

A blue industrial robot arm is shown in a factory setting, positioned over a workbench. The arm is equipped with various sensors and cables. The background shows other industrial equipment and a factory floor.

IRT  
JULES  
VERNE

# CUSTOMISED INNOVATION

FOR THE FACTORY  
OF THE FUTURE

# 5

## REASONS WHY TO ENTRUST US WITH YOUR RESEARCH PROJECTS



Benefit from  
cutting-edge  
equipment



Access to  
high level  
skills



Get a reliable  
and agile  
solution, 100%  
tailored to your  
needs



Promote a fast and  
efficient technology  
transfer



Limit risks and  
investments

# PROCESSING OF COMPOSITE MATERIALS



## EXPERTISE

- Support to the deployment of new methods for shaping composite materials:
  - Thermoplastics: injection, over-moulding, stamping
  - Thermosets: RTM, infusion
- Design of multi-material structures, functionalisation

## EQUIPEMENTS

- 1300 tons robotised injection moulding machine with bi-injection device + infrared oven
- 200 tons robotised vertical press + infrared oven
- 300 litres 2k thermoset injection machine
- Induction welding robot for thermoplastic composites
- TFP (Tailored Fiber Placement) machine



# ADDITIVE MANUFACTURING

## EXPERTISE

- Topological optimisation
- Redesign of parts
- Development of process parameters

## EQUIPEMENTS

- 3D laser printers: metal/polymer powder
- 3D binder jetting printer: sand/ceramic
- 3D wire/filament printers: TIG, MIG, FFF
- Metal materials: aluminium, titanium, steel, etc...
- Other materials: PEEK and PEKK polymers reinforced with short carbon fiber, etc...

# ROBOTICS | COBOTICS

## EXPERTISE

- Control of robots and mobile platforms
- Design and deployment of mobility solutions in industrial environments
- Enhancing workstation ergonomics & operator assistance

## EQUIPEMENTS

- Cobot arms
- Omni-directional mobile platforms
- Welding robots
- Geolocation sensors
- Cable-driven parallel robot (7m x 4m x 3m)

# SIMULATION | CHARACTERISATION

## EXPERTISE

- Development and characterisation of material behaviour properties
- Simulation and optimisation of manufacturing processes
- Reliability and tolerance analysis
- Simulation of structures under operational conditions and experimental validation
- Evaluation and analysis of damage mechanisms
- Noise and vibration control of structures

## EQUIPEMENTS

- Large multi-actuator bench for static and fatigue tests
- Metrology      Process control, NDT & SHM
- Simulation platform

# 1

## A PERSONALISED OFFER

- Use of IRT Jules Verne's equipment
- Feasibility study and Proof of Concept (POC)
- Technical and economic analysis
- Integrated product/process design
- Development of demonstrators and prototypes
- Optimisation of process parameters



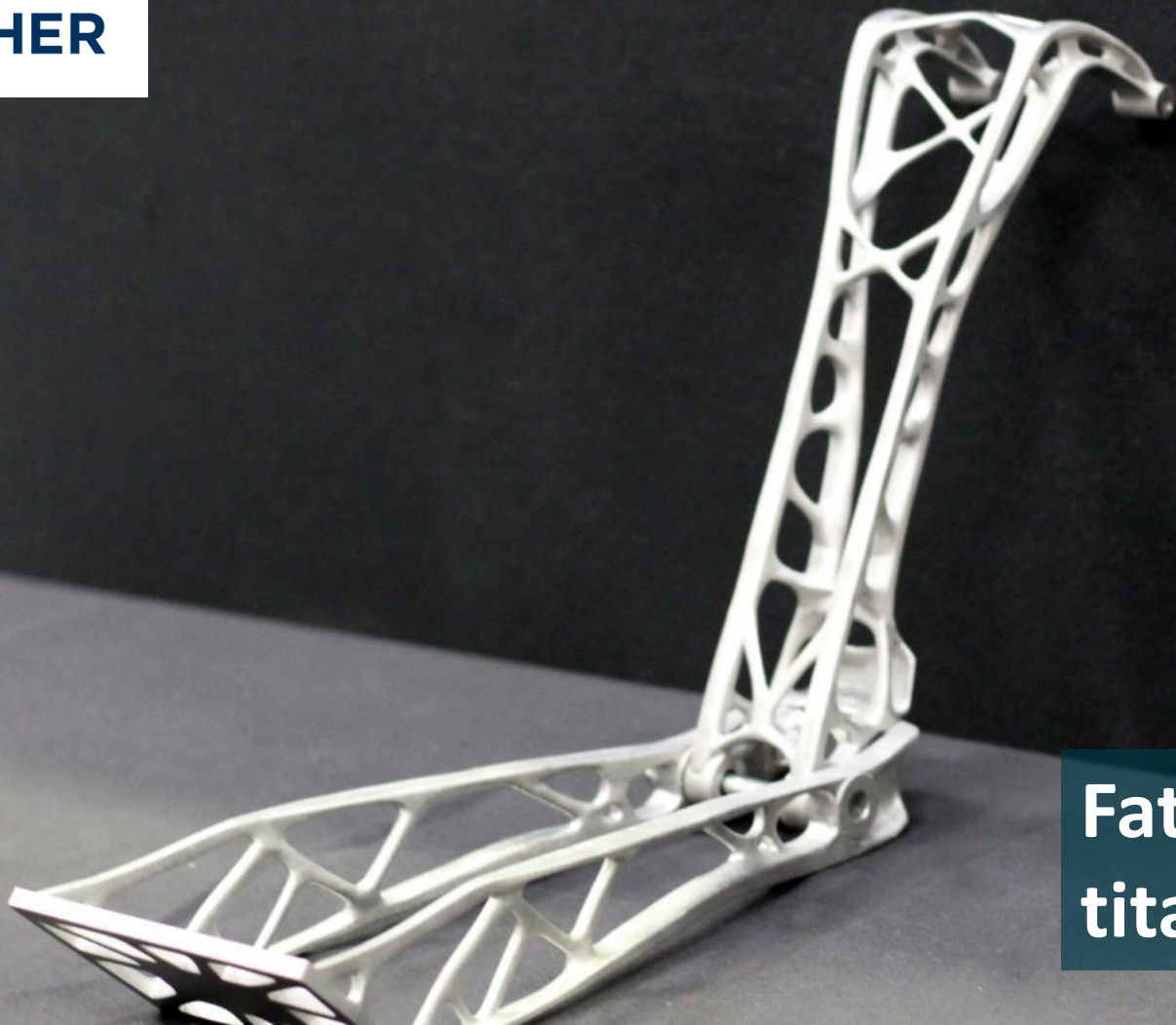
# OUR TRUSTED PARTNERS

ACB | AIR LIQUIDE | AIRBUS | BA SYSTEMES | CHANTIERS DE L'ATLANTIQUE | CLAAS |  
DAHER | ENSIM | ENSAM – MANITOU | EUROPE TECHNOLOGIES | FAURECIA |  
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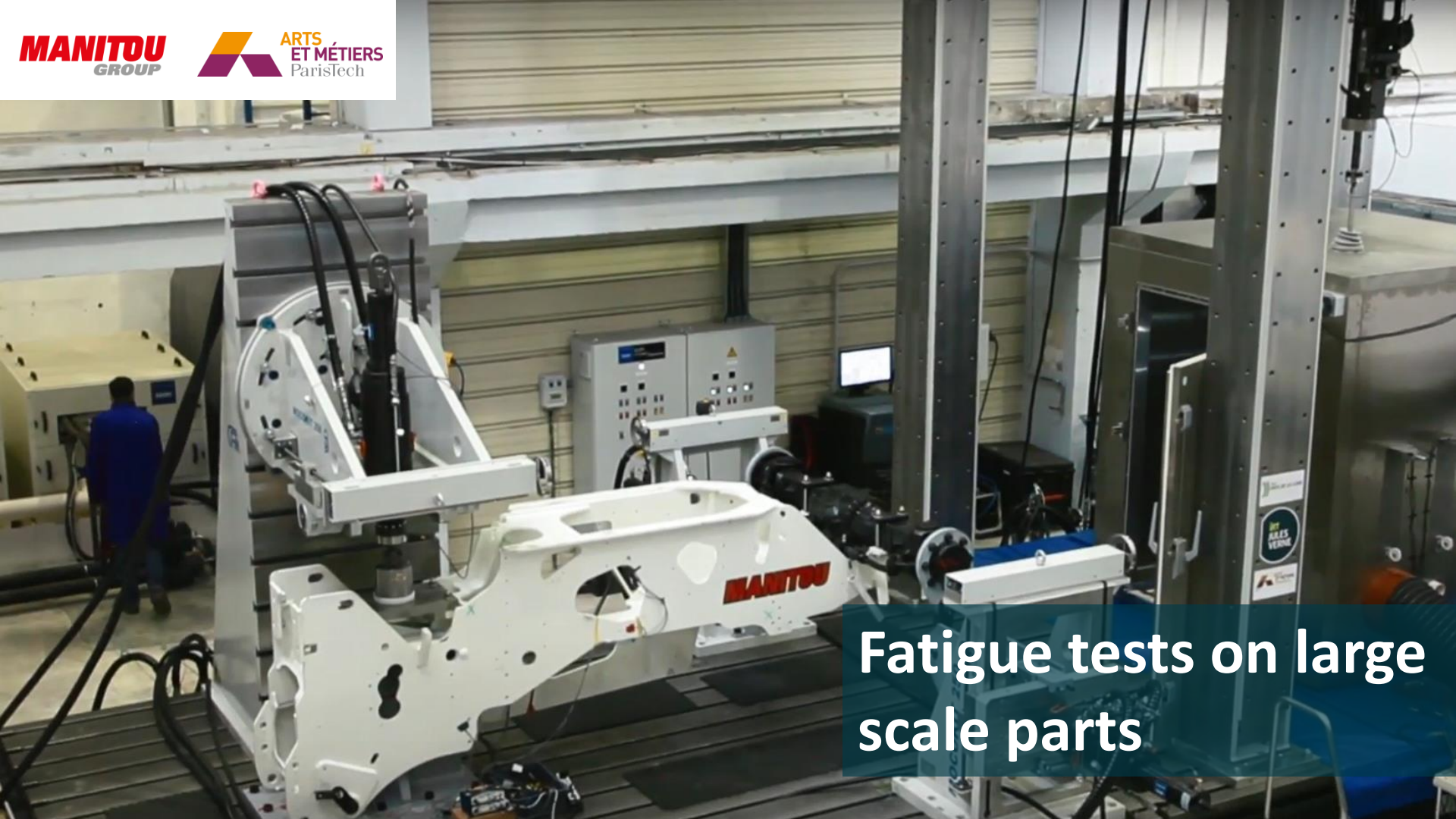
A photograph of three people in a laboratory or workshop setting. On the left, a man in a blue polo shirt and glasses stands and points at a laptop. In the center, a man with a beard and glasses, wearing a black shirt and a yellow lanyard with an ID badge, sits at the desk and operates the laptop. On the right, another man in a light blue shirt sits and looks at the laptop screen. The desk is cluttered with electronic components, wires, and a yellow block. The background is blurred, showing other lab equipment and a red wall.

# Success stories



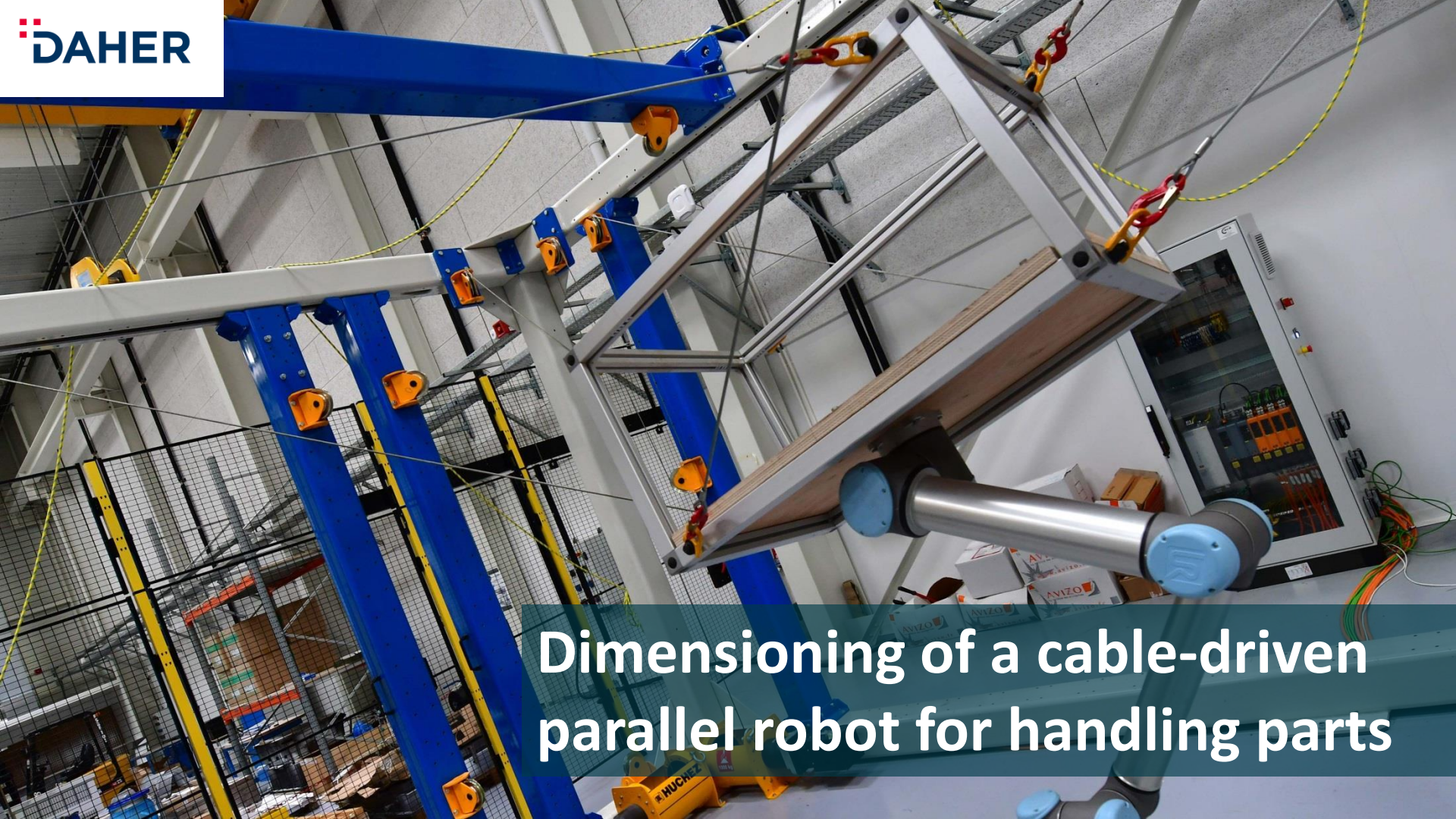
**Fatigue tests on  
titanium step**






**Fatigue tests on large  
scale parts**



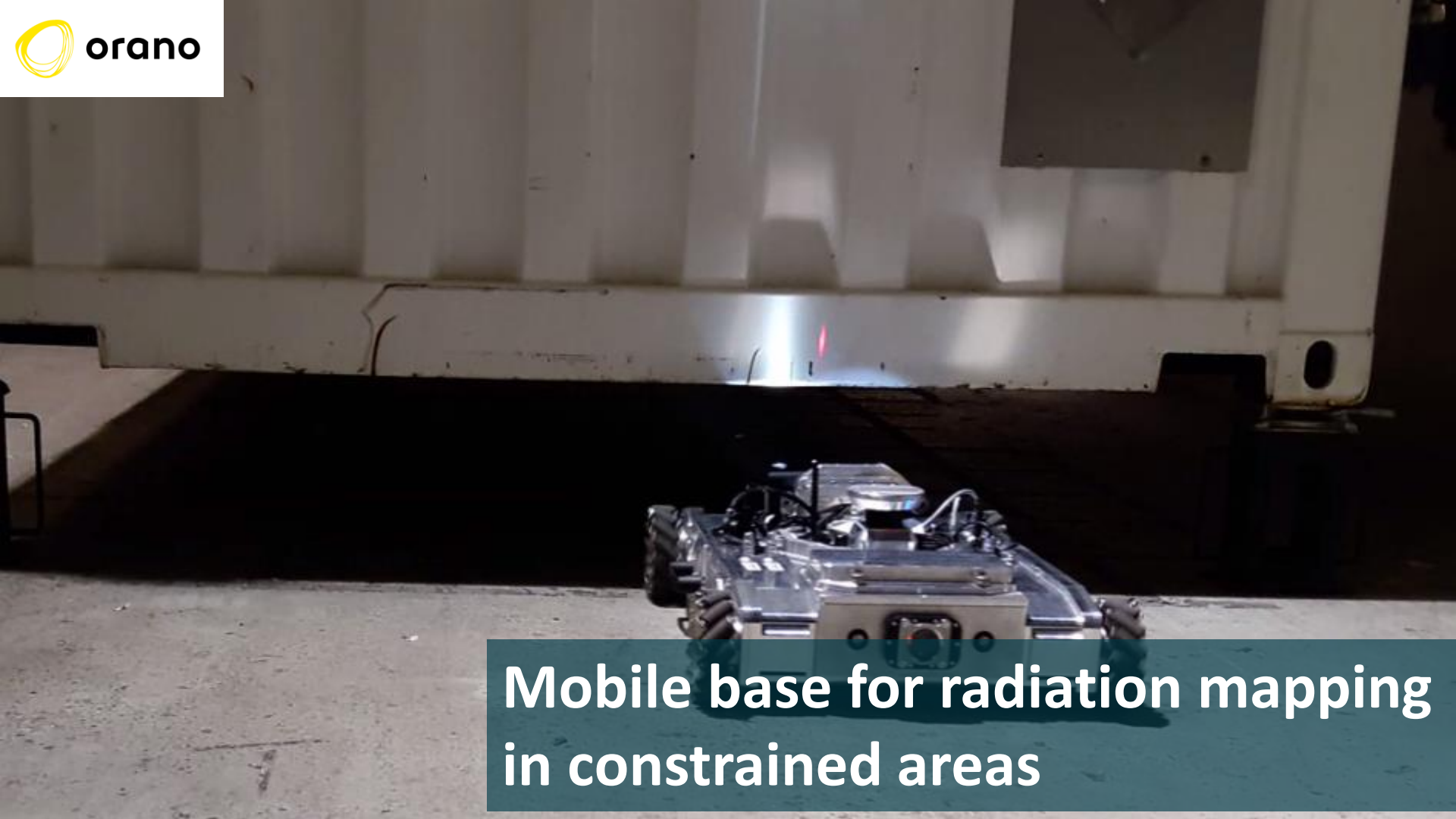


Dimensioning of a cable-driven  
parallel robot for handling parts





**Manufacturing parts using a hot forming  
- super plastic forming hybrid process**



**Mobile base for radiation mapping  
in constrained areas**

# CONTACTS

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