



# THINK INFERENT.

WITH **IDS NXT ocean**  
THE ALL-IN-ONE INFERENCE CAMERA SOLUTION



**IDS NXT ocean** > grab > label > train > run AI.

WE MAKE THE INFERENCE EASY

# IMAGE PROCESSING WITH

# ARTIFICIAL INTELLIGENCE.



With inference, tasks can be solved that could not be realised with rule-based image processing, or only at great expense. This includes, for example, image processing tasks with strongly varying objects - such as classifying different types of fruit or identifying damaged parts (e.g. apples with bruises or colour deviations).

To describe all occurring variances with classical image processing would be extremely time-consuming and therefore expensive. Artificial intelligence, on the other hand, can easily solve such challenges. This allows you to teach a machine using examples instead of code.

IDS is making artificial intelligence usable in an industrial environment. Hardware, software, infrastructure, knowledge and support come from a single source at IDS: both the training software for neural networks and the IDS NXT industrial cameras with their powerful AI core ("deep ocean core"; FPGA technology that provides hardware accelerated

ANN execution) were developed in-house. You only need the knowledge about your images and their classification to create a neural network. Nothing more.

# IT'S NEVER BEEN EASIER TO USE AN INFERENCE CAMERA.

IDS **NXT ocean** > grab > label > train > run AI.

# YOU ALREADY HAVE THE KNOWLEDGE YOU NEED!



The all-in-one solution IDS NXT ocean provides everything that you need to create your own inference camera. Concentrate completely on your application. No image processing or programming knowledge required. With IDS NXT ocean, deep learning is particularly easy.

Work intuitively with images and load individual neural networks directly onto your IDS NXT industrial camera. In no time at all, artificial intelligence is ready for your image processing application.

You know your application and what it should do best. So you have everything you need to start working with IDS NXT ocean immediately. Because the artificial intelligence used by an IDS NXT industrial camera does not require traditional programming or predefined rules.

All you need is your expertise on your application. With IDS NXT ocean you get a complete solution including training software with which our cameras learn to apply your knowledge to solve tasks independently.

# IDS NXT INDUSTRIAL CAMERAS WITH INTEGRATED INFERENCE ACCELERATOR.

# INTELLIGENT IMAGE ANALYSIS IN A COMPACT SHAPE.



Using the integrated AI core, neural networks can be run directly on an IDS NXT industrial camera.



IDS NXT rio & rome: Inference cameras for the industry.

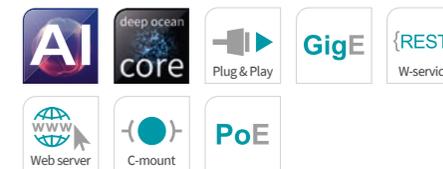


Compact, robust, powerful, versatile: The right solution for every application.

With IDS NXT, we have created a platform for a new generation of easy-to-use and flexible vision systems for industrial applications, allowing all steps of a vision solution to be realised, from image acquisition, image analysis and processing to the control of industrial production machines. With its powerful hardware and software with low power consumption, the IDS NXT embedded vision platform saves

on space and costs of additional processing hardware. The special AI core "deep ocean core" developed by IDS runs hardware-accelerated ANNs and thus enables inference times of a few milliseconds. The performance of the inference camera is comparable to ANN performance on modern desktop CPUs in terms of speed and accuracy.

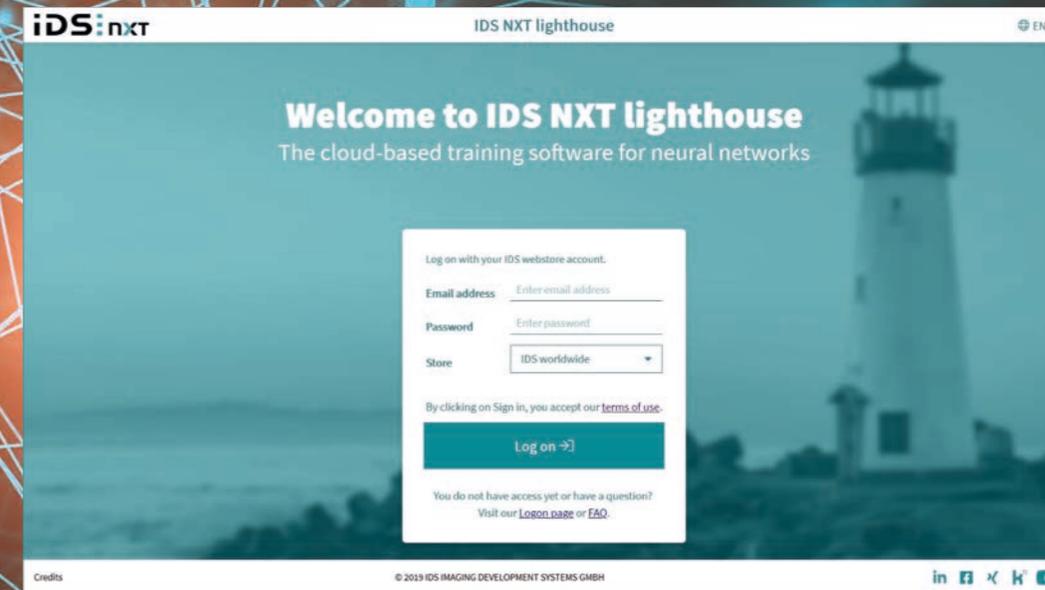
- Powerful embedded vision industrial cameras with an AI core developed in-house "deep ocean core"
- Run pre-trained hardware accelerated ANNs
- Fast ANN switching at runtime and different network architectures possible
- Large sensor selection and free choice of optics thanks to C-mount. Also available with IP65/67 protection class.



# IDS NXT LIGHTHOUSE FOR CLOUD-BASED DEEP LEARNING.



IDS NXT lighthouse



The intuitive web application IDS NXT lighthouse allows you to create your own neural networks for IDS NXT cameras in just a few minutes. It leads you step-by-step through data preparation up to the training of artificial intelligence in the form of a neural network. No additional

software tools needed and you do not have to deal with the time-consuming installation and setup of development environments. As a web application, IDS NXT lighthouse is immediately ready for use. Launch the web application, log in and you are ready to start the training of

your neural network. You do not need any knowledge of deep learning or programming skills. To train artificial intelligence only your application knowledge and sample images are necessary. The web application is realised with AWS exclusively on German cloud servers. This way you

do not have to install anything yourself. The infrastructure offers required performance and server space to complete training processes efficiently and quickly. All your data and images are stored in strictly secured German data centres.

# INCREDIBLE EASY WORKFLOW.



IDS NXT ocean enables you as a user to get started immediately with AI-based image processing and provides easy-to-use tools that allow you to create and run inference tasks on a camera in just a few minutes without in-depth knowledge.

The concept is based on three important components:

- Easy to use training software for neural networks
- an intelligent camera platform
- an AI accelerator that executes the neural networks on the hardware side.

All components have been developed directly by IDS and are designed to work together perfectly. This makes it very easy for you and the overall system very powerful. It is only a few steps from image acquisition and management to training of the artificial intelligence and to the finished inference camera.

Fully trained networks can be uploaded directly to a camera and executed without programming effort. Therefore, you immediately have a completely working embedded vision system that sees, recognizes and derives results from captured image data. With its digital interfaces, machines can be controlled directly.

# START NOW! WITH THE AI ALL-IN-ONE PACKAGE\*

With the IDS NXT ocean design-in kit you get everything you need to bring your own inference camera into the field.

- IDS NXT rio camera with 1.6 MP Sony colour sensor
- High quality 16 mm Edmund Optics lens
- 6 months license for the use of IDS NXT lighthouse
- Gigabit Ethernet cable
- Camera power supply with necessary adapters
- Tripod adapter



**ORDER YOUR  
DESIGN-IN KIT!**  
See for yourself  
how easy AI  
can be.

\* All components are also available separately.

