



## CASE STUDY



# Unlimited Parcel Recognition

*Revolutionising Parcel Automation at Post Denmark*

### PRIME VISION | Unlimited Parcel Recognition



**Prime Vision, in partnership with Accu-Sort Systems, have designed an advanced automated OCR (Optical Character Recognition) system for Post Denmark in late 2004. As a result, Post Denmark's Brøndby Parcel Centre facility located outside Copenhagen is now one of the most advanced on the European continent.**

**Prime Vision B.V.**

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## The Solution For Post Denmark

The complete solution comprises of four-camera tunnel scanning and imaging systems with OCR functionality, online video coding applications and an image archive system. The Brøndby Parcel Centre processes in excess of 80,000 parcels per day; the project was completed in less than nine weeks with no disruptions to Post Denmark's operations.

### The Hardware Solution

Four Accu-Sort AV4000 camera tunnels were installed over Post Denmark's parcel sorter, a Tilt-Tray sorter from FKI Logistex. These camera tunnels read barcodes with performance levels exceeding 99.9%. The camera tunnels were designed to capture and scan barcodes and address labels on five-sides of a parcel; a unique introduction in Europe at the time.

The camera tunnels automatically capture images of the parcel surfaces regardless of its position, angle, size or format.

### The Software Solution

The system immediately detects any barcodes present on the parcel and then passes the images to Prime Visions automatic label detector; a software process that locates labels within larger images and automatically rotates and zooms in to the address label.

The resulting label image is compressed and processed by Prime Visions OCR software that determines the postcode, city name, street name, street number and consignee details. Prime Vision OCR algorithms recognise all text, whether machine-printed or handwritten. The resulting data is transmitted to the parcel sorting system within a few seconds so that the parcel may be automatically sorted to its destination.

Prime Vision's advanced OCR algorithms automatically processes greater than 60% of all parcels. Any parcels that cannot be recognised by the automated processes are presented to the video coding operators for further action. Video coding enables images from unrecognised items to be processed whilst still on the sortation system, eliminating the need for manual handling outside of the sortation system. This substantially saves costs, handling and time.



Carston Dalbo Pedersen, *Deputy  
Director of the Danish Postal  
Service in Copenhagen*

*"This major reorganisation for the automated processing of parcels delivers Post Denmark substantial savings in time and money whilst importantly increasing customer satisfaction."*

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Prime Vision's customized video coding application is tailored exactly to the individual clients needs and allows operators to review parcel images and key-in the relevant destination information. Data accuracy is ensured through Prime Vision's utilisation of data validation against database records for city and place names. A load-balancing module assures a first-in / first-out processing of the parcels and management of the whole coding process.

The system allows Post Denmark to automatically sort up to 20,000 parcel addresses per hour.



## About Prime Vision

Prime Vision powers the worlds leading postal and financial institutions with high-performance, mission-critical OCR, Video-Coding and associated value-added software solutions.

Clients around the world are discovering the benefits of working with Prime Vision, with high-throughput systems now installed from Japan to United States and from Australia to United Kingdom, Europe and the Middle East.

Prime Vision's OCR software is particularly suited to mixed identification tasks with high-performance offered on handwritten text (cursive or non-cursive) in addition to machine print.

Prime Vision has two highly involved shareholders: TNO (40%) and TNT Post (60%). TNO is a Dutch academic organisation for companies, government bodies and public organisations, comparable with the German Fraunhofer Institute. The daily work of some 5,500 employees is to develop and apply knowledge. They provide contract

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research and specialist consultancy as well as grant licences for patents and specialist software. They test and certify products and services, and issue an independent evaluation of quality. TNO is our access to high-level research programs.

TNT Post, as part of the Dutch Royal TNT Post Group, is the national postal operator in the Netherlands and active on a global scale. TNT is their brand for various reliable express and logistic services. TNT has the largest integrated express air and road network in Europe. TNT Logistics is the second biggest logistics company in the world. TNT Post is our 'shop-window' where all our applications are implemented.

With two strong shareholders, Prime Vision is an ambitious company with a strong and stable future. Our number of staff grew substantially over the last 4 years and we moved into another, larger facility; also to accommodate a small parcel-reading test centre. The majority of our staff have a university degree, quite often in mathematics or artificial intelligence. Our customers demand the most sophisticated and reliable solutions and we make that happen. Our HYCR™ technology is the foundation for a wide range of applications for the postal, banking and traffic industry.



**Eddy Thans**  
*CEO, Prime Vision*

*“Following a tour of the Prime Vision systems implemented at TPG Post in Holland, Post Danmark could witness first-hand the reliability, flexibility and quality that Prime Vision could offer, in addition to a record nine week turnaround from contract signature to operation. These were key reasons why Post Danmark selected Prime Vision for their next-generation Parcel Sorting Centre.*”

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## About Accu-Sort



Accu-Sort is a pioneer in reliable and innovative solutions to automatic identification challenges since 1971. Today, Accu-Sort are the world-leader in fixed-position laser and CCD scanners, with more than 80 percent of all parcels shipped in the U.S. passing under our equipment.

More than 500 employees worldwide develop, manufacture and distribute our products for the leading players in distribution, warehousing, manufacturing and retail; CCD cameras, bar code readers, RFID and a wide range of integrated, real-time data management solution. Accu-Sort world-wide headquarters are located in Telford, PA, USA with the European headquarters located near Berlin, Germany.

## The AV4000 Camera Imaging System

We've got the better solution – The AV4000 V2.0 CCD imaging system. The AV4000 V2.0 uses Accu-Sort's new, patented Digital Zoom technology with integrated image binarisation. Digital Zoom functions like a very smart zoom lens without the challenges associated with a mechanical device. Digital Zoom helps to simplify the design of the AV4000 V2.0, eliminating the need for multiple configurations and reducing maintenance and spare part costs.



Ingbert Schmitz  
*Managing Director*  
*Accu-Sort Europe*

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*“Accu-Sort were chosen for this project because we have established a reputation for the excellent performance and service offered to the Danish Post in the recent years and because of the quality of the images provided by our cameras”*

Installation is easy and quick because all field replaceable components, including the camera and illumination assembly, are firmly and permanently aligned. The entire system can be installed, removed and replaced in less than 20 minutes – maximising up time.

The AV4000 V2.0 supports Accu-Sort's in-camera dimensioning (VisionCube™), side-by-side detection (VisionDetect™) and real-time image capture (VisionCapture™).

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The integrated coplanar LED illumination ensures the same high read rate as sodium illumination without the CDRH safety concerns associated with laser illumination. The low power consumption and longer life of LEDs ensures maximum reliability and economy.

**More information:**

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