

# RAPOLAC

Rapid production of large aerospace components

Shaped metal deposition (SMD) is a rapid manufacturing and prototyping system that builds large complex parts out of welded wire. The RAPOLAC project is developing SMD for commercial use.

## SMD advantages

- Produce near-net parts from CAD models
- Material properties better than cast
- Reduced material waste
- Reduced lead time and cost
- Reduced tooling and inventory

## Applications

SMD has significant potential in aerospace and other industries for prototype and short-run production, or repair and customisation of existing parts, using specialist alloys.

SMD is particularly suitable for short-run parts which:

- Are hollow
- Have bosses, flanges or other features
- Require customisation or rapid development

SMD can be used by large companies in aerospace and other industries, and can allow SMEs to offer high-value services to the supply chain.

## The SMD cell

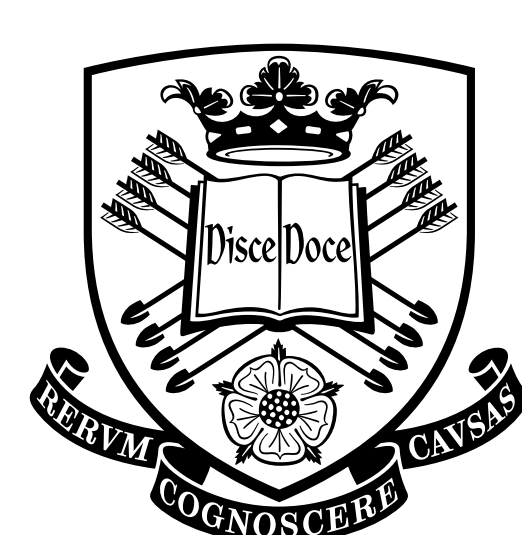
- Inert-atmosphere cell
- Standard robotic TIG welding equipment
- Hardware integrated with simulation and control software
- Automated deposition with adaptive control
- Test cell can build parts up to 1m – production cells can be any size

## RAPOLAC achievements

- Optimised process for different applications
- Proven material properties – geometric, microstructure and mechanical
- Automated adaptive control for welding process
- Detailed process modelling and simulation
- Proven machinability of SMD parts
- Demonstrated economic and environmental benefits

[www.rapolac.eu](http://www.rapolac.eu)

Project coordinated by



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