

New vision system for single point inspection applications

Mark Williamson, of Stemmer Imaging, describes the benefits and features offered by the new BOA vision system from Dalsa which has been introduced to complement Dalsa's existing 'Vision Appliance' (VA) range



Measurement using machine vision technology plays an important role in manufacturing industry, with applications ranging from presence verification to checking high-precision dimensional accuracy and geometrical tolerances. For many production lines it is beneficial to have cameras with local image processing capabilities linked directly into the production process, eliminating the need for a remote PC to carry out the processing.

Stemmer Imaging can now offer the new BOA vision system from Dalsa which has been introduced to complement existing Dalsa's 'Vision Appliance' (VA) range. BOA utilises the same on-board 'iNspecT' image processing and control software as the VA range, with the key benefit that any web browser can be used to set up the camera without the need to install software.

The BOA vision system is ideally suited to single point applications, i.e. one camera, one application. Although multiple BOA cameras can be used together as with other smart camera solutions, it is unnecessary to have intelligence within each camera and Dalsa's Vision Appliance approach, with a single processor for multiple cameras is a compelling option. The VA range contains the image processing power in a rugged, DIN mountable enclosure for integration into factory environments, with small camera heads located at the measurements point in the process. The launch of BOA provides the iNspecT software with even more hardware deployment options from smart camera through to custom built industrial PCs. With cost management being driven down to all levels of management, BOA meets the growing demand for automation at lower cost of ownership.

Integrated smart vision

The new BOA vision system provides integrated industrial smart vision in a compact rugged industrial enclosure. The small cubic form factor of 44 x 44 x 44mm and easy mounting capabilities allow it to integrate easily into existing production lines, machinery or moving

equipment. An IP67-rated housing and an optional water tight lens cover that accommodates a variety of C-mount focal length lenses means the camera can be located in the most demanding of production line environments, including those requiring wash down, without the need for costly enclosures.

The self-contained unit features:

- Integrated VGA CCD sensor
- Integrated processor
- Integrated I/O
- Integrated light control
- Integrated communication control
- Integrated application software for manufacturers and system integrators
- Software Development Kit for machine builders and small equipment manufacturers.

BOA utilises standard M12 cordsets and provides power and strobe timing directly to a variety of associated lighting products. External lighting offers the most flexibility for the diversity of vision applications for which BOA is designed. A full PLC communication interface is provided. Three LED status indicators provide activity and device health feedback.

iNspecT software

BOA, like the VA range, utilises a newly updated version of the proven iNspecT software, which, with multi-language support, is ideal for both first-time and experienced vision users alike. The software offers excellent inspection capabilities that can be readily used across a multitude of applications. It provides capabilities for an extensive range of inspection tasks, such as positioning, identification,

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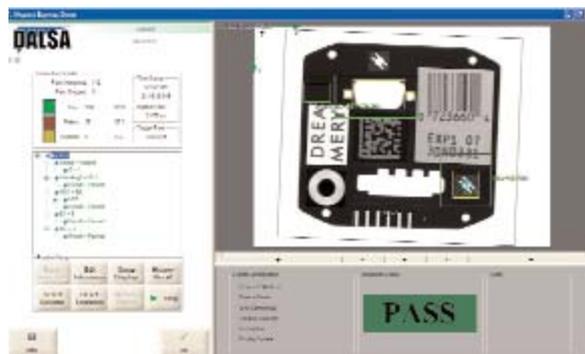
verification, measurement and flaw detection. Each of the inspection tools has been carefully designed to extract the relevant information from the object image. No programming or extensive training is required and the software can be readily accessed using any web browser by connecting a computer via a standard Ethernet connection, so no special setup software is necessary. An efficient GUI panel layout minimises setup time and allows easy I/O configuration, allowing users to quickly deploy an application.

Another major benefit offered by iNspecT is the powerful scripting capability that can not only script the inspection process but also run as a background script for application control, which could, for example, allow monitoring of an I/O line for trend analysis. The iNspecT software connects directly to a variety of Ethernet ready factory devices such as PLCs and extended I/O modules along with Dalsa's i-Collect software, which provides a factory wide audit trail of the cameras' use, making deployment of CFR21 Part 11 production lines a lot simpler. For end users and vision integrators, iNspecT software offers a fully featured emulator for offline application development and debugging.

The iNspecT software offers excellent inspection capabilities that can be readily used across a multitude of applications. Pictured is the iNspecT set-up page

Hitting the ground running

The versatility offered by BOA makes it attractive to a wide range of potential customers. End product manufacturers from industries that use, or are looking to use, vision to improve quality or increase productivity through automation will find BOA attractive, as will machine builders looking for vision based industrial platforms that can be customised to meet their needs. For OEMs or speciality equipment providers, BOA is also available as a vision hardware component that can be customised to meet the application need. The product is offered with an API or an application framework that can greatly accelerate time to market.



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