

## SHOT-PEENING PLATFORM

SAE\_AMS2432D / NF L06 832 standards compliant

### Equipments

2 air blasting nozzles mounted on 6 axis robot

Wheel blasting

Rotative table



### Monitoring

Computer controlled

Pressure / Mass flow

Shot speed (Shotmeter®)

Media quality



### Media

Steel shots high/regular hardness (S110/S130/S230)

Cut wire shots (200/400/600 µm)

Ceramic shots

More on demand



## TECHNICAL SERVICES

*For a better understanding and control of shot peening treatment, IRT M2P can provide high quality services to get a fine tuning of process parameters to improve fatigue life of component for automotive, aeronautic, nuclear industries.*

### Virtual processing parameters development

- Parameters definition assistance
- Process simulations (residual stresses), part distortion modelling and fatigue life estimation
- Off-line robotic simulations for trajectories and coverage control

### Controlled shot peening operations

- Precise intensity and coverage value and homogeneity
- Aeronautic certifications compliant
- Complete process reporting

### Test and validation procedures

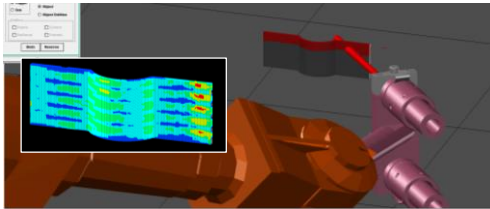
- Surface integrity
- Residual stress analysis
- Mechanical tests



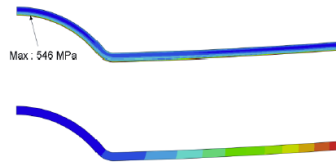
## PLATFORM AVAILABILITY

- Multi-partner research projects with public co-funding
- Research studies/services
- Platform rental with technical support
- Training

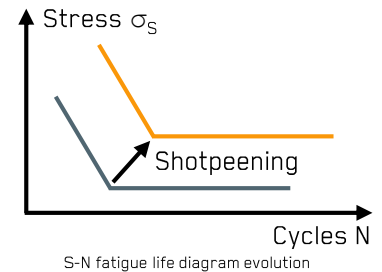
**Example of application:** knowing the required intensity and coverage to ensure the integrity of stamped part in service, we calculated the optimized trajectory and provided the corresponding coverage/intensity map. By introducing a measured residual stress field in a Finite Element Model, an estimation of S-N fatigue life diagram is provided, supported by some experimental verification points.



Trajectory computation and corresponding coverage/intensity map on part.



Finite Element modeling: residual stress field introduction and in-service stress



S-N fatigue life diagram evolution

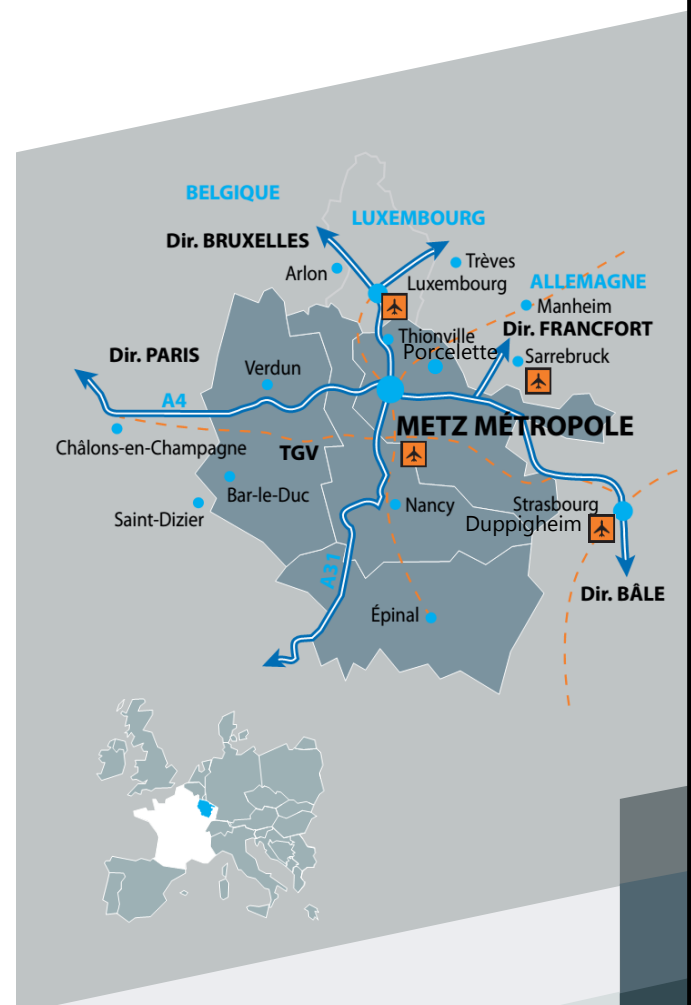
## ABOUT IRT M2P

IRT M2P is a mutualized research center bringing together skills of industrial and public research, based on public-private co-investment and partnerships. IRT M2P accelerates innovation and growth for industrial companies, develops key technologies (shared amongst major industrial sectors) and provides technological platforms for industrial companies (processing of metallic materials, life cycle assessment and recycling, mechanical surface treatment, surface treatment and coating, thermal and thermochemical treatments, composites, forging, mechanical processes for multi-material assembly).

## CONTACT

Quentin PUYDT  
Quentin.puydt@irt-m2p.fr

**Headquarters**  
IRT M2P  
4, rue Augustin Fresnel  
57070 Metz Technopôle  
France  
Tél. : +33 3 72 39 50 85



Find other projects and platforms on our website :