

# SMART READING

Keeping on top of an influx of packets that need sorting can be challenging and time-consuming, but efficiency could be improved by using automatic address readers

Large postal operators have been overwhelmed by small packets originating from Asia, specifically from China. Several hundred thousand small import packets are received and sorted every day.

Solystic now has a proven e-commerce packet-sorting solution, which has been deployed at Dutch operator PostNL.

Several months ago, Solystic installed its CPS at another large European company in its international hub. The CPS now sorts more than 90,000 small import packets every day with an automatic address reader, supplemented by a video coding system.

These small packets are too thick to be sorted by letter sorting machines and are also too small and light to be treated by the traditional parcel sorters of postal operators. The addresses on these packets are very difficult to locate on their supple and irregular surfaces. In addition the addresses themselves are often far too poorly written to be read by the existing address readers.

Compared with existing address reading technologies and even manual sorting, this difficulty involves three main critical points.

**Problem solving** Firstly, the surface of a small packet is not flat, which introduces variations of resolution in the image.



Many small parcels are too thick for a letter sorting machine but too light for the parcel sorters of most postal operators

Solystic must therefore make a sophisticated 3D pretreatment to correct these variations. The objective of the pretreatment produces the same result as if the parcel has been ironed.

Secondly, postal information is embedded in a wide variety of non-standardized forms. To handle this great diversity, Solystic implements algorithms derived from its virtual ID tag V-Id and makes them a part of classes representative of these forms. These classes are then grouped by similarity to help to locate the address block location.

Lastly, not all the addresses are structured like standard addresses. The address can be printed on a single line, contain incorrect keywords, and the postal code is often isolated from the rest of the address and is accompanied by Chinese ideograms. As such, a standard address reader would be unable to locate and read the components of the address. To deal with this last point, Solystic implements advanced technologies in the fields of deep neural networks and big data.

Combining these advanced technologies not only enables Solystic to address the small Chinese parcels challenge, but will also create advantages for reading and encoding difficult addresses on domestic mail and parcels.



The automatic address reader will decipher illegible handwriting with the help of a video coding system

**Advantages** The CPS machine provides the customer with a greater sorting capacity. It currently offers 72 outputs, while a manual operator can serve 20 outputs.

The automation provided by the solution, combined with the decision capability of the automatic address reader versus the time needed by a manual operator to find the destination output of a small packet, reduces the need for staff.

The level of performance of the automatic address reader has a 70% correct read rate, dramatically reducing the error rate of manual sorting.

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