



## MACHINE VISION SOFTWARE FOR MACHINE INTEGRATORS

ATS SmartVision™ software is the machine vision software development platform designed by integrators for integrators. ATS SmartVision™ software is a highly scalable PC-based vision system that combines a high-performance, platform-independent vision engine with an easy-to-use development interface.

ATS SmartVision™ software can control virtually any industry-standard third-party camera and lighting system to perform high-precision part and defect identification, measurement, sorting, and robotic guidance.

## Scalable across application types and levels of complexity

The ATS SmartVision™ engine can control multiple cameras in a single application to perform numerous independent inspection sequences comprised of ordered lists of steps. Each step contains one SmartVision tool. Sequences can be single stepped for debugging.

Results can range from a simple pass/fail condition to the more involved precise position of objects for complex applications.

These results can then be used by other steps in the sequence.

Programmable flow control provides for simple to advanced branching within sequences.

## Powerful toolkit including Deep Neural Networks

A complete set of modern vision tools is provided, including edge finding, blob analysis, measurement, OCR, barcode reading, scripting, and image processing tools. Tools are dragged and dropped into an inspection sequence, graphically configured on the image and are easily configured using simple dialog boxes.

In addition, ATS SmartVision™ software has the capability of integrating 3rd party vision tools for specific applications.

The latest in AI Imaging processing capabilities are built into ATS SmartVision™ through our DNN Inferencing tool. Whether it's a home built or third-party model, the DNN tool is designed to support many of the standard execution platforms as simply just another of the many tools in the overall toolkit offered.

## Rapid application development

ATS SmartVision™ software provides a rapid application development platform for machine vision applications. Many applications can be developed with no traditional programming required.

For highly complex applications, a scripting tool is provided to allow programming logic to be created without the need for a compiler or another external development environment.

For the most sophisticated users, ATS SmartVision™ software can be embedded into a traditional program written in VB, C# or C++ to create custom interfaces. ATS SmartVision™ software also leverages open-source software such as Intel OpenCV, Intel Integrated Performance Primitives and ICI scripting language.

## Strong communications and infrastructure

ATS SmartVision™ software takes advantage of advanced communications making integration faster and easier. Communication options exist for: Ethernet/IP, Profinet, Profibus and TCP/IP for standardization across your organization. (For other interfaces, please contact ATS)

## Remote configuration and troubleshooting

A TCP/IP link can be used to create and modify inspection sequences. As a result, the support and troubleshooting of vision applications can be performed remotely from anywhere around the world.

## /// Benefits

- Extensive and powerful vision toolkit
- Rapid application development
- Highly scalable range of applications
- Remote configuration over TCP/IP
- Strong integrated communications
- Competitively priced
- Proven in a wide range of industrial environments
- Hardware independent
- Inspection portability to new hardware as standards change
- Easy to learn
- Standard or custom GUI interfaces
- Flexible local and remote image viewing
- Multiple Language Support (English, French, German, Simplified Chinese)

The screenshot displays the ATS SmartVision software interface. The main window shows a camera view of a mechanical part with various inspection overlays, including bounding boxes and feature markers. A 'Sequence Result' table is visible on the right, showing a 'PASS' status. Below the camera view, a detailed table lists the steps of the inspection sequence, including tool names, descriptions, tool types, pass/fail status, error steps, results, and execution times.

Step	Tool Name	Description	Tool Type	Pass	Fail	Error Step	Result	Status	Referenced By	References	Step Time
1	ReadImage	Read robot work string	ScriptTool	Next	EndFail	EndError	PASS	Executed	2, 3, 4, 5, 6, 7, 8, 9	1	1.048196 s
2	GenerateResult	Generate the result for the robot	ScriptTool	SendReadAnd	EndError	EndError	PASS	Executed	6, 7, 8	6, 7	171.266196 s
3	MacroGrab	Perform an image grab	MacroTool	Next	EndFail	EndError	PASS	Executed			53.210196 s
4	GrabImage	Grab image	Grab	Next	EndFail	EndError	PASS	Executed			1.048196 s
5	Calibrate	Apply calibration to the grabbed image	Grab	Next	EndFail	EndError	PASS	Executed			7.200196 s
6	LightCheck	Check the presence of parts in the grabbed image	LightMeter	Next	EndFail	EndError	PASS	Executed			6.118196 s
7	MacroRun	Run the normal inspection macro sequence	MacroTool	Next	EndFail	EndError	PASS	Executed	10, 13, 14	1	195.425196 s
8	MacroRun	Run the teach inspection macro sequence	MacroTool	Next	EndFail	EndError	PASS	Executed	10	1	271.599196 s
9	MacroRun	Run the calibration inspection macro sequence	MacroTool	Next	EndFail	EndError	PASS	Executed	10	1, 2	4503.452196 s
10	SendReadAnd	Select the correct return string	ScriptTool	Next	EndFail	EndError	PASS	Executed		1, 7, 8, 9	0.010196 s
11	RollOver	Define the source ICI for computing	MacroTool	Next	EndFail	EndError	PASS	Executed	12	1	0.044196 s

## Explore how ATS SmartVision™ can enhance your inspections.



Contact us at [lifesciences@atsautomation.com](mailto:lifesciences@atsautomation.com)



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