

FSI Machine Vision Project Services

At FSI, we do vision differently. For over 55 years FSI Technologies has specialized in manufacturing leading-edge automation products for industrial markets. We believe that our success comes from meeting the true needs of industrial customers by our unique strengths in these areas:

- Products and product architecture including software from NeuroCheck and EVT.
- Assured Path to Success™ program: Where Failure is Not an Option
- People and expertise to recognize and navigate the unique challenges of machine vision.

Using Machine Vision for automatic inspection or process control provides substantial benefits and unique challenges. FSI has the people and expertise to design solutions that recognize and navigate these challenges, providing large benefits from a small investment in project services.

How Machine Vision is different from other factory automation projects:

- Effective Machine Vision combines an unusually broad range of disciplines. Besides industrial control automation and communications, it has substantial elements of physics, optics, the interaction of light with surfaces, gauging and measurement type mathematics, creative use of digital hardware and software, and expertise with the various types of specialized hardware for acquiring and handling images.
- Specification phase factors and variables that appear to be minor, secondary or irrelevant often have a major impact on the cost and feasibility of machine vision for that application. Further, these interact in synergy, causing very high impacts. The result is that vision expertise must be included early in the process.
- The “main” piece of equipment is a major tool, but just a tool used in the implementation process to accomplish the mission.
- Equipment selection, confirmation of project viability and accurate quotation occurs only after a great amount of technical work has been done.
- Selection and application of “accessories” may be more critical and difficult than the main equipment.
- All the pieces of the solution must work together. Many important items that make or break the solution do not relate to any one central piece of equipment. A “vision architect” will make sure that all the pieces interact and work together for success.

How Project Services from FSI Machine Vision Can Save You Money

Despite advances in technology, machine vision projects often have problems: mission failures, time overruns, and run-away costs. Expert assistance early in the specification process, when important decisions are being made, is essential for the success of the project. FSI Vision Engineers are experts in all areas of machine vision; current on the latest available technologies; experienced with factory floor environments and systems; knowledgeable about hardware, software, optics, lighting, physics, sensing technologies and the geometric relationship between them. This expertise helps insure credibility of the project and provides a large return on investment by way of reduced project costs.



FSI Technologies Inc.

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Project / Engineering Services that FSI Machine Vision Can Provide

Technical Feasibility Studies: What can Vision do for you? Whether the application is for process control or automated inspection, we can evaluate the proposed project to determine if it is technically feasible and/or would provide a cost benefit.

Project Planning and Specification: Various planning decisions such as the range of products to be inspected, inspection tolerances, required accuracy, types and subtlety of defects that must be detected, product presentations, and interactions between all the factors have immense impacts on the cost, feasibility and robustness of a solution. The methods, scale and importance of this phase are counterintuitive, and are often overlooked or underestimated. Our process combines our extensive expertise with close communication with the client to arrive at a specification that fulfills their needs. An evolving Vision Application Specification (VAS) document is used as a catalyst and tool for this process, resulting in an optimized mission and conditions plan for the specific application.

Confirm feasibility to a successful finish line before you start If we have helped in the project planning and specification phase, then this has already been accomplished. If not, we can handle this separately.

Development of the Physical-Spatial Solution to the Application: How to accomplish it. Working from the VAS, the location and type of the lighting, the optics, and the geometric relationship between them needs to be determined in order to design a vision system that delivers the desired results. This is typically done by a combination of engineering and lab work. We can quickly rule out hundreds of solution ideas, explicitly evaluate or test dozens, and formulate the optimal solution, or determining that a feasible one does not exist. Having a nearly unlimited “toolbox” of hardware, software and expertise avoids artificial constraints by vendor-specific considerations.

Technology Base Development. In some cases the vision solution requires fundamental technology/software development, often proprietary to the customer rather than application engineering. FSI has assisted customers both on a stand-alone basis and via embedding in the customer’s R & D departments.

Study and Solution of Performance Problems. If your previously installed vision system is not accomplishing what you want it to, we can analyze the situation and make recommended adjustments. For situations where a roadmap like our Assured Path to Success™ has not been followed.

Training. Nothing is more important than having well trained personnel on staff to operate your automatic inspection systems. In the long run, it will actually lower your cost of operations and provide you with true long-term ownership of the system. FSI Technologies offers comprehensive training on all aspects of machine vision as well as NeuroCheck and EVT software. These are hands-on classes that range from a few hours to a few days. Classes are held in the Chicago area, or we can customize classes for your specific application with an on-site visit.

Helping You is Our Vision. Please contact us to start a review of your application and goals. Our engineering team stands ready to help make your project a resounding success in every respect.



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