SPACEYE - 3D

Sensor for robotic workstations

Contact details

KYBERNETES, s.r.o.
Omská 14
040 01 Košice
Slovakia

00421 905 622 376

kybernetes@kybernetes.sk
jan.ligus@kybernetes.sk

SPACEYE advantages compared to competing products on the market

- **Full integrity of the device** – SPACEYE offers a fully integrated solution for all subsystems of depalletization process (subsystem of preparing and implementing a model of a real object, subsystem of localization and determining the gripping position together with subsystem of gripping and subsequent imposition of an object)
- **Adaptivity of the system** – SPACEYE device is fully adaptive in terms of generating a model of a real object. It provides fully automated creation of the model of a real object, either directly scanned or loaded as a 3D CAD model
- **Short period of implementation** – implementation of models of new real objects is realized in 24 hours
- **High reliability of localization and handling objects** – SPACEYE device combines technology of camera systems together with laser triangulation
- **High speed of localization and manipulation of objects** - total accumulated period of (1) scanning, (2) the localization of the object and (3) gripping and the subsequent imposition of the object is up to 7s.
- **High robustness of the device** – SPACEYE device has no limitations of surface and structural properties of the scanned object. The size of the device is adapted to the size of standard Euro pallets. In case of larger dimensions of pallets it's only necessary to adjust the scanning device.

This device has been developed with the financial support from the EU under the operational program COMPETITIVENESS AND ECONOMIC GROWTH | ITMS Code: 25110320069 | Priority 1 Innovation and growth of competitiveness | Measure 1.3 Support of innovation activities in enterprises | Name of Project: Feasibility study and experimental development of 3D integrated sensory device

SCIENCE AND TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT

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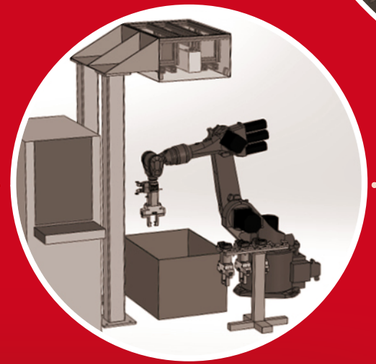
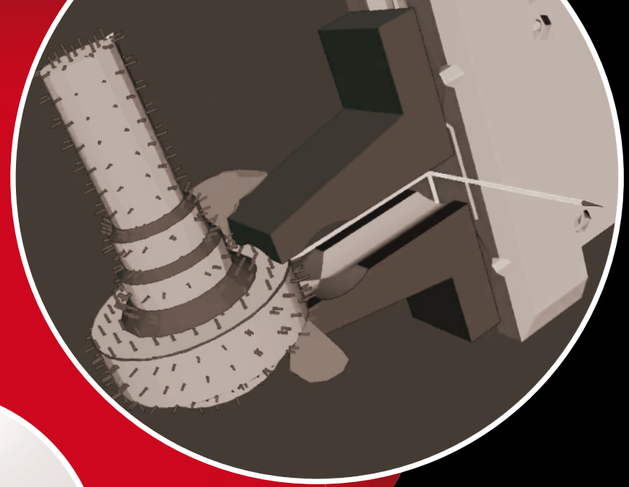
Device functions

- registration of searched model
- acquiring the point cloud of the search area
- program lookup of the registered model in the workspace
- acquiring the position and rotation of the object in 3D space with a designated place for object gripping using the robotic manipulator and its imposition into required space
- automatic generation of robotic manipulator trajectory for reliable and secure gripping and unloading

SPACEYE subsystems

1. Subsystem of preparing and implementing the model of a real object
2. Subsystem of localization and determining the gripping place of the object (product) of various sizes and shapes in 3D space in a heap of randomly arranged objects (products), including functional safety module – Safety.
3. Subsystem of gripping and subsequent imposition of the object (product) of various sizes and shapes from the heap of randomly arranged objects in 3D space





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