# Circular Steel for Mass Market Applications

Introducing scrap-based Electric Arc Furnace steel for a greener circular economy in mass-market sheet metal goods

42 months duration
01/10/2024 to 30/04/2028

Grant agreement ID:
101177798

Budget: € 4.380.528
100% funded by the EU

Coordinated by
Eurecat, RTO

13 partners from
5 different European countries

**13**
**PARTNERS**

**5**
**EUROPEAN COUNTRIES**

Project coordinator

eurecat · aerobase · ALBA · Blekinge Tekniska Högskola BTH · CSIC · Electrolux Professional · ESTEP European Steel Technology Platform · MATVISION · RI.SE · TATA STEEL · LIÈGE université · voestalpine ONE STEP AHEAD. · VOLVO

- 2 STEELMAKERS
- 4 RESEARCH CENTERS
- 2 ACADEMIC INSTITUTIONS
- 1 INDUSTRIAL ASSOCIATION
- 2 END-USERS
- 1 SME
- 1 SPIN-OFF



Funded by the European Union

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# Challenge 1: Analyzing the Effect of Residual Elements

**Demonstrating the 100% recycled steels in mass-market products**

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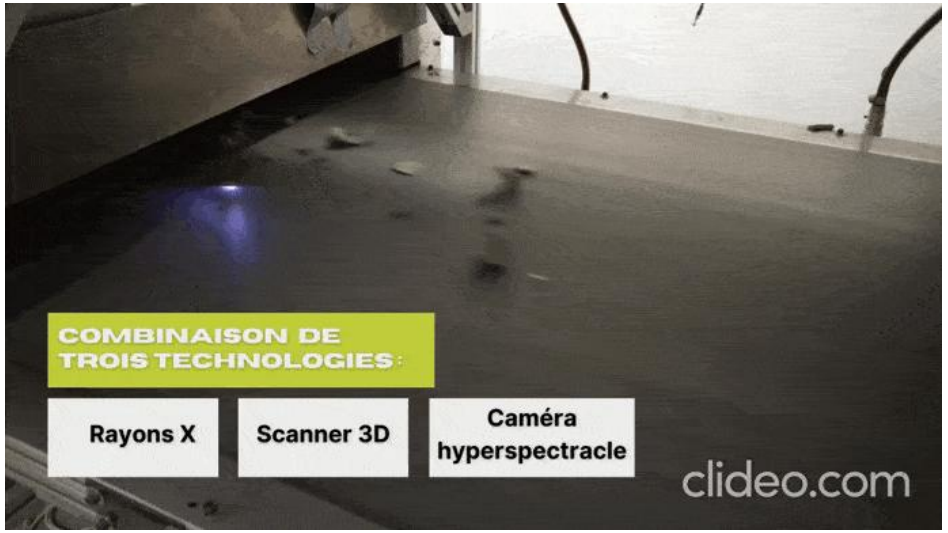
- High Strength Steel (DP)
- Cold Rolled HSLA
- Interstitial-Free Steel

# Challenge 2: Scrap as a Raw Material

**Robotic Sorting**




| Common robotic sorting problems (*e.g.* Aluminium sorting) | VS | CISMA robotic challenges |
|---|---|---|
| ▪ 60% of the stream could be considered as waste when targeting specific alloys (*e.g.* 5xxx, 6xxx) | | ▪ Less than 2% of the stream could be considered as waste |
| ▪ The target classes are removed from the belt during the sorting | | ▪ Negative sorting: The target classes stay on the belt |
| ▪ Quality is more important than the throughput | | ▪ High throughput is crucial |

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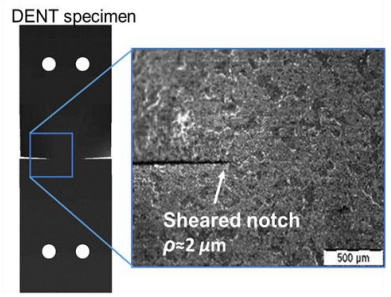
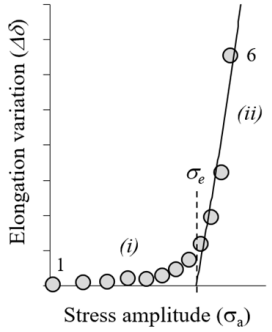
# Challenge 3: Fast and Accurate Characterization

## Fast testing methodologies

### Essential Work of Fracture

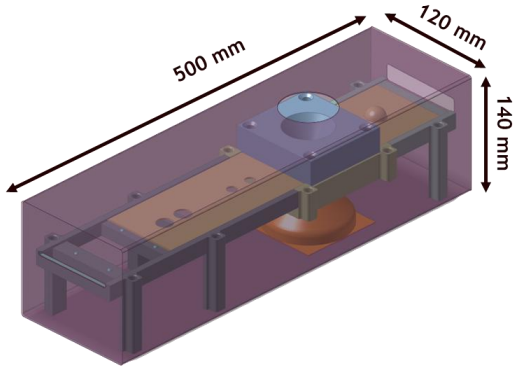



### Fast Fatigue Studies

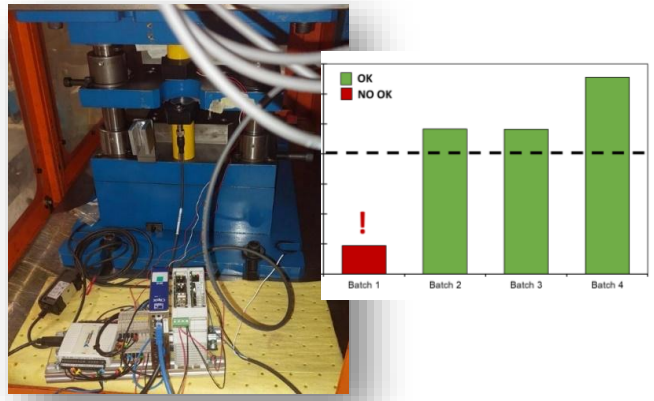



## (Soft) real-time testing

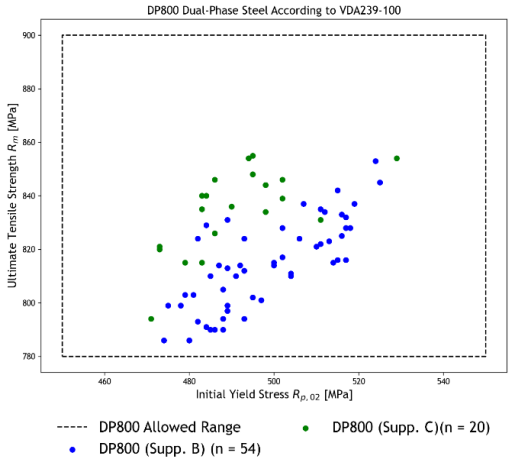
### Smart punching tool

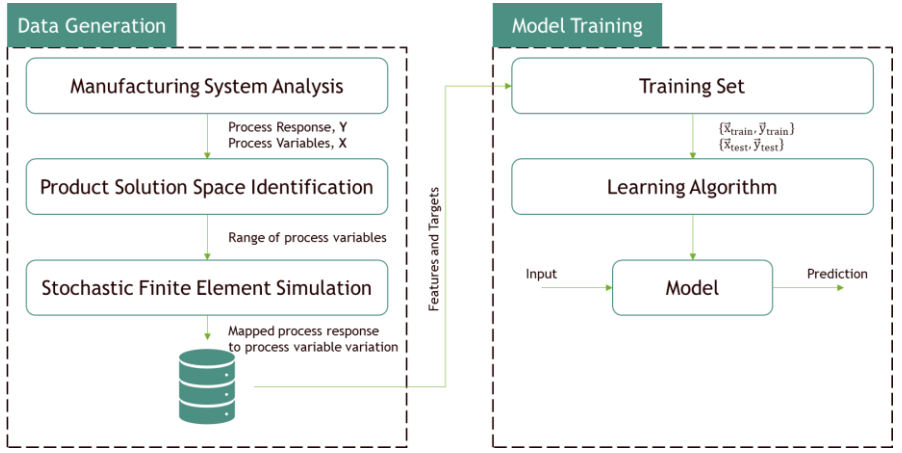



Digital model of Inservice Formability Test

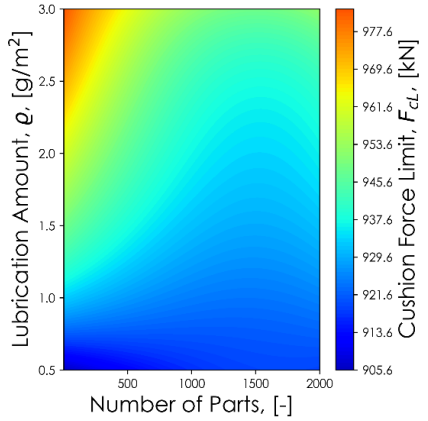



# Challenge 4: Data-Driven Adoption of Recycled Steel




### Numerical Data-Driven Robust Process Window



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