

# Stereo Laser Image (SLI®)

## Protecting the main portrait with a 3D secondary picture



**S**tereo Laser Image (SLI®) is a reproduction in 3D of the primary photo of the identity document holder. This secondary portrait is designed to confirm that the primary picture is genuine. Both pictures are produced using two different technologies to make fraudsters' attempts to tamper more difficult.

### Fraud in ID and travel documents is evolving

Identity documents are subject to serious security threats. Counterfeiting and forgery of identity documents are the major types of fraud, the portrait being the element most attacked by fraudsters.

The International Civil Aviation Organization (ICAO) declared that all necessary measures shall be taken by the issuing state or organization to ensure that the displayed portrait is resistant to substitution and other types of forgery (doc 9303).

Ensuring a high level of protection of personalized information is key.

### IDEMIA's security concept

Polycarbonate substrates offer new possibilities both in terms of personalization and physical features.

Portrait protection and data interlinking, which consists of using different personalization technologies to print variable data in different parts of the ID document, are essential.

### SLI®

SLI® is a reproduction of the primary portrait using a different technology that gives a three-dimensional effect. This secondary picture allows checking the authenticity and the integrity of the main portrait. Any attempt to change the primary picture will result in a clear mismatch with the secondary portrait.

Moreover, if a document gets, for example, scanned and reprinted, SLI® will no longer have the 3D effect, making it obvious that the document is fraudulent.

On SLI® pictures, variable data (usually numbers such as the year of birth) is added to the foreground and seems to float in the picture.

When tilting the document, the portrait and the numbers will move in opposite directions, emphasizing the depth effect.

## Benefits



### Tamper-proof

SLI® offers a high level of protection against the major types of fraud — photo substitution or alteration — as it requires a sophisticated level of know-how and access to non-commercially available hardware.



### Easy-to-authenticate

SLI® allows an immediate one-to-one comparison with the primary photo reducing verification time for officials.

The 3D effect is also easily controlled by visual inspection.

In addition, the embossed lens structure can be perceived by touch.



### Durable

SLI® is laser-engraved in long-lasting polycarbonate structure. A ten-year durability is ensured.

## Why IDEMIA?

With over 3 billion identity documents issued worldwide, IDEMIA has extensive experience in the production of fraud-resistant documents and comprehensive knowledge of the evolving challenges in tampering.

Innovation is key in this fight against security threats and IDEMIA continuously innovates to be one step ahead of fraudsters.

SLI® has been adopted by the Netherlands for their passports and identity cards and more recently by Morocco and Latvia for their ID cards.

## How it works

### An optical lens structure

The lenticular lens, integrated into the surface of the polycarbonate document, allows the creation of a stereo view effect.

From a single color photo of the ID document's holder, the picture is engraved at different angles through this high-quality lens structure using a proprietary software that will generate grayscale images.

SLI® consists of four pictures. When tilting the document under a light source a motion effect is perceived by the human eye.

An array of lenses adds a tactile effect to SLI®.

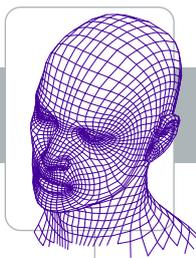


## SLI®

### a 3D secondary portrait



Picture as supplied



3D model generation



SLI® as engraved with floating data



3D facial image of the ID document holder



### Cutting-edge technology

- › A 3D image laser- engraved in a polycarbonate structure
- › A high-quality feature: SLI® reveals all detail visible in the primary photo
- › A tactile lens structure that gives 3D and depth
- › A technology that can be used directly in existing enrollment infrastructures without any additional equipment



### And tomorrow?

SLI<sup>2</sup>, also called SLI inverted, presents a negative view of the same portrait in addition to the depth effect of the positive portrait. When tilting the document, a positive-negative swap is observed. If a fraudster tries to add an element in the positive image, it will be impossible to remove this element from the negative image made of dark laser-engraved areas to keep consistency.

