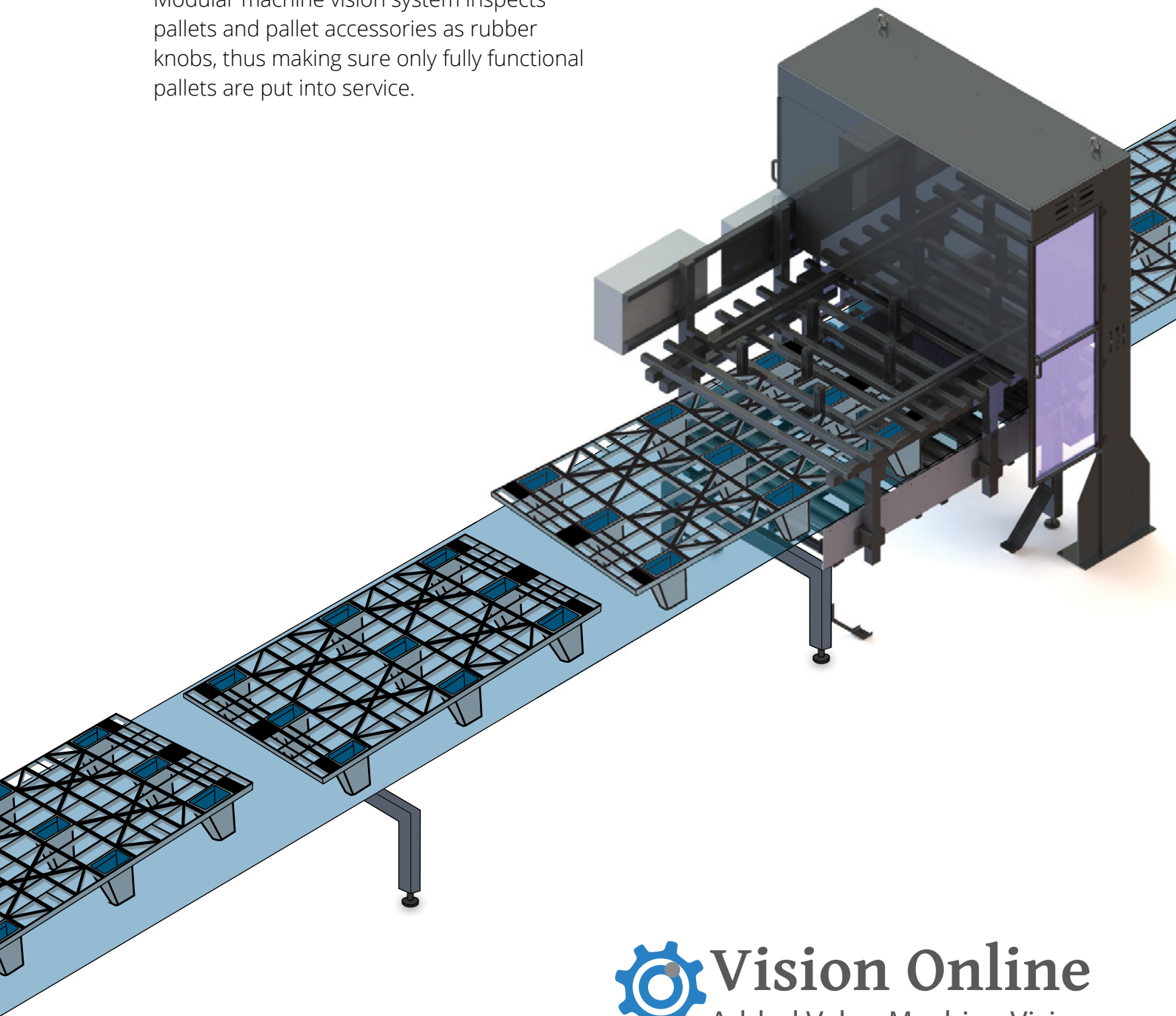


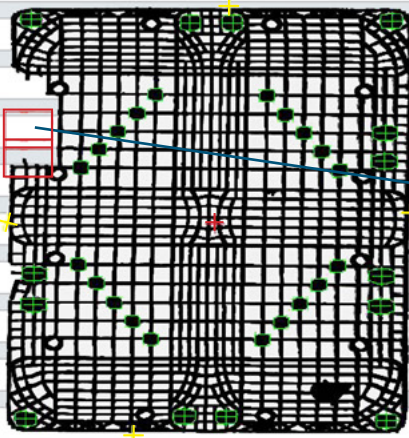
PalletControl

Automated
visual inspection
solution for pallets

#03

Modular machine vision system inspects pallets and pallet accessories as rubber knobs, thus making sure only fully functional pallets are put into service.

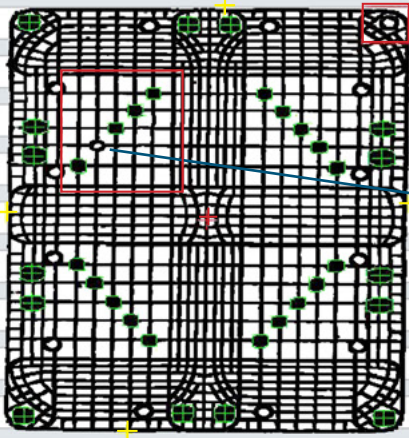




Perimeter and principal structure:

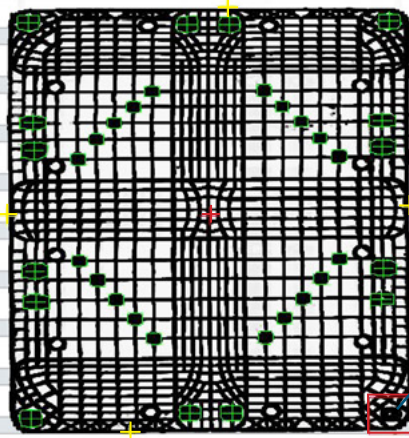
Detections of missing parts of the pallet or alien objects.

- Alien objects in the perimeter of the pallet and any other not desired object that might interfere with correct usability.
- Missing material due to breakout of structural parts.



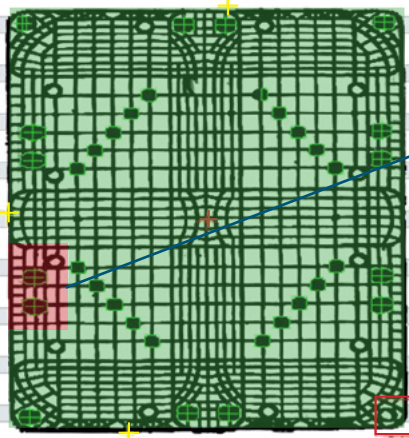
Anti-sliding knobs:

- Rubber knobs are mounted to the pallet in order to prevent the keg from sliding off. Presence of the anti-sliding rubber knobs is verified by the system.



Centering knobs:

- Missing or cut centering knobs can not hold the keg safely on the pallet, thus their presence and good state needs to be controlled.

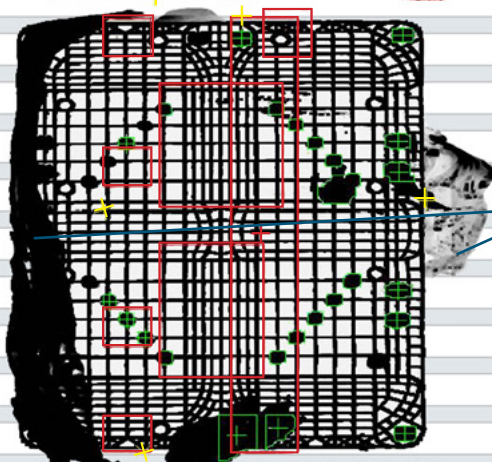


Bottom part inspection:

• On the bottom part of the pallet structural integrity may be inspected via different technologies:

- Camera inspection, like top part
- Ultrasound inspection
- Mechanical sensing

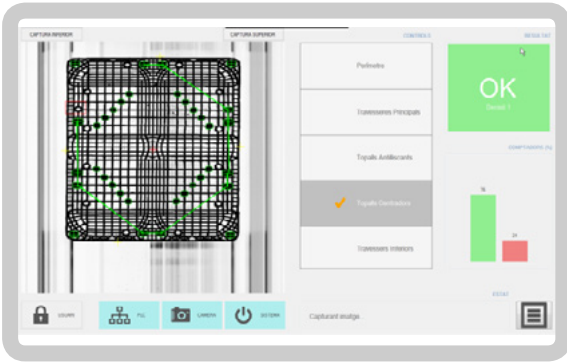
• The inspection result is shown on the GUI as a graphical representation, also for non-imaging technologies.



External elements:

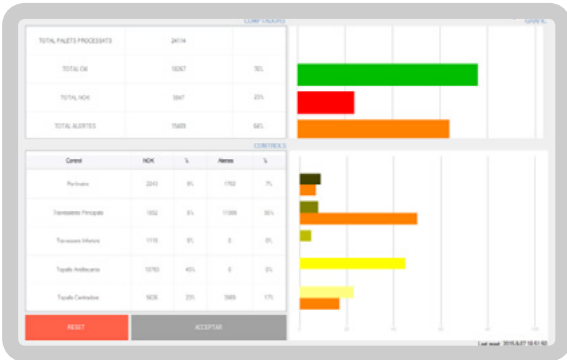
- Efficient detection of external elements that might disturb the automatic processing of the pallets, like shrink foil or similar..

Software and Graphical User Interface



User interface:

- Image processing and feature extraction is done by high-end algorithms, but the graphical user interface is kept intuitive and easy to use.



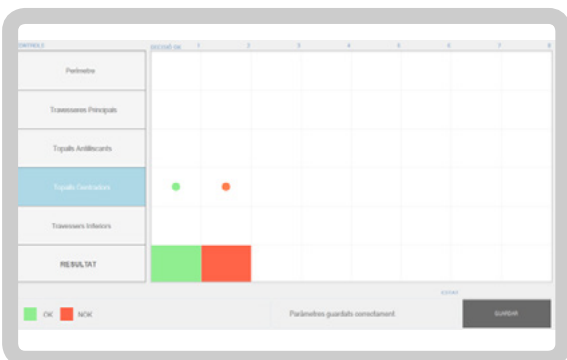
Production statistics:

- PalletControl saves and offers statistical data of the products inspected in order to detect trends and improve efficiency.



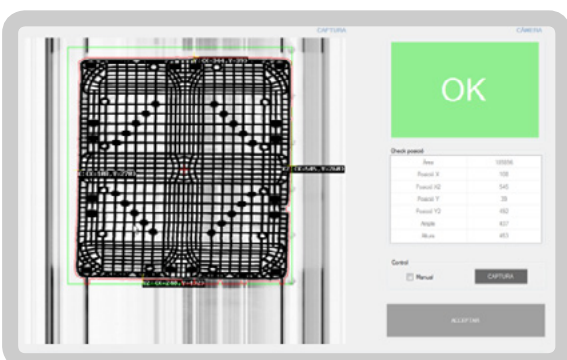
Image history:

- Images of NOK inspections are saved into a data base with a graphical representation of the error that caused the pallet to be NOK.



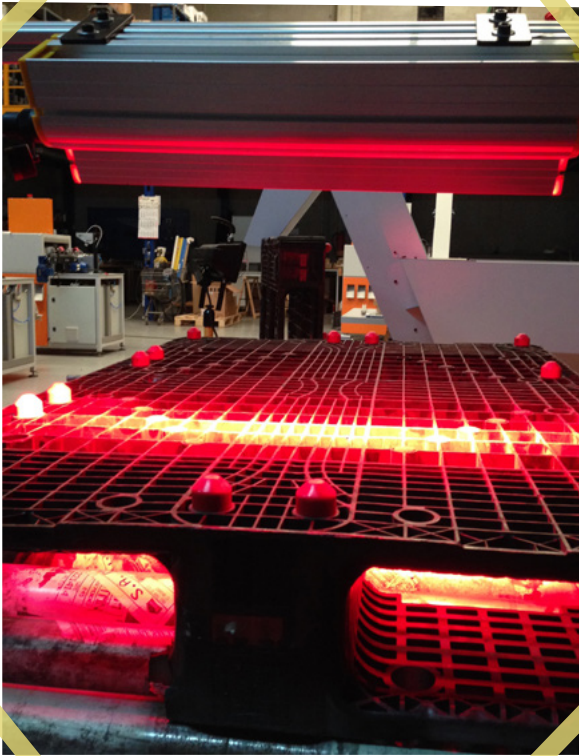
Decision making in the operator's hand:

- The user can activate and deactivate controls and their influence on the global control result.
- Action to be taken, a simple alarm or a signal to the segregation mechanism for scrapping.



System calibration:

- On the calibration screen the user can verify the correct functioning of the system.



Principal advantages of a vision inspection system for pallets:

- Evaluation of pallet condition as OK, NOK or usable
- Usable pallets can be re-used, whereas mechanical systems only give OK or NOK
- Detection of cut or otherwise deteriorated centering and anti-sliding knobs
- Statistics and error management. Pallet deterioration can be monitored over time to improve process.

Working system

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