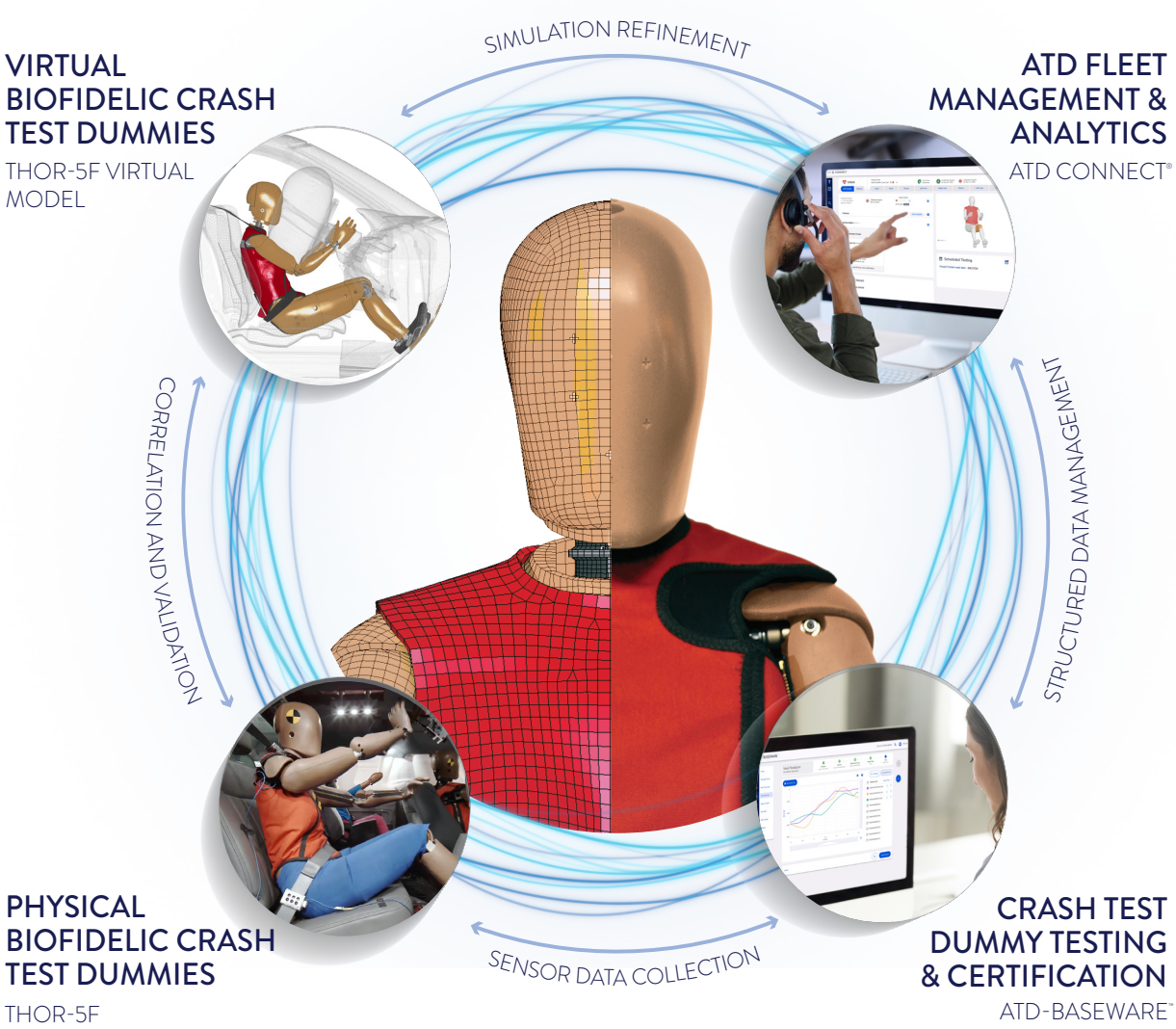
HUMANETICS



CONNECTED LAB SOLUTIONS



ADVANCED BIOFIDELITY IS ONLY THE BEGINNING.
THE REAL ADVANTAGE IS CONTINUITY.

Humanetics supports an end-to-end occupant safety workflow where simulation, physical testing, and data continuity operate on a shared foundation, enabling efficient data analysis and informed engineering decisions.

HUMANETICS

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WHERE **SAFETY MEETS PRECISION**

The Hybrid III crash test dummy, introduced in 1976, remained the benchmark for vehicle safety testing for a while. At the time, it was a groundbreaking device, equipped with sensors measuring critical injury points such as the head, neck, and chest. But modern vehicles, advanced restraint systems, and new mobility concepts demand deeper insight into how the human body behaves in a crash. The evolution of safety technology must keep pace with the evolution of vehicles themselves.

UNDERSTANDING SAFETY FROM THE INSIDE OUT

For more than seventy years, Humanetics has been a leader in crash safety testing. We cover every part of the process — from building crash test dummies to the sensors inside them and the systems used to check their accuracy. No other organization has this depth of end-to-end expertise.

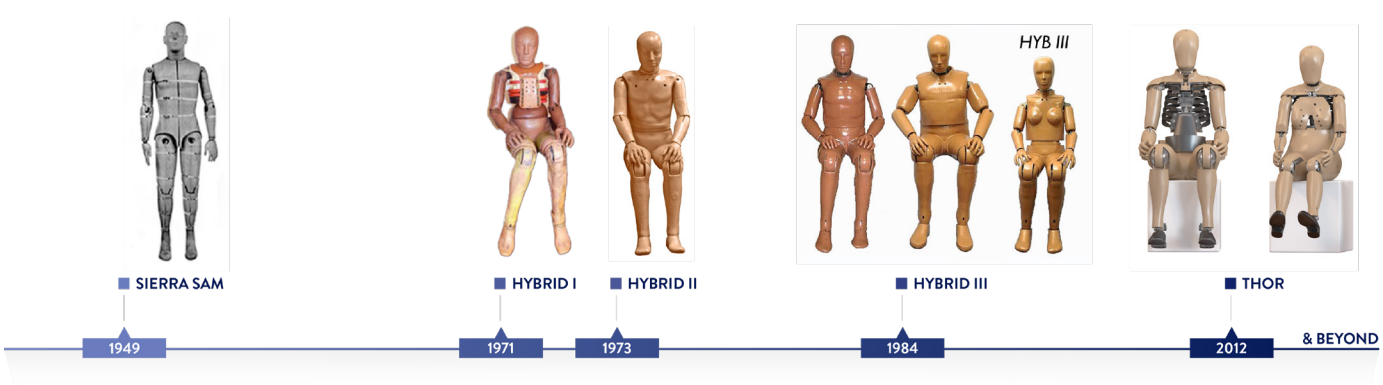
Our work focuses on three core areas. First, we design and build crash test dummies that closely mimic how the human body moves and responds during a collision.

Second, we equip these dummies with advanced sensors that can record hundreds of data points measuring potential injuries. Third, we develop the testing systems and procedures that ensure consistent, reliable results every time.

FROM INDIVIDUAL TECHNOLOGIES TO A CONNECTED ECOSYSTEM

Crash test dummies have come a long way, from early models like the Hybrid III to today's advanced systems such as THOR and WorldSID. Modern dummies can capture data from hundreds of measurement points, generating detailed insight into human injury mechanisms during crashes.

But getting the most out of all that data takes more than sophisticated hardware. It requires a fully integrated system where certification, data analysis, and management of ATDs all work together seamlessly That's what the Connected Lab delivers. It links modern certification equipment, advanced crash test dummies, and smart data platforms to turn certification laboratories into fully connected, digital environments — making testing faster, smarter, and more effective.



Our test systems enable cusomers to certify all current and future ATDs.



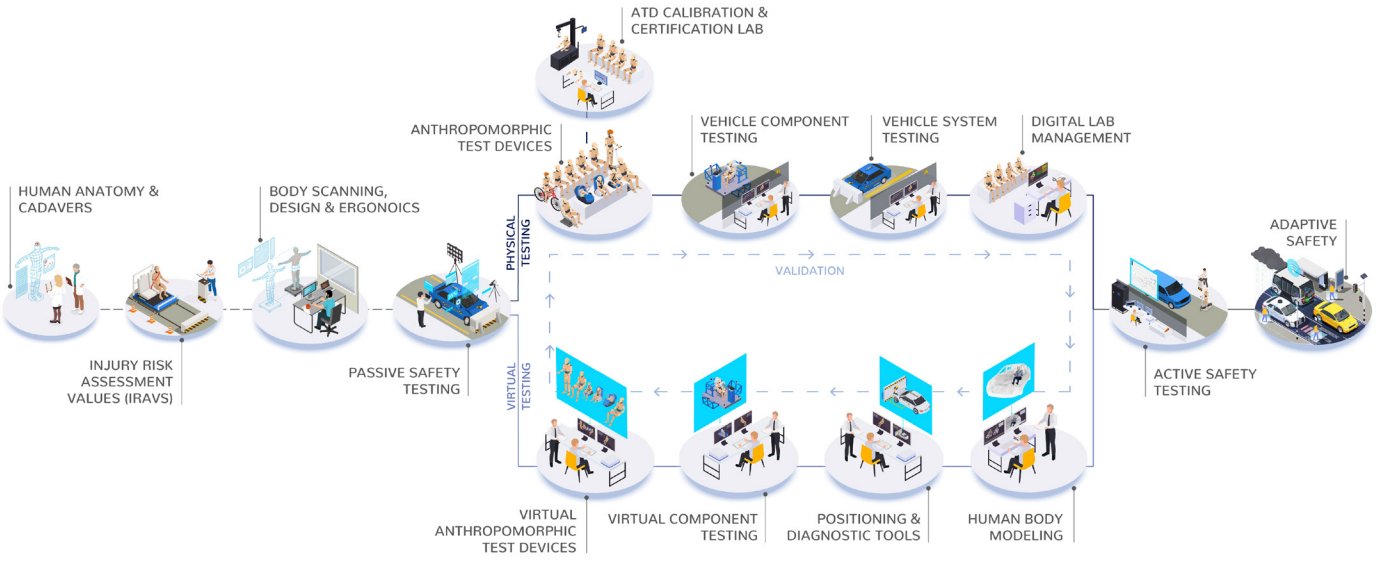
This ecosystem approach enables laboratories to work more efficiently, reduce variability in test results, and accelerate the development of safer vehicles. In a world defined by rapid technological progress, safety innovation must move just as quickly.

FACILITATING THE DIGITAL TWIN

The combination of Next Generation ATDs and Connected Lab technologies assists the creation of “real-time digital twins” of crash test dummies. This bridge between physical testing and computer-aided engineering (CAE) simulations offers several benefits, including significant reduction in vehicle development time and costs, maintenance or improvement of safety standards, and enhanced ability to address complex vehicle designs and emerging technologies like autonomous driving systems.

Do more with what you already have: *The Connected Lab can cut your test equipment needs by up to 50% and lets you certify advanced ATDs with the team you have today. Your lab runs more efficiently, your resources go further, and the equipment you’ve already invested in keeps paying off.*

HUMANETICS SAFETY ECOSYSTEM





WHAT IS THE CONNECTED LAB

Next generation crash test dummies are becoming increasingly sophisticated, equipped with hundreds of sensors capable of measuring highly detailed injury responses. While these advances provide deeper insight into occupant protection, they also introduce new challenges for crash laboratories.

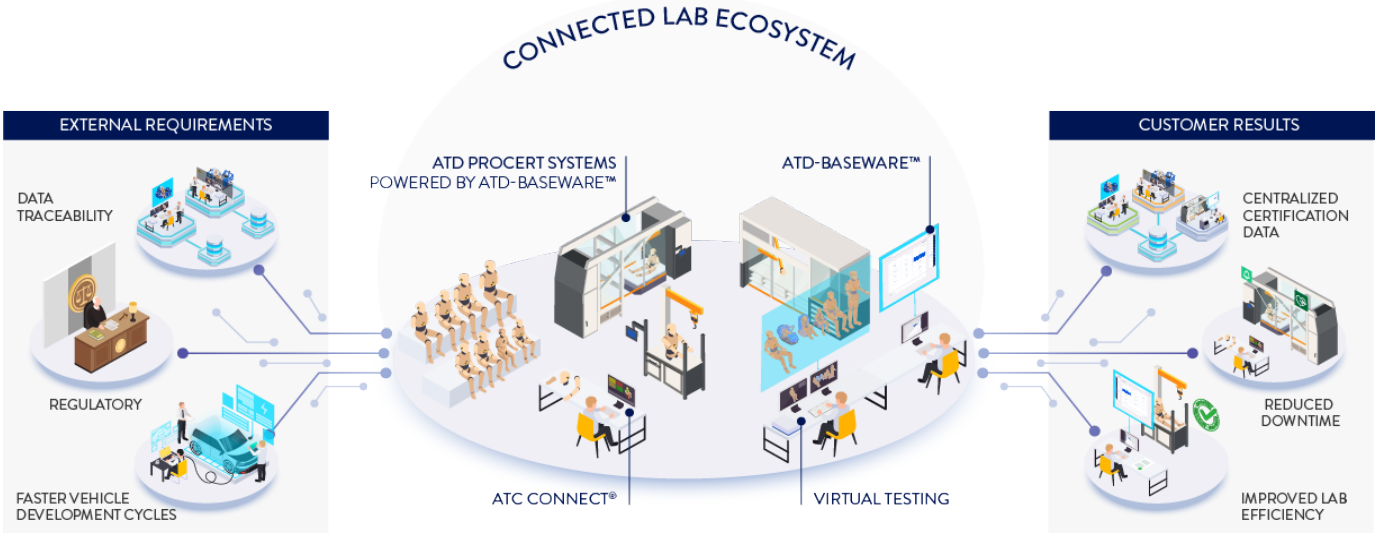
THE COMPLEXITY BEHIND MODERN SAFETY TESTING

Traditional testing workflows were never designed to manage this level of technological complexity. Many laboratories still rely on fragmented systems to configure sensors, operate test equipment, process measurement data, and generate certification reports. These manual processes can slow down certification procedures, introduce variability in results, and make it difficult to maintain full traceability of ATD data.

As development cycles shorten and regulatory requirements become more demanding, laboratories must find ways to work faster without compromising accuracy or compliance. This is where digital transformation becomes essential.

CONNECTING THE CERTIFICATION ECOSYSTEM

The Connected Lab brings together testing hardware, ATDs, instrumentation, and digital management platforms into one integrated ecosystem. Instead of isolated tools and manual data handling, laboratories operate within a connected environment where systems communicate seamlessly and workflows become automated. At the core of this approach are digital platforms such as ATD Connect® and ATD-BaseWare™, which provide centralized visibility into certification data and ATD lifecycle information — turning the lab from a collection of test stations into a coordinated, data-driven operation.



THREE INTEGRATED PILLARS DELIVER THIS VALUE

The Connected Lab is built on three pillars. Each leads on a different customer outcome but reinforces the others, so labs that adopt one pillar can extend into the others without changing platforms or losing data.

ATD ProCert Systems™ | Leads on Time: One ATD ProCert System™ can replace multiple Legacy Certification Systems. Automated workflows, high-precision motors, crane-supported ATD handling, and quick-change adaptions cut certification cycles by up to 37% — not by working harder, but by removing the friction points that drive retesting and operator variability. Compact footprints (one-third of a legacy certification lab) and plug-and-play DAS integration mean modernization does not require rebuilding the lab.

Connected Lab Management | Leads on Data Integrity: ATD-BaseWare™ and ATD Connect® give labs end-to-end visibility from integrated platforms. Every action (sensor configuration, test execution, certification report) is automatically logged in a tamper-free, ISO 17025–aligned audit trail.

Real-time fleet visibility and transparent scheduling eliminate redundant communication with lab staff. One customer valued ATD Connect® at the equivalent of an additional team member, describing it as “almost like having a second set of eyes on the lab.”

Retrofit for Legacy Certification Systems | Leads on Cost: Over 90% of global ATD certification labs — including NHTSA, IIHS, CAERI, and Euro NCAP — still operate Legacy Certification Systems. Retrofit options bring tamper-free workflows, ISO 17025–compliant reporting, and the combined power of ATD-BaseWare™ and ATD Connect® to existing equipment, preserving capital investment while delivering modern data analytics and traceability, turning a productivity upgrade into a compliance and trust upgrade at the same time.

Together, they create a powerful framework for the future of certification laboratories—one that combines precision testing, intelligent data management, and seamless integration across the entire vehicle safety development process.

ATD PROCERT SYSTEMS™
ATD ProCert Systems™ increases efficiency for compliant certification

RETROFIT LEGACY SYSTEMS
Enhances proven technology with modern capabilities

CONNECTED LAB MANAGEMENT
Drive Productivity through actionable data-driven insights

ATD PROCERT SYSTEMS™



EFFICIENCY AND PRECISION
FOR MODERN ATD CERTIFICATION

ATD ProCert Systems™ simplify the way ATDs are certified. Automated workflows guide technicians through each step, supported by an intuitive user interface that makes the system easy to operate. Digital and analog data acquisition systems are seamlessly integrated and synchronized within the machine, ensuring that test execution and data collection work together as one process. The result is faster testing, consistent data, and repeatable certification—regardless of who operates the system.

Walk into a traditional certification laboratory, and you will often find a setup shaped by decades of incremental additions with separate test benches, isolated data systems, and workflows that rely heavily on manual expertise. As ATDs have become more advanced, these environments have struggled to keep pace. More sensors, more data, more complexity—yet the underlying infrastructure has remained largely unchanged.

ATD ProCert Systems™ take a different approach. Instead of adding complexity, they reduce it. Designed as an integrated, modular environment, they combine multiple test capabilities in a compact and highly efficient footprint. The result is a system that not only keeps up with modern ATDs but actively simplifies how the certification process is executed.

Through intelligent system architecture and automation, certification becomes a guided, repeatable process—less dependent on individual expertise, more driven by standardized workflows, and significantly faster from setup to reporting. At the same time, safety is designed into every step. Advanced safety features such as light curtains, safety interlocks, and controlled access zones reduce operator exposure to hazardous test conditions. Ergonomic system layouts, assisted handling solutions, and automated positioning tools minimize physical strain and repetitive manual tasks, creating a safer and more sustainable working environment for operators.

UP TO 37% FASTER—BY DESIGN, NOT BY EFFORT

Efficiency gains rarely come from working harder, they come from working smarter. ATD ProCert Systems™ achieve up to 37% faster ATD certification by eliminating the friction points that traditionally slow laboratories down.

Automated workflows guide technicians step by step, while unified system control removes the need to switch between multiple software platforms. This not only reduces training effort but also minimizes the risk of operator error. Physical efficiency plays an equally important role. This is possible by using high-precision servo-controlled motors that apply the input loads to a test-specimen with highest precision. Crane-supported ATD handling simplifies setup and reduces physical strain. Dedicated fixtures remove trial-and-error adjustments from the process. These innovations significantly reduce the need for retesting, accelerating throughput across the entire lab, while at the same time improving operator safety.



All images and descriptions in this document are for illustrative purposes only. Actual features may vary depending on the selected system configuration.

EFFICIENCY AND PRECISION
FOR MODERN ATD CERTIFICATION

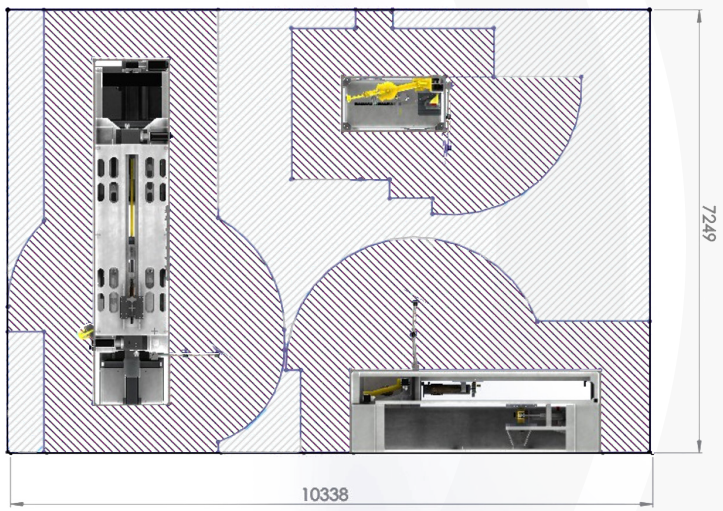
LESS SPACE, MORE CAPABILITY

One of the most visible, and impactful, differences of ATD ProCert Systems™ is their compact design. Traditional certification setups often require large, separated test areas with extensive safety zones. In contrast, ATD ProCert Systems™ are designed as an integrated environment where multiple test benches work together efficiently within a shared space.

The minimum footprint for a complete lab setup is approximately 75 m², with a required ceiling height of just 4.4 meters. This is roughly one-third of the space required by conventional Legacy Certification Systems, which often demand up to 200 m² and higher ceiling heights.

This reduction is made possible by intelligent system layout and innovative safety concepts that allow operators to move freely and safely between test areas without extensive physical barriers. Modular system design further enables laboratories to expand certification capabilities without redesigning the entire space, ensuring long-term flexibility as requirements evolve.

DESIGNED FOR REAL-WORLD INTEGRATION



Despite their advanced capabilities, ATD ProCert Systems™ are designed to fit seamlessly into actual laboratory environments. Typical installation requirements include:

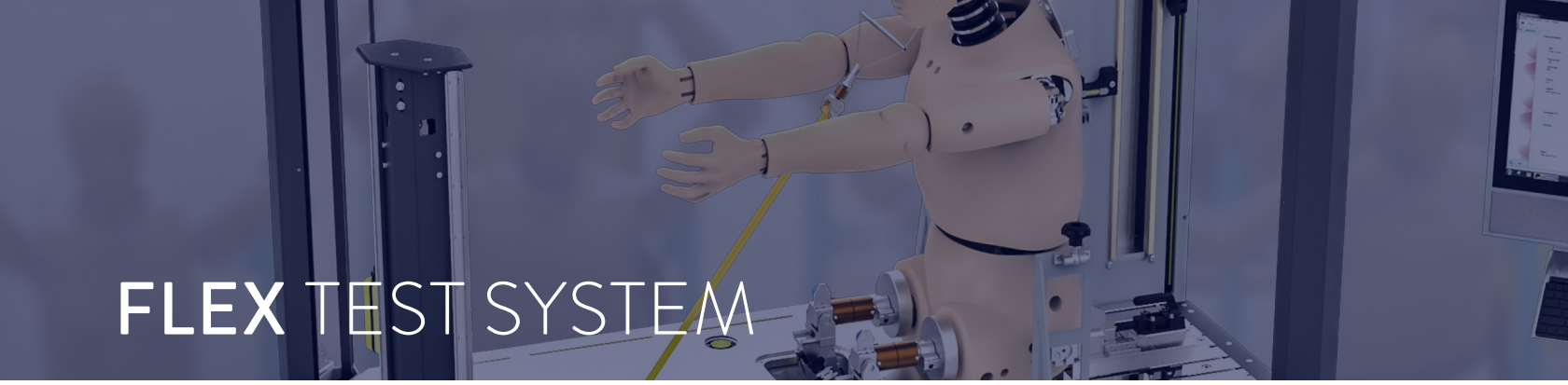
- Minimum Floor Space: 75 m²
- Ceiling Height: 4.4 m *(Lower ceiling heights may be feasible depending on site-specific conditions.)*
- Ground Load Capacity: 1.5–2.5 t/m²
- Door Dimensions: 2.4 x 2.1 m (H x W)
- Temperature Range: 20.6 – 22.0 °C
- Relative Humidity: 10 – 70%

The modular design also allows machines to be relocated without any significant loss of quality. This enables customers to make predictable and well-planned decisions.

PLUG-AND-PLAY DATA ACQUISITION

Modern ATDs rely on a wide range of data acquisition technologies, and laboratories might operate mixed DAS environments. ATD ProCert Systems™ are designed with this reality in mind. A wide variety of analog and in-dummy DAS systems can be connected plug-and-play, without complex integration efforts.

Whether working with DTI, DTS or KYOWA DAS, all data streams are seamlessly integrated into a unified workflow. Technicians no longer need to handle a variety of DAS software or manage each DAS individually, the system handles the integration automatically. This dramatically reduces system complexity while ensuring that all sensor data is captured, synchronized, and processed consistently across every test.



FLEX TEST SYSTEM

The Flex Test System offers versatile and adaptable testing capabilities, supporting a wide range of component-level evaluations within a single, flexible platform.

The Flex Test System is a solution designed to perform both hip range of motion (HROM) and torso flexion tests in a single, space-efficient system. This advanced test bench eliminates the need for multiple setups, reducing footprint while increasing efficiency and accuracy.

Fully automated test execution ensures higher test repeatability and eliminates operator variability, leading to consistent and reliable results. The integrated crane system enables easy dummy handling, reducing strain on operators and improving workplace ergonomics. The system's reactive light fence enhances work safety while allowing seamless test execution.

A centralized touch panel interface simplifies machine control and data processing, integrating directly with ATD-BaseWare™ for automated test preparation and report generation. Designed to meet IATF 16949 and ISO 17025 standards, the Flex Test System ensures full data integrity and traceability for reliable, auditable certification.

Future-proof by design, the system can be adapted for new dummies and evolving certification requirements, making it a long-term investment for any ATD testing facility.

KEY FEATURES

Dual-Test Capability
Performs hip range of motion and torso flexion tests in one compact system

Integrated Crane
Reduces physical strain and enhances ergonomic handling of dummies

Integrated Safety Features
Ensure operator safety without restricting the workflow

Fully Automated Test Execution
Streamlines test execution and reduces human error

ATD-BaseWare™
Controls Test Systems, automates test execution and report generation



IMPACT TEST SYSTEM

Designed to replicate real-world crash dynamics, the Impact Test System enables robust validation of ATD performance under dynamic loading conditions.

The Impact Test System is a state-of-the-art solution designed to accelerate ATD certification by automating workflows and unifying all data acquisition systems within ATD-BaseWare™. This advanced system ensures increased accuracy, efficiency, and repeatability in testing procedures, reducing retesting time and certification complexity.

Capable of performing torso impact, knee impact, dynamic aPLI/Flex-PLI certification, and BioRID certification, the Impact Test System integrates multiple test functionalities into a compact and highly automated platform. Its linear pendulum and test bench work together to create a flexible testing environment, allowing precise control of impact velocities and probe positioning across various ATD types and testing scenarios.

The touch panel interface serves as the user-friendly access point to ATD-BaseWare™, which controls the machine, executes tests, and guides the user step by step through the certification process. ATD-BaseWare™ ensures compliance with the latest manuals, automates workflows, and maintains test consistency. Advanced efficiency boosters, such as quick probe change, laser pointer probes, and automated test preparation, further enhance accuracy and minimize setup time.

KEY FEATURES

Multi-Test Capability
Supports Torso, Knee, BioRID, and aPLI/Flex-PLI Impact Tests in a single compact system.

Automated Efficiency Boosters
like quick probe change, laser pointer probes, smart mechanical interfaces facilitate quick test set-up changes

Integrated Safety Features,
a protective barrier ensures operator safety without restricting workflow.

Fully Automated Test Execution
Streamlines test execution and reduces human error.

ATD-BaseWare™
Controls Test Systems, automates test execution and report generation

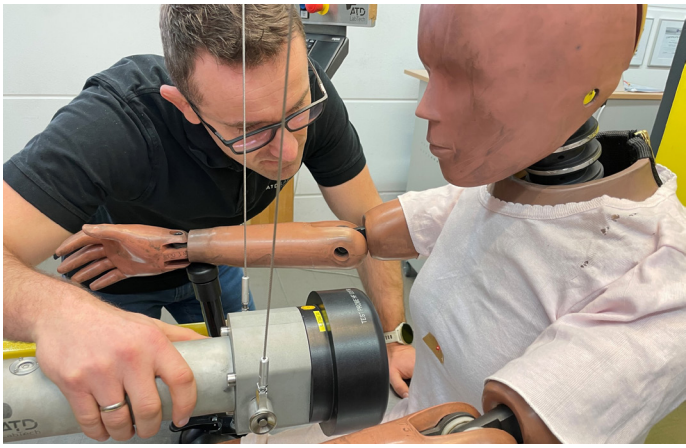


IMPACT TEST SYSTEM

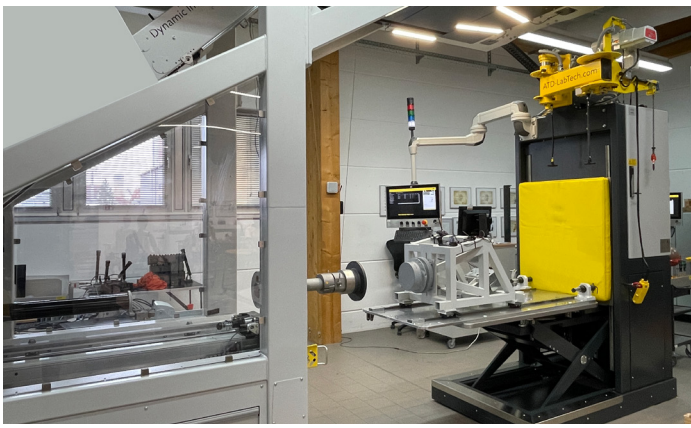
With its compact footprint and automated multi-axis movement, the system optimizes laboratory space while maintaining full compliance with regulatory standards, including IATF 16949 and ISO 17025. The incorporation of state-of-the-art safety equipment ensures operator safety while allowing full freedom of action during testing, making it one of the safest and most ergonomic solutions available.

Additionally, the high-speed impact capability of up to 11.3 m/s guarantees precise and reproducible impact conditions across a wide range of certification requirements. The pendulum system, combined with linear actuator technology, ensures the highest level of test accuracy and reliability. Designed for seamless integration, the system supports multiple data acquisition platforms. Its modular design allows the system to be quickly reconfigured for different test applications, including e.g. BioRID or FlexPLI set-ups, providing the flexibility to accommodate evolving certification requirements.

The modular design of the Impact Test System allows for upgrades and adaptations to future regulatory standards, ensuring future-proof certification capabilities. By incorporating automated report generation, the system significantly reduces administrative workload, allowing for faster test completion and improved documentation.



LASER POINTER IN PROBES



BIORID SETUP



FLEX CERT SETUP



PDC TEST SYSTEM

Engineered for precision and repeatability, the PDC Test System delivers highly controlled impact conditions for accurate and reliable ATD certification.

The PDC Test System accelerates ATD certification by combining five essential tests in a single, compact system, enhancing efficiency through automated workflows, improved accuracy, and advanced Pendulum Deceleration System for superior repeatability. The PDC Test System (Pendulum, Drop, and Compression) unites multiple test benches into a single, space-efficient system, enabling efficient and precise execution of neck pendulum tests, foot impact tests, head drop tests, rib drop tests, and various compression tests as well as aPLI / FlexPLI bending and pendulum tests. Designed for ergonomic operation, it optimizes working heights, provides intelligent storage solutions, and enhances overall efficiency with a user-friendly control system.

The touch panel interface serves as the user-friendly gateway to ATD-BaseWare™, which controls the machine, executes tests, and guides users step by step through the certification process. By ensuring alignment with the latest certification standards, ATD-BaseWare™ enhances repeatability, reduces human error, and streamlines certification workflows. The PDC system is modular and future-proof, allowing seamless adaptations for future certification requirements and new dummy types.

KEY FEATURES

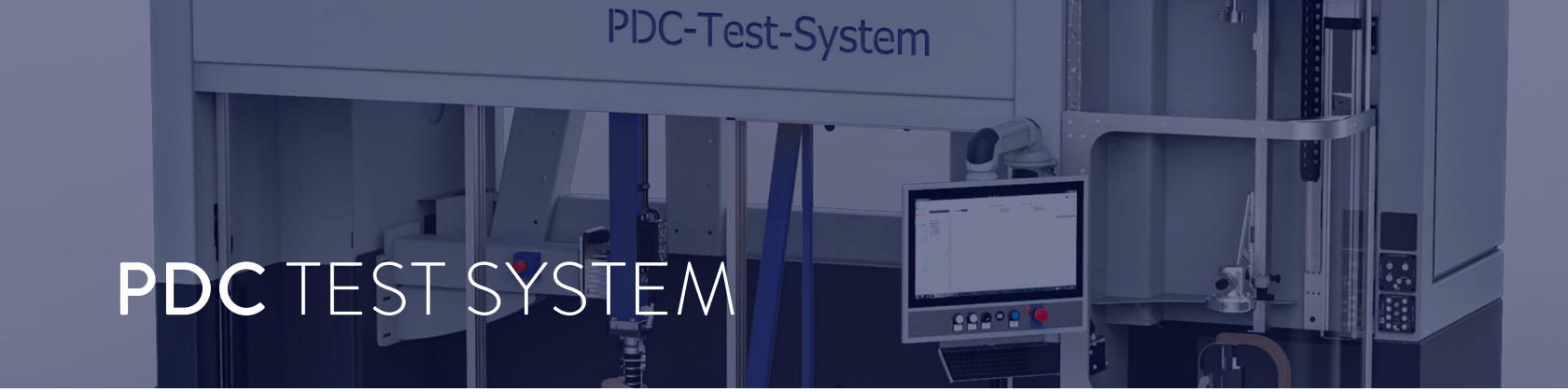
Multi-Test Capability
Supports Neck, Foot, Head, and Rib-Drop, FlexPLI and aPLI tests in a single compact system

Pendulum Deceleration System enables an exceptional level of repeatability compared to the conventional honeycomb method

Ergonomic Design with optimized working heights and safety features

Modular & Future-Proof
Easily adaptable for upcoming certification requirements

ATD-BaseWare™
Controls Test Systems, automates test execution and report generation



PDC TEST SYSTEM

Additionally, the system ensures enhanced data integrity and ISO compliance, guaranteeing workflows with complete traceability. It meets IATF 16949 and ISO 17025 standards, providing reliable, auditable certification processes.

Traditional honeycomb-based pendulum deceleration methods suffer from variability due to inconsistencies in material hardness across different brands and batches. The Pendulum Deceleration System is a high-performance, precisely adjustable system capable of generating deceleration pulses similar to those produced using conventional honeycomb methods. Its high sensitivity enables precise tuning of test conditions, with even small adjustments to the system potentially having a significant effect on the resulting response.

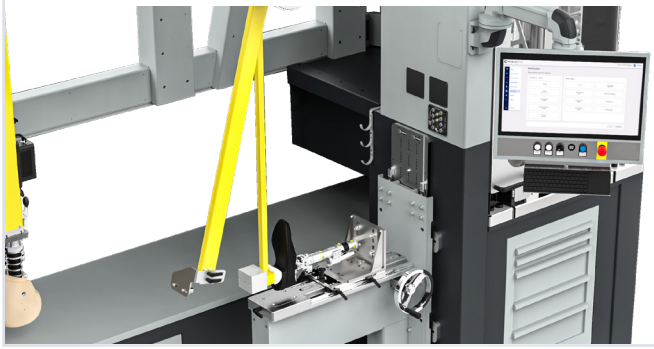
Operators can adjust the linear motor parameters using intuitive software sliders. These sliders control the motor exclusively, they do not directly control the deceleration behavior of the pendulum or the performance of the ATD component being tested. The resulting overall performance is measured separately at the relevant pendulum or dummy component.

With an impact velocity of up to 7.2 m/s, the system supports precise and repeatable execution across a wide range of ATD certification tests. Additionally, the Pendulum Deceleration System can be retrofitted into existing test stands, bringing its advanced control capabilities to existing laboratory equipment.

PDC TEST SYTEM



EXEMPLARY FOOT IMPACT



PENDULUM DECELERATION SYSTEM



CONNECTED LAB **MANAGEMENT**



FROM DATA OVERLOAD **TO DATA INTELLIGENCE**

Modern certification laboratories generate more data than ever before. Advanced ATDs, multi-channel sensors, and increasingly complex certification procedures produce vast amounts of information. The challenge is no longer collecting the data — it is making sense of it.

The result is a paradox: more data, but less clarity. Engineers spend valuable time searching, validating, and reconciling information. Connected Lab Management resolves this paradox by giving labs an integrated digital environment in which all certification data is consistent, traceable, and ready to act on. At the heart of this approach is a tightly integrated software suite, including ATD Connect® and ATD-BaseWare™ working together to create a seamless digital backbone for the Connected Lab.

BUILT FOR COMPLIANCE, DESIGNED FOR TRUST

In safety testing, data integrity is everything. Certification results must not only be accurate, but also fully traceable, reproducible, and auditable. Regulatory frameworks such as ISO 17025 and IATF 16949 set increasingly demanding requirements, and Connected Lab Management is built so those requirements are met as a natural outcome of how the system operates — not as an additional documentation burden tacked on at the end.

The regulatory crash test library indicates the ATDs required for the given test and cross-references availability of those ATD types in your fleet, flagging any conflicting events to ensure tests are conducted without delay.

FROM RAW DATA TO ACTIONABLE INSIGHT

Beyond compliance, the true value of Connected Lab Management lies in its ability to turn data into insights. By consolidating all ATD-related information (usage counts, certification expiry, ISO-MME data, integration configuration, certification protocol, test results and reports, and lifecycle history) into one platform, it gives engineering and lab management teams the visibility they need to make decisions with confidence.

That visibility is more than a dashboard. Lab teams can compare results across multiple tests for the same ATD to identify drift before it becomes a certification issue, perform root cause analysis by investigating individual data channels and overlaying them for comparison, export ISO-MME data for CAE correlation, and quickly identify test results that lie within 10% of the corridor limits through color-coded icons.

The editable inventory shows exactly which spare parts are on hand, and the condition and performance of those parts. When an item is worn or failing certification, use the built in RFQ cart to request a quote directly from the inventory catalog, sent straight to the Humanetics customer service and sales team.

SIMPLIFYING OPERATIONS AND SCALING PERFORMANCE

Connected Lab Management is more than a software solution, it is the digital intelligence layer of the Connected Lab. By ensuring data integrity, enabling actionable insights, and simplifying complex workflows, it allows ATD certification labs to scale capacity without scaling complexity.



ATD-BASEWARE™

ATD-BaseWare™ was developed to eliminate certification complexity. It brings all activities into a single, unified platform, combining data acquisition, analysis, and reporting into one coherent workflow.

BUILT-IN COMPLIANCE AND DATA INTEGRITY

ATD-BaseWare™ embeds compliance directly into the workflow, ensuring that all certification activities meet the requirements of ISO 17025, IATF 16949, and TISAX-aligned standards. All processes are fully traceable and tamper-free. Every action, from sensor configuration to final report generation, is logged and documented, creating a complete and auditable record of the certification process.

At the core of ATD-BaseWare™ is the ability to unify all sensor data — analog and digital — within one system architecture. This removes the need to manage separate DAS platforms and ensures consistent handling of every test result.

Guided Test Execution
Step-by-step workflows guide technicians through the certification procedure, ensuring correct setup and execution.

Automated Data Processing & Evaluation
Integrated tools perform calculations such as ISO MME evaluation automatically, ensuring consistency and compliance.

Data Storage & Lifecycle Integration
All results are stored within a structured, traceable system, enabling further analysis, audits, and lifecycle management.

UNIFIED AND AUTOMATED CERTIFICATION WORKFLOWS

Automated workflows guide users through each step of the certification process, reducing reliance on individual expertise and minimizing the risk of errors. Real-time data visualization, integrated evaluations, and automated reporting bring consistency to the entire certification cycle.

The system's intuitive interface allows technicians to become proficient quickly, dramatically shortening training times. At the same time, remote support capabilities enable real-time assistance, ensuring that issues can be diagnosed and resolved without delay.

SIMPLIFYING COMPLEXITY, INCREASING EFFICIENCY

By replacing multiple disconnected systems with a single interface, ATD-BaseWare™ fundamentally simplifies laboratory operations. Certification processes become faster, more predictable, and easier to manage at scale.

Automated checks and guided workflows reduce variability in execution, while improved reproducibility minimizes the need for retesting. This leads to shorter certification cycles and increased overall throughput.

At the same time, the platform is designed to scale. New sensor technologies, additional test systems, or expanded lab operations can be integrated without introducing new layers of complexity.



ATD-BASEWARE™

BUILT-IN COMPLIANCE AND DATA INTEGRITY

ATD-BaseWare™ embeds compliance directly into the workflow, ensuring that all certification activities meet the requirements of ISO 17025, IATF 16949, and TISAX-aligned standards. All processes are fully traceable. Actions from sensor configuration to final report generation, are logged and documented, creating a complete and auditable record of the certification process.

Automated calculations and standardized ISO-compliant reporting reduce manual workload while ensuring consistent and reliable outputs. Compliance is no longer an additional step—it is an inherent part of the system.

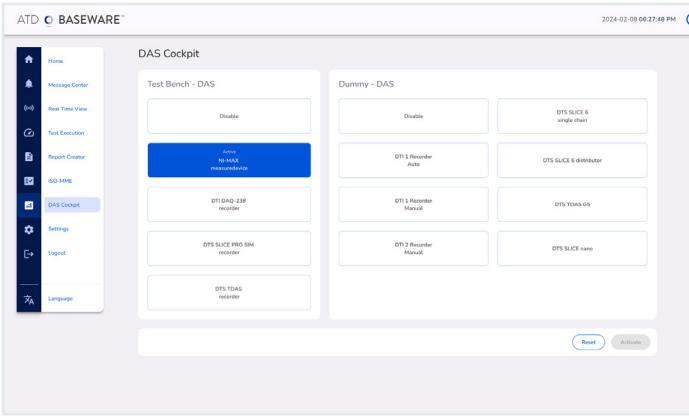
TRUST THROUGH TRACEABILITY

In complex testing environments, trust in data is critical. ATD-BaseWare™ ensures end-to-end traceability, allowing users to track exactly how each result was generated. Each dataset includes a detailed history of its origin, processing steps, and system interactions. This enables engineers to quickly identify discrepancies, validate results, and ensure consistency across tests and locations.

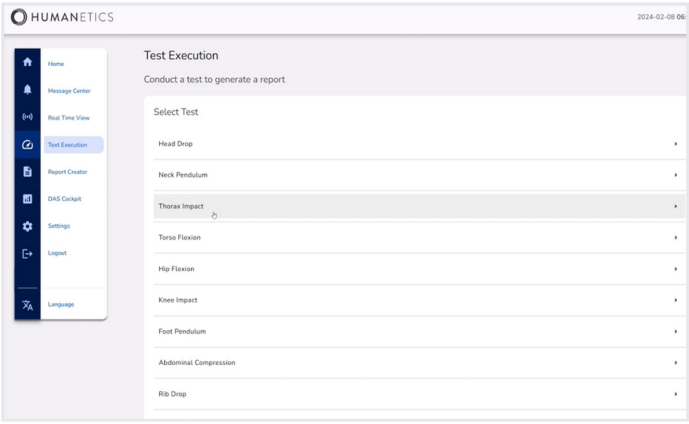
Robust security and user management features further protect data integrity, preventing unauthorized access and ensuring that certification outputs remain reliable and trustworthy.

ENABLING THE CONNECTED LAB

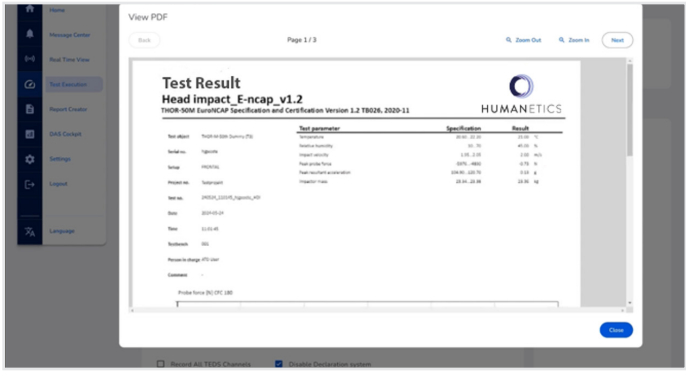
ATD-BaseWare™ is the operational core of the Connected Lab, connecting physical testing systems with digital intelligence. By unifying workflows, automating processes, and ensuring compliance, it creates a foundation for efficient, scalable, and future-ready laboratory operations. It does not simply improve certification—it redefines it as a fully integrated, data-driven process.



DAS COCKPIT VIEW



TEST EXECUTION SETUP



REPORT VIEW



ATD CONNECT®

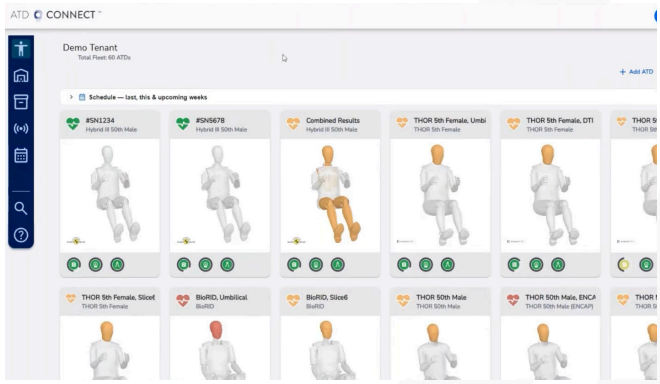
Each dummy represents a highly sophisticated system with its own certification status, sensor configuration, calibration schedule, and usage history. Keeping track of this information across multiple ATDs and test campaigns has historically meant spreadsheets, email, and a lot of redundant communication. ATD Connect® replaces all of that with a single, live source of truth.

This transforms certification from a document-driven process into a fully digital, controlled workflow.

SEAMLESS DATA INTEGRATION ACROSS THE LAB

ATD Connect® serves as the central hub for ATD fleet management and data integration. It automatically ingests ATD certification data from ATD BaseWare™ and packages it to provide insights on the health and availability of an ATD fleet. With ATD metrics tracking, inventory management, scheduling, and data analysis, ATD Connect® consolidates lab operations in an intelligent platform. With ISO 27001-certified architecture, ATD Connect® protects this data from acquisition through archive and gives lab leaders the assurance that what they see in the dashboard is exactly what was measured at the bench.

This shift, from managing individual devices to managing a connected fleet, marks a fundamental step toward a fully digital ATD certification laboratory.

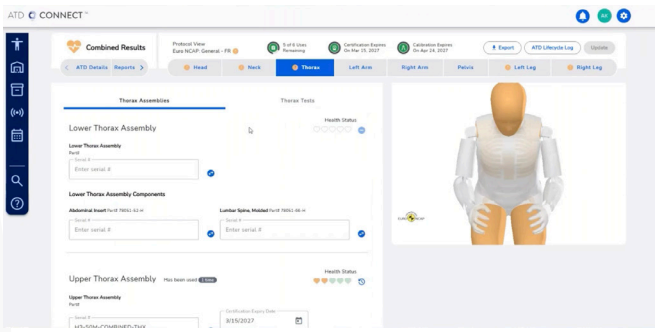


FULL VISIBILITY ACROSS THE ATD FLEET

At the core of ATD Connect® is live overview of the entire ATD fleet. Designed for both lab managers and technicians, it enables immediate insight into the readiness, status, and history of every dummy in the lab.

Key operational parameters are continuously monitored:

- Remaining test usages
- Certification expiry
- Calibration expiry



Color-coded indicators and automated notifications ensure that critical thresholds are never missed. Whether a certification deadline is approaching or usage limits are being reached, the system proactively surfaces the information that matters, before it becomes a problem.



ATD CONNECT®

MANAGING THE ATD LIFECYCLE—STEP BY STEP

ATD Connect® is not just a dashboard — it is an interactive management environment that supports the entire lifecycle of each ATD. Users can directly manage and update ATD information through a structured workflow:

- Select protocols and assemblies
- Link certification reports directly from ATD-BaseWare™
- Define certification validity and expiry
- Confirm and publish certification status with full traceability

Certification results from ATD-BaseWare™, lifecycle data, and operational inputs from lab activities are consolidated into a single platform. This eliminates the silos that traditionally separate certification, lifecycle, and operations — and gives every team member the same view of the truth.

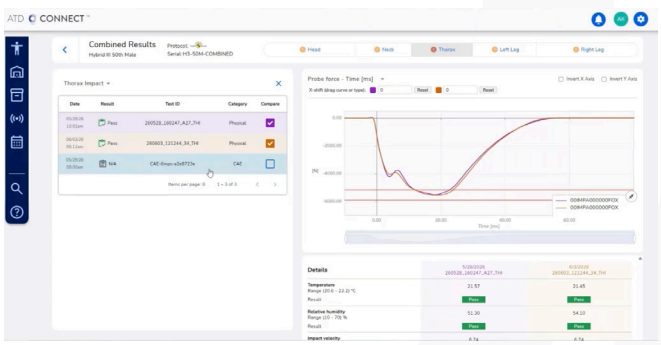
FROM DATA TO INSIGHT

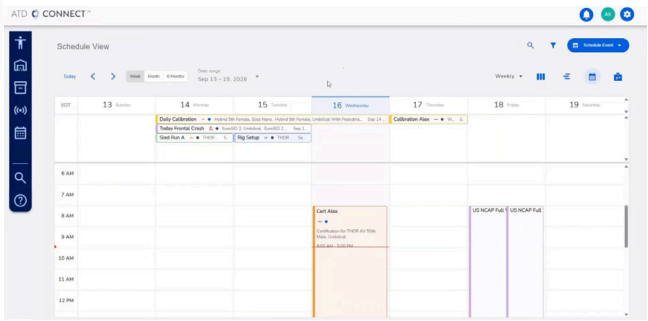
Beyond data access, ATD Connect® enables interactive analysis and a deeper understanding of test results. Users can:

- Analyze test data through interactive graphs with real-time visualization
- Compare multiple tests for the same dummy side by side to identify drift, validate repeatability, or investigate anomalies
- Trace assembly-level history when a part is swapped from one ATD to another, preserving an unbroken chain of evidence across the fleet
- Customise certification tests to support internal validation runs, OEM-specific protocols, or new test variants — with full traceability maintained throughout
- Identify performance trends and zoom into specific events for detailed analysis

This combination of full flexibility and full traceability is what turns ATD Connect® from a data viewer into a decision-support tool. Lab managers can answer questions in minutes that previously required days of cross-referencing spreadsheets, and engineers can interrogate the data in the way that matches how they actually work.

ATD Connect® also extends beyond data management into operational coordination through its integrated scheduler tool. Multiple visualization modes — Kanban, Gantt, and Calendar — allow users to manage scheduling in the way that fits their team's workflow.





LEGACY SYSTEMS **RETROFIT**



PROVEN SYSTEMS
NEW CAPABILITIES

Many laboratories rely on Legacy Certification Systems that have proven their reliability over years of daily use. These systems continue to meet regulatory requirements and represent significant capital investment that customers are right to want to preserve.

But as certification workflows become more data-driven, traditional systems face new expectations. Laboratories need centralized data handling, ISO-compliant reporting, improved traceability, and easier integration with simulation environments. Retrofit upgrades extend the lifespan of existing equipment while enabling laboratories to take a practical, phased approach toward digital transformation.

FROM STANDALONE EQUIPMENT TO CONNECTED WORKFLOWS

The core value of Retrofit is straightforward: it brings the combined power of ATD-BaseWare™ and ATD Connect® to Legacy Certification Systems. Instead of managing sensor setup, data acquisition, processing, and reporting in disconnected applications, lab teams work in a single connected environment — with the same certified data and the same insight tools that customers use on ATD ProCert Systems™.

This modernizes day-to-day certification work in several important ways. Sensor information can be measured, read, processed, and stored more efficiently. Analog and digital DAS systems can be integrated together. Reports can be generated consistently and with full traceability.

For technicians, this means fewer manual steps and a more intuitive workflow.

For lab managers, it means better data accessibility, improved process transparency, and a clearer line of sight from individual test results to fleet-wide trends.

COMPLIANCE, TRACEABILITY, AND REPORTING BUILT IN

Traditional Legacy Certification workflows rely on two or three disconnected applications to acquire, process, and report test data. The result is operational drag, increased user error, and the risk that test data can be inadvertently or deliberately altered between systems, an exposure that ISO 17025, and OEM procurement now scrutinise closely.

ATD-BaseWare™ and ATD Connect® work together to close this gap. ATD-BaseWare™ brings fully traceable workflows to existing test stands — every action is automatically logged and ISO 17025–aligned reports are generated directly from the system. ATD Connect® then turns that certification data into actionable insight: fleet-wide visibility, predictive maintenance signals, and audit-ready dashboards that surface issues before they delay a certification cycle. Running in a TISAX-certified environment with ISO 27001–certified architecture, ATD Connect® also protects data integrity from acquisition through archive without replacing the underlying mechanical infrastructure.

By embedding compliance into the workflow, Retrofit reduces the burden of manual documentation while improving reliability across the certification process, turning a productivity upgrade into a compliance and trust upgrade at the same time.



RETROFIT OPTIONS

Retrofit is offered in two different configurations — Standard and Premium — so labs can phase modernization at the pace and budget that fits their operation.

STANDARD CONNECTED LAB: INTEGRATED SYSTEM CONTROL AND DATA MANAGEMENT

The Standard Retrofit Option adds the Rack, which is powered by ATD-BaseWare™, to the lab, which enables communication between ATDs and certification systems. This creates a stronger link between physical testing and the digital workflow.

The standard tier includes ATD Connect® so the lab gains both system-level integration and fleet-wide insights together — backed by ATD Connect®'s TISAX-certified environment and ISO 27001–certified architecture.

With the Rack, technicians can simultaneously connect to, and acquire data from multiple data acquisition systems synchronously, automatically merging data sets from integrated ATDs and test bench sensors without manual intervention. Data is then automatically processed in ATD-BaseWare™, eliminating manual data merging and simplifying the testing workflow.

The Rack can be installed as a stationary unit at a central location in the laboratory or configured as a mobile unit that moves with the technician or ATD between test stands, providing flexibility for different laboratory workflows.

STANDARD CONNECTED LAB SETUP





RETROFIT OPTIONS

PREMIUM CONNECTED LAB — THE PATH TO FULL DIGITAL INTEGRATION

The Premium Connected Lab represents the highest level of integration. It combines ATD ProCert Systems™, ATD-BaseWare™, and ATD Connect® into a fully connected certification environment — with every component of the Connected Lab ecosystem working together end to end.

The workflow is standardized, intuitive, and designed for ISO-compliant certification from setup through reporting.

ATD Connect® delivers the analytical layer on top: cross-fleet visibility, predictive maintenance signals, and the same TISAX-certified environment with ISO 27001–certified architecture that protects data integrity at every other tier.

For laboratories operating both legacy and modern systems, the Premium Connected Lab provides a clear roadmap. Existing Legacy Certification equipment can be upgraded through Retrofit options, while new test systems integrate seamlessly into the same digital environment , protecting capital investment without forcing customers to choose between old and new.

PREMIUM CONNECTED LAB SET-UP





RETROFIT OPTIONS



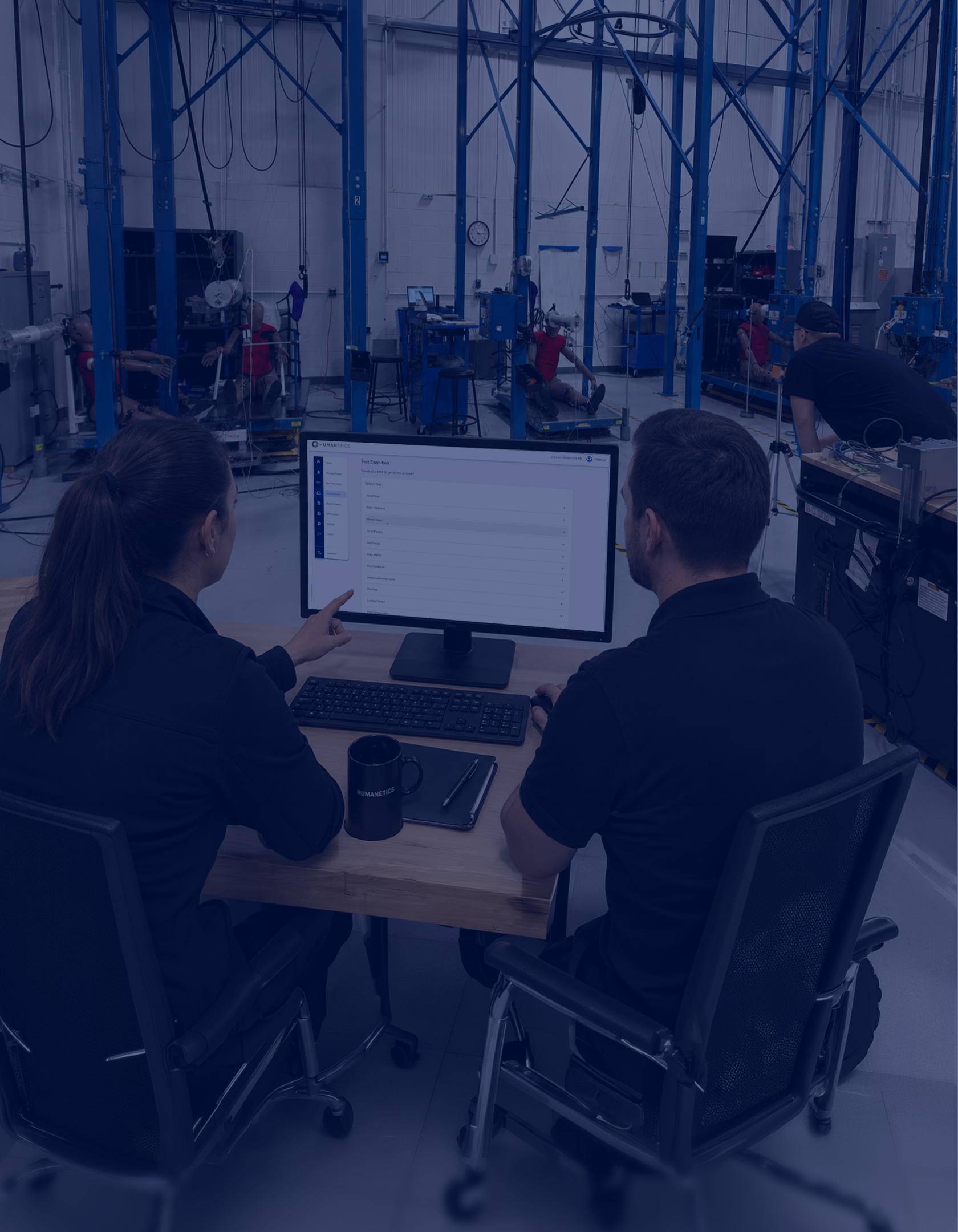
DATA INTELLIGENCE HUB

The Data Intelligence Hub serves as the central repository for all certification and measurement data within the retrofit environment. It enables secure, network-based storage with structured data organization, ensuring that all test results are accessible, traceable, and audit-ready. By eliminating local and fragmented data storage, it supports seamless integration into ATD-BaseWare™ workflows and prepares laboratories for advanced analytics and Connected Lab scalability.

RACK

The Rack acts as the central communication interface between ATDs, test systems, and the Connected Lab software environment. It enables synchronized data flow and system control, allowing certification processes to be managed directly through ATD-BaseWare™. By consolidating hardware communication into a single unit, the Rack simplifies system architecture, enhances operator safety, and provides the foundation for automated and standardized workflows.




HUMANETICS
Test Execution
Conduct a test to generate a report
Select Test
Head Drop
Neck Pendulum
Thorax Impact
Torso Flexion
Hip Flexion
Knee Impact
Foot Pendulum
Abdominal Compression
Rib Drop
Lumbar Flexion
HUMANETICS

WHY IT MATTERS: **KEY TAKE AWAYS**

Vehicle safety testing is entering a new era. As crash test dummies become more sophisticated, vehicle architectures more complex, and regulatory requirements more demanding, traditional laboratory workflows are increasingly becoming the limiting factor. The challenge is no longer the capability of individual test systems—it is the efficiency of the entire certification process.

The result is a growing disconnect between the complexity of modern testing and the capabilities of traditional laboratory environments. Valuable engineering time is spent on repetitive manual tasks, information is distributed across multiple systems, and critical knowledge often depends on the experience of individual technicians rather than standardized processes. As testing volumes continue to increase, these inefficiencies become a significant operational and financial challenge.

CONNECTED LAB COMPONENTS



ATD ProCert Systems™

Connected Lab Software

Retrofit Options for existing labs

The Connected Lab was developed to address exactly this challenge. Rather than viewing certification as a sequence of isolated activities, it connects every stage of the process—from the physical ATD and test system to laboratory management, secure data storage, and digital simulation. Information flows continuously between systems, eliminating manual handovers, improving consistency, and making data available wherever it creates value.

For organizations, this means far more than faster certification. Automated workflows reduce operator dependency and improve repeatability. Centralized fleet and sensor management increase equipment availability while reducing administrative effort. Standardized data processing simplifies compliance with ISO 17025 and creates complete traceability throughout the certification lifecycle. Together, these improvements allow laboratories to operate more efficiently, make better use of their resources, and focus engineering expertise where it has the greatest impact.

> **"The laboratories that lead tomorrow won't simply perform more tests—they'll make better decisions from every test they run."**

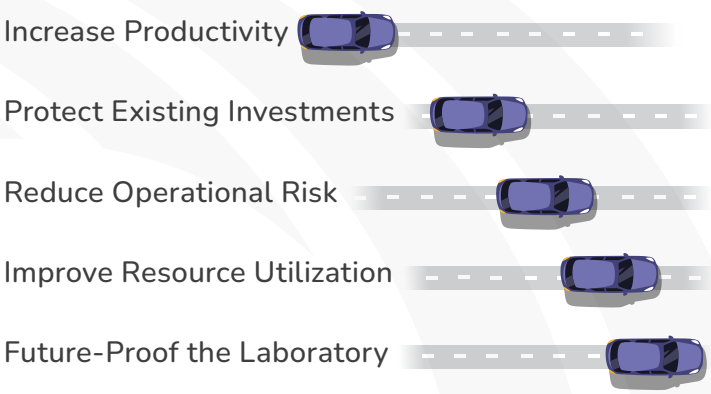
Importantly, adopting the Connected Lab does not require replacing an entire laboratory overnight. Existing Legacy Certification Systems can be modernized through retrofit solutions, while new laboratories can immediately benefit from fully integrated ATD ProCert Systems™. This flexible approach allows organizations to protect previous investments while introducing digital capabilities step by step.

> The Connected Lab allows laboratories to operate more efficiently, make better use of their resources, and focus engineering expertise where it has the greatest impact.

Beyond today's operational improvements, the Connected Lab also lays the foundation for tomorrow's development processes. High-quality certification data can be securely aggregated, managed, and reused to support simulation and digital twin development. As physical and virtual testing become increasingly interconnected, laboratories equipped with a Connected Lab are better positioned to validate increasingly complex safety scenarios while reducing development time and improving confidence in engineering decisions.

Ultimately, investing in a Connected Lab is not simply an investment in new test equipment. It is an investment in a more efficient, connected, and data-driven way of working—one that improves productivity today while preparing laboratories for the next generation of vehicle safety development.

BUSINESS VALUE AT A GLANCE



Increase Productivity	Up to 37% faster certification through automation and standardized workflows
Protect Existing Investments	Retrofit existing test systems instead of replacing Legacy Certification Systems
Reduce Operational Risk	ISO-compliant, traceable and tamper-free certification processes
Improve Resource Utilization	Centralized ATD fleet management, scheduling and predictive maintenance
Future-Proof the Laboratory	Modular architecture that grows with new regulations and technologies

PRODUCT & CUSTOMER SUPPORT



There is no company of engineers more experienced in designing, installing, and maintaining sophisticated passive and active safety testing equipment than Humanetics.

Our experts in each of our global facilities spend much of their time on-site with customers training them how to use the latest technologies. Humanetics offers an extensive global service model. We train automaker and test facility engineers in a range of capabilities: calibration of sensors, set-up of complete test facilities, and CAE and FE modeling.

We also provide fully outsourced on-site dummy management through our own test engineers.

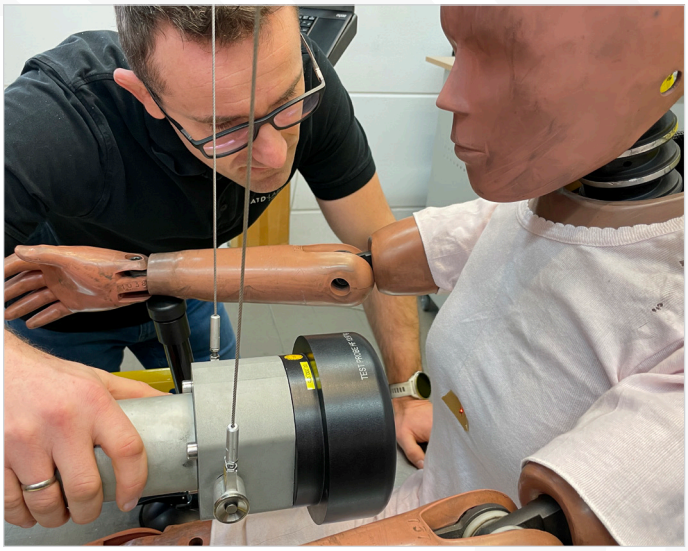
Let us know how you would like us to support you - we are here to help you succeed.

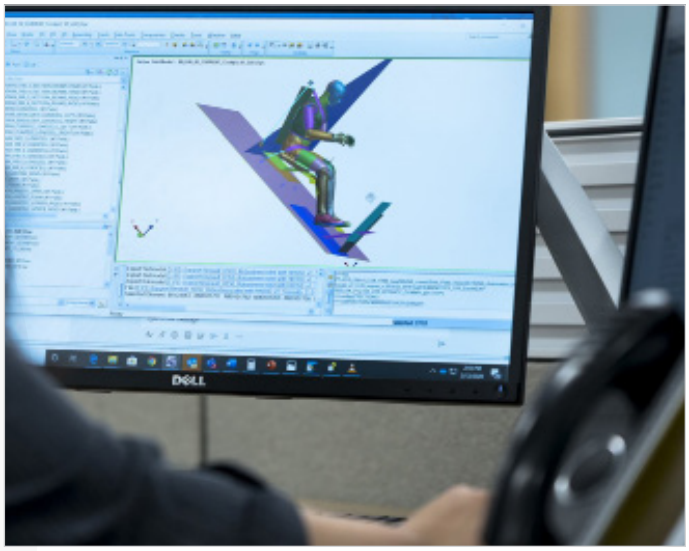
CERTIFICATION & **CALIBRATION**

Humanetics offers an extensive global service model. We train automaker and test facility engineers in a range of capabilities: calibration of sensors, set-up of complete test facilities, and CAE and FE modeling. We also provide fully outsourced on-site dummy management through our own test engineers.

Humanetics offers calibration and certification services for the entire range of ATDs their components and sensors. ATD certification includes initial overall inspection of the dummy and dynamic testing certified to the latest approved industry standards. Our worldwide certification laboratories are working daily with our own test systems and software and make sure regional support is always available for your ATD.

Humanetics certification labs also stock the most commonly replaced certified parts for all dummy types. This allows Humanetics to offer the fastest possible turn-around times to meet your testing schedules.

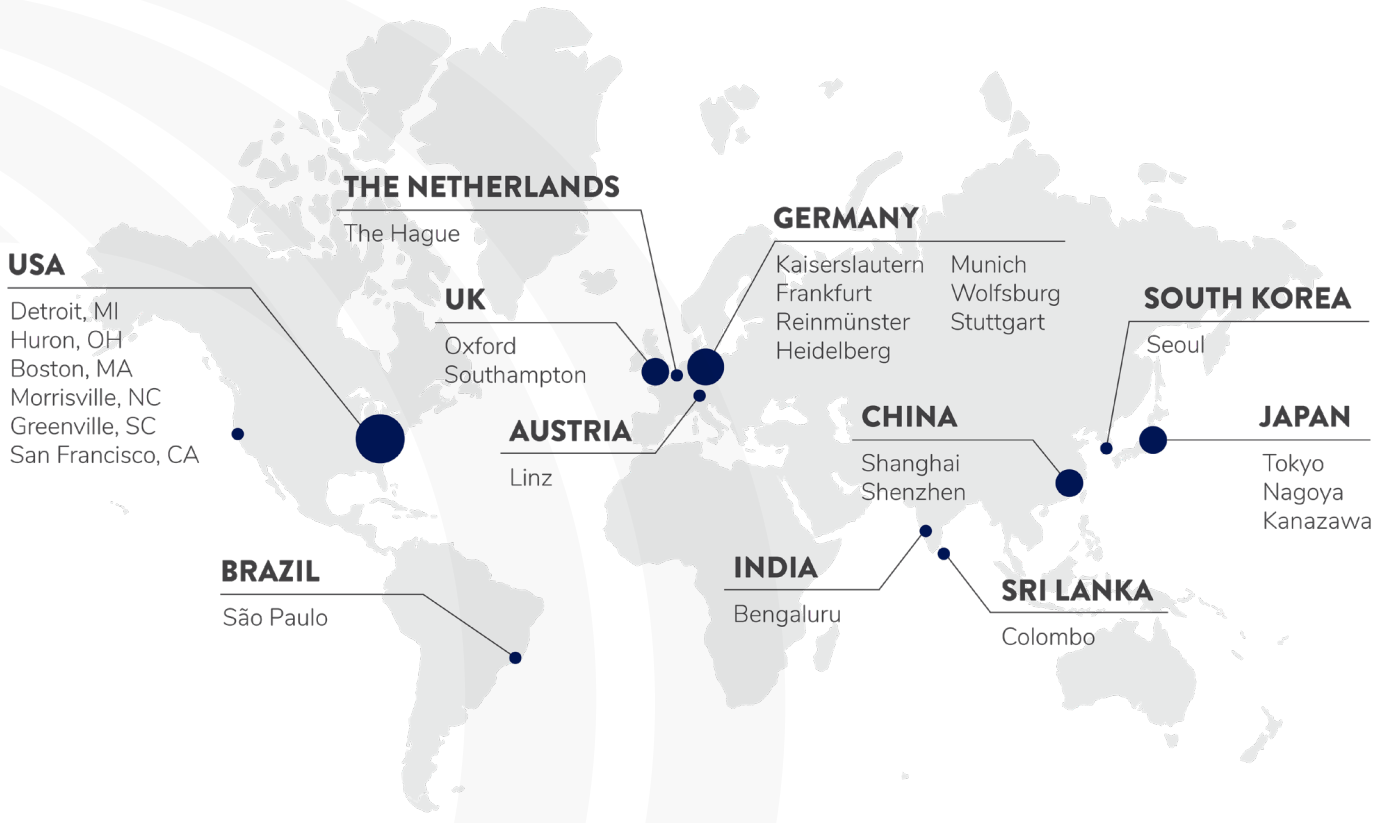




HUMANETICS
GLOBAL NETWORK

Humanetics has a strategic presence in major automotive and industrial markets to fully support test systems and lab software with 24 locations worldwide including 12 sales & customer, design, and service centers.

Our management team are some of the world's leading experts on vehicle safety and biomechanical engineering. They have a passion to lead their teams to develop the best devices, service the needs of our incredible customers worldwide and ensure that people are safe every time they get into a car.



SALES, MAINTENANCE, **& TRAINING**

Humanetics provides a full range of services to install, maintain, calibrate, and certify our ATD's. Our aim is to keep your test operations running to the highest certified standards by providing you with our expertise, products, and partnership when you need it.

- A complete plug and play management service to give some of our clients a turnkey solution building and resourcing new facilities around the world, and others, a scalable set of resources during peak testing.
- A full training program to develop the next generation of engineers in your labs, or a fully outsourced solution with our engineers embedded in your teams on a short term or long-term basis.

KEEP YOUR TESTING PROGRAM ON TRACK

Scan QR code to view the full range of services for our next generation ATDs.

CONTACT US

Having offices across Europe, the U.S. and Asia, we have a number of experts in each region who can help you with inquiries. Feel free to reach out to our team in your region, in case you have questions or are interested in more detailed information at any time.

Detailed contact information for each region as well as the latest product information including user manuals and technical service bulletins are located on our homepage.

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Stay Safe, Stay Informed. Please enjoy our on-demand webinar series on exciting topics that we and our community are passionate about.

Our online seminars are presented to enable our experts to engage in discussions with the safety community and share the latest industry knowledge on the tools we use daily and ones soon available in the near future. When in-person meetings are not practical because of distance, schedules, or even health reasons, our webinars are a great source of information delivered effortlessly right to your computer.

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Technical support by email is always available for our complete line of crash test dummies and test equipment, certification testing, product specifications and more at atdtechsupport@humaneticsatd.com

HUMANETICS

PROTECTING HUMANS IN MOTION

CONTACT US

Scan QR code to contact your local Humanetics Representative