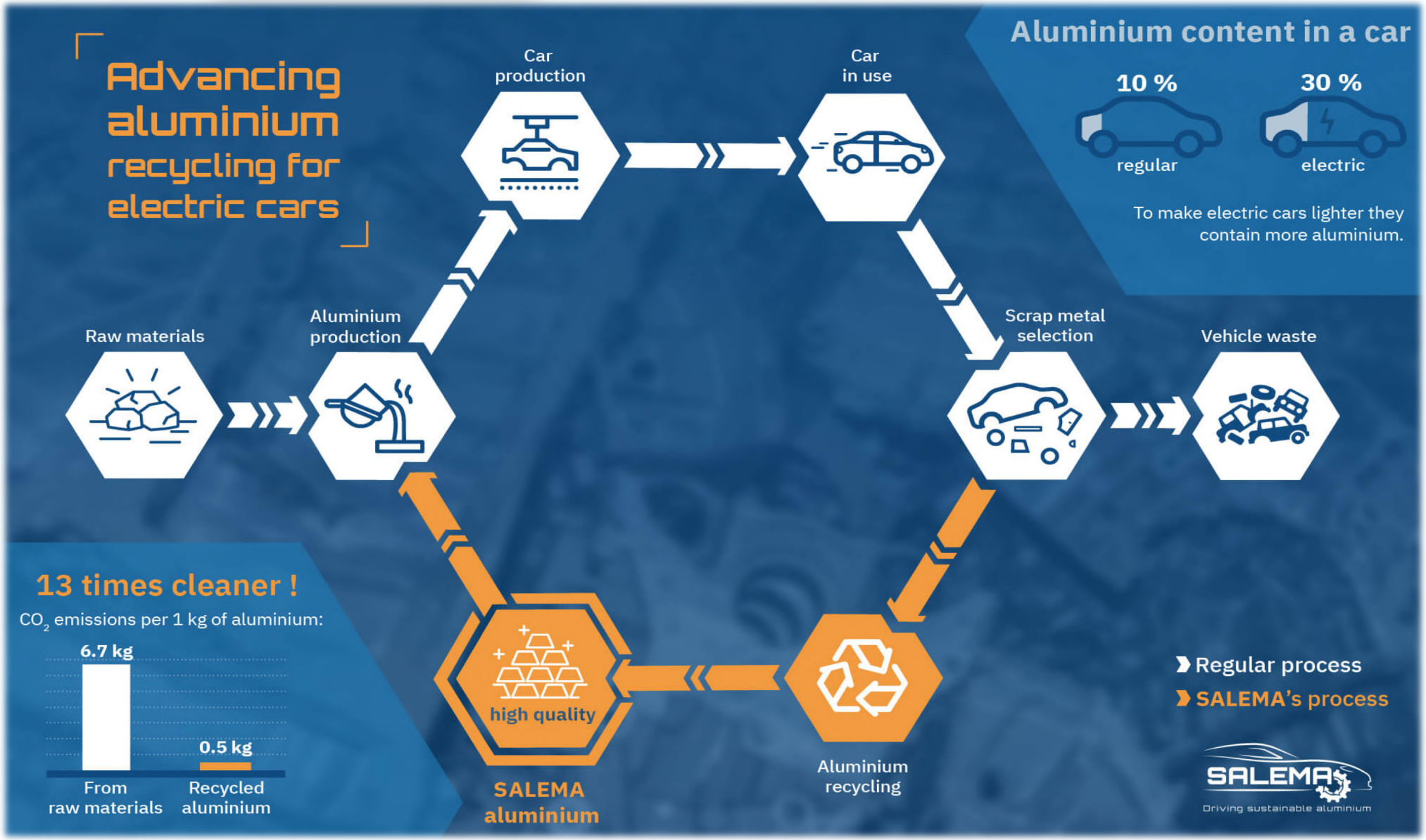
ENDURANCE

# Substitution of Critical Raw Materials in Aluminum Alloys for HPDC

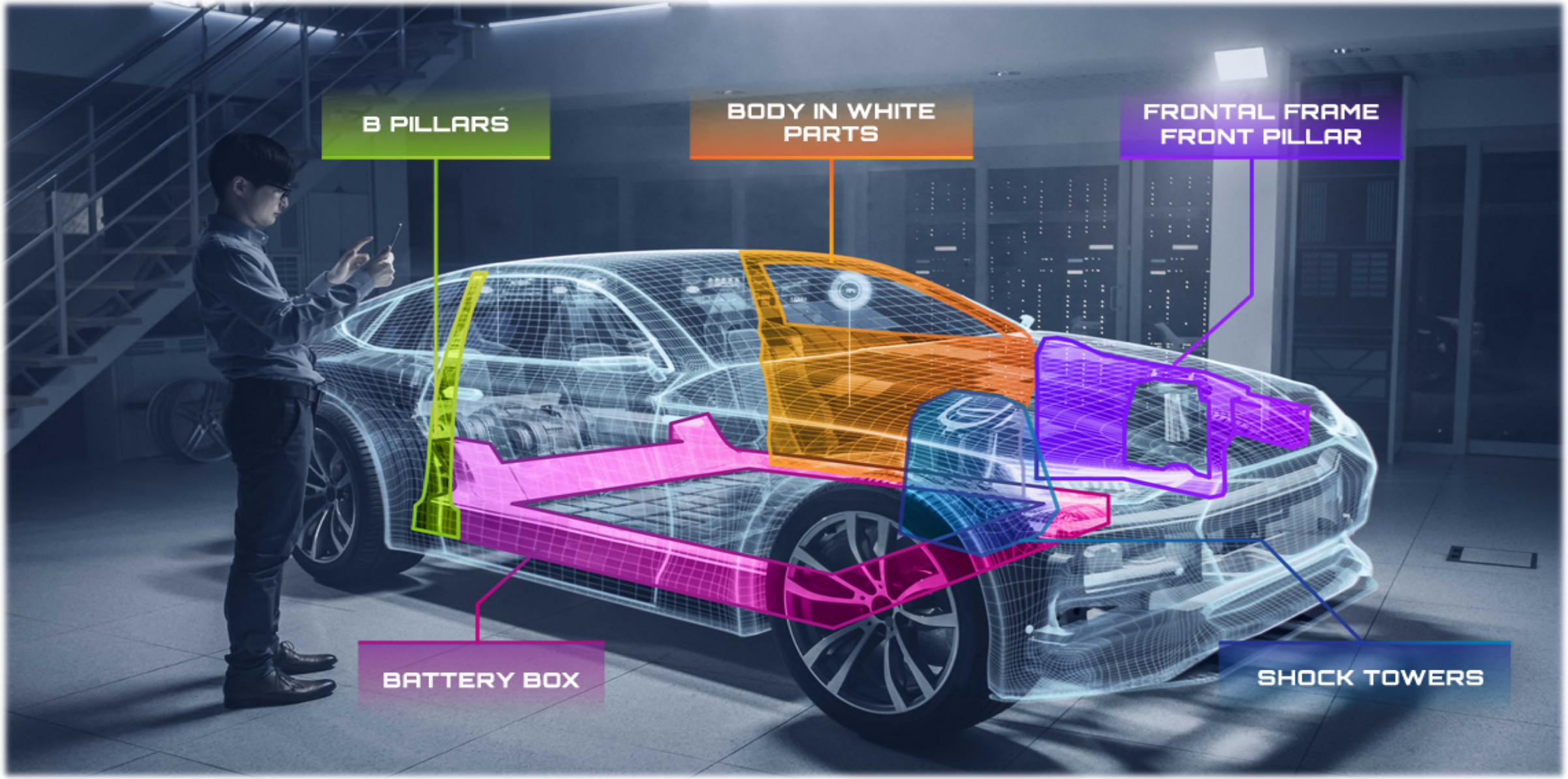
SALEMA

# Premises

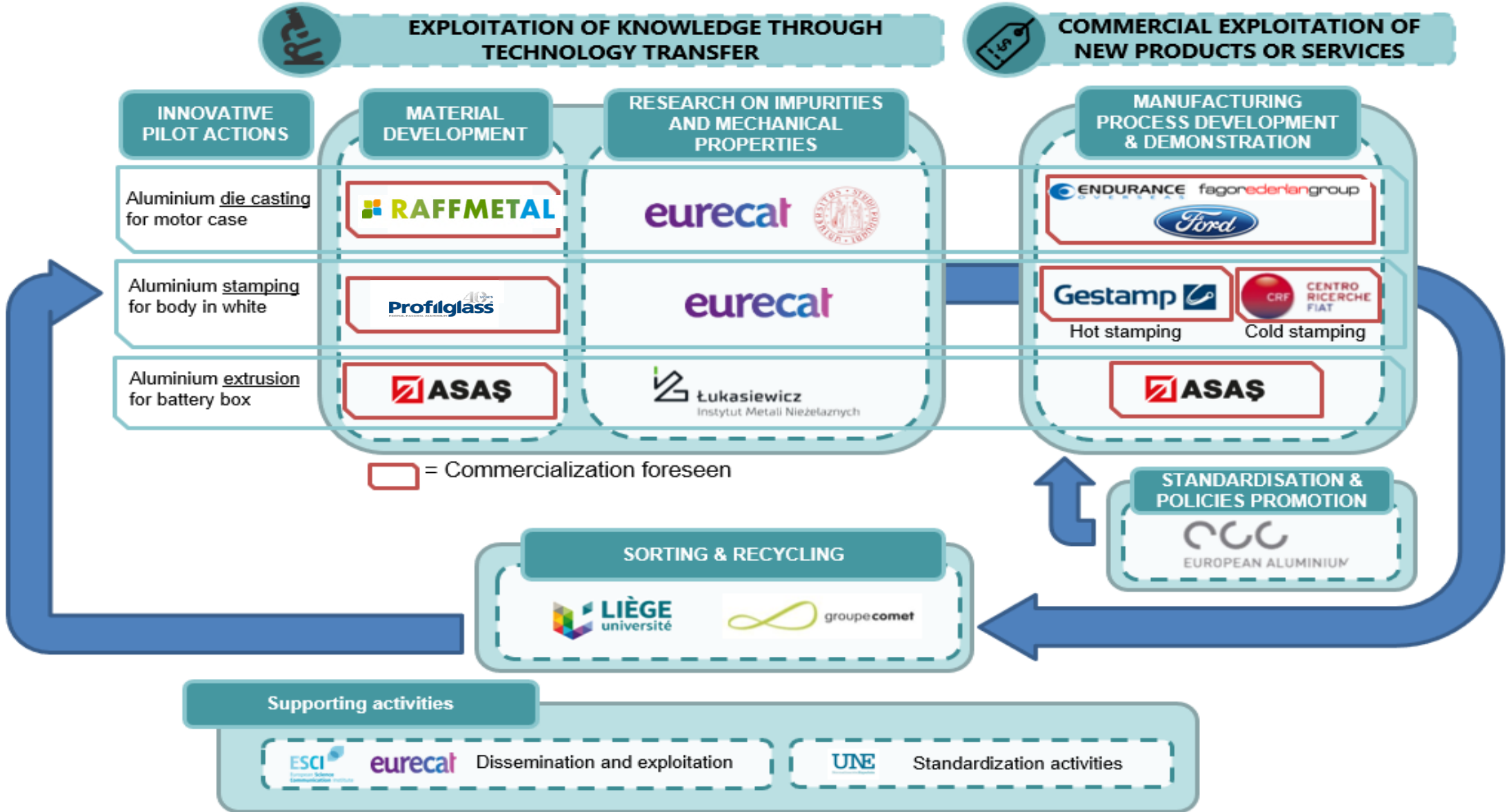

Advancing aluminium recycling for electric cars
Car production
Car in use
Scrap metal selection
Vehicle waste
Aluminium recycling
SALEMA aluminium
high quality
Aluminium production
Raw materials
Aluminium content in a car
10 %
regular
30 %
electric
To make electric cars lighter they contain more aluminium.
13 times cleaner !
$CO_2$ emissions per 1 kg of aluminium:
6.7 kg
0.5 kg
From raw materials
Recycled aluminium
Regular process
SALEMA's process
SALEMA
Driving sustainable aluminium

# Premises

# Demonstrators

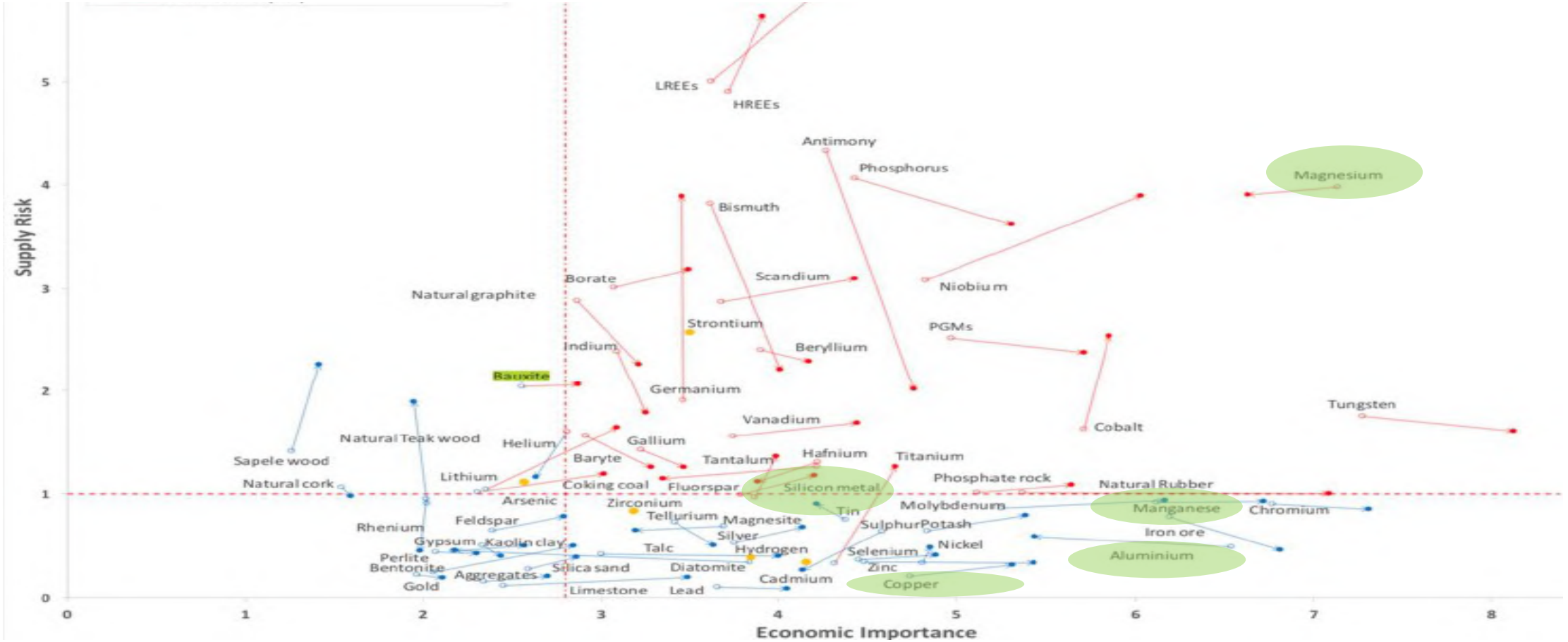


# Partnership



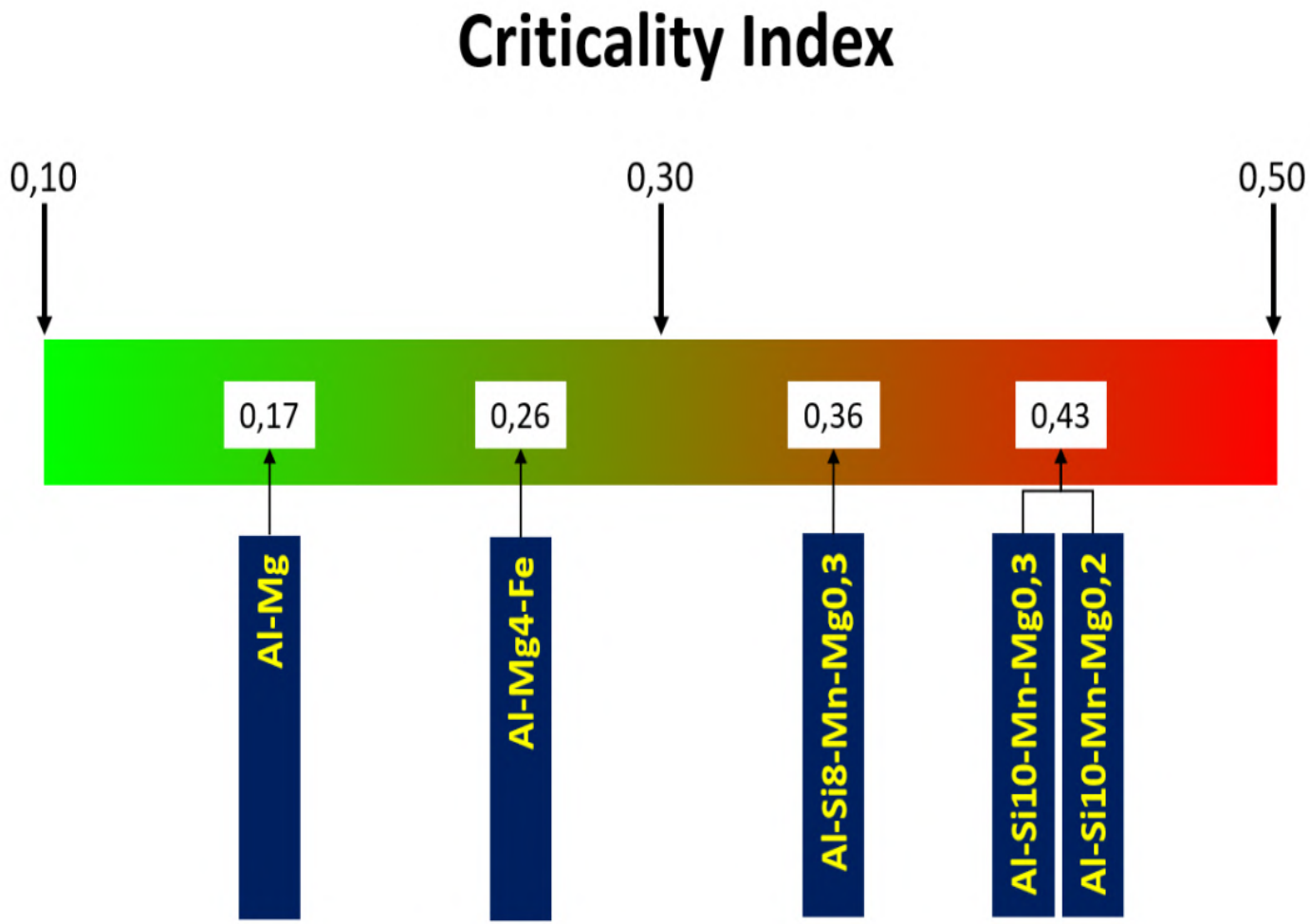
# Critical Raw Materials

The SALEMA project will develop novel aluminium alloys with minimalised critical raw materials content, using iron as a substitute and integrating scrap metal

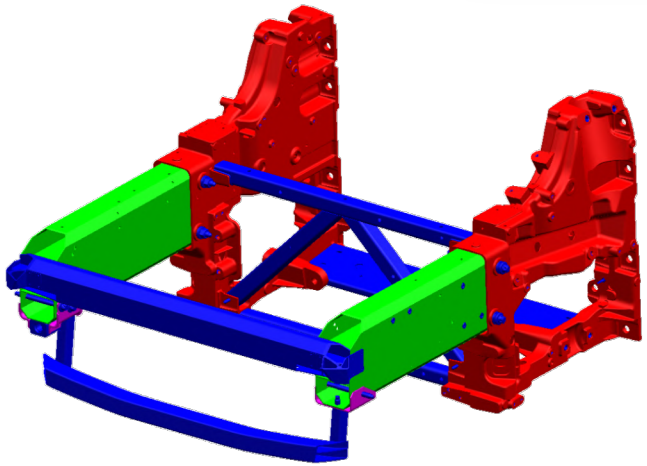


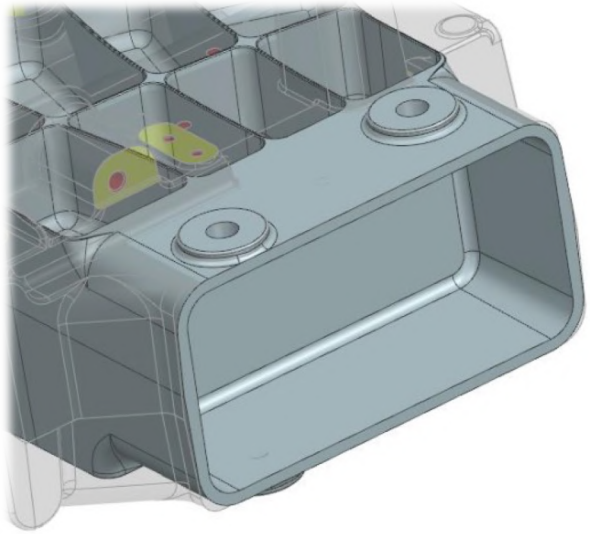
# HPDC Critical Raw Materials

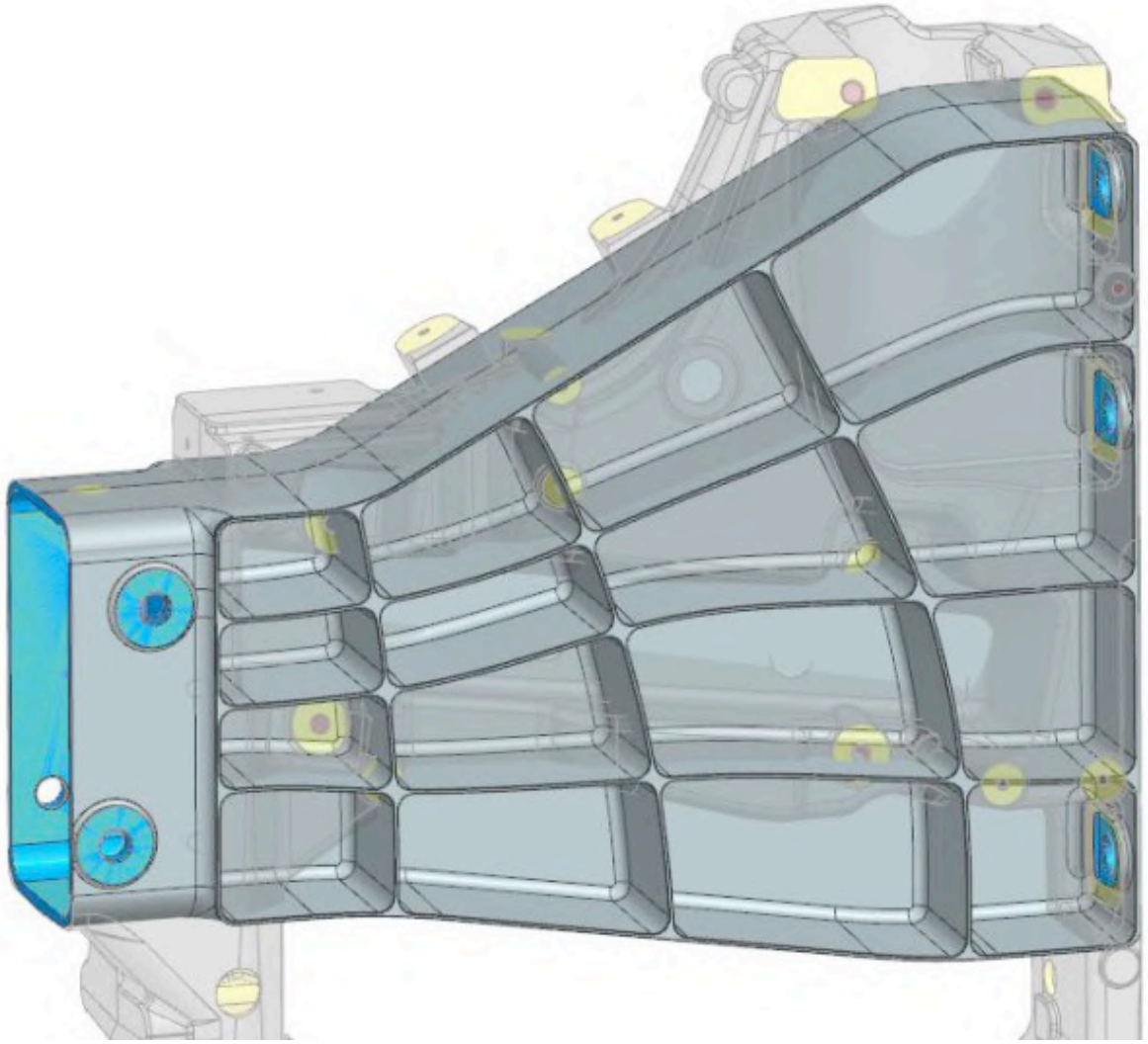
| Conceptual area | Characteristic or phenomenon to be modelled | For HPDC |
|---|---|---|
| CRM content | Criticality Index | √ |
| Castability | Fluidity (as the inverse of viscosity) | √ |
| | Solidification shrinkage | √ |
| | Slag/dross formation tendency | √ |
| | Die soldering tendency | √ |
| | Hot tearing tendency | √ |
| Hot working attitude, extrudability | Solid solution element at processing temperature | |
| Mechanical compensation of Si and Mg decrease in alloys | Alternative elements for solid solution strengthening | √ |
| | Grain refinement | √ |
| | Improving of heat treatment | √ |
| | Improving work hardening | |



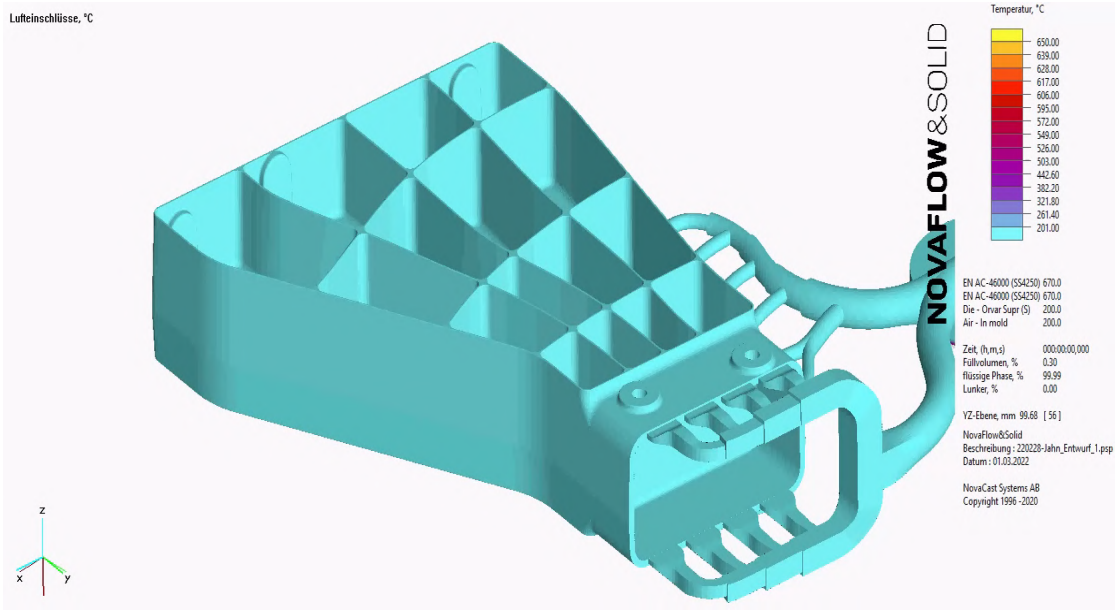
# HPDC Demo

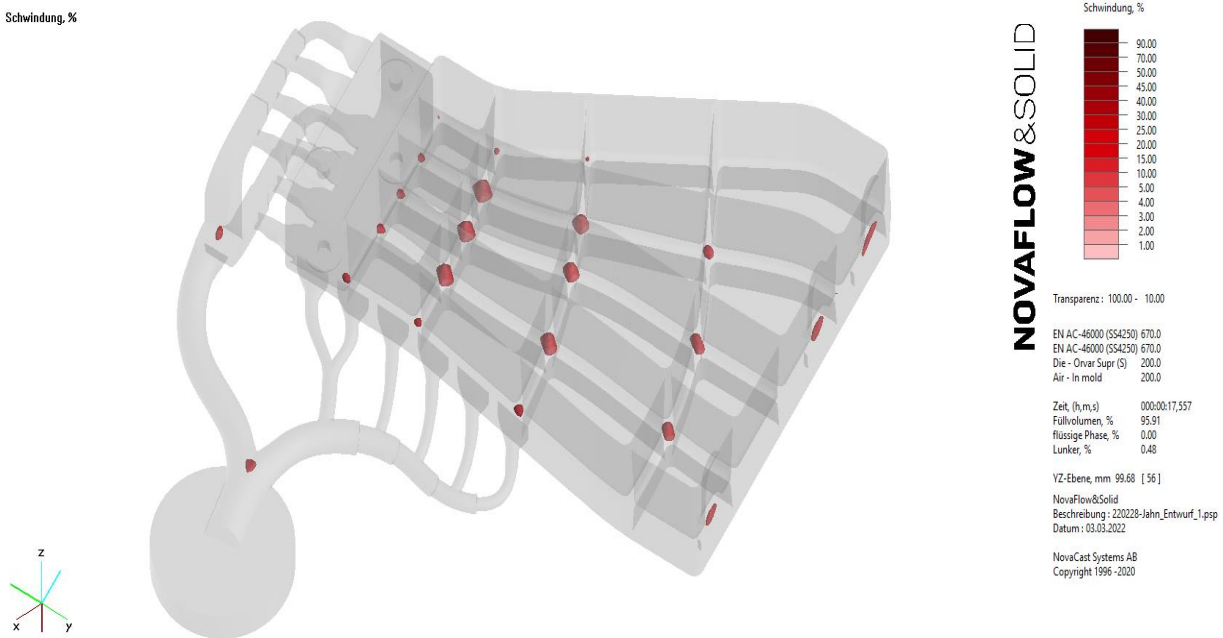






# Virtual simulation with Low CRM Alloys



# More details

**www. salemaproject.eu**

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