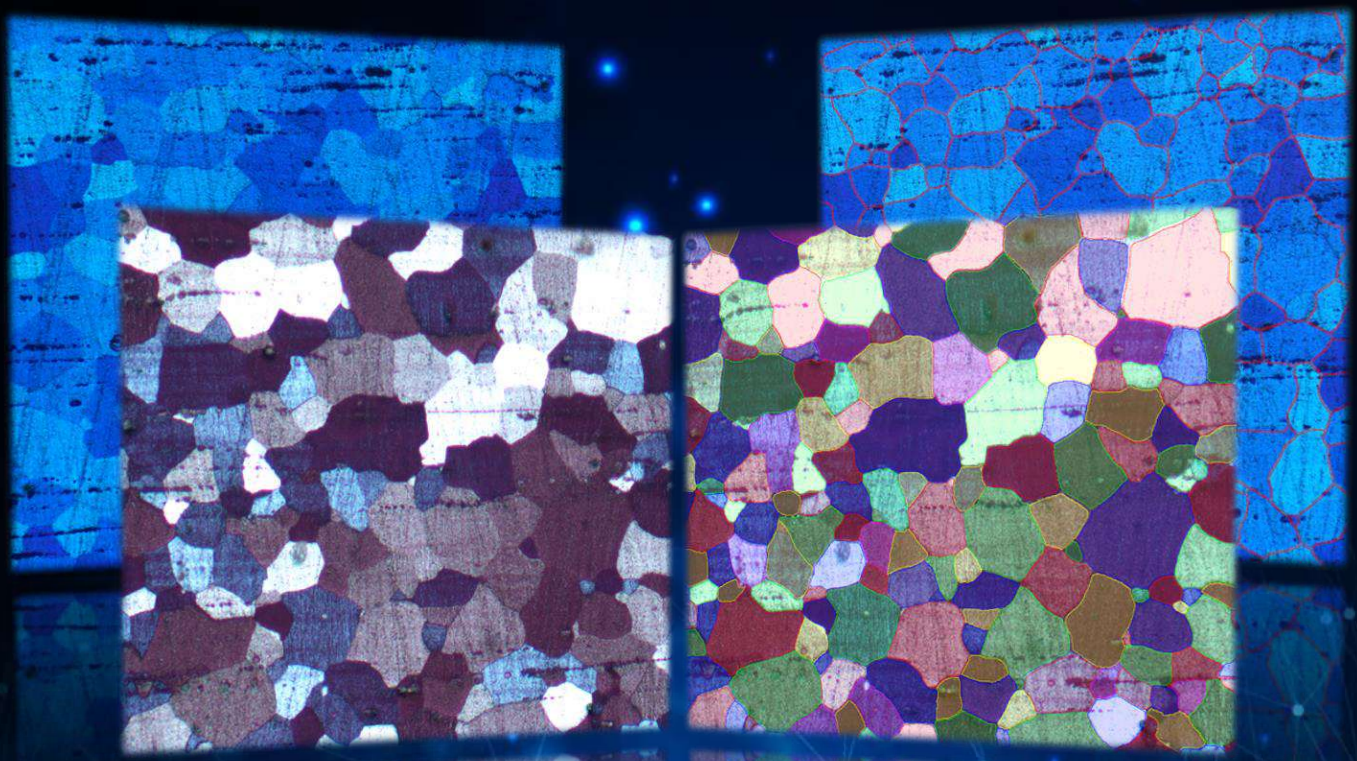
Artificial Intelligence detection for Grain Size



Discover more about
One-click solutions using
Artificial Intelligence

- Aluminium
- Austenite
- Brass

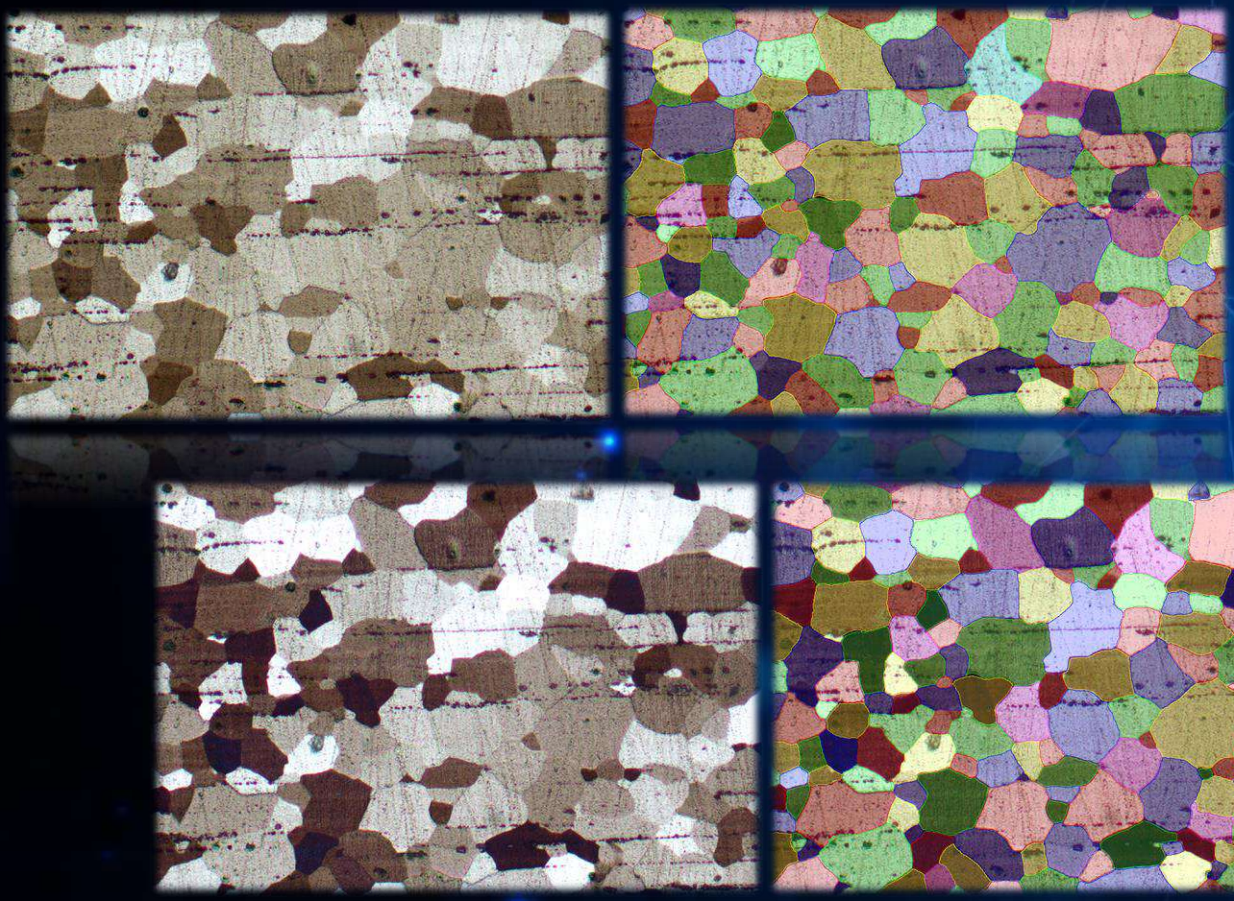
NIS-Elements
Imaging Software
Advanced Solutions for your Imaging World

Automatic Segmentation

Artificial Intelligence (AI) and deep learning make the segmentation absolutely effortless. Segmenting grains using manual thresholding can be very tricky and tedious – this is now past.

➢ One-click detection

Automatic and complete image segmentation without complicated workflows is provided by just one-click using AI in NIS-Elements.



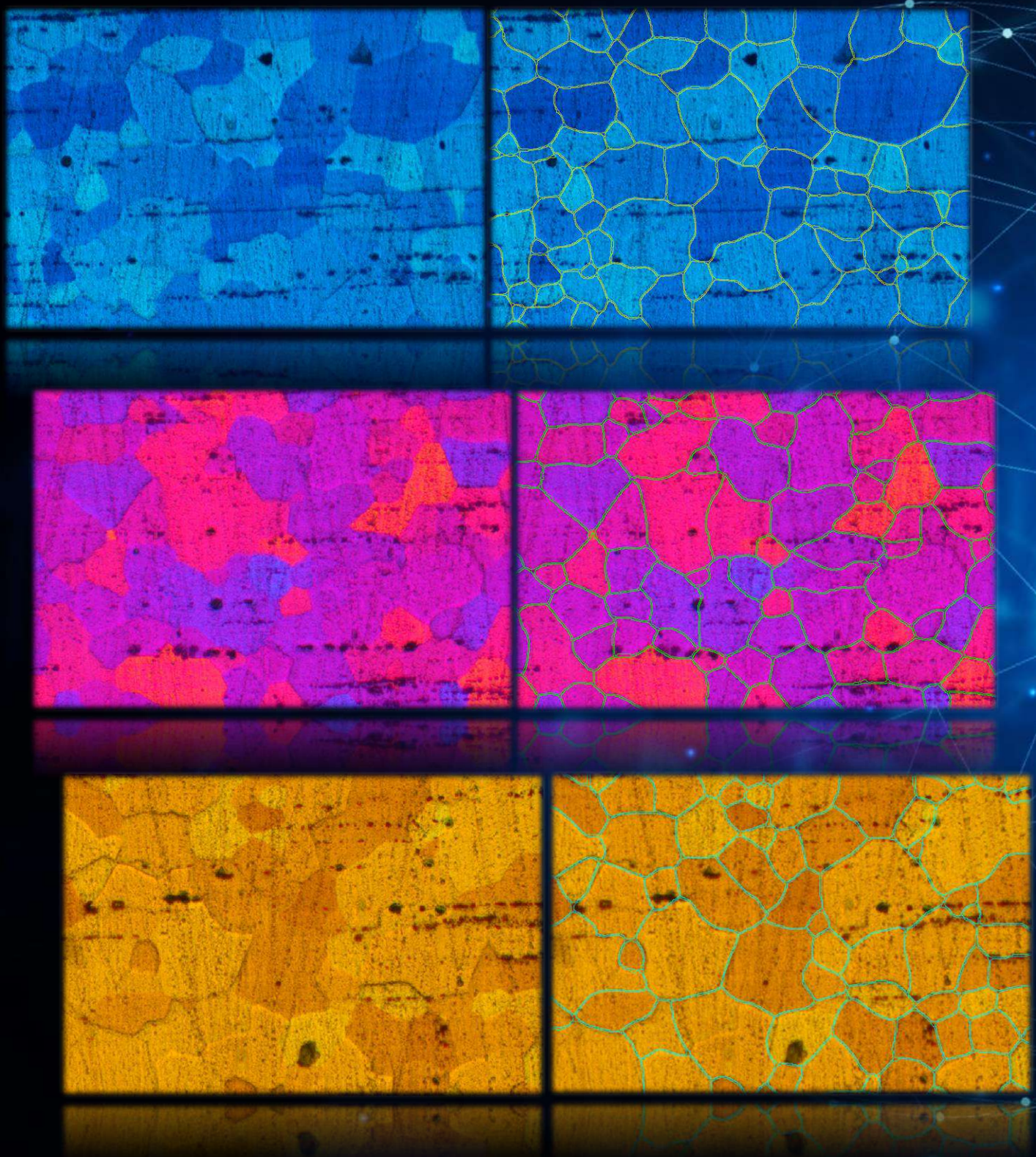
➢ Sample type flexibility

AI network can recognize grains on wide variety of images as it has been trained on large amount of samples.

Reliable AI grain detection currently works primarily Aluminium structures and similar material samples observed in polarized light with or without lambda plate.

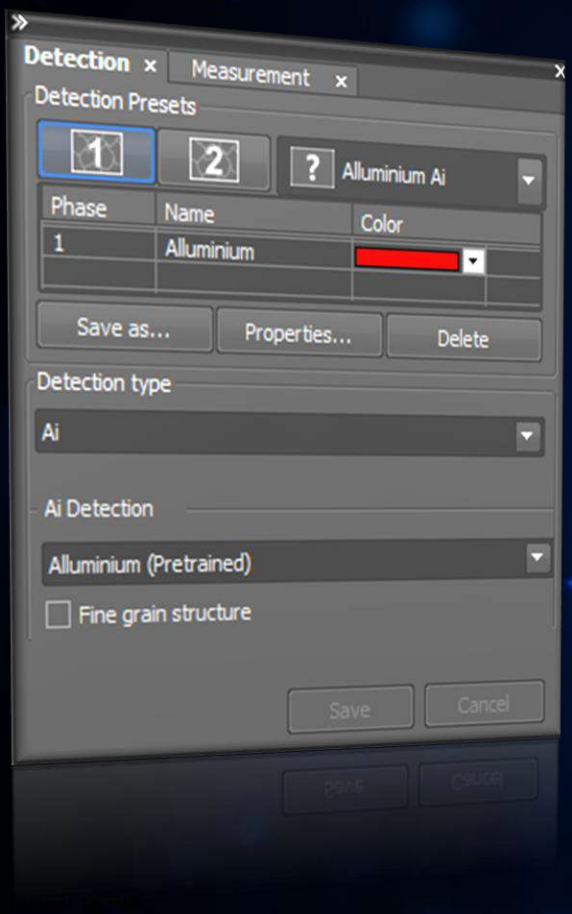
Additional image samples are being continually added into the AI network to offer customers the best and the most comfortable grain segmentation on the market.

- AI segmentation results
  - The results of AI segmentation on other various samples without any further adjustments:



All mask segmentation results on images in this brochure have been created purely by our AI and have not been further altered or adjusted in any way.

Already pretrained for you

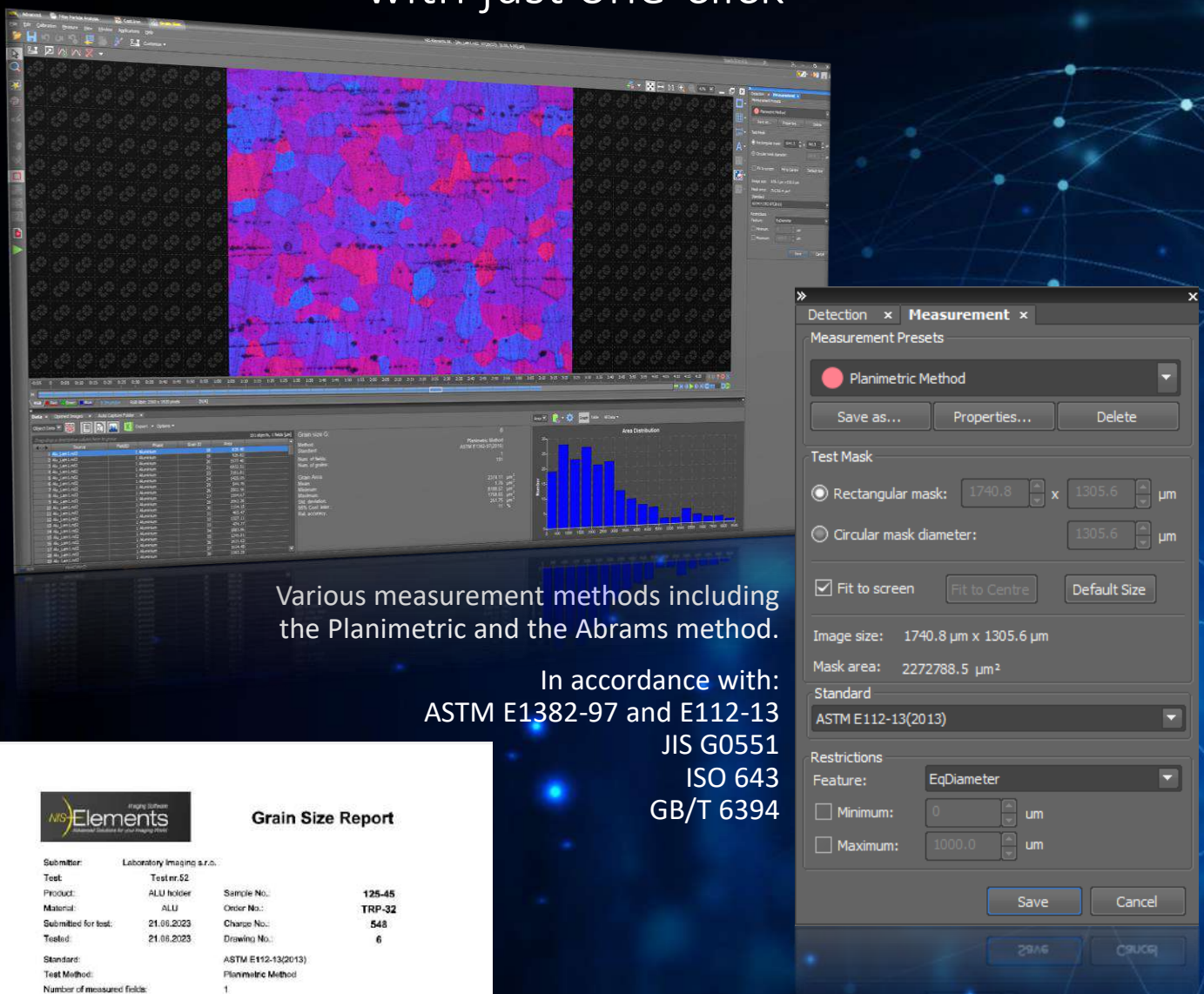


And the best part? Grain Size AI detection in NIS-Elements comes already ready to use! Simply click and the AI detection will do the work for you all by itself.

Customize your own AI

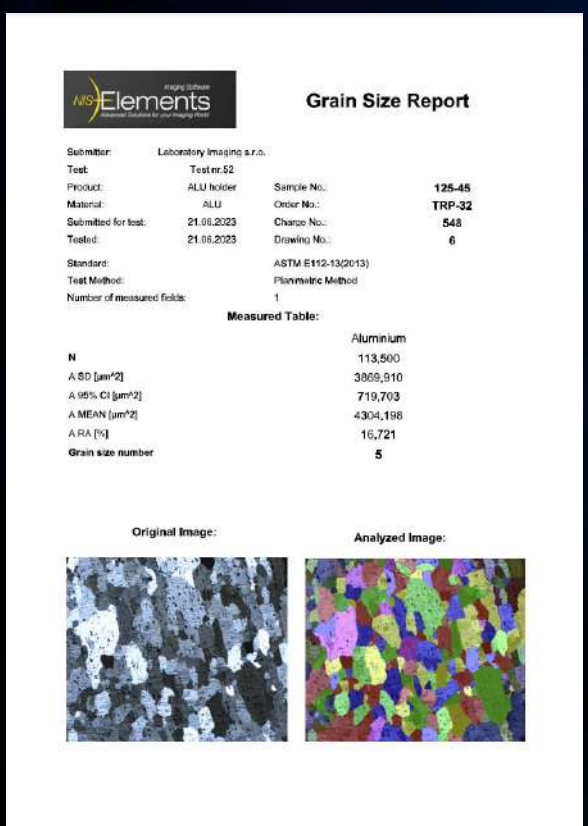
Do you have samples you would like to achieve better results on? Create your own custom AI for specific samples using the NIS-Elements NIS.ai module to get the best results possible.

Automatic complete grain size results with just one-click



Various measurement methods including the Planimetric and the Abrams method.

In accordance with:
ASTM E1382-97 and E112-13
JIS G0551
ISO 643
GB/T 6394



NIS-Elements

Grain Size Report

Submitter:	Laboratory Imaging s.r.o.		
Test:	Test nr.52		
Product:	ALU holder	Sample No.:	125-45
Material:	ALU	Order No.:	TRP-32
Submitted for test:	21.06.2023	Charge No.:	548
Tested:	21.06.2023	Drawing No.:	6
Standard:		ASTM E112-13(2013)	
Test Method:		Planimetric Method	
Number of measured fields:		1	

Measured Table:

	Aluminium
N	113,500
A SD [µm^2]	3869,910
A 95% CI [µm^2]	719,703
A MEAN [µm^2]	4304,198
A RA [%]	16,721
Grain size number	5

Original Image:

Analyzed Image:

Complete measurement results in Report including the number of measured fields or images, the number of grains and the grain area (mean, minimum and maximum) using NIS-Elements

NIS-Elements Imaging Software
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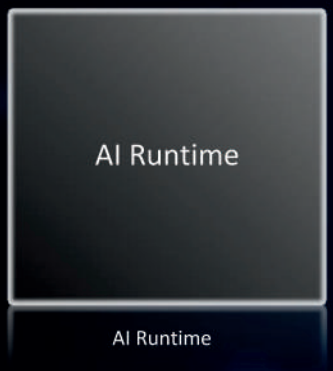
➢ Products required for this application

Modules



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Any of the software packages below

Ar Advanced Research

NIS-Elements Advanced Research

Optimized for advanced research applications. Nikon's flagship software package features fully automated image acquisition, advanced device control and powerful analysis and visualization tools

Br Basic Research

NIS-Elements Basic Research

Developed for standard research applications such as analysis and photo-documentation of fluorescent imaging, NIS-Elements BR features up to four-dimensional acquisition and advanced device control capabilities

D Documentation

NIS-Elements D

Software package for photo-documentation. Includes basic measuring and reporting tools.

➢ Contact us

For more information about our solutions, please contact your local Nikon representative at

- www.industry.nikon.com

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