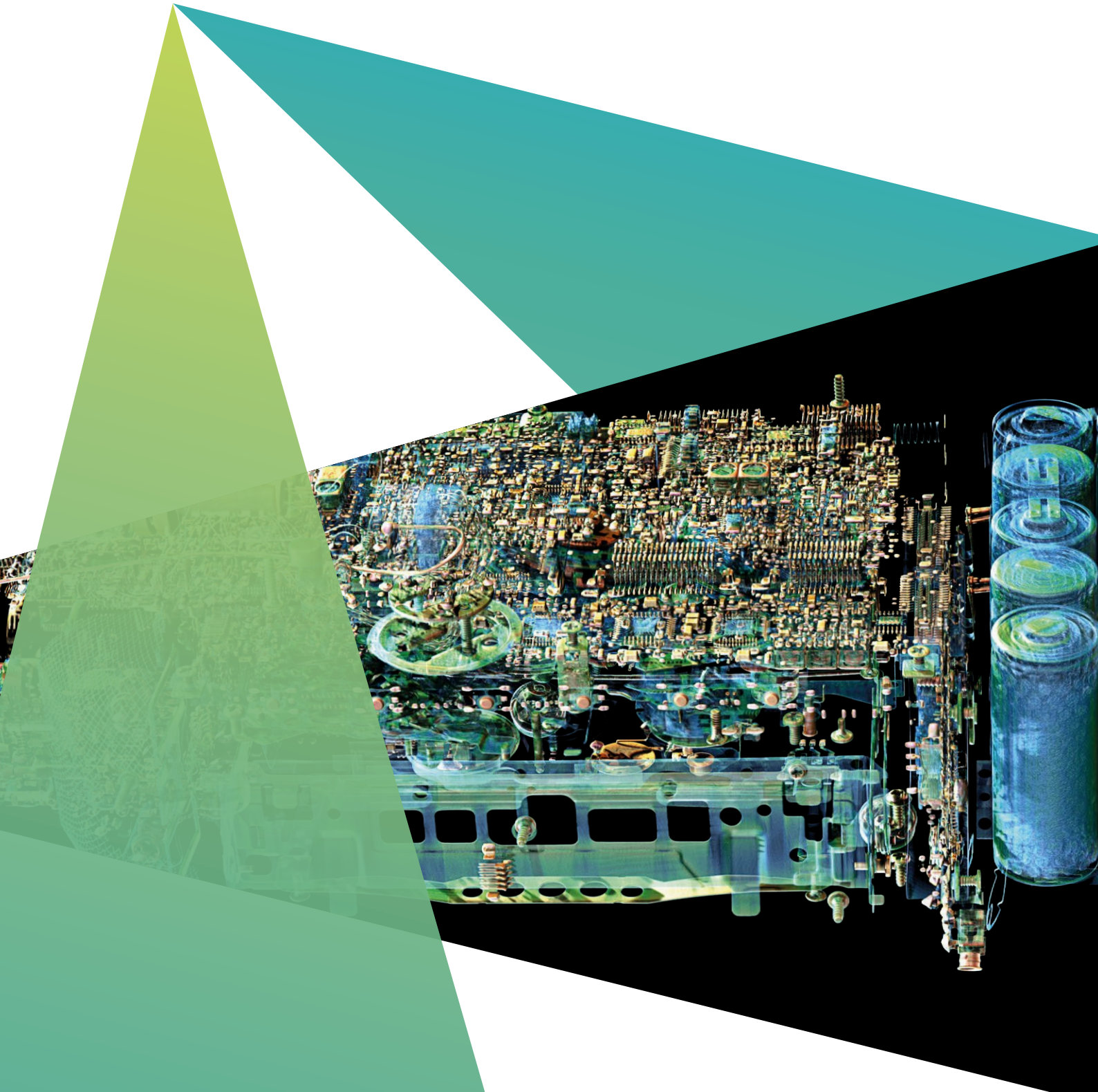
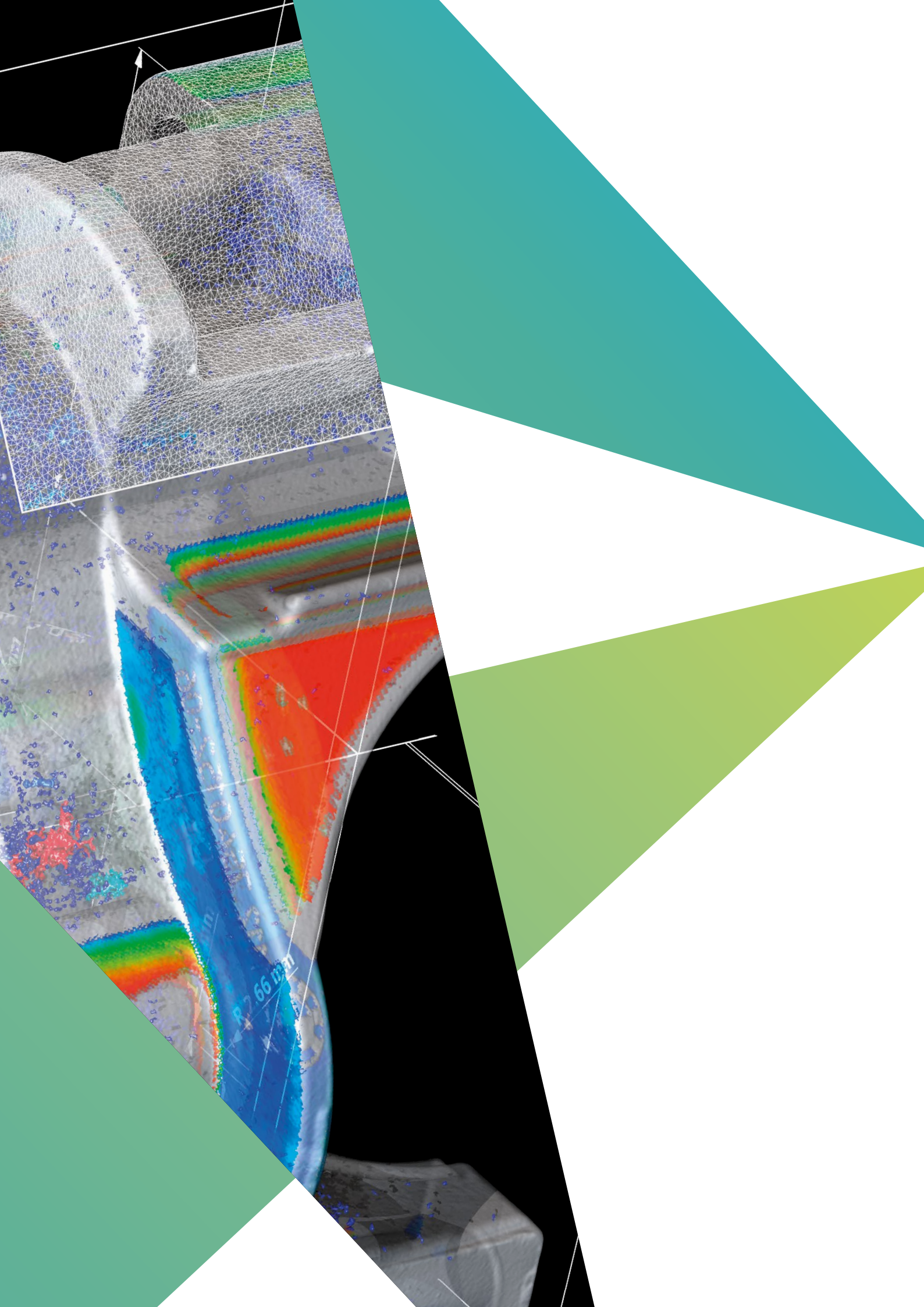
HEXAGON

Brochure

VG software

Analysis and visualisation software for industrial CT scanning and other 3D data sources





Introduction

VG software for unmatched clarity into non-destructive testing (NDT) data

From real-world digital twin to actionable insights

When quality defines your success, you need absolute confidence in your data. Hidden defects, material inconsistencies, and out-of-tolerance parts can lead to costly recalls, safety risks, and production delays; challenges no manufacturer can afford. Powered by industrial CT, VG software provides pioneering technology that delivers truly holistic insights, creating an authentic 3D digital representation of your part for complete, non-destructive analysis.

In a world of grey values, you want your software selection to be black and white. As the de facto industry standard for non-destructive evaluation (NDE) and CT data analysis, Hexagon's VG software is your obvious choice for gaining actionable insights from NDT data sources.

VGSTUDIO MAX

Versatile, industry-leading software for the holistic analysis and visualisation of industrial CT and other NDT data.

VGSTUDIO

Foremost software for visualising industrial CT data.

VGMETROLOGY

Innovative software for comprehensive, precise metrology on CT data, CAD data, meshes, and point clouds.

VGinLINE

Robust software for executing automated inspection of CT data on the shop floor.

VGTRAINER

Intuitive software to self-train deep learning models for AI-assisted segmentation.

myVGL

Your free viewer app exclusively for VG project files.

84%

Reach 84% reduction in inspection times

An Austrian automotive supplier cut first article inspection time from 75 to 12 man-hours while improving measurement accuracy and efficiency with VG software.

50%

Reduce inspection costs by up to 50%

This same automotive supplier reduced costs by 50% with VGSTUDIO MAX, cutting initial acceptance time from 450 to 100 man-hours – all while preserving the part.

VG software at a glance

Your clear choice for precision and insight

The industry's longest-trusted CT analysis software

Access powerful tools for every challenge

From visualisation to complex analyses, VG software covers it all with a full suite of capabilities:

- CT reconstruction and data quality analysis
- AI-supported data segmentation
- Visualisation and animation
- Dimensional metrology and reverse engineering
- Material analysis
- Reporting and documentation
- Automation and inline inspection
- Fixture simulation

See beyond the surface with eye-opening precision

VG software transforms industrial CT data into full 3D models, creating a high-precision digital representation of your manufactured part. At its core is the voxel, capturing internal structures down to the finest details.

This level of insight lets you:

- Detect hidden defects before they become failures
- Analyse material properties for durability and performance
- Conduct precise metrology for reliable pass/fail decisions
- Automate inspections to bring these insights to the shop floor

Benefit from expertise earned side by side with industry leaders

With over a quarter century of continuous development, VG software has been co-created with manufacturers who demand the highest standards. It has been tested and refined where precision is non-negotiable. That's why it remains the go-to solution for quality assurance in the most demanding industries.

End-to-end versatility

Adapts to any workflow, any industry, and any quality inspection challenge.

Precise and insightful

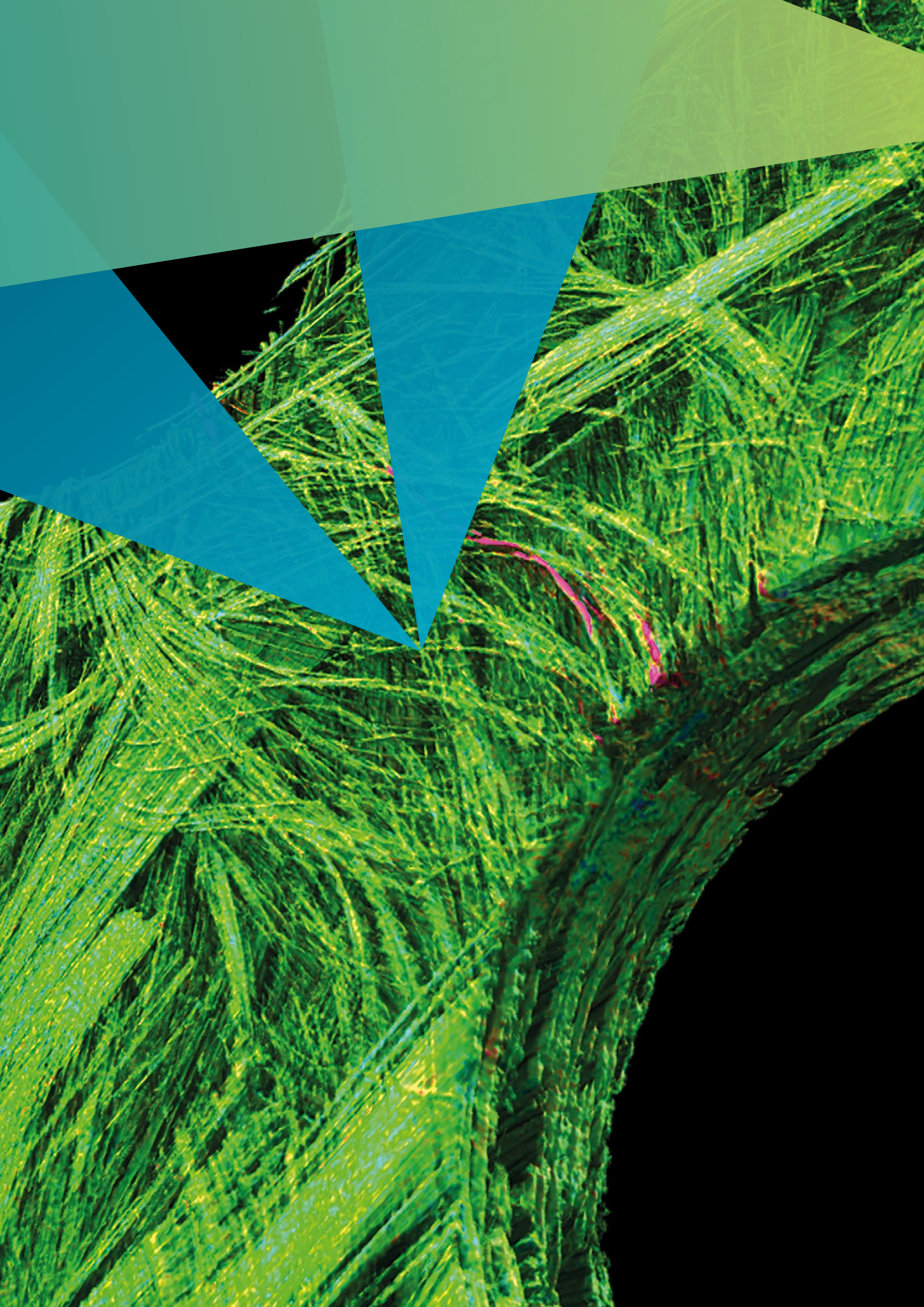
Proven accuracy that delivers clear, actionable quality insights.

Built for the long run

Robust software that grows with your needs and changing industry demands.

Rely on 25+ years experience

VG software doesn't just do most 3D data analysis tasks—it does them better. So well, in fact, that others now follow our lead. That's why we remain the go-to choice for manufacturers who demand absolute precision, reliability, and confidence in their quality process.



Contents

Contents

Discover the inspection tools that help your business stay ahead

See why VG software should be on your shortlist

We get it—text first, talk later. You're still exploring your options, and VG might not be on your shortlist, yet. That's okay. This brochure is your first stop for discovering how VG software transforms non-destructive quality inspection, from digital part validation to precise metrology and material analysis.

Read on. Gain confidence. Make better decisions—faster.
And when you're ready, let's talk.

Prefer a conversation?

Have questions? Need guidance?
Let's make this easy. Talk to a VG expert and get the answers you need.

Scan the QR code for our contact page

Data collection

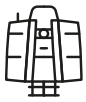
Data analysis

Data sources

(Where the **data** comes from)

Industrial CT scanners

- X-ray
- Medical CT
- Neutron
- Synchrotron



3D NDT technologies

- Optical scanners
- Tactile scanners (CMM)

Visualisation

(What gets **visualised** in VG)

Voxel-based CT data

Render, rotate, section, segment, animate

CAD, point clouds, and mesh data

Converted for measurement and simulation/morphing

Segmentation

(What gets **selected** in VG)

Precise data segmentation

Used to separate data sets into parts, or regions of interest (ROIs)

Flexible selection and AI tools

Manual, shape-based, grey-value-based, semi-automated, and AI-supported tools

Total quality inspection

How we take you from data to decision

Drive product excellence with the leading software for NDE

Data reporting

Analysis

(What gets **analysed** in VG)

Indication detection and material analysis

Identify porosity, cracks, inclusions, fibre orientations, and more

Dimensional metrology

Perform GD&T analyses, CAD comparisons, and wall thickness analyses

Simulation

Simulate assembled state of deformed parts, convert CT data to meshes for high-fidelity simulations

Reporting

(What gets **documented** and shared in VG)

Data-rich inspection reports

Informative combination of traceability data, numerical results, and interactive 3D images

Tailored reporting for all

Customisable content and level of detail for all project stakeholders

Seamless system integration

Connectivity to third-party systems for all reported data, including Hexagon's Metrology Reporting and Q-DAS software

Putting data to work

(Real-world **application** of the data)

Product and process optimisation

Improve manufacturing processes based on statistical analysis

Inline inspection and automation

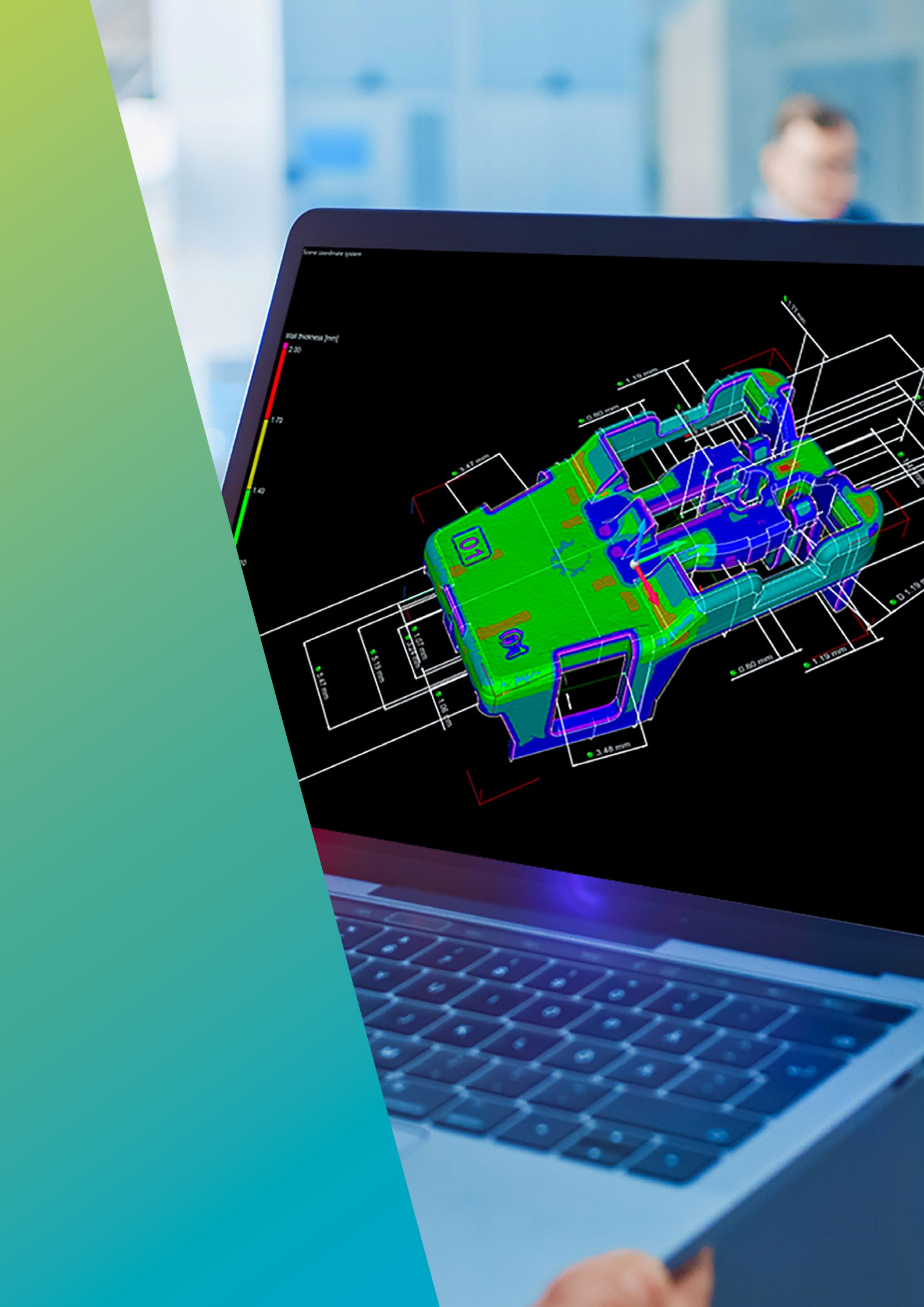
Reduce human error and speed up QC

Failure analysis and R&D innovation

Understand and prevent product failures before they happen

Regulatory compliance and traceability

Generate detailed reports for audits and certifications


Wall thickness [mm]
2.00
1.70
1.40
01
01
3.48 mm
0.80 mm
1.19 mm

The VG software range

The best tools for your CT and 3D data analysis tasks

Powerful solutions for your quality assurance challenges

Designed for efficiency and scalability, VG ensures you're always equipped for today's challenges and tomorrow's demands. Our customers are at the heart of what we do, which is why flexibility is key. Choose a pre-configured package or build a custom solution that fits your exact needs.

VG software applications

A powerful suite of software, built to tackle a wide range of data analysis challenges. Each product ensures you have the right tools and capabilities to keep your inspection workflow efficient and precise.

VGSTUDIO MAX
Swiss Army Knife of quality inspection.

VGSTUDIO
Simple visualisation.

VGMETROLOGY
Full GD&T functionality.

VGinLINE
Automation for at- and in-line scenarios.

VGTRAINER
Train AI-powered segmentation models.

myVGL
No-cost viewer of VG files, accessible to anyone.

Add-on modules

Specialist add-ons that expand your analysis capabilities as your needs evolve. Tailor your application with advanced tools to keep pace with new challenges and changing workflows.

Here is a selection of our most popular add-on modules:

- Coordinate Measurement (GD&T)
- Porosity/Inclusion Analysis
- Wall Thickness Analysis
- Nominal/Actual Comparison
- Battery Anode Overhang Analysis
- Deep Segmentation

Discover all available add-on modules here

Preconfigured software packages

These industry- and application-specific collections of essential VG tools are designed to help you tackle your real-world inspection challenges at a slightly lower bundled cost.

Geometry package
Metrology and quality control across industries.

Battery package
Inspection of battery defects and structural integrity.

Cast & Mold package
Quality assurance for casting and injection moulding.

Material package
Advanced research into materials and lightweight construction.

Composites & Plastic package
Precision analysis for composites and polymers.

Additive package
Inspection and validation of 3D-printed parts.

Universal package
Versatile toolset for multi-industry labs.

Ultimate package
Full-featured solution for end-to-end quality.

Industries and use cases

Built for your toughest standards

See where VG is trusted when precision cannot fail

When quality is non-negotiable, you choose VG software.

Transform industrial NDT data into clear, actionable insights, ensuring precision, reliability, and efficiency at every stage. For manufacturers, engineers, and researchers across industries, VG delivers the tools to detect defects, validate dimensions, and optimise production and part design. VG software has been co-developed with industry leaders where the stakes are highest, ensuring unmatched accuracy and total quality improvement.

If quality defines your success, VG is the software you trust.

Our users work in industries like these:


Automotive manufacturing


Aerospace engineering


Battery development


Injection moulding


Additive manufacturing


Casting


Science and research


And more

To solve challenges like these:

Application	Software package	Key features
Material quality analysis	VGSTUDIO MAX	Evaluate imperfections: porosity/inclusion analysis, fibre orientation analysis, foam/powder analysis, smart and AI-assisted segmentation.
Dimensional metrology	VGMETROLOGY	Full GD&T functionality: nominal/actual comparison, wall thickness analysis, advanced surface determination.
In-line and at-line automation	VGinLINE	Fully and semi-automated inspections and workflows, adaptable inspection plans, task distribution for reliable speed, smart and AI-assisted segmentation.
R&D and prototyping	VGSTUDIO MAX	Material property analysis, digital volume correlation, simulation, volume meshing.
Data sharing and collaboration	myVGL VGMETROLOGY VIEWER	Free viewing tools for .vgl and .mvgl files to share insights across teams effortlessly.
CT reconstruction and visualisation	VGSTUDIO	CT data import and quality analysis, visualisation of CT data or VG projects and their analysis results, basic reference measurements and alignment, keyframe animations, reporting.

Quality in
aerospace

Industries

Aerospace engineering

When even the smallest flaw isn't an option

From composite fuselage panels to turbine blades, every aerospace component must be lightweight, durable, and entirely defect-free, but traditional inspection methods often leave critical gaps. With VG, you don't have to compromise.

Struggling to detect sub-millimetre cracks in composite materials? VG software sees what the human eye, and even many inspection tools, can't. Rely on VG software to gain insights that keep aerospace safe, efficient, and ahead of the competition.

> **We are already users of VG software for analysing and visualising CT data. It's easy to use and delivers convincing results in no time."**
>
> **Safran**

Learn more about our solutions for aerospace

Together, we'll tackle your critical industry challenges:

Safety

Meet "zero defect" standards
Safety-critical requirements leave no room for error. VG software delivers precise, reliable inspection data with automation features that minimise risk and reduce human error.

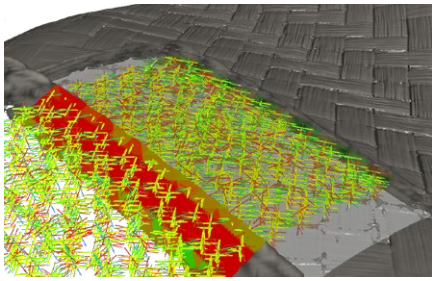
Speed

Achieve precision metrology
Gain a holistic view of part quality, reduce iterations, and get it right the first time with VG's inspection insights and automation, maximising output while cutting costs.

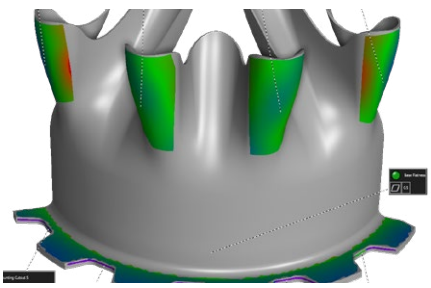
Sustainability

Validate performance
Merge reliable insights into real-world parts with powerful simulation capabilities to drive innovation in aircraft design and production, resulting in weight savings, reduced noise pollution, and decreased fuel consumption.

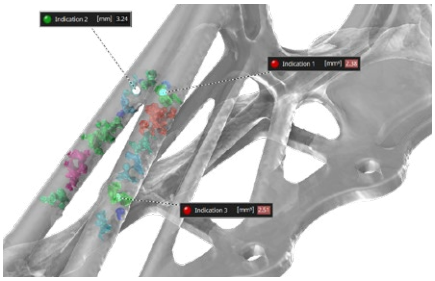
Key analysis capabilities:



Fibre composite material analysis
Visualisation of fibre orientation and properties in woven composites.

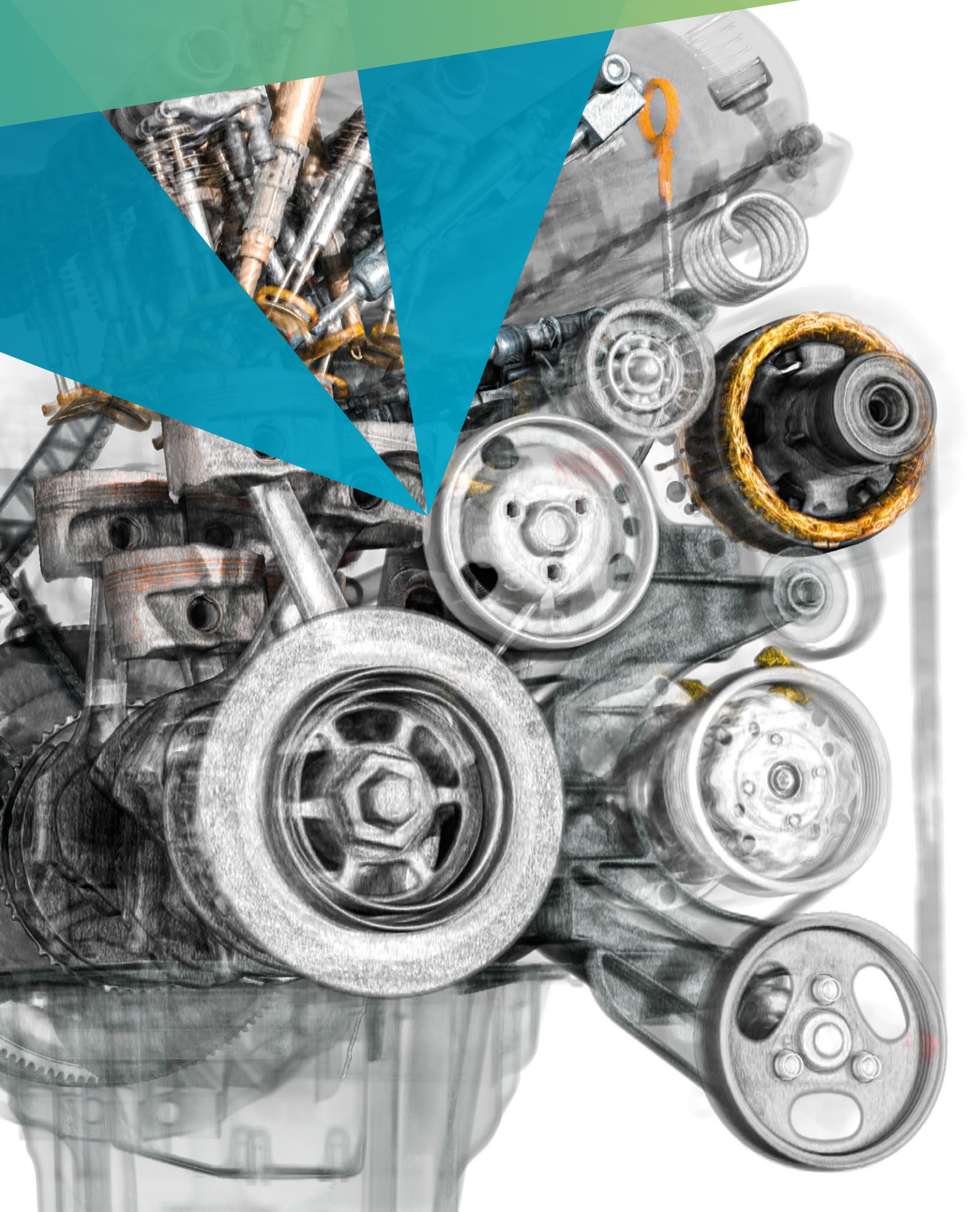


Coordinate measurement
Visualisation of profile and flatness tolerances on a turbine, with colour-coding for easy identification of critical zones.



Porosity/inclusion analysis
Easily detect, characterise, and visualise porosity and inclusions with volume-toleranced indications.

Quality in
automotive



Industries

Automotive manufacturing

Driving the mobility revolution

In your industry, every component—from engine blocks to battery enclosures—must not only meet strict tolerances but also endure stress and perform flawlessly over time. Traditional inspection methods can lead to slow processes, missed defects, and costly rework. With VG software, you eliminate that risk.

Facing porosity issues in cast aluminium parts? Detect even the most minor inclusions before they become structural failures. Looking to automate quality inspection? Our AI-driven solutions accelerate inline inspection, making it faster and more reliable than ever. VG software empowers the automotive industry to lead confidently, ensuring quality, minimising waste, and accelerating production.

> **For the kind of advanced data processing software that would deliver the metrology results our customers were asking for, we found our way to Hexagon's VGSTUDIO MAX and VGinLINE. Everyone was aware of VG software; it was, and is, the standard in CT software."**
>
> **Heitec AG**

Learn more about our automotive manufacturing

Together, we'll tackle your critical industry challenges:

Safety

Achieve comprehensive quality assurance
Utilise advanced inspection and analysis tools to detect potential safety issues early in the design and manufacturing process.

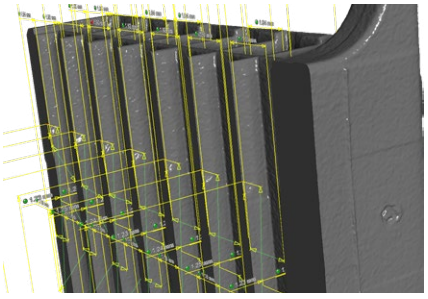
Sustainability

Optimise part design
Implement simulation and testing technologies to develop lightweight, efficient components that reduce emissions and fuel consumption.

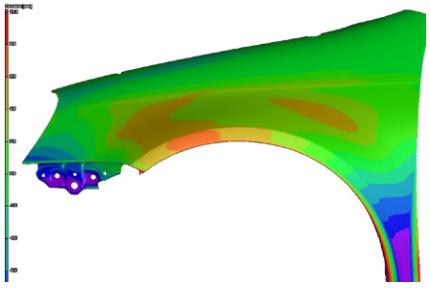
Time-to-market

Streamline production processes
Leverage digital twins and virtual prototyping to speed up product development cycles and reduce time-to-market.

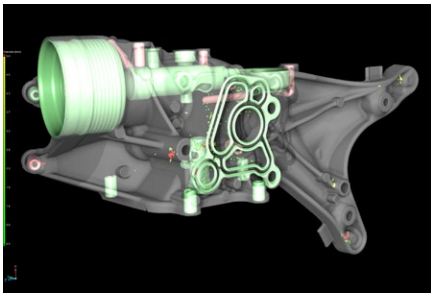
Key analysis capabilities:



Coordinate measurement
3D clipped view of a measurement on a plastic injection-moulded connector.

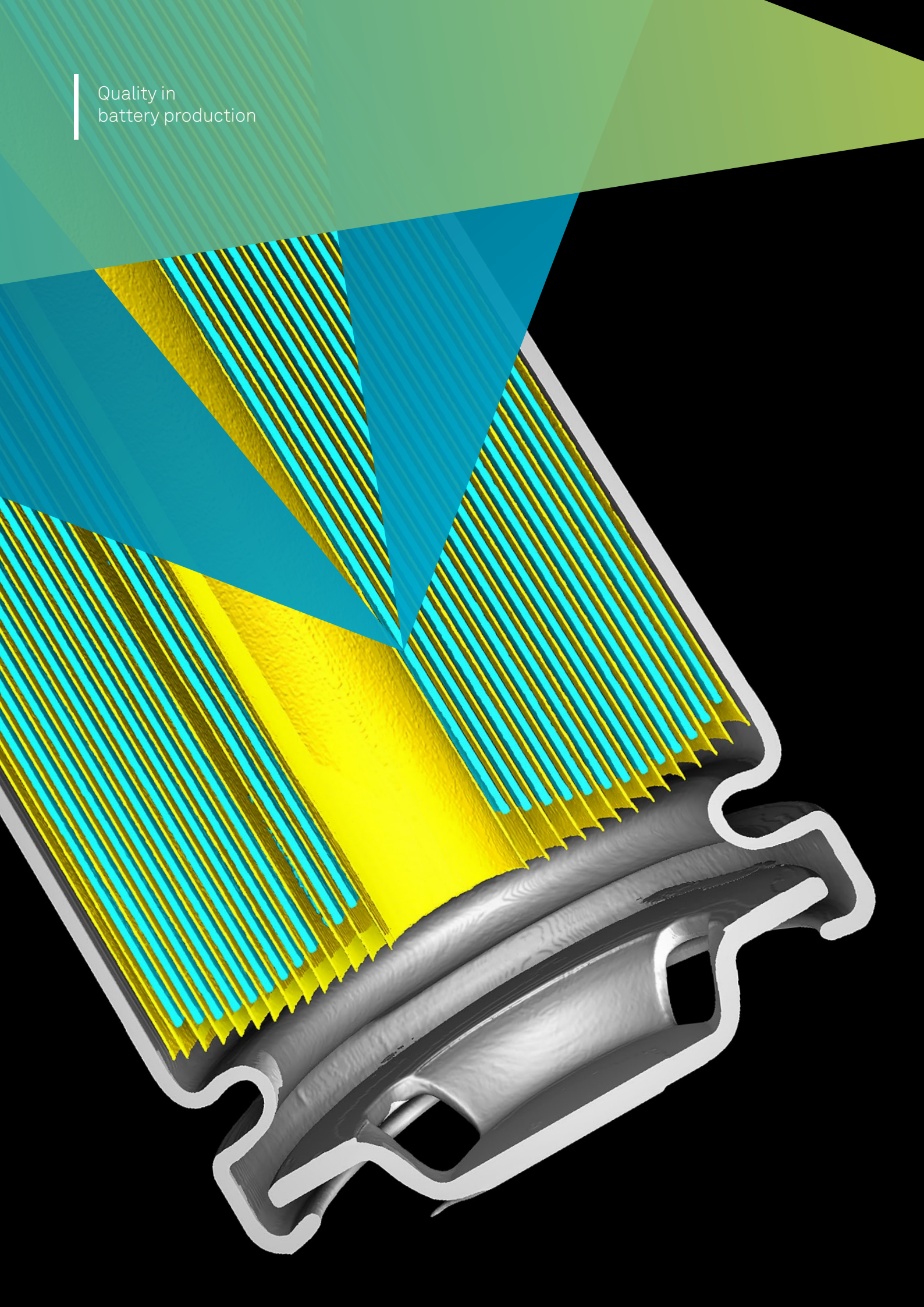


Automation
Nominal/actual comparison of an optical scan of a fender against the nominal part.



Porosity/inclusion analysis
The P 203 analysis is used to define regions with corresponding tolerances.

Quality in battery production



Industries

Battery inspection

Longer life, safer cells, better performance

Battery technology is evolving fast, and quality control must keep up. Defects in battery cells can lead to shortened lifespan, reduced performance, and even safety risks. Regardless of end use, costs caused by poor quality in a battery can be astronomical, resulting in global recalls and double-digit losses in production.

VG software provides the answer. Need to detect microscopic defects in electrodes? We see what traditional inspection methods can't. Struggling with anode overhang? VG's specialised analysis tools ensure maximum efficiency and longevity. Concerned about battery degradation over time? Our Digital Volume Correlation (DVC) module tracks internal changes across charge cycles, giving you a deeper understanding of material behaviour. Let us help you push the limits of performance, reliability, and safety.

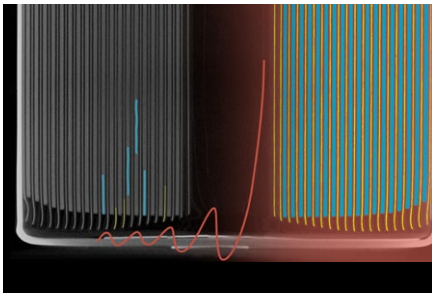
> **We use many modules from VG and examine nearly our entire portfolio with them. The VG products simplify my daily work by providing a wide range of analysis methods, all conveniently available in a single software package."**
>
> **Brose Fahrzeugteile GmbH & Co. KG**

Learn more about our battery inspection

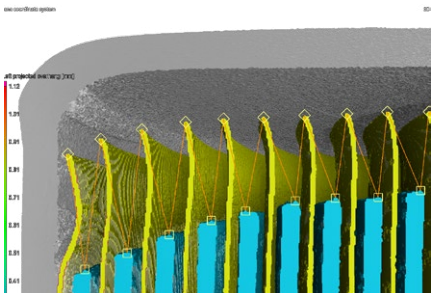
Together, we'll tackle your critical industry challenges:

Safety	Innovation	Speed
Ensure unmatched quality Implement rigorous testing protocols to identify and mitigate potential battery design and manufacturing failure points. Detect anode overhang and electrode misalignment affecting battery performance.	**Accelerate development and efficiency** Employ cutting-edge segmentation techniques to explore new materials and designs that improve energy density and longevity. Make progress in battery design and component microstructure characterisation.	**Transform production operations** Identify production defects early to reduce waste and improve yield. Train deep-learning-based segmentation models in-house, keeping your data safe and enabling quality inspection that keeps up with production without sacrificing accuracy.

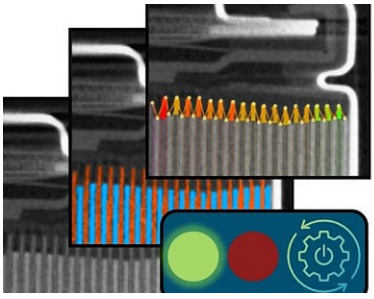
Key analysis capabilities:



Advanced segmentation
Our Paint & Segment tool segments structures within your dataset effortlessly. Simply paint some example voxels and we'll handle the rest.

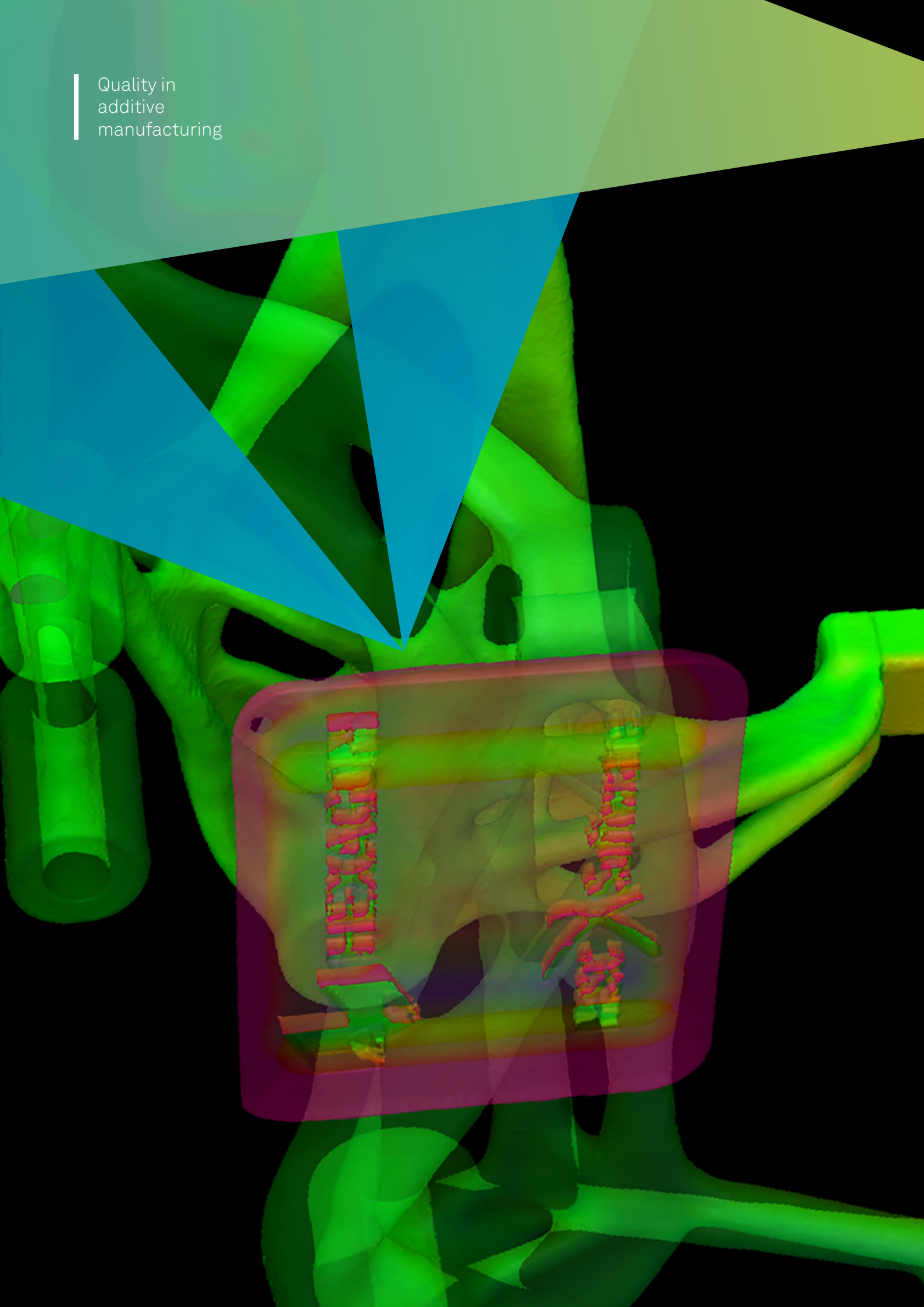


Battery anode overhang analysis
Analyse internal battery structures with the Battery Anode Overhang Analysis using precise 3D segmentation.



Automation
VG software enables a fully automated inspection of your entire production.

Quality in
additive
manufacturing



Industries

Additive manufacturing

Your work without the guesswork—see inside every layer

Complex geometries, lightweight structures, and rapid iteration make additive manufacturing (AM) revolutionary, but only if quality can keep up. Traditional inspection methods struggle with internal defects, residual stress, and inconsistencies in powder-based manufacturing. With VG software, you don't have to rely on trial and error.

Printed parts not matching CAD models? Our nominal/actual comparison tools highlight even the slightest deviations. Need to ensure internal strength without excess material? VG's volume meshing and simulation modules predict real-world performance. Struggling with powder consistency? We provide detailed powder analysis to optimise AM processes from the ground up.

Move from prototype to production with confidence—with VG software.

> **"The main advantage is the visualisation and the rapid evaluation of the scans. VGSTUDIO MAX is very easy to learn, and after a short training period, every user is fully ready to use it."**
>
> **FIT AG Additive Manufacturing Group**

Learn more about VG in additive manufacturing

Together, we'll tackle your critical industry challenges:

Accuracy

Verify complex geometries
Compare printed parts against CAD models to detect deviations. Iteratively optimise your additively manufactured part's shape to make sure even complex, thin-walled parts fit together perfectly.

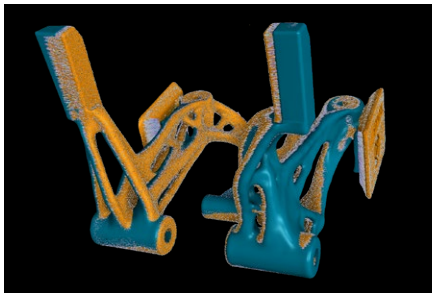
Integrity

Ensure your parts perform
Identify porosity, inclusions, and internal inconsistencies affecting mechanical integrity to ensure your AM parts meet performance criteria. Use these insights to refine printing techniques and improve part consistency.

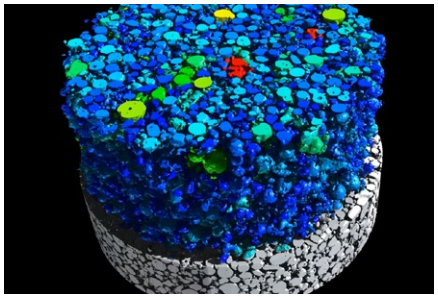
Innovation

Optimise process parameters
Leverage our specialised powder analysis to identify potential quality issues before the first print. With our range of material analysis options, easily explore new materials and their properties for AM applications.

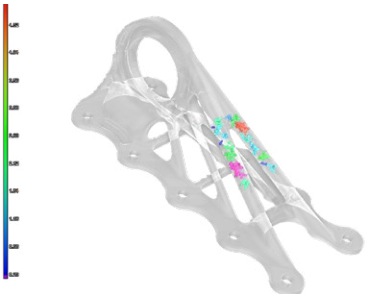
Key analysis capabilities:



Compensation mesh
Utilise deformation fields to correct discrepancies between actual and reference objects.

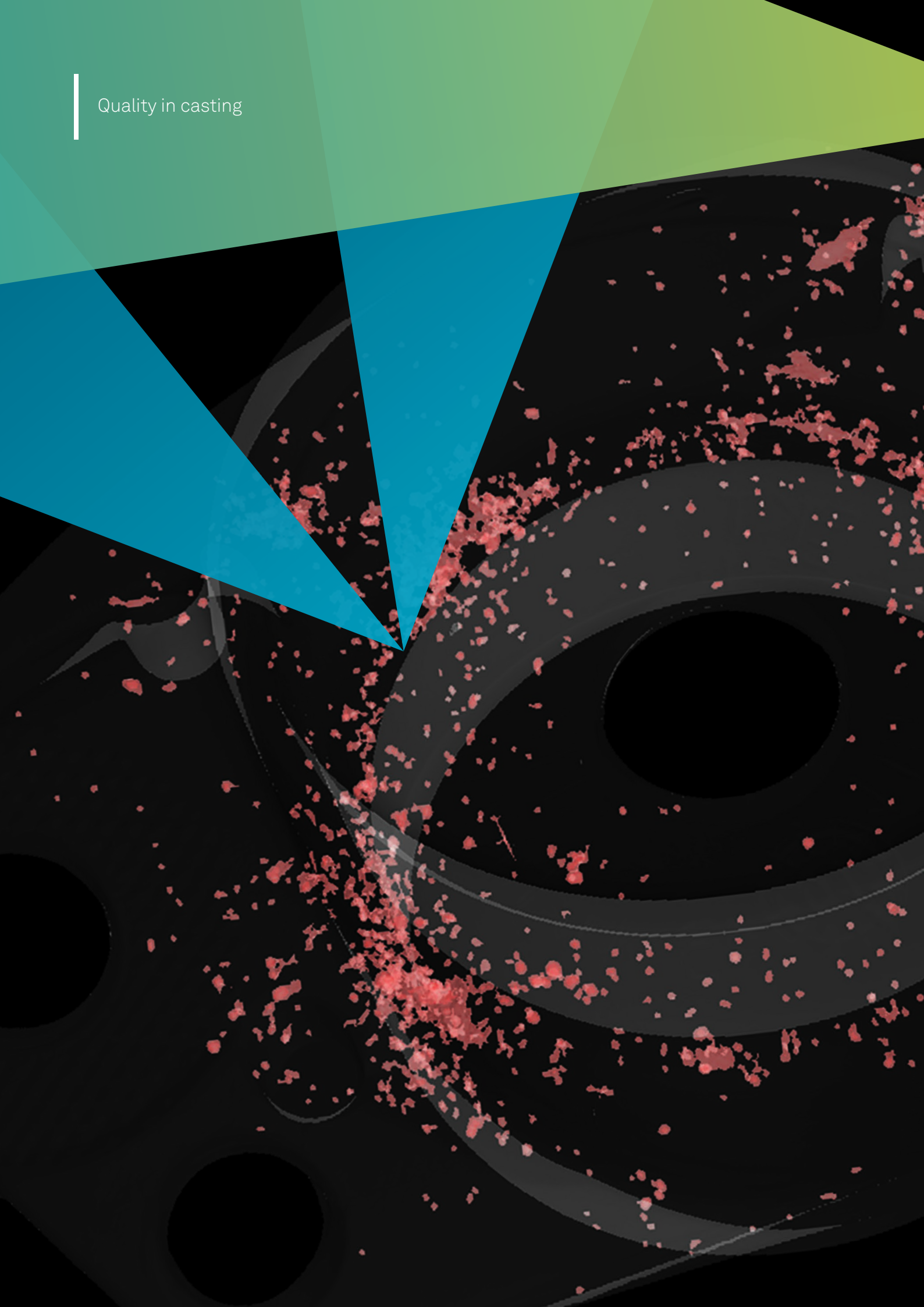


Foam and powder analysis
Measure particle size distributions in powder for additive manufacturing.



Porosity/inclusion analysis
Easily detect, characterise, and visualise porosity and inclusions with volume-toleranced indications.

Quality in casting



Industries

Casting

Flawless quality—from first pour to final part

In casting, flaws hide beneath the surface. Porosity, shrinkage, and tool wear can mean costly rework, rejected parts, and production slowdowns. Catching defects before they lead to failures is critical, but traditional methods often fall short.

With VG software, you can see what's happening inside, non-destructively. Struggling with porosity in aluminium castings? Our software detects and quantifies it with precision. Need to optimise your mould? VG provides geometry correction tools that help extend mould life and improve consistency. Concerned about maintaining tolerances? Our advanced metrology tools ensure every part meets exact specifications.

VG software helps foundries produce higher-quality parts with less waste and greater efficiency.

> **We can meet today's challenges successfully because we have the competence and the right tools. VG products allow us to tackle all of them."**
>
> **F. & G. Hachtel GmbH & Co. KG**

Learn more about VG in casting

Together, we'll tackle your critical industry challenges:

Reliability

Detect hidden flaws
Detect hidden defects such as porosity, shrinkage cavities, and inclusions before they lead to production issues.

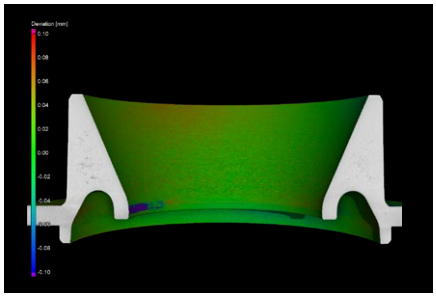
Precision

Ensure dimensional accuracy
Achieve superior accuracy in fewer iterations by validating tooling and accounting for material shrinkage and deformation. Analyse part defects to enhance and optimise the entire production process.

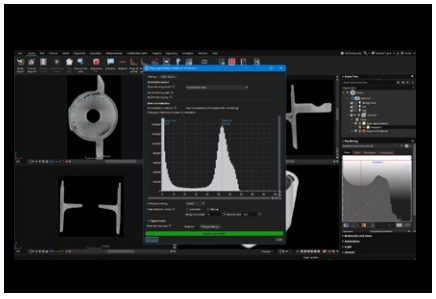
Consistency

Meet customer demands
Extend the lifespan of moulds and tools by optimising designs to minimize wear and ensure uniformity across production batches. Deliver consistent product quality to meet industry standards and fulfill customer expectations.

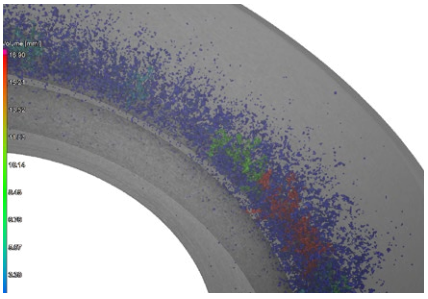
Key analysis capabilities:



Nominal/actual comparison
Nominal/actual comparison of a cast part, with colour overlay to directly identify areas of increased deviation.



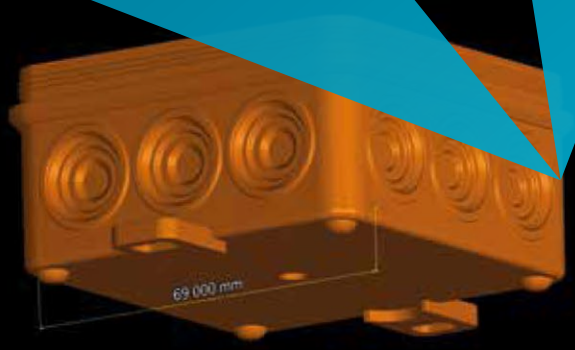
Deep segmentation
Detect indications in challenging CT scans using AI and our Deep Segmentation module.



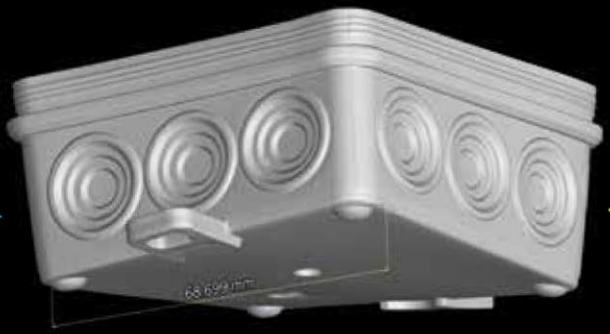
Porosity/inclusion analysis
Visualisation of a 3D defect analysis on a casting with increased transparency to reveal internal pores.

Nominal part

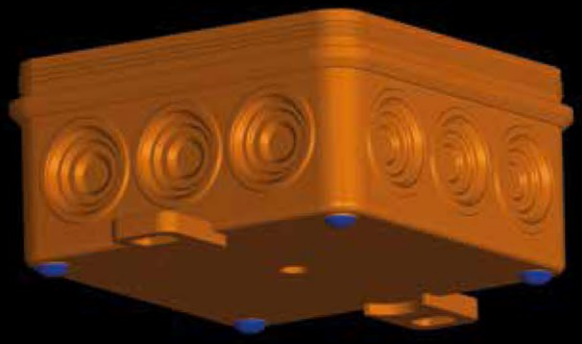
Actual part, highly warped



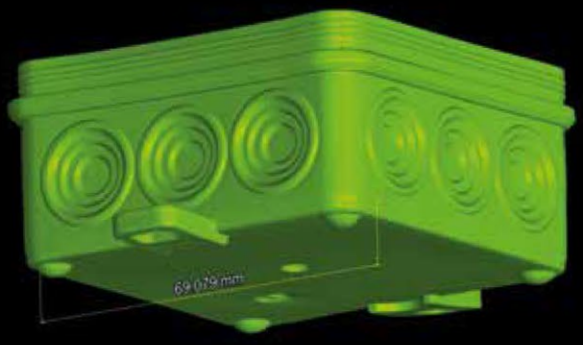
Measurement task



Adaptive measurement template works,
but results deviate due to warpage



Solution: Define regions where the actual object should deform into the nominal object´s shape. Regions are morphed into each other, the deformation of the rest of the part is performed in an FEM simulation.



Fixture simulation result and measurement

Industries

Injection moulding

Stronger, more consistent parts

In injection moulding, unseen defects can compromise performance and durability. Porosity, fibre orientation, and warpage lead to rework, scrap, and production inefficiencies. Detecting and correcting these issues early is essential, but traditional inspection methods only see the surface. VG software reveals what's inside—without cutting parts open. Are you struggling with fibre misalignment in reinforced plastics? VG maps fibre orientations for optimized strength and performance. Are you concerned about porosity affecting durability? Our software quantifies voids and inclusions with precision. Do you need to improve mould accuracy? VG's geometry correction tools refine moulds to reduce warpage and ensure perfect fits.

When complexity increases, tolerances get tighter, and the goal is zero defect production, VG is your software of choice.

> **VG is really the best on the market. What I love most about VG is the versatility, from failure analysis and metrology to defect analysis and stress strain analysis. Awesome, versatile, incredibly efficient, and well-engineered."**
>
> **Tessy Plastics**

Learn more about VG in injection moulding

Together, we'll tackle your critical industry challenges:

Stability

Ensure quality in every production run
Utilise advanced analyses to maintain high precision and quality. Identify porosity, fibre misalignment, sink marks, and warpage before production failures occur.

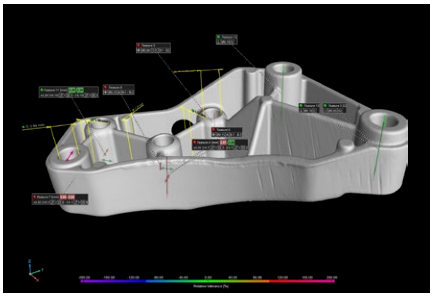
Efficiency

Invest in quality at the right stage
Lower your running costs on fixtures and their qualification by applying VG's Fixture Simulation module in R&D and quality control.

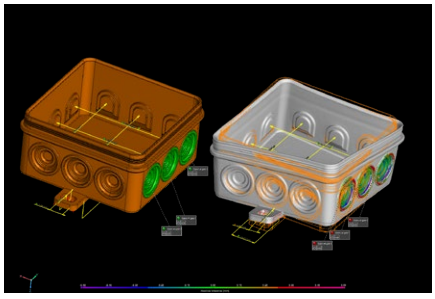
Time-to-market

Make multiple iterations a thing of the past
Advanced software capabilities enable you to use scan data of manufactured parts to optimise your mould designs. Validate tooling and compensate for shrinkage, warpage, and material flow inconsistencies.

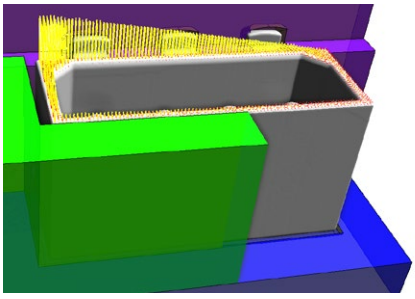
Key analysis capabilities:



Coordinate measurement
Evaluate part geometries using a comprehensive set of tolerances and dimensions.

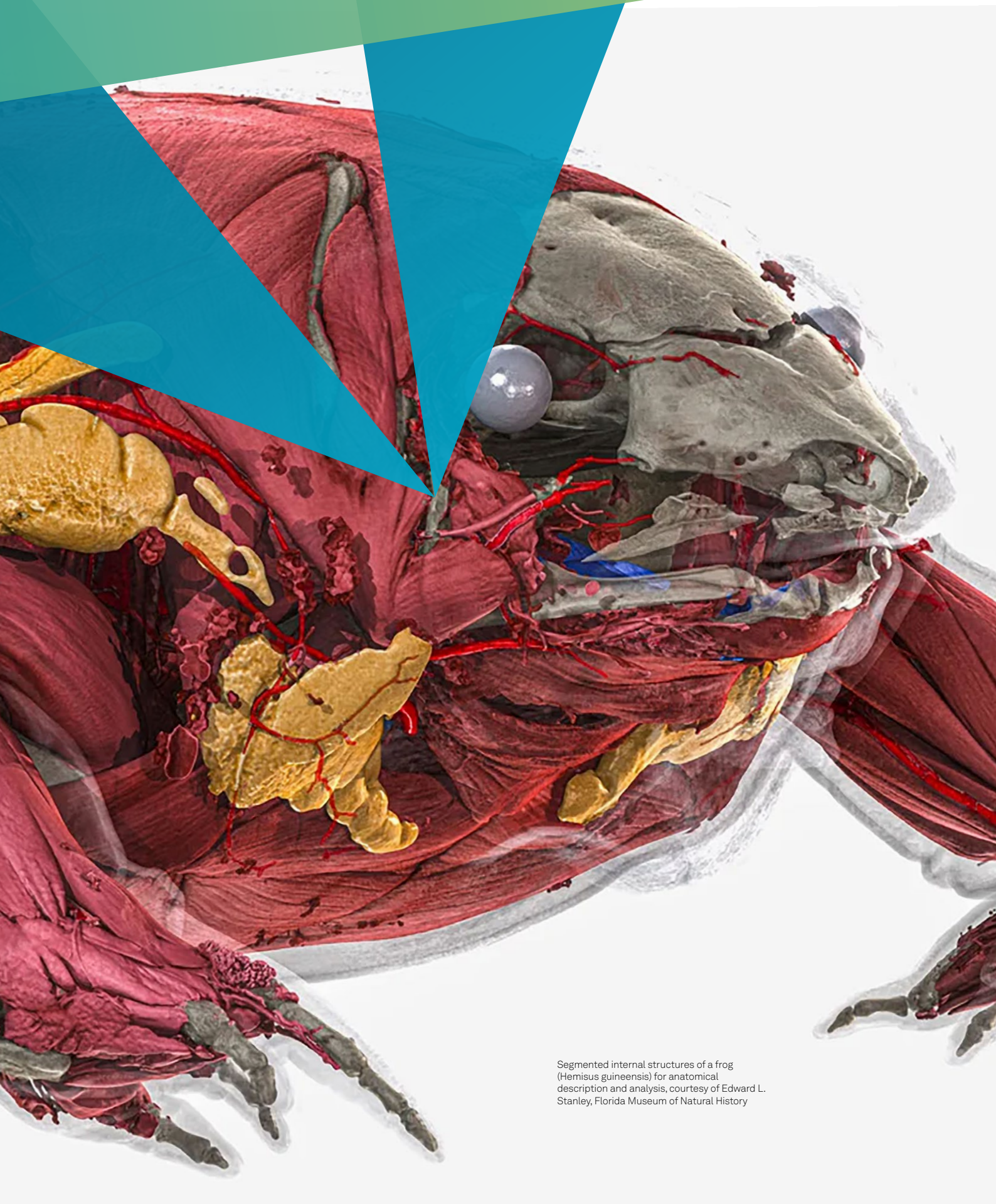


Adaptive measurement template
Automatically evaluate morphed parts without manual adjustments.



Manufacturing geometry correction
Adjust your part or mould CADs to compensate for deviations in produced parts.

Quality in research



Segmented internal structures of a frog (Hemisus guineensis) for anatomical description and analysis, courtesy of Edward L. Stanley, Florida Museum of Natural History

Industries

Science and research

Reveal the unseen and unlock new discoveries

In science and research, understanding what lies beneath the surface is essential. Traditional methods often involve destructive testing, time-consuming sample preparation, or limited visibility into internal structures. VG software changes that. With high-precision visualisation and analysis, researchers in biology, archaeology, palaeontology, geology, and medical science can explore complex structures non-destructively, gaining deeper insights into materials, organisms, and artefacts than ever before.

Need to segment delicate fossils or biological tissues? VG makes it easy to separate structures with advanced, AI-driven segmentation. The only thing more exciting than your next great discovery? Sharing it with the world thanks to VG software's tools for stunning visualisations and animations.

> **"If I'm looking at a rare specimen, I don't want to damage it. VGSTUDIO MAX is perfect. It's complex, but that's what's so wonderful about it. It's remarkable. I'm learning something new and really cool every day."**
>
> **American Museum of Natural History**

Learn more about VG in science and research

Together, we'll tackle your critical industry challenges:

Precision

Achieve subvoxel accuracy with standardised methods
Ensure precision and reproducibility with advanced segmentation tools, sub-voxel precise analysis, and standardised workflows, which provide reliable insights into biological and material structures.

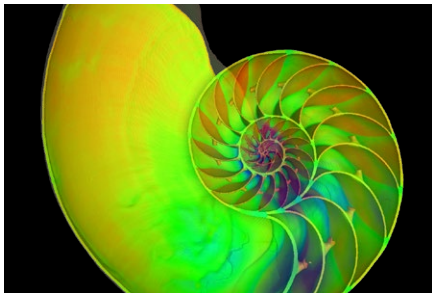
Versatility

Experience a comprehensive, all-in-one solution
With a complete toolbox and multiple modules, perform everything from reconstruction to volume analysis and visualisation. It is compatible with CT, MRI, neutron tomography, and synchrotron scans for maximum flexibility.

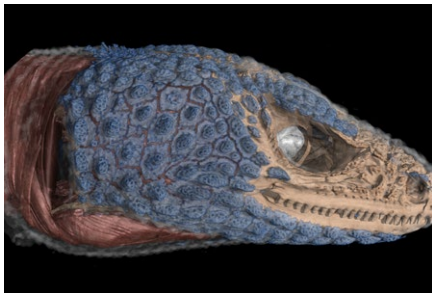
Efficiency

Automate workflows for time-saving analysis
Leverage AI-based segmentation tools and macro-capable automation for efficient analysis. Our software streamlines processes, freeing up valuable time for more critical tasks.

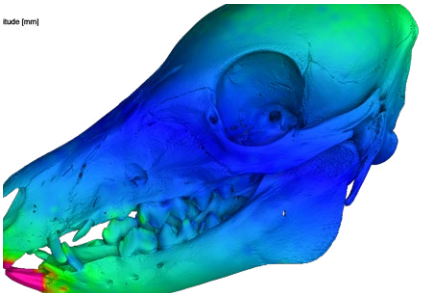
Key analysis capabilities:



Wall thickness analysis
Wall thickness analysis on a nautilus (Allonautilus scrobiculatus) with a 3D clipping element to reveal inner structures for comparative anatomy. By analysing wall thickness, biologists can learn how the species adapts to different water depths.



Visualisation
Visualisation and segmentation of a Xenosaurus skull for comparative morphological analysis, courtesy of Edward L. Stanley, Florida Museum of Natural History.



Digital volume correlation
Digital volume correlation and annotations used for landmarking on a pig's skull (Sus scrofa) to compare specimens and quantify changes in anatomical structures.

Enjoy the freedom of a tool that works how you do

You can do everything with VG. You can make simple images or do complex analysis. One phrase that would describe VG is “versatility.” There's so much there.”

National Technical Systems

Benefits to you

End-to-end versatility. No, but really.

See how VG is adaptable to your industry and workflow

Manufacturers, engineers, and researchers face relentless pressure to ensure quality, optimise production, and stay ahead of evolving industry demands. Whether you're struggling with defect detection in high-volume manufacturing, trying to validate next-generation materials, or looking for a seamless way to automate quality control, the right tools make all the difference. VG software is designed to adapt to your workflow, no matter the challenge—helping you inspect with confidence, automate faster, and make better decisions.

R&D and prototyping

Refine designs with confidence. Get non-destructive insights to validate tools, analyse precision, and optimise early-stage development.

Warranty and reclaim

Turn failures into future improvements. Identify root causes with detailed defect analysis, reducing risk and enhancing product reliability.

Production and inline quality control

Catch defects before they cause problems. Automate inspections to detect flaws early and maintain zero-defect standards at speed.

Hardware independence

No limitations, no lock-in. Seamlessly integrates with most NDT hardware, ensuring flexibility in any workflow.

Customisable and scalable

Built to fit your needs. Packages and add-ons let you adapt VG software to your industry's toughest challenges.

> **Everything's there. You don't need to go look at other software and source in different solutions."**
>
> **National Technical Systems**

Be sure of
your impact

We use VG daily for the visualisation of components, defect identification, and qualification of our plastic parts. I would unreservedly recommend VG software, especially because it truly provides transparency regarding where the challenges lie in the analysis and qualification of parts."

F. & G. Hachtel GmbH & Co. KG

Benefits to you

Precision that moves you forward

Get the insights that matter

When tolerances are tight, materials are complex, and internal structures dictate performance, precision is non-negotiable. VG software delivers unmatched accuracy at every level, from subvoxel-accurate indication detection to full 3D digital twins. Whether you're working with CT scans or other NDT data, or need your CT scanner to function like a high-accuracy CMM tool, VG transforms raw data into clear, actionable intelligence, so you can make decisions with confidence.

Uncompromising accuracy

With CT and VG, see what others miss. Industry-leading precision detects porosity, fiber orientation, microstructures, and cracks at the finest scale.

Digital twin creation

Turn scans into certainty. Generate high-fidelity 3D representations of your part for detailed structural analysis and defect detection.

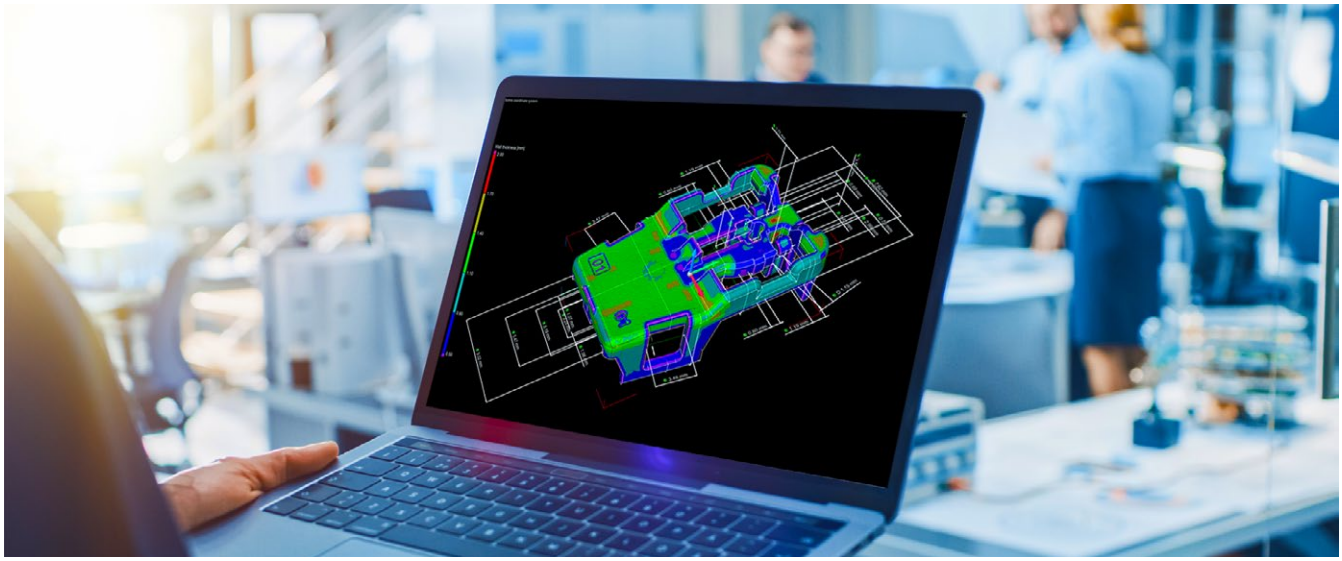
Advanced analytics

Deeper insights, smarter decisions. Compare nominal vs. actual, analyse wall thickness, and evaluate material properties with precision.

Proven results

Efficiency you can measure. Inspection costs cut by 50%, inspection times reduced by 84%, delivering real-world impact.

> **You know each time you use VGSTUDIO MAX that it will work. And the quality of the rendering is the best in the world. VGSTUDIO MAX enables us to create incredible 3D renderings, images, and animations."**
>
> **IMA Solutions**



Rest easy knowing you can meet the demands of today and tomorrow

“I don't think there's any software that offers all the solutions better than VG does.”

CTM-do GmbH

Benefits to you

Built for the long run

Designed for longevity, scalability, and lasting impact

VG is a one-time investment that keeps delivering, no matter how your inspection needs evolve. Designed to grow with your workflow, VG remains compatible with NDE systems, expanding 3D data sources, and your latest industry demands. What's more, the interface remains consistent across all VG products, so once it's in place, it stays efficient, adaptable, and ready to meet your next challenge.

AI-driven insights

Limits are off when AI is on. With tools like VGTRAINER, leverage AI-assisted segmentation to ensure accurate, repeatable results with no expertise required.

Automation and templates

Work smarter, not harder. Customisable macros and batch processing streamline inspections and reduce manual effort.

Intuitive interface

One platform, limitless potential. A unified, intuitive interface keeps navigation smooth and efficiency high.

Collaboration made simple

Share insights instantly. Export data in .vgl and .mvgl formats or use free viewers like myVGL for seamless teamwork.

Reporting and integration

Share data your way. Export interactive HTML reports or send results directly to Metrology Reporting or Q-DAS, no specialist software needed.

Support and training

On-demand resources, expert guidance, and local VG Academy training courses ensure you can quickly maximise on software capabilities.

Pick the VG application that fits your needs

The right tools for your challenges, ready when you are

Every inspection challenge is different, and VG applications ensure you have the right tools to master yours. Whether it's metrology, automation, or defect analysis, each application is designed to seamlessly integrate into your workflow and deliver precise, reliable results.

Need AI-powered segmentation?
Use VGSTUDIO MAX alongside VGTRAINER

VGSTUDIO MAX

Learn more about VGSTUDIO MAX

The complete solution for CT data analysis

VGSTUDIO MAX delivers non-destructive insights at every stage of the product lifecycle, helping manufacturers improve quality, reduce costs, and accelerate production. With a full spectrum of inspection tools, from CT reconstruction and GD&T to material analysis and simulation, it's the go-to software for precision-driven industries.

Designed for holistic analysis and high-resolution visualisation, VGSTUDIO MAX ensures you see more, understand more, and optimise faster—so you can move your products forward with confidence.

Basic license features:

- CT data import and data quality analysis
- Visualisation of CT data, GD&T, and analysis results
- Surface determination; segmentation
- Basic reference measurements (not full GD&T callouts)
- Basic alignment (simple alignment, simple 3-2-1)
- Reporting
- Automation
- Animation

Preview of add-on modules available:

- **Porosity/Inclusion Analysis:** Identify voids and material inconsistencies.
- **Battery Analysis:** Detect defects in electrodes, separators, and anode overhangs.
- **Structural Mechanics Simulation:** Perform stress and load simulations on CT data.
- **Digital Volume Correlation (DVC):** Analyse material deformation over time.
- **Reverse Engineering:** Convert CT data into high-fidelity CAD models.

> **This is a new dimension in quality assessment. Virtually unlimited possibilities of metrology."**
>
> **VG training participant**

VGSTUDIO

Learn more about VGSTUDIO

The gold standard for visual quality inspection

VGSTUDIO reveals hidden details beyond the limits of optical and tactile metrology. Designed for electronics, research, and scientific discovery, it provides clear, high-resolution visualisation of a part's material makeup, non-destructively and with unmatched clarity.

A low-cost, low-barrier solution for industrial CT data, VGSTUDIO helps you see what's beneath the surface, delivering insights that drive better product quality, breakthrough discoveries, and a deeper understanding of material behavior.

Basic license features:

- CT data import and data quality analysis
- Visualisation of CT data or VG projects and their GD&T and analysis results
- Basic reference measurements (not full GD&T callouts)
- Basic alignment (simple alignment, simple 3-2-1)
- Reporting
- Keyframe animation

Preview of add-on modules available:

- **CT Reconstruction:** Transform 2D X-ray images into detailed 3D CT models.

Pick the VG application that fits your needs

The right tools for your challenges, ready when you are

VGMETROLOGY

Learn more about VGMETROLOGY

Precision metrology without compromise

VGMETROLOGY delivers comprehensive, high-precision measurement tools for CT data, CAD models, meshes, and point clouds. Designed for fast, reliable results, it ensures full GD&T compliance, helping you adapt to changing demands with confidence.

Seamlessly integrating with CT, tactile, and optical scanners, VGMETROLOGY enables non-destructive dimensional analysis, including nominal/actual comparisons, wall thickness evaluation, and advanced GD&T tasks—so you can measure with certainty and trust every result.

Basic license features:

- CT data import (no grey values)
- Visualisation of surface data, GD&T, and analysis results
- Advanced (single) surface determination as part of the import process
- Dimensional measurement
- GD&T callouts
- Geometry element fitting
- Nominal/actual comparison
- Wall thickness analysis
- Alignment
- Reporting
- Automation

Preview of add-on modules available:

- CAD Import
- Manufacturing Geometry Correction
- Reverse Engineering
- PMI Extension for CAD Import

> **The complete infrastructure of VGinLINE is a ready-to-use software package that allows us to easily integrate our own modules and functions, enabling us to combine accepted standards with flexibility."**
>
> **Heitec AG**

VGinLINE

Learn more about VGinLINE

Automated CT inspection that's fast, reliable, and scalable.

VGinLINE brings the analysis power of VGSTUDIO MAX and AI-supported segmentation to the shop floor, ensuring high-throughput, non-destructive quality control with minimal manual input. Designed to reduce human error and streamline inspection workflows, it enables real-time defect detection and fully autonomous quality monitoring.

Easily configure inspection jobs, set priorities, and integrate results into existing systems for seamless inline process optimisation. A live dashboard keeps you informed, displaying inspection status and results for every part as they arrive.

Included capabilities:

- Create jobs to define what VGinLINE does* with CT data sets as they come in at or near the production line.
- Include if-then statements in your jobs and assign priorities to define which jobs will be calculated first.
- A dashboard keeps you informed about the status of your inspections and the results for every part in real time.

** VGSTUDIO MAX is needed to create the macros and templates for data set analysis.*

Pick the VG application that fits your needs

The right tools for your challenges, ready when you are

Need AI-powered segmentation?
Use VGTRAINER alongside VGSTUDIO MAX and VGinLINE

VGTRAINER

Learn more about VGTRAINER

Train AI-powered models for segmentation with ease

VGTRAINER puts the power, accuracy, and speed of AI-driven segmentation in your hands—without the need for AI expertise. Designed for inline and high-throughput environments, it enables fast, stable segmentation of hundreds of datasets, ensuring precise, repeatable results at scale.

When outsourcing isn't an option—or when you're the provider manufacturers outsource to—VGTRAINER enables you to build and refine segmentation models on your own data, in your own secure environment. Whether you're working with batteries, medical scans, or composite materials, VGTRAINER builds the model you need to segment relevant data with confidence every time.

Once you have the model, use the Deep Segmentation module to seamlessly import and automate the application of your segmentation model in VGSTUDIO MAX and VGinLINE, putting AI to work where you need it, from R&D to fully automated production lines.

The results are very impressive. After training a model with just 20 labeled datasets, the resulting segmentation is about 98% accurate. It's very impressive, very efficient."

Anatomik Modeling

Basic license features:

- **No-code AI model generation:** Train segmentation models without programming or AI expertise.
- **Automated dataset processing:** Simply upload your labeled training datasets into the interface and let the software take it from there. You can have your first working model in a single day, and can iterate as many times as you like with additional data to improve the model's accuracy.
- **Full VG software compatibility:** Use AI models inside VGSTUDIO MAX and VGinLINE when you purchase the Deep Segmentation module.
- **Secure on-premise solution:** No cloud dependencies, keeping your data in-house.

Pairs well with these add-on modules for your VGSTUDIO MAX or VGinLINE license:

- Deep Segmentation module: Connects your AI-trained models with the powerful workflows and analyses available in VGSTUDIO MAX and VGinLINE. Ideal for achieving reliable segmentation results on even low-quality scans typical to inline scenarios, this tool frees you from standard quality inspection limitations and makes reliable, data-driven decision-making that much easier.
- Battery Analysis module: Optimised for advanced, precise measurements of the anode overhang, accurate tolerancing of electrode shape and ordering, and seamless automation of all functions.

Use AI to analyse hundreds of parts per day
The VGTRAINER workflow

01 Prepare your training data

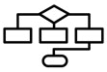
Curate accurate, consistent training data in VGSTUDIO MAX.

02 Train the AI model in VGTRAINER

Use VGTRAINER to develop a segmentation model tailored to your needs.

03 Apply the model

Use the Deep Segmentation module to import the trained model into VGSTUDIO MAX for precise, automated analysis.



04 Prepare automation

Set up your workflows in VGSTUDIO MAX to streamline your inspections.

05 Automate your quality control

Use your AI-driven inspection in VGinLINE for high-speed, inline analysis.

myVGL

VGMETROLOGY VIEWER

Access, analyse, and share VG data for free

Download now

These free viewing tools make collaboration effortless. myVGL enables users to open, review, and share CT data and VG project data, while VGMETROLOGY VIEWER provides interactive metrology analysis and report generation. Both tools ensure that teams can review critical insights without needing a full software license.

- Completely free to use
- Seamless data sharing and inspection
- Interactive reporting for better collaboration

“I would say it's practically the standard to work with VGSTUDIO MAX in industrial computed tomography. For our customers, a significant advantage is the availability of myVGL. This means that the data can be directly provided to the customer in the form we prepare it.”

TPW CTinspect

See your licensing options

Access VG in the ways you need

Every workflow is different, which is why Hexagon offers flexible licensing options to fit your inspection environment, team structure, and scalability needs. Our options ensure you have the right access at the right time.

	Global floating	Continental floating	Country floating	Local floating	Node-locked	Dongle
Summary	For global companies	For companies with multiple sites across one continent	For companies with users in a specific country	For companies with multiple users at one location	For use on a specific computer	The easiest way to use software alternately on multiple computers without a network connection
Available for	VGSTUDIO MAX (only packages, optionally with further add-on modules), VGMETROLOGY, VGMETROLOGY ES VGTRAINER	VGSTUDIO MAX (only packages, optionally with further add-on modules), VGMETROLOGY, VGMETROLOGY ES, VGTRAINER	VGSTUDIO MAX (only packages, optionally with further add-on modules), VGMETROLOGY, VGMETROLOGY ES, VGTRAINER	VGSTUDIO MAX (only packages, optionally with further add-on modules), VGMETROLOGY, VGMETROLOGY ES, VGTRAINER	VGSTUDIO MAX, VGSTUDIO, VGMETROLOGY, VGMETROLOGY ES, VGTRAINER	VGSTUDIO MAX, VGSTUDIO, VGMETROLOGY, VGMETROLOGY ES, VGinLINE, VGTRAINER
Use on multiple computers	✓	✓	✓	✓		✓
Floating within a network that extends across ...	... the world	... one continental time zone range (Americas, EMEA, or Asia-Pacific)	... either an entire country or a specific territorial region of a country (in the case of the territorial states Russia, Australia, India, Canada, the United States of America, and Mainland China)	... one city	–	–
Multiple instances on one computer for one user	✓	✓	✓	✓	✓	✓
Usable without network connection	✓ (temporarily)	✓ (temporarily)	✓ (temporarily)	✓ (temporarily)	✓	✓
Supports virtual license servers	✓	✓	✓	✓	–	–
Hardware-independent	✓	✓	✓	✓	No (computer-bound)	No (dongle-bound)
Platform-independent	✓	✓	✓	✓		✓

Services beyond software

Your long-term success begins with long-term support

World-class products to rely on

Drawing on decades of research and development experience, VG technology from Hexagon's Manufacturing Intelligence division is built on a long history of outperforming technological innovation.

That's why every application is sold with an update/service agreement, allowing you to download new versions at no additional cost while receiving priority customer assistance whenever needed.

World-class support delivered locally

With the largest dedicated service team of any metrology equipment manufacturer and a strong emphasis on locally delivered solutions, Hexagon ensures comprehensive aftersales support worldwide.

From service to training and software maintenance, we are committed to keeping your VG software performing at its best—wherever you are.

> **Once again, like in many other cases in the past years, you sent us a quick, clear explanation for our requests, no matter if the topic is hardware configuration or advice in a dedicated defect analysis setup. VG continues to be a strategic technical partner in our everyday job and we are proud to work with you."**
>
> **Metrix3D srl**

Maximise performance with an update/service agreement

Ensure your software remains current and fully supported

- **Regular updates at no extra cost:** Access new features and bug fixes regularly without additional expenses, keeping your software aligned with the latest advancements in industrial CT data analysis.
- **Exclusive in-person support:** Benefit from direct access to the VG Support team, providing expert assistance to address challenges and optimise your software usage.
- **Cost efficiency and convenience:** Maintain up-to-date software cost-effectively, with automatic contract renewals eliminating the need for manual annual renewals.
- **Dongle license protection:** For dongle license users, optional protection minimises replacement costs in case of loss or theft, ensuring continuous operation.

By securing an Update/Service Agreement, you ensure your VG software remains cutting-edge, fully supported, and cost-effective, empowering you to focus on achieving optimal results in your industrial CT data analysis endeavours.

“If you have questions or encounter a problem with any operation or evaluation, you receive assistance, a workaround, or even an update that resolves the issue very quickly. This is significantly better compared to other software companies.”

iWP innovative Werkstoffprüfung GmbH & Co. KG

VG software community on Nexus

Our software is trusted by customers and partners worldwide across various industries and applications. Our Technical Solutions Experts from the VG Support Team are here to assist with data analysis and optimising your use of VG software.

For support, visit our user forum on Nexus. Browse the knowledge base for relevant articles, explore the forum for existing answers, or post your own question. Community members receive updates on new features, releases, and more.

Get your free trial

The software is powerful, but trying it is easy. Try our applications for 30 days and experience the benefits of VG-powered NDE for yourself.

Get your free trial license today

Visit VG Academy

Increase your efficiency and master analysis techniques

With flexible learning options, including onsite, online, and e-learning courses, VG Academy gives you hands-on, expert-led training to maximise efficiency and precision in your inspections.

- **Public training sessions:** Available at VG Academy training centres
- **Onsite training:** VG experts come to your location for tailored learning
- **E-learning and virtual courses:** Access full VG Academy training anytime, anywhere
- **Local training:** Available through authorised training partners near you

“The course is extremely interesting and well structured. Lectures are straightforward and very enlightening.”

Training participant

Scan the QR code to learn more about your training options

Ready to talk?

Have questions? Need guidance?

Let's make this easy. Talk to a VG expert and get the answers you need.

Scan the QR code to contact us

> **The tool set and the power that VG software provides is second to none."**
>
> Delphi Precision Imaging

Hexagon is a global leader in digital reality solutions, combining sensor, software, and autonomous technologies to boost efficiency, productivity, and sustainability across industries.

With decades of research and development experience, our Manufacturing Intelligence division has pioneered cutting-edge portable measuring arm technology, delivering unmatched innovation and quality.

Our global presence ensures world-class support with 35 service centers offering full ISO certification, repair, and training. Hexagon's mission is to empower customers to harness data for a smarter, more sustainable future.

Learn more about Hexagon at hexagon.com and follow us @HexagonAB.