KP LABS

Resolution Enhancement

Powered by Deep Neural Networks

Commissioned by the European Space Agency

esa

www.kplabs.pl

Enhanced image

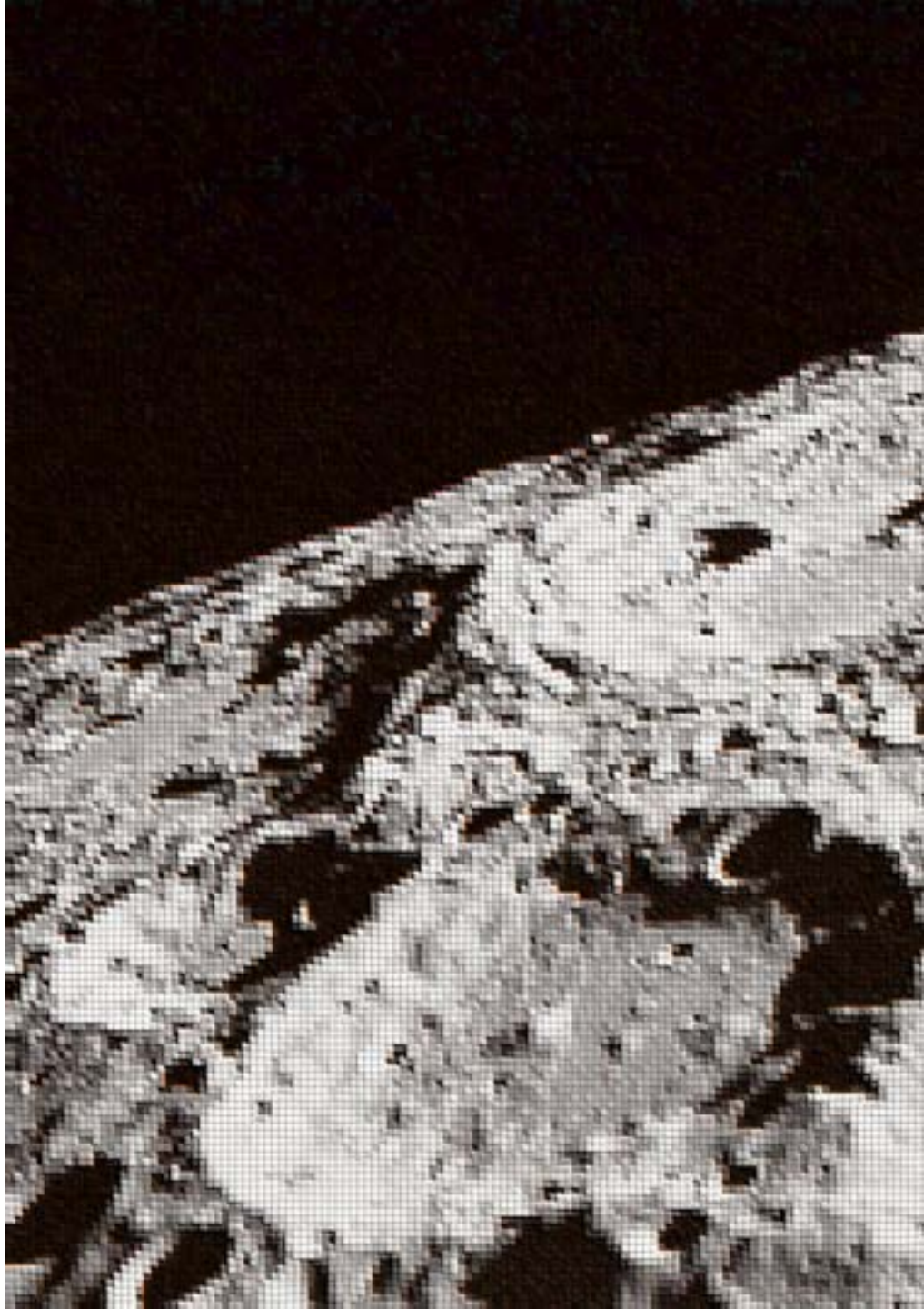
2021

WHAT IS RESOLUTION ENHANCEMENT?

The aim of resolution enhancement is to increase the spatial dimensions of images while reconstructing as many details as possible to ensure greater data interpretability. Additional goals include:

- Preserving sharp edges
- Creating a visually appealing image
- Limiting amount of unwanted graphical distortions

Did you know? This technology is also referred to as Super-Resolution Reconstruction (SRR)



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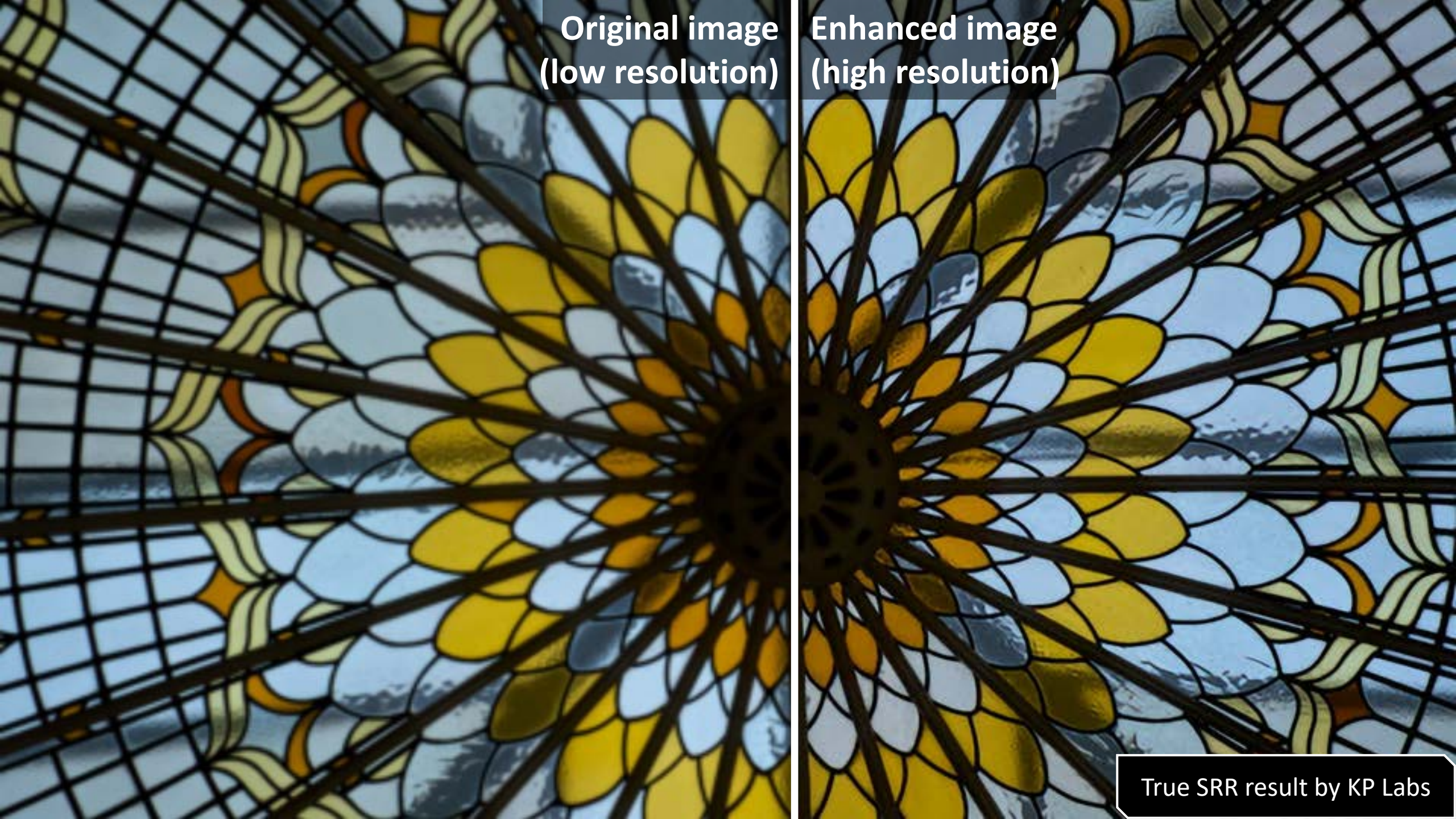
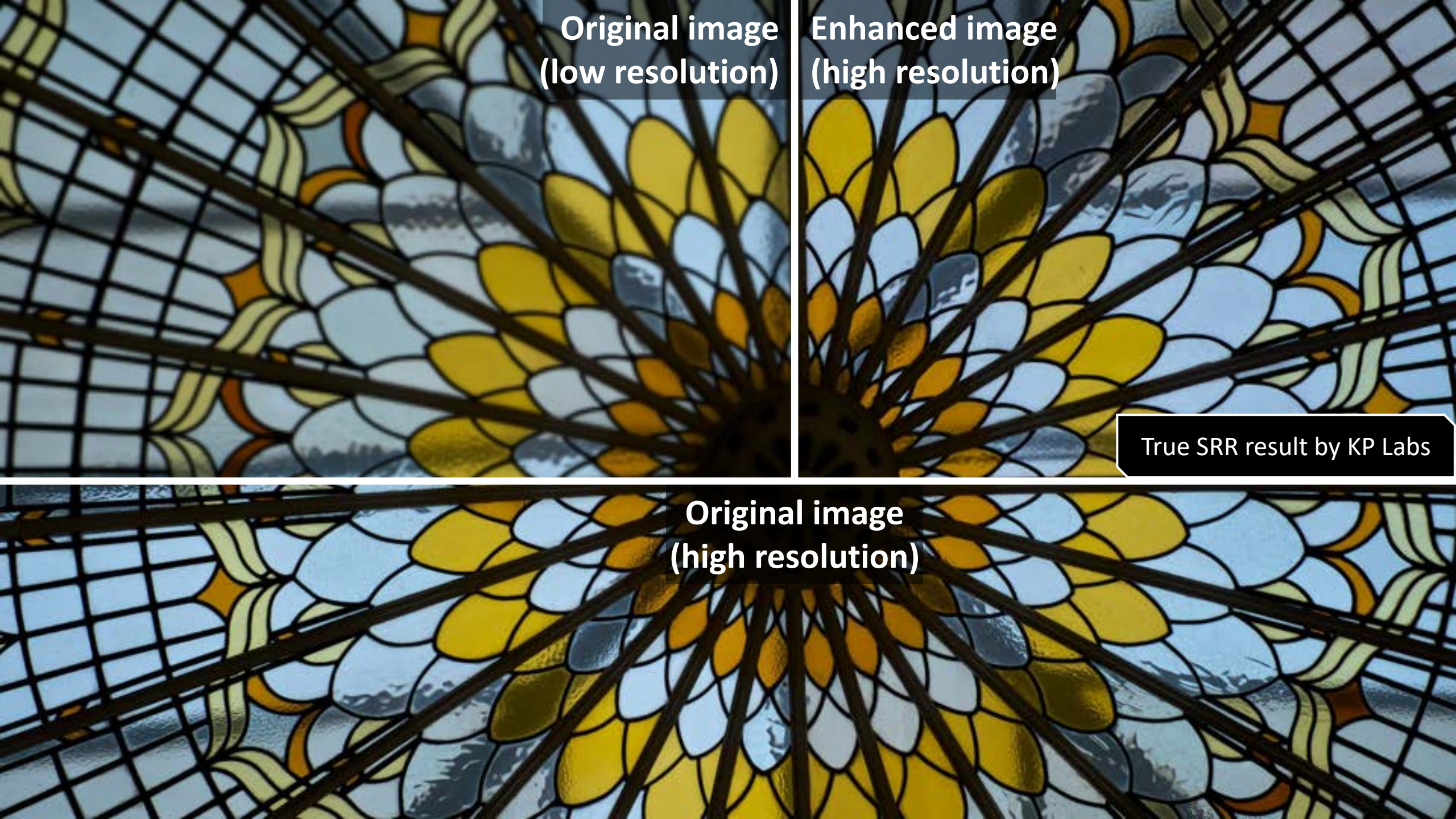
A simple picture is worth a thousand words here…

The following examples present true results of the single image SRR technologies by KP Labs


Original image
(low resolution)


Original image
(low resolution)
Enhanced image
(high resolution)
True SRR result by KP Labs


Original image
(low resolution)
Enhanced image
(high resolution)
True SRR result by KP Labs
Original image
(high resolution)

VALUABLE APPLICATIONS FOR OUR SRR TECHNOLOGIES

We are evaluating application of our SRR technologies within the following promising sectors:

- Satellite imaging
- Nano-satellite constellations, SAR satellites, ESA Copernicus, meteorology
- Machine vision systems
  Production monitoring, inspection & control, security systems
- General usage for consumer purposes
  Image editing, photo enhancement, pattern recognition (codes etc.)

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SATELLITE IMAGE RESOLUTION ENHANCEMENT

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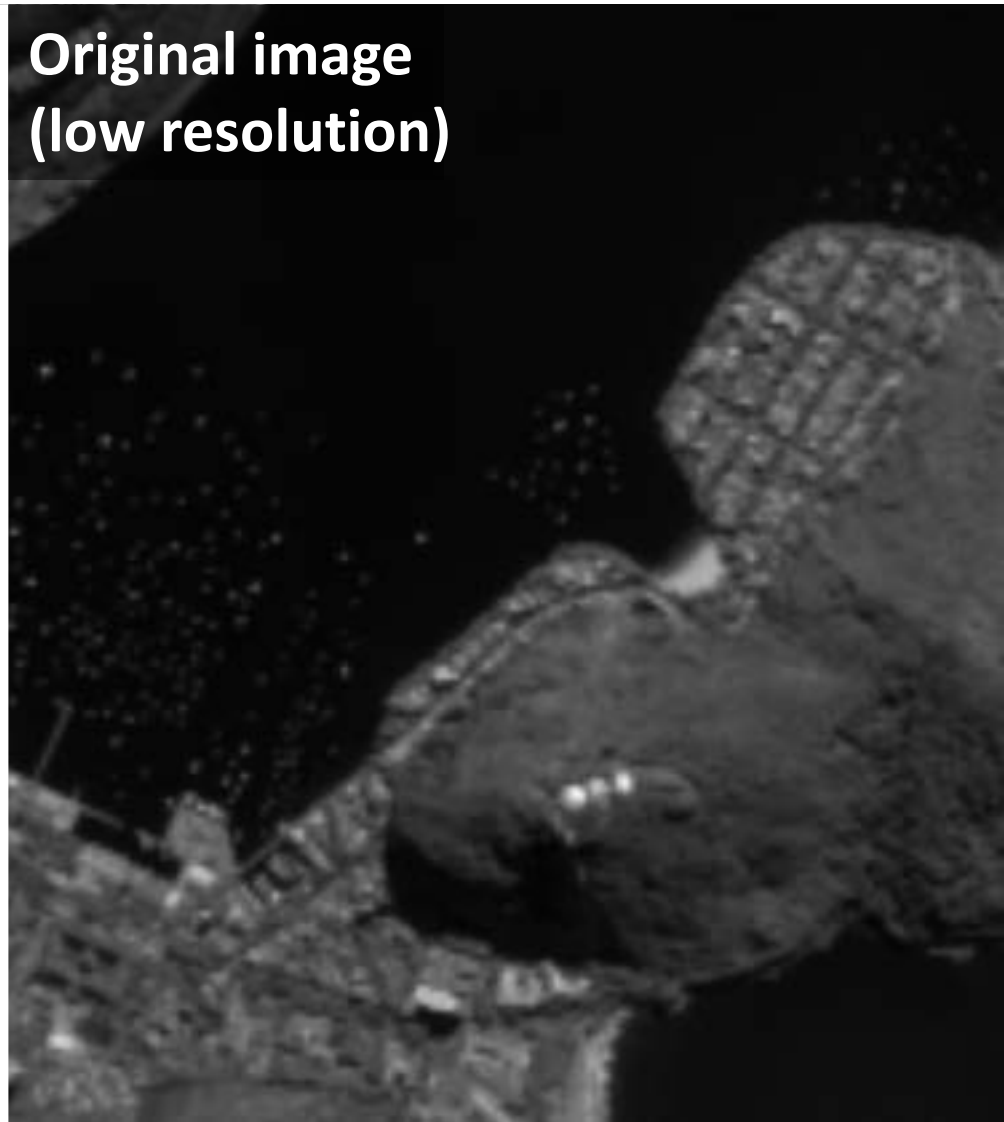
SATELLITE IMAGE RESOLUTION ENHANCEMENT



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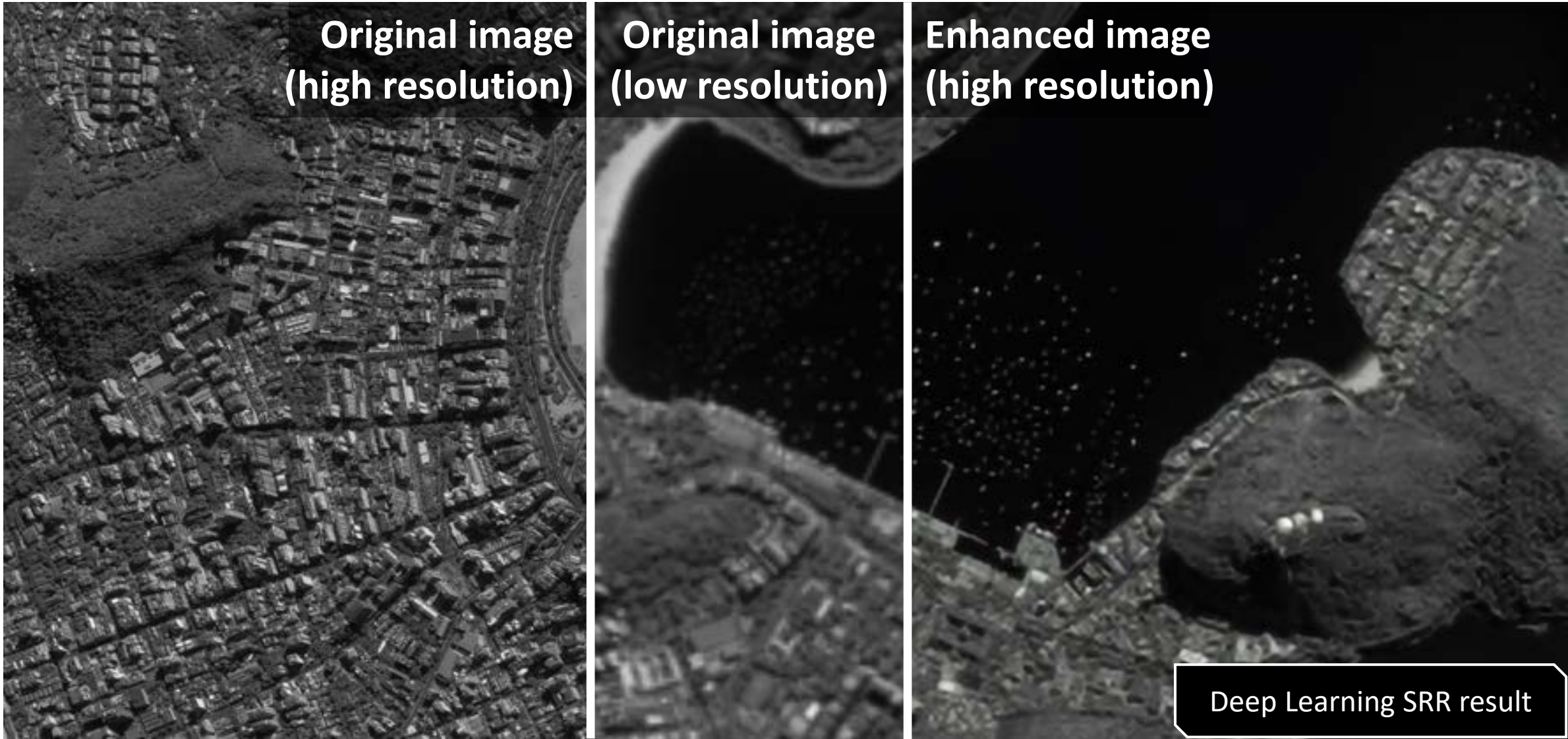
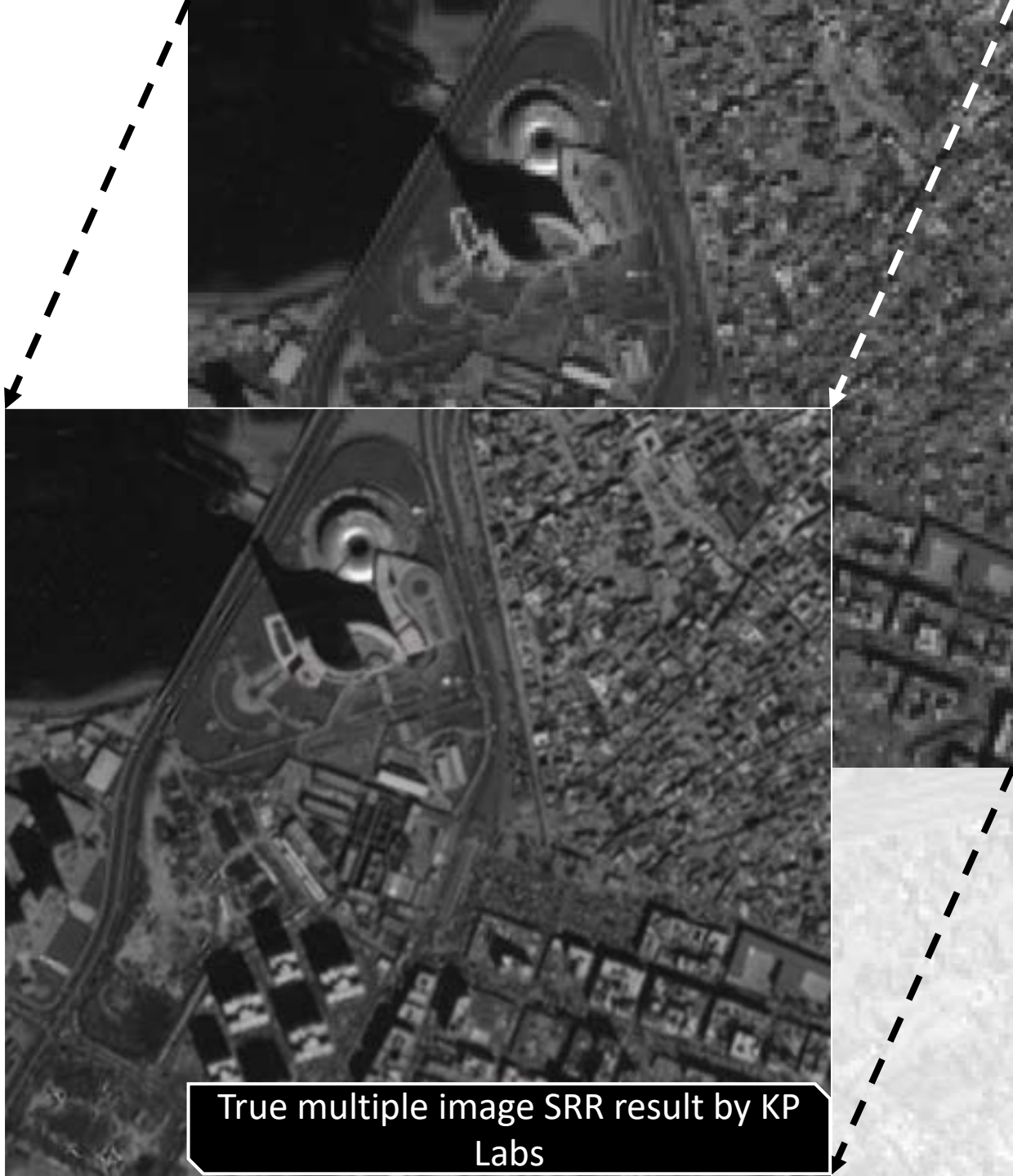
SATELLITE IMAGE RESOLUTION ENHANCEMENT



SRR FROM MULTIPLE IMAGES

- Multiple-image SRR based on **deep learning**
  - Information fusion from multiple observations of the same scene
  - Increased reconstruction capabilities compared with single-image SRR
  - Techniques adopted to multispectral Sentinel-2 images
  - Suitable for other satellites as well



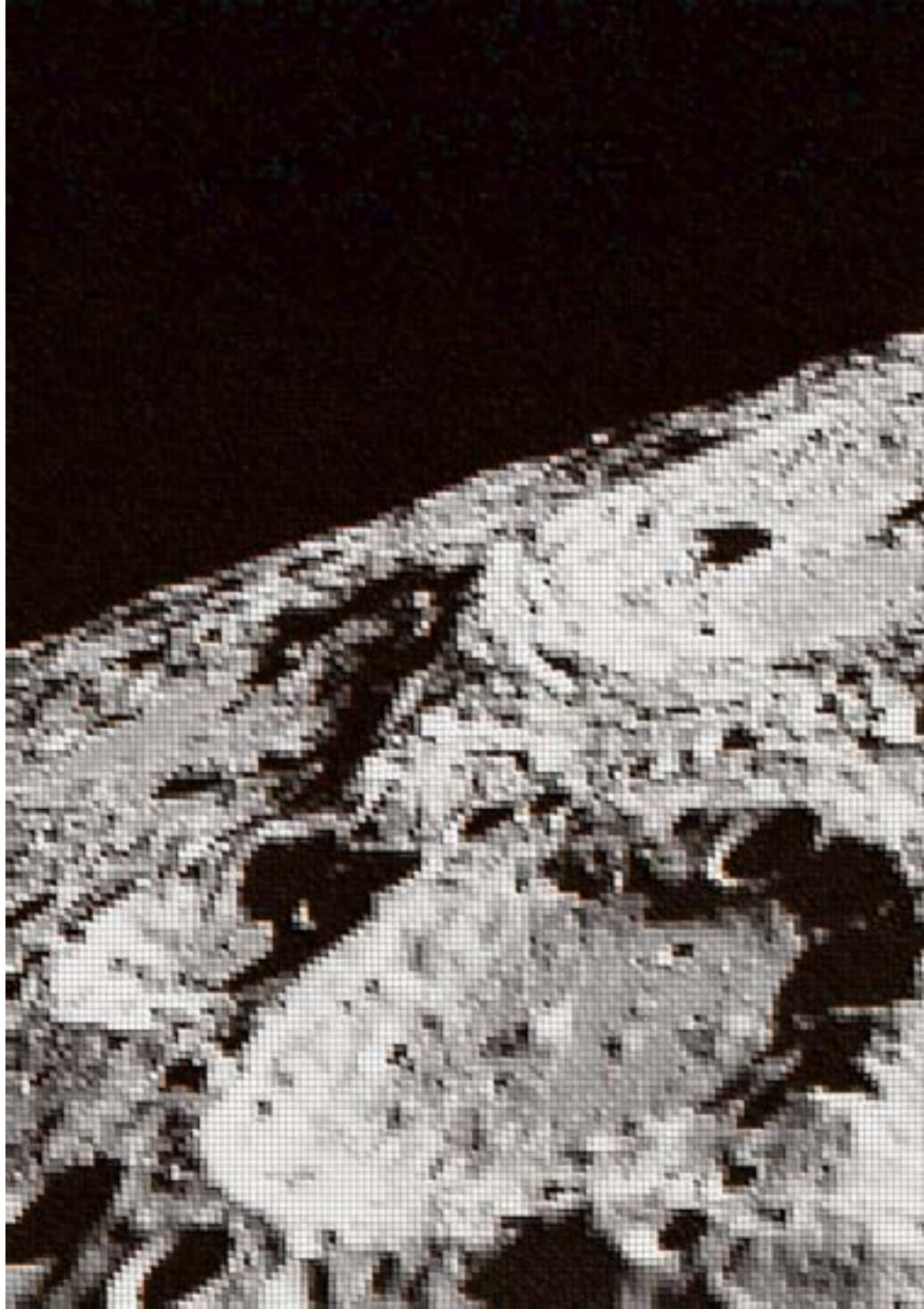
True multiple image SRR result by KP Labs

ARE YOU INTERESTED IN LEARNING MORE?

Why don’t you send a few images of your choice to test us?

We will apply our SRR free of charge and deliver the results for you to assess enhancement quality

If you’re interested, please contact us at sales@kplabs.pl



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THANK YOU

Resolution Enhancement technologies (referred to as SRR) demonstrated in this presentation were developed under a programme of, and funded by, the European Space Agency as part of following projects: SISPARE, SUPERDEEP.

KP Labs Sp. z o.o,
ul. Stanisława Konarskiego 18C,
44-100 Gliwice,

kontakt@kplabs.pl

www.kplabs.pl