SpatialAnalyzer®
Software Packages

SpatialAnalyzer® (SA) by New River Kinematics (NRK) is the essential measurement, alignment, and reporting software for all portable metrology instruments. There are several different SA software packages that address different needs. Custom software solutions are also available.

SA BASIC

SA ULTIMATE

SA ARM

SA MACHINE

SA POWER3 SUITE

NATIVE CAD
(OPTIONAL)

SA BASIC

SA Basic is the essential measurement, alignment, and reporting software for all portable instruments. SA Basic can interface with and simultaneously run over 120 instruments. It includes all instrument interfaces, simple and complex 3-D alignment, build, inspection, and analysis features. It works with points (via ASCII) and/or CAD models imported via universal standard formats such as IGES or STEP. SA's intuitive graphical environment allows for easy learning and execution of complex tasks.

MEASUREMENT

SA Basic offers 100% traceability from measurement to reporting. All measurement data is stored alongside time stamps, instrument information, weather data, and other measurement parameters. Log files track user actions, fit results, and more, allowing you to see the entire history of the job file.

ALIGNMENT

An essential part of the measurement process is the alignment of measurements to a known coordinate system. SA Basic includes a variety of alignment methods ranging from traditional 3-2-1 alignments to more advanced surface fits.

BUILD

The Relationship functionality offers an easy way to calculate and observe part deviation. Relationships are dynamic in nature and update automatically if part alignment or data changes.

EVALUATION & ANALYSIS

A user-friendly interface permits both graphical and numerical depiction of measurement uncertainty, enhancing the user's perspective of measurement quality.

REPORTING

SA Basic offers quick, user-friendly reporting functionalities. Quick Reports are ideal for on-location reporting, report templates are perfect for repetitive work, and the Report Designer allows users to drag and drop items to develop custom reports using tables, charts, and graphics.

☆ SA ULTIMATE

SA Ultimate is the premier measurement, optimization, analysis, reporting, and automation software suite for all portable instruments. It contains all of the capability and instrument interfaces in SA Basic, plus the features below. SA Ultimate can be configured to serve a range of metrology uses.
OPTION: SA Ultimate can be purchased with Native CAD.

REAL-TIME ALIGNMENT

Transformation Tracking allows you to track moving parts in real-time so that you can monitor a part's position as it is guided into place.

ADVANCED TRANSFORMATION FITTING

Relationship minimization provides the power necessary for advanced alignments. Minimizing relationships can help bring an out-of-tolerance part back within tolerance.

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SA ULTIMATE (*Continued*)

COMPLEX INSTRUMENT NETWORKS

USMN is an extremely powerful feature that calculates the uncertainty characteristics of different instruments within a network to provide a much more accurate instrument network than that of traditional alignment methods. It is used by many metrology groups to solve large-scale networks such as accelerator rings, full submarine surveys, and large machinery surveys.

GD&T INSPECTION

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

AUTOMATION

The Measurement Plan and SA SDK functions can add a significant layer of automation to your processes. Generating simple and complex scripts can greatly improve workflow and productivity, reducing analysis time from days to minutes while eliminating errors and saving significant resources.

PIPE FITTING

The Pipe Fitting function is used in large piping applications when precision cuts must be determined. Precision measurements and optimization greatly improves accuracy, thus reducing rework costs.

ROBOT CALIBRATION

Robot Calibration uses precision portable metrology to calibrate a robot to a greater accuracy. By using the precise measurements of the robot's Tool Center Point (TCP) with advanced optimization algorithms, a new kinematic model for the robot's linkages can be derived, which more accurately represents the true kinematics of the robot.

SA ARM

Adapted specifically for arm use, SA Arm connects to all available arm interfaces and any connected laser line scanners, and tailors the available commands and menus for arm use. It includes all applicable features of SA Basic, along with GD&T analysis, but is restricted purely to arms and scanners.
OPTION: SA Arm can be purchased with Native CAD.

SA MACHINE

SA Machine contains all features of SA Ultimate + Native CAD, but also allows users to interface with robots and CNC machines. This permits calibration and compensation of robots and large volume CNC machines to high degrees of accuracy. It also enables robotic scripting, teach pendant behavior, and linear or joint space robotic control. *NOTE: While SA Ultimate allows robot calibration, only SA Machine can connect with robots to enable true real-time compensation and control.*

SA POWER3 SUITE

SA Power3 Suite is a powerful software bundle that contains three software packages: SA Ultimate + Native CAD, Geomagic Studio™, and Geomagic Qualify™. This suite of packages brings the full spectrum of measurement capability to a single desktop: the power of SA's measurement, acquisition, and analysis capabilities and the reverse engineering capabilities of Geomagic Studio™ and Qualify™. Measured point and cloud data can be sent quickly directly to Studio™ or Qualify™ from within SA.

NATIVE CAD

Native CAD can be added to SA Ultimate (SA Ultimate + Native CAD) or SA Arm (SA Arm + Native CAD) and provides native CAD import support for such major applications as CATIA V4, V5, Pro/Engineer, SolidWorks, Unigraphics, and other CAD formats.

FOR MORE DETAIL, SEE THE SA PRODUCT MATRIX.