



MAKING MEASUREMENT

MORE ACCURATE, EFFICIENT, *PRODUCTIVE*





About New River Kinematics

New River Kinematics (NRK) is an engineering company that develops and supports high-quality portable metrology software solutions. Our software, combined with our engineering and spatial relationships expertise, provides comprehensive engineering solutions and helps make manufacturing processes more accurate, efficient, cost-effective, and ultimately more productive. Serving large-scale manufacturers around the globe (in over 40 countries) from a variety of industries, we take a big-picture approach to solving engineering challenges and work closely with our customers throughout the entire process.

Based in Williamsburg, Virginia, NRK was founded in 1994 by two PhD mechanical engineers who specialize in computational kinematics. The NRK founders are unique in the sense that they have additional skills in software development, robotic simulation and control, coordinate metrology, engineering database management, and molecular modeling. NRK has expanded since then to include a talented team of industry-trained engineers to further develop our software and support our customers.



IMPROVING PRODUCTIVITY WITH METROLOGY SOFTWARE AND ENGINEERING EXPERTISE.

Solutions

Since 1994, NRK has embraced a customer-centric culture and focused on delivering comprehensive, high-quality engineering solutions with the use of metrology software. This includes two primary categories of work: the nonstop development of SpatialAnalyzer® (SA), NRK's core metrology software, and building custom software packages for key customers.



SpatialAnalyzer®

SA is the premier portable metrology software solution for large-scale manufacturers who need precision measurement in order to be more productive. Simply put, SA helps users improve productivity by saving time, resources, and money. SA can be used to address a broad spectrum of measurement challenges and accomplish goals that may have been previously impossible. NRK continuously develops and enhances SA in order to advance its functionality and meet the evolving needs of SA users.

Versatile and user-friendly, SA performs complex measurement tasks and analysis simply, and has the ability to automate complex operations to improve efficiencies. An instrument-independent, traceable 3D graphical software platform, SA makes it easy for users to analyze data, build, inspect, automate, report, and reverse design a variety of parts and tools. SA interfaces with and can simultaneously communicate with virtually any number and type of portable metrology instruments. With the ability to integrate data from multiple instruments, SA helps users find the best combination to improve accuracy, save time, reduce scrap, and ultimately improve productivity.

Custom Software Development

NRK regularly undertakes custom software development projects that address metrology applications and custom integration with factory production processes. These projects typically deal with spatial transformations, robotics, industrial automation, optimized part fit-up, and computer graphics challenges. Not only is NRK a leader in software development of easy-to-use, agile software solutions, but unique in the sense that our background in engineering allows us to problem solve and implement solutions quickly and efficiently.

Applications & Industries Served

NRK's customers have a few things in common: they use SpatialAnalyzer® (SA) to save time measuring and analyzing, improve quality through increased accuracy, and reduce scrap and lower operational costs. Ultimately, our customers use SA to improve the productivity of their manufacturing processes.

Aerospace

Aerospace manufacturing requires highly precise part inspection and adheres to extremely tight tolerances. There can be serious consequences if components are not aligned properly, particularly if they are not aerodynamic enough to fly. As composite parts have become more commonly used throughout the aerospace industry, so has the use of advanced metrology software.

NRK has long standing relationships with major aerospace manufacturers around the world including Boeing, Airbus, Lockheed Martin, Northrop Grumman, Spirit Aerosystems, and NASA. Not only is SA used extensively throughout this industry, but NRK has developed numerous custom solutions for aerospace manufacturers as well.

Shipbuilding

Portable metrology is an integral component of the entire shipbuilding process, be it nuclear aircraft carriers or submarines. Used to align things like catapults, missile tubes, and navigation systems, and determine neat cuts on super lift units, SA is heavily relied upon to meet schedule and accuracy demands throughout the process.

NRK has extensive experience in the shipbuilding industry, both implementing SA and developing custom solutions for specific projects. Clients include Newport News Shipbuilding, Electric Boat, Bath Iron Works, Huntington Ingalls Industries, and Babcock Marine.

Energy

SA applications in the energy industry include involvement in particle accelerators, windmills, and nuclear power plants. In fact, NRK's very first project dealt with robotics and addressed the refitting of a part within a nuclear power plant. In the case of particle accelerators, SA is used by many labs including Jefferson Lab, Brookhaven National Lab, and CERN.

Satellite

SA has been extensively used for the construction and installation of satellites, specifically in order to achieve proper alignment of antennas and other sensors. Customers in the satellite industry using SA include Lockheed Martin, Boeing Satellite, NASA, and Orbital Sciences Corporation.

Automotive

In the automotive industry, SA is used to cost-effectively calibrate and compensate industrial robots, thus achieving the repeatability and accuracy necessary for inspection operations. It's also used to build and inspect tooling fixtures on automotive assembly lines.

Other

SA has been used in industrial applications such as massive tunneling projects in Europe, specifically for the measurement and alignment of the concrete segments that comprise a tunnel. In the healthcare industry, SA has been used to align the synchrotron, switch yard, patient positioning system, and lead wall panels of a proton therapy center. SA is also used in a variety of applications by suppliers of aerospace, marine, wind energy, and transportation industries in order to meet the tolerances and requirements of their customers.



How Can We Help You?

Contact us for more information or to schedule a free demo.

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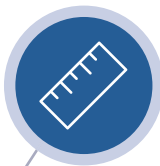
SpatialAnalyzer® (SA)

Software Packages

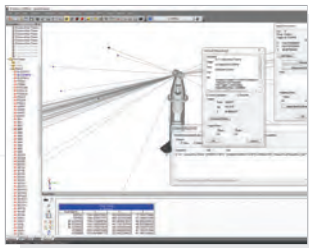
SpatialAnalyzer® (SA) by New River Kinematics (NRK) is the essential measurement, alignment, and reporting software for portable metrology in large-scale manufacturing settings. SA can simultaneously communicate with virtually any number and type of portable metrology instruments.

SA PROFESSIONAL

SA Professional with Native CAD is the professional measurement, alignment, inspection, analysis, and reporting software for all portable metrology instruments. In addition to all essential measurement needs, it includes several key inspection features, geometry inspection, and measurement automation.



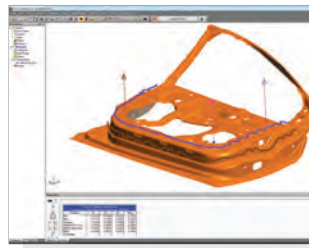
MEASUREMENT



100% traceability from measurement to reporting.



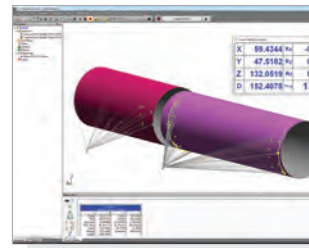
ALIGNMENT



A variety of alignment methods ranging from traditional 3-2-1 alignments to more advanced surface fits.



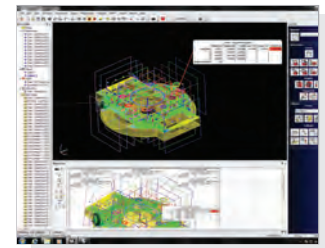
BUILD



Relationships are dynamic in nature and update automatically if part alignment or data changes.



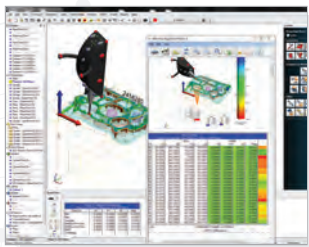
EVALUATION & ANALYSIS



Permits both graphical and numerical depiction of measurement uncertainty.



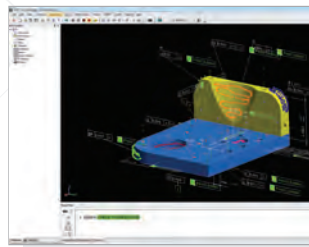
REPORTING



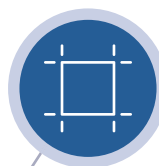
Quick, user-friendly reporting functionalities. Includes the ability to transfer SA data to databases and track projects/data long-term.



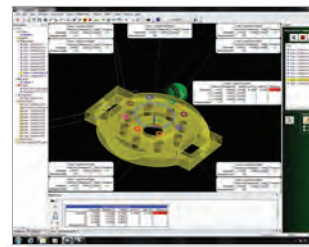
GD&T INSPECTION



Import CAD with GD&T annotations, create annotations manually, and inspect to GD&T standards with real-time reporting.



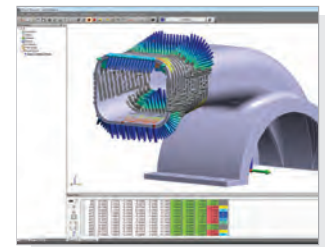
GEOMETRY INSPECTION



Define design-based inspection routines from a CAD model or primitive geometry.



NATIVE CAD



Import support for such major applications as CATIA V4, V5, Pro/Engineer, SolidWorks, Unigraphics, and other CAD formats.

SA ULTIMATE

SA Ultimate plus Native CAD is the premier measurement, optimization, analysis, reporting, and automation software suite for all portable instruments. It is inclusive of everything contained in SA Professional, plus the features below.



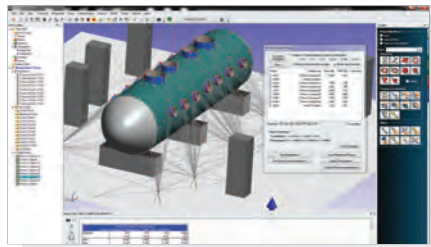
REAL-TIME ALIGNMENT



Track moving parts in real-time so that you can monitor a part's position as it is guided into place.



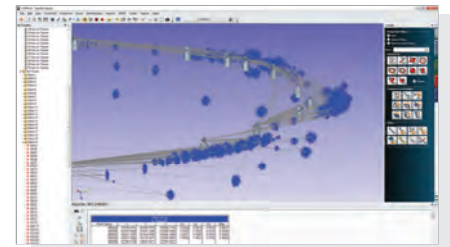
ADVANCED FIT OPTIMIZATION



Provides the power necessary for advanced alignments and can help bring an out-of-tolerance part back within tolerance. You can also define fit envelopes to satisfy multiple constraints/ requirements.



COMPLEX INSTRUMENT NETWORKS (USMN)



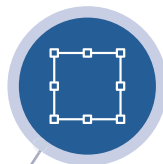
A powerful feature that leverages the uncertainty characteristics of different instruments to provide a much more accurate instrument network than that of traditional alignment methods.



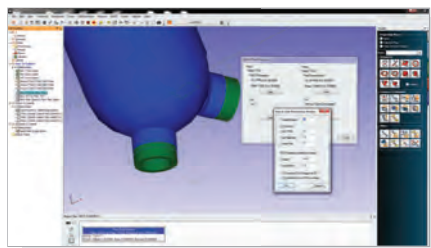
AUTOMATION



Generate simple to complex scripts that will greatly improve workflow and productivity, eliminate errors and save significant resources.



PIPE FITTING



Used in large piping applications when precision measurements and optimization are required.



SA CAD VALIDATION



CAD Validation

The SA CAD Validation application is a separate utility that allows you to define standalone test reference files that contain lists of CAD files and reference points for verification.