

# DEROSA

## Semi-automatic robotic cutting D'Écoupe Robotisé Semi Automatique

### Scope

#### Create a digital twin of the workspace using onboard 3D scanning

- 3D scanning of the equipment to be cut and its environment
- Reproduction of the 3D environment in real time in the form of a point cloud
- New 3D scan after cutting to reconstruct the new «as-built» environment

#### Precise configuration of cutting operations

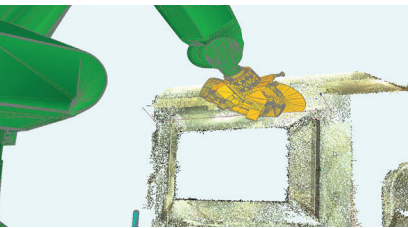
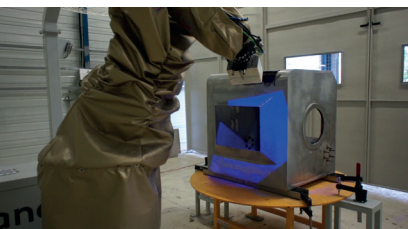
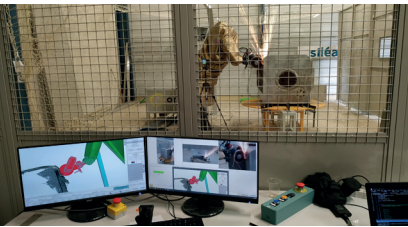
- Choice of the right cutting tool for the configuration
- Cutting paths defined by the operator, directly in the points cloud, taking the parameters of the selected tool into account

#### Risk-free cutting sequence

- Simulation of robot cutting trajectory to confirm accessibility of both the equipment to be cut and the built-in tool
- Detection and management of robot's collisions with its environment

#### Automatic, optimized cutting

- Cutting in automatic mode following the trajectory set by the operator and confirmed by the anti-collision and accessibility calculation
- Robot speed controlled by cutting force measurement



### Advantages

- **STANDARDIZATION**  
Use of industrial robotic arms that are robust, reliable, and cost-competitive
- **PERFORMANCE**  
Use of cutting tools in optimal conditions, resulting in savings on consumables of around 50%, with a direct impact on operating times
- **ADAPTABILITY**  
System that can be adapted to different working configurations, different robotic arms and cutting tools and different operations (unpacking from bulk, packing of waste, etc.)
- **SIMPLICITY**  
User-friendly human-machine interface (HMI) that is easy to use and requires no robotics training

### Key data

- Adapted to the use of different tools (230 mm circular saw, 125 mm / 230 mm / 300 mm grinder, band saw, Fein saw, laser, plasma torch)
- Preparation time for a series of consecutive cutting operations reduced by 10 to 30 minutes
- Cutting to millimeter accuracy

# Semi-automatic robotic cutting system, adapted to volume reduction operations in a nuclear environment

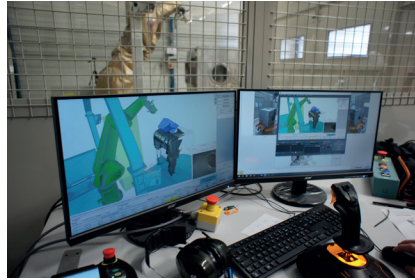
## Model-based qualification prior to operational deployment

### Reproduction of worksite conditions

Performance of cutting operations on representative models of containments made of stainless steel.



Shielded containment at CEA  
Fontenay-aux-Roses



DEROSA control station



Representative model of an ECE  
drum from Orano la Hague

## Gains reproducible under real conditions

Simple, easy-  
to-use HMI for  
rapide familiarisa-  
tion with the pool

No risks to  
operator or the  
equipment

Extended tool  
and operating life  
of cutting  
equipment

Cutting  
with a proven  
industrial robotic  
arm

Anti-collision  
management



DEROSA has been developed by  
both Orano and Sileane.  
The solution is covered by a joint  
patent application



Watch the  
DEROSA  
presentation video

Contact us to discover the  
range of possible services with  
DÉROSA

## Orano DS

Mail: [ds@orano.group](mailto:ds@orano.group)  
[www.orano.group](http://www.orano.group)