



Optima: images, from paper ... to glass

Scan-Way, the most recent innovation from Optima, not only obtains the image of an object, but also goes on to "find" the geometry of the profile completely and automatically. The end product of this operation is the creation of a DXF file, which can, therefore, be read by the entire range of applications and plants present on today's market. First introduced at glasstec 2004 as a prototype, Scan-Way has since been modified considerably in response to the needs of the market.

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OPTIMA SRL

The possibility of scanning or taking a photo of an object to be created in glass and identifying the characteristics useful for the production of the same object: a real revolution for glassworks. Optima has done just this, thanks to its 10 years' experience in the field of Information Technology applied to the flat glass sector and, in general, to all processing sectors for flat surfaces.

The solutions offered have contributed in expanding the market share of the Italian company from Bologna. At present, Optima has branches in France, Spain, North America and Canada, along with a widespread network of agencies, almost completely covering the worldwide market. The headquarters of Optima, however, remain where the production of the company takes place, in Italy.

The product range of Optima is quite vast and one of the most important goals reached by the company is that of having created a programme to support all functions of glassworks. This

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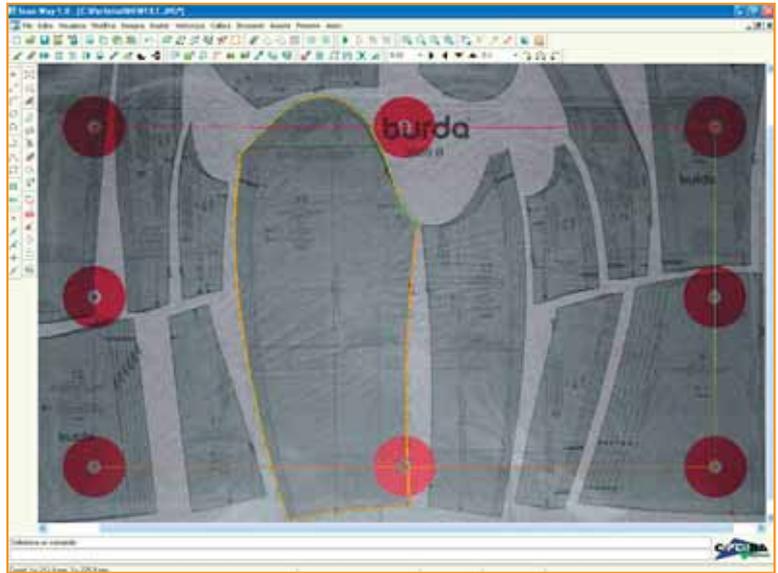
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project has been fulfilled also thanks to constant and direct contact with the end users of its products. It is exactly this constant monitoring of glassworks' needs that has led Optima to create programmes even more innovative, and functional, in response to the most complex needs of the production process.

In this respect, the innovation of this year from Optima is the *Scan-Way* system, which enables to obtain and transfer images with profiles, recognizing their geometry. This simple definition contains, however, numerous functions able to respond positively to the various needs and different situations that can take place in the glass sector. The "Base" version of the Scan-Way system manages the transferring of the data, while the "Photo" version is completed with algorithms for the calibration and compensation of the images.

STARTING FROM A DRAWING....

In order to understand the functions of Scan-Way, we need to have an "operative" example. A glassworks can receive an order to manufacture an item that has been ordered by means of a drawing on paper. Until now, the possibilities could have been, other than the classical use of a CAD instrument, the use of a graphical table or digital drafting machine to obtain a series of points on the profile as references for the design of arches and segments. This phase is laborious and the time needed can increase as



From a paper pattern to a 3-D object

per the complexity of the drawing. Just think about the difficulty represented by an artistic drawing or a mosaic.

Scan-Way, connected to a scanner or to a digital camera, after having obtained the image, goes on to "find" the geometry of the profile completely and automatically. This operation is normally called transfer and takes place by recognizing the profile, on the basis of the contrast of the colours in the image, as well as a series of tolerance parameters indicated in the system. The end product of this operation is the creation of a DXF file, which can, therefore, be read by the entire range of applications and plants present on today's market.

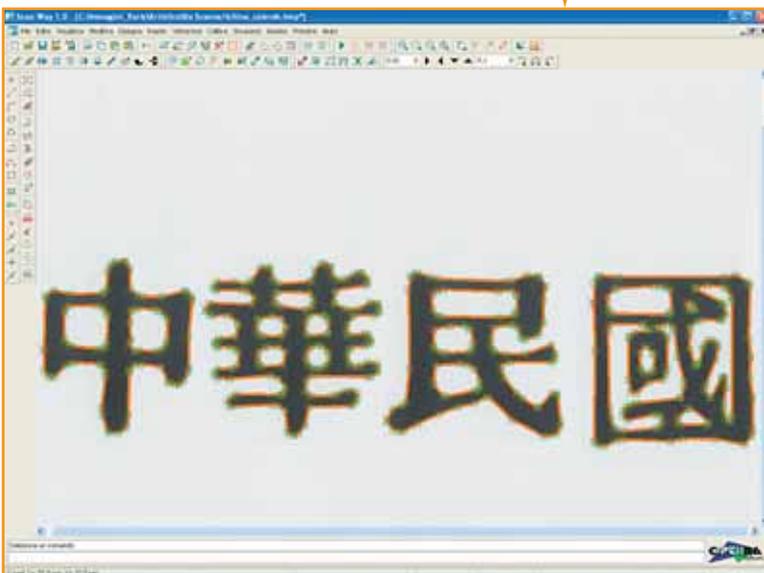
Scan-Way used for complex figures

REPRODUCTION OF A SAMPLE OBJECT

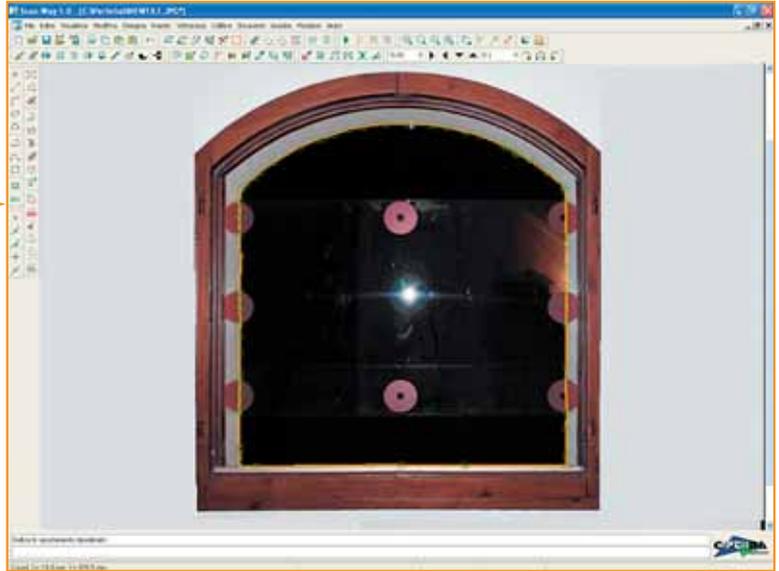
Sometimes the glassworks also need to reproduce a sample or a particular prototype. This is the case that has pushed Optima to find an alternative solution to the present methods, given the obvious gaps and limitations that the same methods have at present. The reading of a shape is considerably simplified with Scan-Way. Firstly, with Scan-Way, glassworks have a support that can be of various dimensions and that contains references recognized by the software. The same support, if printed on sheet metal, enables to hold the shapes using magnets, also supplied with the product. At this point, Scan-Way corrects the deformities of the image caused by the optics of the camera. Special algorithms are, therefore, called up without the need of particular technical knowledge by the operator, enabling any person to operate efficiently with Scan-Way.

A MULTIPLE-USE PROGRAMME

However, Scan-Way has many other possible uses. The versatility of the product is considerable and it is often the client who sug-

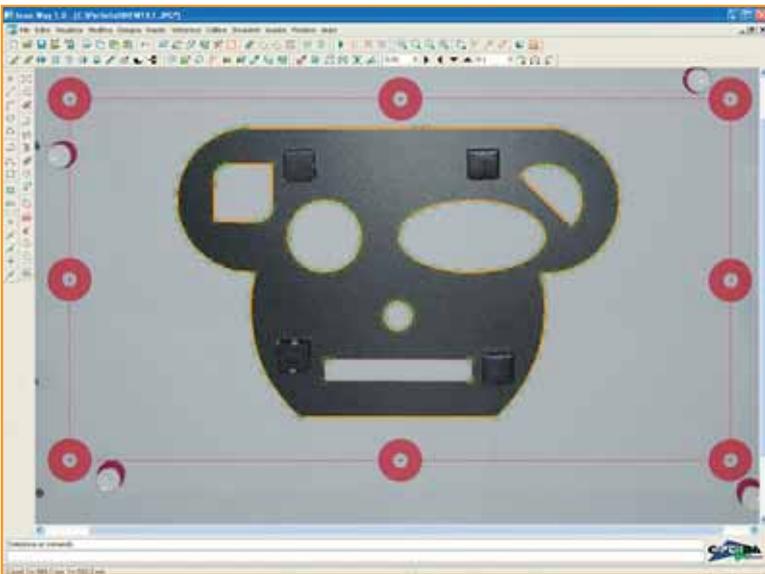


A window shape can be easily "read" by Scan-Way



gests how Scan-Way can help in particular situations and needs.

For example, some clients use the product exclusively for problems regarding the cutting of vinyl, and in this way, Scan-Way is really ideal. The algorithms have been improved to this aim, to black and white images, to the creation of the DXF to be passed on to Numerical Control, so that no operations are needed for



Reproduction of any shape with Scan-Way

verification and correction, but it is sufficient to just call up the right pre-formed macro. This operation, even if it involves complicated artistic drawings, takes no more than a few minutes. We must not forget, however, that in the case of difficult images from the contrast or limpidity point of view, Scan-Way is a valid help to draw by hand over an image. Optima, has continued to develop this programme, with acceptable accuracy by means of the use of commercialized cameras with convenient prices. This is possible because the market for cameras is evolving very fast and their quality is now very similar to expensive professional ones. Apart from the cameras, we can also say that a stand is advisable, not only for the limpidity of the image but also to avoid irritating reflection caused by the use of the flash. Nothing else is needed because, as already mentioned, the millimetric support grids containing the necessary references, other than a series of magnets for the positioning of

the object to be scanned, are supplied along with Scan-Way.

Optima introduced Scan-Way for the first time at *glasstec 2004* and since then has modified considerably the product that, at that time, was considered a prototype, as per the needs of clients interested in this solution and that, over time, have been analyzed and implemented into the product. As of today, many needs and demands have been faced and solved but Optima is certain that the future is directed towards reading without contact, more laborious and binding, and that digital technology combined with the elaboration of images can, today, and even more, tomorrow, be a winning alternative and with continuously decreasing costs. Scan-Way, that the public had the change to see at the 2005 edition of *Vitrum*, was considerably evolved and the integration with other products from Optima can give an alternative flexible tool aimed at the needs and demands of the sector. ■

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