75mm ≤ 4%, 120mm ≤ 8%
Backscatter IQI	6mm Steel (in front of 3mm Plastic)

SCANNING IMAGE

Transmission



Backscatter



TITAN-X

X-RAY FAST TRUCK/CONTAINER SCANNING SYSTEM (FIXED SCANNING SYSTEM)



Titan-X P

Our X-Ray Fast Truck/Container Scanning System provides **fast and efficient scanning** for vehicles and cargo.

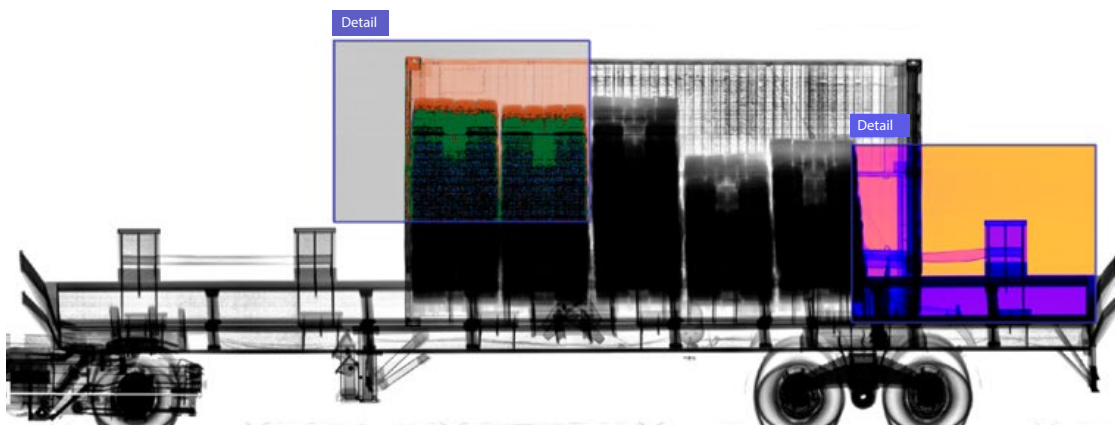
It utilizes advanced transmission technology to deliver sharper and more detailed imaging than conventional X-Ray systems, enabling the detection of hidden threats and contraband with high precision.

Capable of rapidly scanning large vehicles such as trucks and trailers, the system features dual-energy imaging technology for effective material discrimination. With high-resolution imaging and superior penetration capabilities, it ensures thorough inspections while offering a user-friendly interface for easy and efficient operation.

TECHNICAL SPECIFICATIONS

Scanning Size	4,7m (H) x 2,6m (W)
X-Ray Source	4/6 MeV Dual Energy LINAC
Scanning Rate	100 Trucks per Hour (Portal Mode)
Operating Conditions	-30°C - +50°C 95% Relative Humidity (Non-condensing)
Start-up Time	≤15 minutes
X-Ray Dose Rate	≤0,5 µS/hour (out-side exclusion zone)
Smart Features	Advanced thread/contraband detection Advanced system health monitoring
Steel Penetration	High Penetration
Wire Resolution	High Resolution
Material Discrimination	Organic / Inorganic / Mixed
Power Consumption	≤40kVA
Analysis and Collaboration Features	Zoom up to x64 Compare up to 4 images Wide pseudo color schemes Automatic histogram Data access between TITAN systems
Spatial Resolution	≥ 4 mm (Horizontal) ≥ 5 mm (Vertical)
Contrast Sensitivity	IQI - 0,8% @ 100mm IQI - 1,5% @ 150mm IQI - 3,5% @ 300mm

SCANNING IMAGE



BAGGAGE X-RAY

BAGGAGE SCANNING SYSTEM



FOTON-X 100100 Dual

FOTON-X 100100 Dual, with its dual energy level detectors and image processing ability, can classify objects in the cargo automatically based on atomic number. Stores scanned image of cargo with the video of person who placed the cargo by help of the integrated video cameras.

In addition, FOTON-X 100100 Dual can create artificial threats through the threat image projection library. With its low conveyor band height, heavy cargo can easily be placed on the conveyor

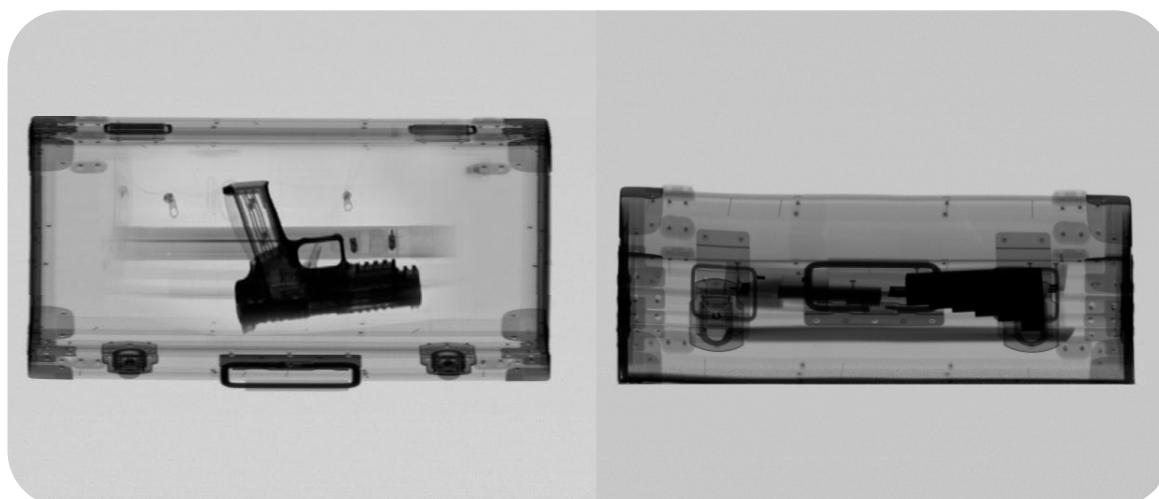
TECHNICAL SPECIFICATIONS

Tunnel Size	100 cm x 100 cm
Wire Resolution	38 AWG
Anode Voltage	160 keV
Operating Conditions	0°C / +40°C ≤90% Relative Humidity
Penetration	35 mm
Scan Direction	Bidirectional Scan
Storage	>50.000 images
Video Recording	Bidirectional video record
Conveyor Max Load	150 kg
Steel Penetration	38 AWG 0,01 mm

IMAGE SPECIFICATIONS

Imaging Technique	Dual Generator, Dual view 2
Grayscale Image Depth	16bit (65536 levels)
Colored Image Depth	8bit (256 levels)
Classification	Organic – Inorganic Light Metals – Metals
Imaging Mode	20 Modes
Zoom	64x

SCANNING IMAGE



Global Presence with Advanced Electro-Optic & X-Ray Technologies



MS SPEKTRAL develops and exports high-tech Electro-Optic and X-Ray solutions to key markets worldwide.

With a strong commitment to technological excellence, we continue to expand our global reach, providing state-of-the-art solutions in optical systems, imaging technologies, and advanced detection systems.