PRODUCT INFORMATION

SICK AppSpace

GIVING SPACE TO YOUR IDEAS AND SOLUTIONS

Software products

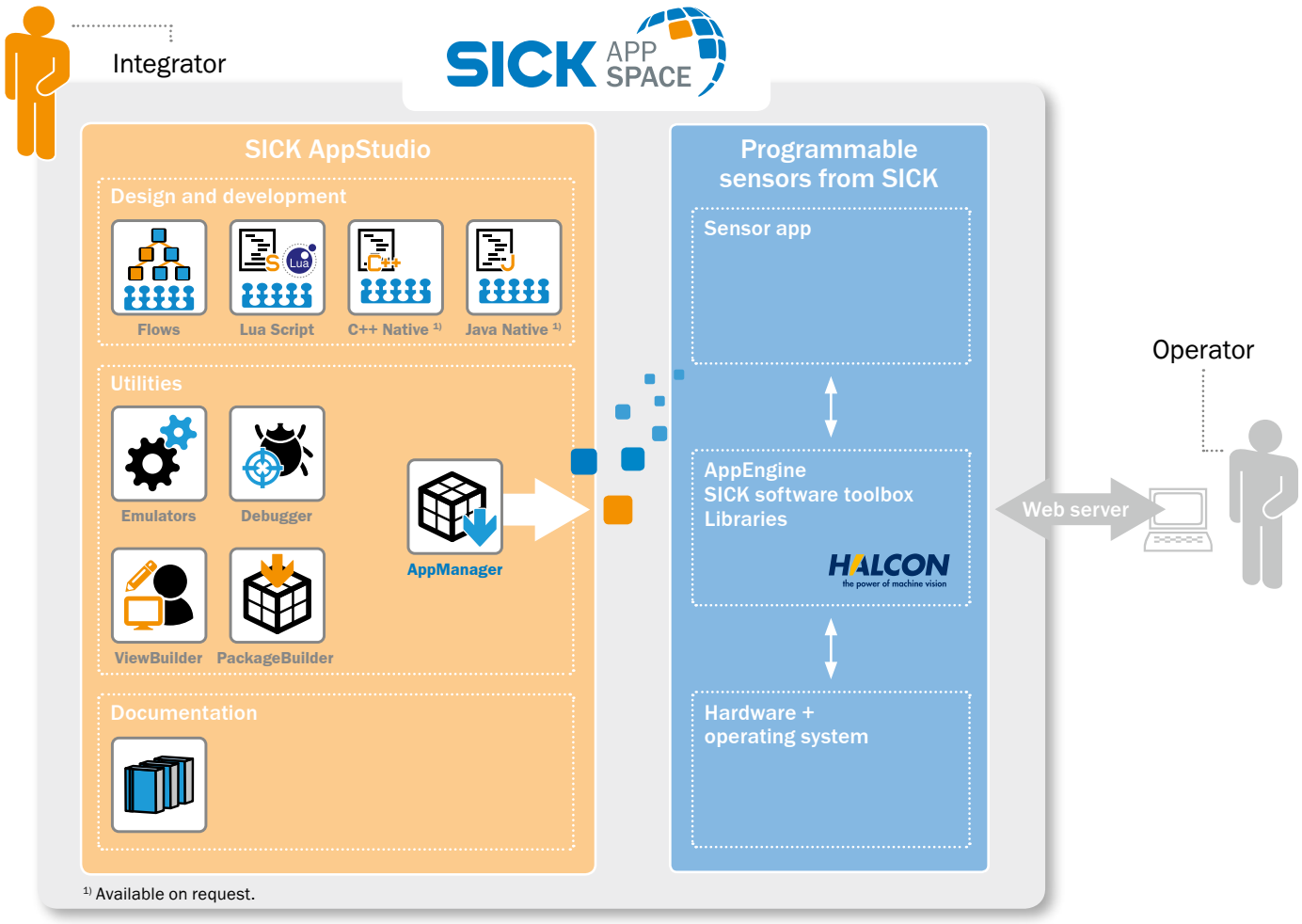
SICK
Sensor Intelligence.

GIVING SPACE TO YOUR IDEAS AND SOLUTIONS

SICK APP SPACE

Break through the boundaries of conventional programming – with SICK AppSpace, SICK's open platform for programmable sensors. The world of the SICK AppSpace offers system integrators and original equipment manufacturers (OEM) the freedom and space to develop application solutions to fit the specific needs and requirements of application descriptions. From precisely designing the perfect online user interface, through selecting the most suitable programming technique to distributing the software on various hardware platforms, for SICK AppSpace, one thing is of paramount importance: Providing you with flexibility during the development of a customized solution.

SICK AppSpace combines software and hardware: In addition to flexible programming options and utilities, SICK AppStudio also offers access to the SICK software toolbox and established image processing libraries such as HALCON. With the help of Lua scripting featuring many forms of integrated development support such as auto complete, the app development for the programmable sensors can easily be inserted into existing development processes. Apps developed in this way will then be rolled out on various programmable SICK sensors. A flexible and sophisticated solution concept – by SICK developers for application software developers worldwide.



ACHIEVING A GREAT DEAL TOGETHER

A foundation formed by a strong partnership

Since 2010, SICK has been successfully working together with MVTec Software GmbH in the field of industrial image processing. SICK's AppSpace has furthered this partnership, with an integrated runtime license of the image processing library HALCON. To keep the implementation of programmable vision solutions simple, cost-effective, and low-risk, both sophisticated SICK-specific algorithms and the extensive image processing library HALCON are available. Established components are thus used to produce new, perfectly tailored solutions which fit your requirements, developed with the SICK AppSpace environment.

HALCON
the power of machine vision

HALCON is a comprehensive standard software package with an integrated development environment (IDE) for machine vision (industrial image processing) which has proven itself a thousand times over in worldwide industrial use. The flexible software architecture allows quick application development for industrial image processing and image analysis and thus leads to cost savings and a short time to market. In addition to exceptional performance and GPU acceleration, HALCON also offers extensive support for multi-core platforms and instruction set extensions such as AVX2.

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We offer you more than just a platform

With the SICK Support Portal, you have worldwide 24/7 access to a valuable online platform. On the Portal, in addition to a wealth of information, you will also find helpful tips and tricks, downloads, and tools to assist you with your software development. Online training courses also offer the opportunity to deepen your knowledge of individual work steps and thus increase your efficiency in daily programming work. If you cannot find the assistance you need online, as a member of the "Developers Club", you will also have access to a personal and competent contact person in our support team.

More information about SICK AppSpace
➜ www.sick.com/SICK_AppSpace

Become part of the SICK AppSpace Community!

A strong community with many advantages – the SICK AppSpace Developers Club. When you purchase a SICK AppStudio license, your one-year membership starts automatically, and you can enjoy attractive club benefits such as special offers for demo kits and lab equipment. In addition, your membership entitles you to participate in the SICK AppSpace Developers Club annual developers' conference. In addition to interesting talks, product demos and training sessions, this conference offers you the opportunity to share your experiences and network with other members of the Community. In this way, you can help to determine the development of the SICK AppSpace environment.

BY DEVELOPERS FOR DEVELOPERS

Product description

The SICK AppStudio is used for developing customer-specific applications on programmable SICK devices. Available programming technologies for creating sensor apps are graphical Flow Editor and Lua script programming, as well as C++ or Java. HALCON image processing procedures can also be integrated. Helpful tools such as emulators, debuggers, resource monitors, and an extensive range of documentation and demo apps make the development process easy. The user interface for machine operators can be created individually as a web GUI using the graphical ViewBuilder. The PackageBuilder combines all the software components to make a single package that safely defines access rights.

At a glance

- Overview illustrations of input windows and status information
- AppExplorer for displaying and managing sensor app components
- Graphical Flow Editor for block programming
- AppMonitor for visualizing system performance and usage
- ViewBuilder for easily creating a web GUI

Your benefits

- The editor with convenient auto-completion function makes program creation easier and quicker
- The emulator functionality makes programming possible even when no programmable SICK device is connected to the PC
- Save time when searching for programming errors using the debugger
- CPU and memory usage visualization provides information about the performance of the connected devices in the functioning state
- Quick integration and creation of sensor apps thanks to many example programs

SICK APP SPACE

→ www.sick.com/SICK_AppStudio

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

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Detailed technical data

Product features

Software category	SICK AppSpace
Software type	SICK AppStudio
Supported programming languages	Flow-based programming, Lua, C++ Native [1], Java Native [1]
Language	English
Documentation	www.sick.com/SupportPortal
Supported product family	RFU62x, RFU63x, RFU65x, SIM4000, InspectorP63x, InspectorP64x, InspectorP65x

[1] On request.

System requirements

Operating system	Windows 7 (64 bit), others on request
Required disk space	550 MB (3 GB incl. native software development kit)
Processor	Compatible with x86 processors
Frequency and RAM	1 GHz, 2 GB RAM
Minimum resolution	1,024 px x 768 px
Supported browsers	Mozilla Firefox (version 44 or higher) [1], Google Chrome (version 49 or higher) [1], others on request

[1] Older versions may also be compatible depending on the functions used.

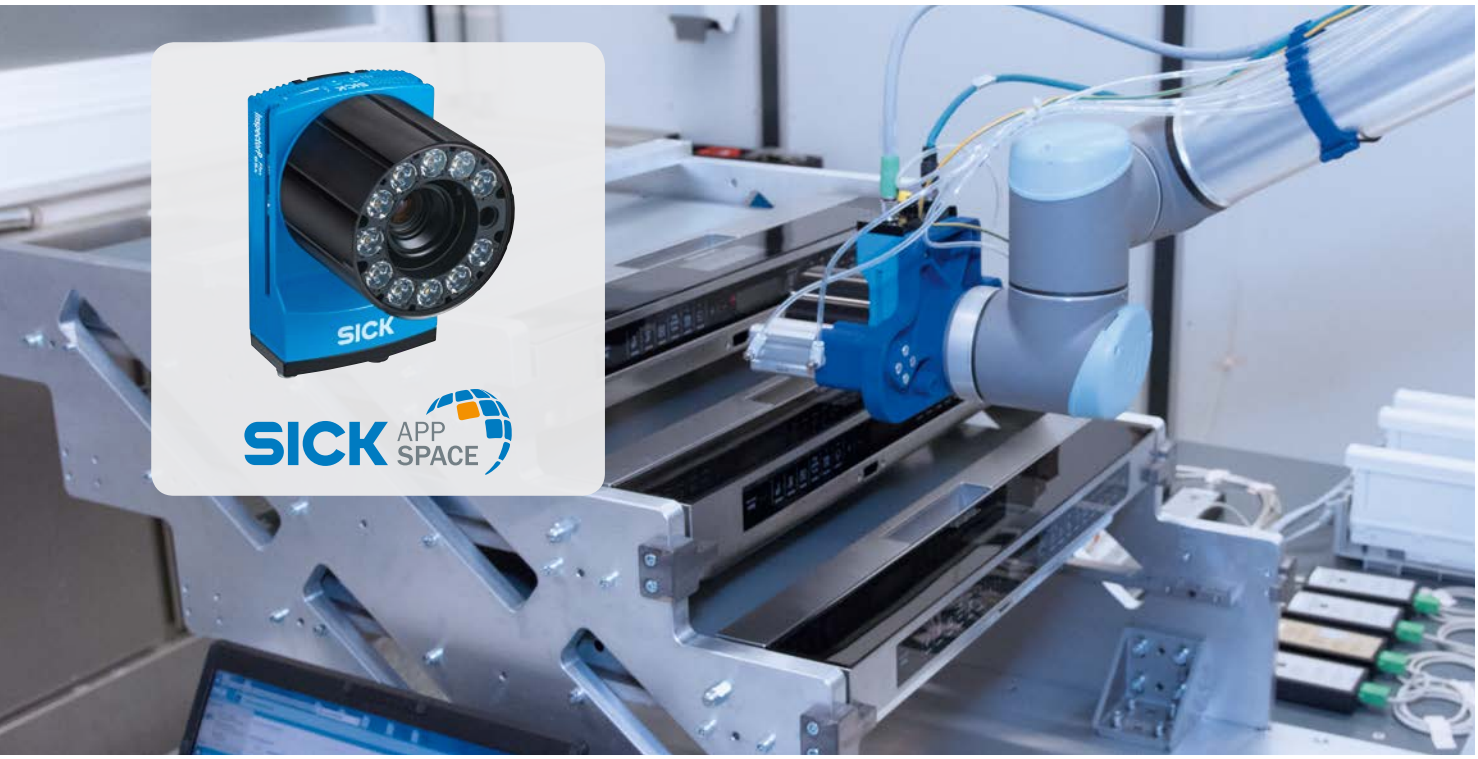
Ordering information

Description	Type	Part no.
1-year software license, includes membership of the SICK AppSpace Developers Club	SICK AppStudio	1610199

INSPECTION OF CONTROL ELEMENTS WITH INSPECTORP65x

Task

To ensure that innovative touch operating elements, of dishwashers, for example, function reliably for their entire service life, service-life tests must be carried out for the pilot series of the operating elements. By means of a robotic system with a programmable InspectorP65x camera, it must be ensured that the test finger on the robot arm can be directed in a repeatable and precise manner.



Solution

A symbol on the touch operating element is selected as a reference image which is used as the starting point for the robot program. The sensor app in the InspectorP65x is programmed in such a way that the camera mounted on the robot arm detects the operating element using the reference image, and uses it to determine the position of the pushbuttons. The values are sent to the robot, which then moves into the actuation position in a repeatable manner and tests the individual pushbuttons with the test finger.
The signals of the pushbutton actuation are measured in order to find out whether the parameters change during the course of service life.

Your benefits

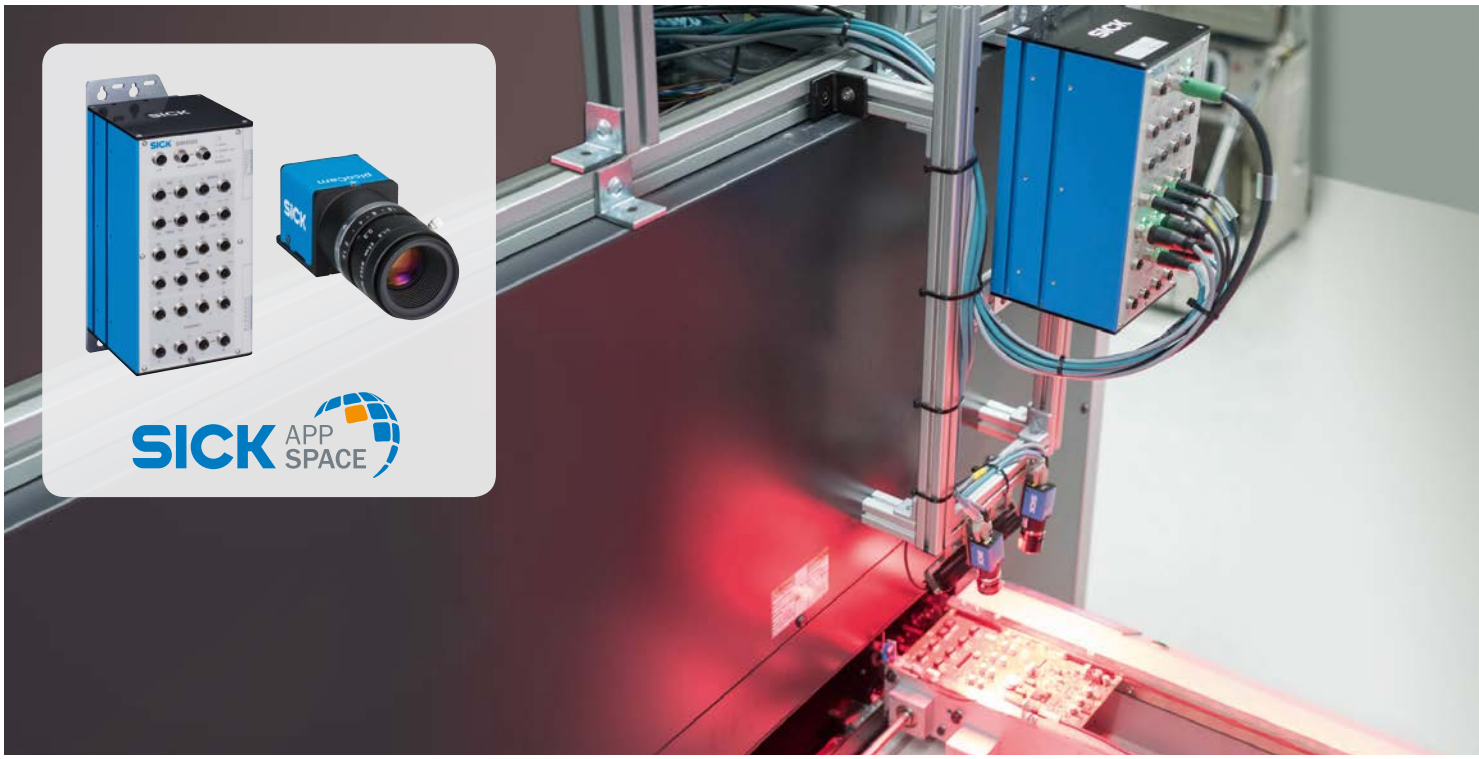
The control of the robot by the InspectorP65x camera in the automated testing process results in high efficiency, an increase in repeatability, and thus in reliable values in the test results. By using the robot through the night, the throughput of the operating elements increases, saving time and relieving employee's workloads. There is also no need to carry out the precise alignment the operating elements manually, since the camera automatically aligns with the reference image. This quality level cannot be achieved when judging by eye or using a mechanical system.
Communication between InspectorP65x and the robot controller takes place via Ethernet. With the high image resolution, the compact housing, exchangeable optics, and a choice of illumination, the InspectorP65x offers an optimal combination of performance and flexibility. With the HALCON image processing library, installed as standard, even the most challenging application demands can be met. An integrated web server makes it possible to visualize a graphical user interface on any browser-compatible display device.

8019161/2016-12-16

PCB INSPECTION WITH SIM4000 AND picoCam304x

Task

In the PCB industry, there is a wide range of inspection and identification tasks due to the huge variety of electronic components, plug connectors, and other components. To ensure the required product quality as well as consistent traceability along the individual production steps, industrial image processing is often used here.



Solution

The SIM4000 Sensor Integration Machine is used with two picoCam304x 2D streaming cameras. With a resolution of 4 megapixels, the cameras are suitable for both inspection tasks, e.g. for quality control activities such as component testing, and for identification tasks such as Data Matrix code reading on the printed circuit board. The SIM4000 carries out both applications with the help of HALCON procedures and transfers the results to the higher-level PLC via fieldbus. SICK AppStudio is used to program the application.

Your benefits

The solution is easily scalable. You can expand it with additional lanes by adding more cameras to the SIM4000 and extending the sensor app or adding another app. What's more, the SIM4000 controls and supplies the illumination directly without additional components. As a result, all of the components required for the solution come from a single source. Both the hardware and programming are independent of standard PCs and their interfaces, e.g., Windows, and therefore last considerably longer than these. No equipment cabinet is required as the SIM4000 can be mounted directly on the application. The compact industrial streaming cameras enable installation even in situations with restricted space. The integrated HALCON image processing library also guarantees high accuracy levels and provides solutions for even the most demanding applications.

RFID-BASED ACCESS CONTROL WITH RFU6xx

Task

To control access to a defined area, all access rights and profiles for authorized persons and vehicles must be managed via software. Device-specific software is also required to manage access control and meet additional safety requirements.

Solution

The application software was programmed within SICK AppStudio and, when combined with RFU6xx RFID devices, provides a convenient and reliable solution enabling fast access for over 350 vehicles per hour. As the vehicle approaches the barrier the RFU6xx devices read the content from the transponder mounted on the windshield. If accepted, access is then granted.

Your benefits

The implemented solution stands out thanks to the straightforward management of access profiles and rights within the software. SICK AppSpace turns a standard device into a product that meets the demanding requirements for a modern access system with increased safety requirements. Access rights are saved locally on the RFID device without the need for additional hardware. Identification is quick and reliable, thereby reducing unwanted waiting times in peak hours.

8019161/2016-12-16

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- ☑ Create, save and share personalized wish lists.
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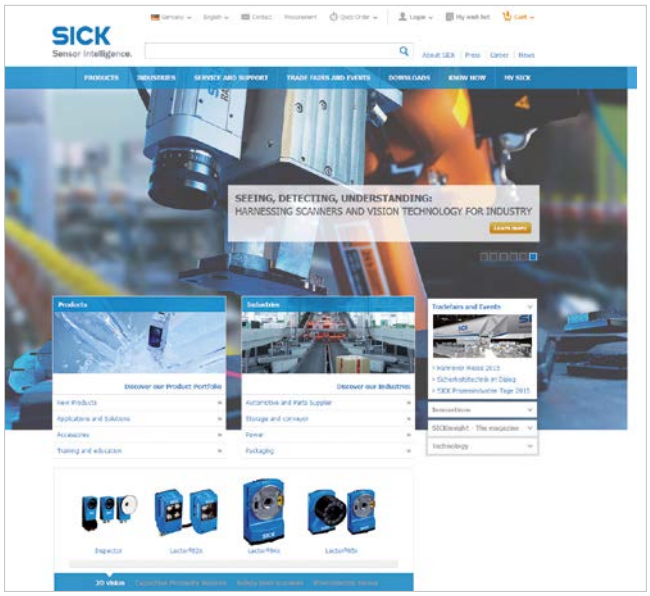

SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.

Consulting and design
Safe and professional

Product and system support
Reliable, fast and on-site

Verification and optimization
Safe and regularly inspected

Upgrade and retrofits
Easy, safe and economical

Training and education
Practical, focused and professional

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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, we are always close to our customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services round out our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com

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