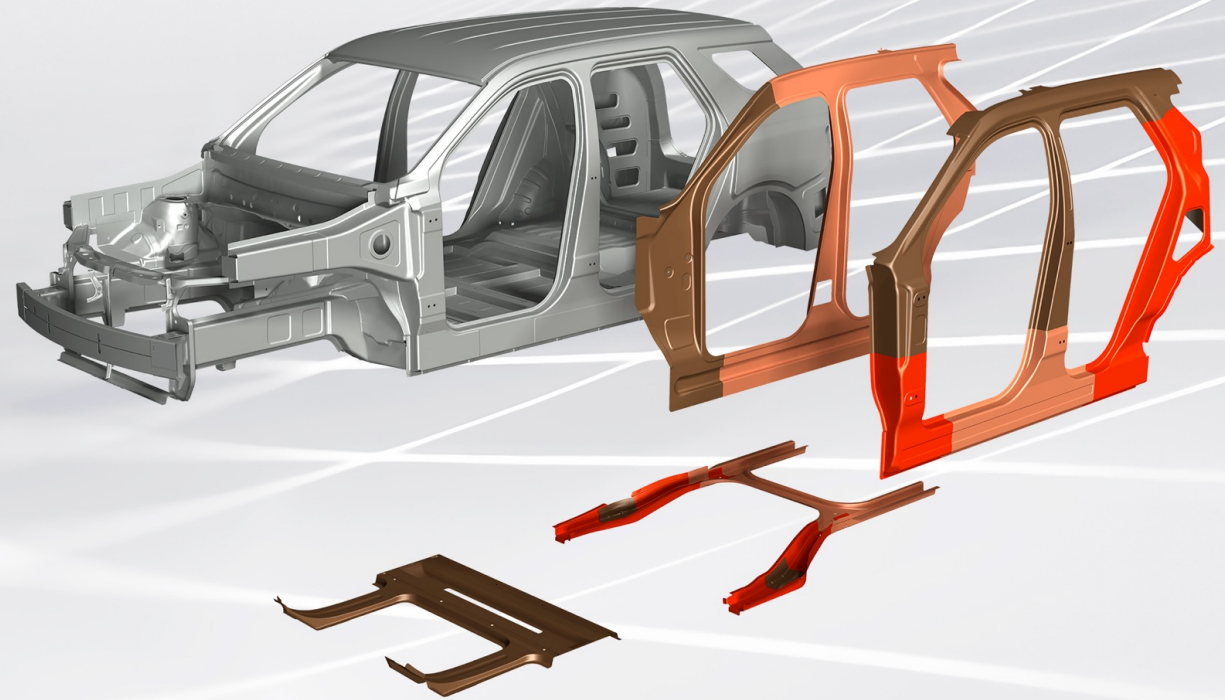


ArcelorMittal's Multi Part Integration™ Simplifying Car Manufacturing



ArcelorMittal



What is ArcelorMittal Multi Part Integration™?

- ❑ Meeting the new automotive trends:
 - Simplification
 - Modularity
 - Electrification
 - Sustainability

- ❑ ArcelorMittal Multi Part Integration™ combining:
 - High-tech laser welded blanks
 - latest PHS steel products to form complex parts (Usibor® 2000 & Ductibor® 1000)
 - Large size parts to integrate many components

- ❑ additional added value to OEM other than mass and cost savings.

Weight savings



- Lightweight steel solution
- Advantage vs. aluminium gigacasting solution

Commonality & modularity



- Compatible with multiple OEM platforms:
ICE - HEV - PHEV - BEV

Part integration - Simplification

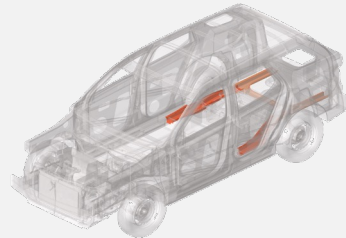


- Reduction of parts
- Complexity reduction in body shop & assembly

ArcelorMittal Multi Part Integration™

1

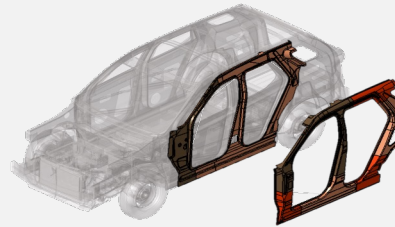
H-Frame



1 instead of
11 parts

2

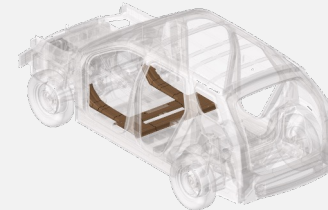
Door Ring inner & outer



4 instead of
13 parts

3

Floor environment Reinforcement



1 instead of
4 parts

Sustainability



- CO₂ emission reduction for improved Life Cycle Assessment (LCA)
- High material utilization
- Nesting optimization
- Unmatched recyclability

Crash optimization



- Optimized anti-intrusion & energy absorption management thanks to using the right steel grade in the right place

Cost saving



- Function integration
- Material usage optimization
- Forming tool reduction
- Spot weld reduction
- CAPEX advantage vs. aluminium gigacasting

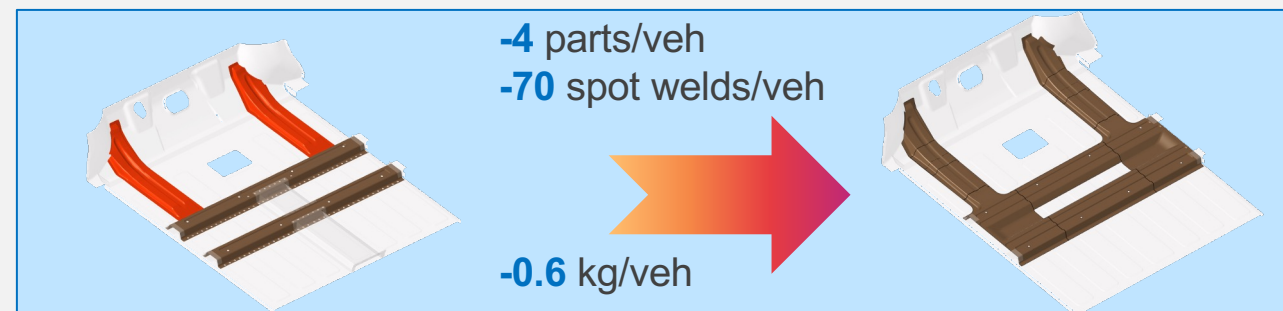
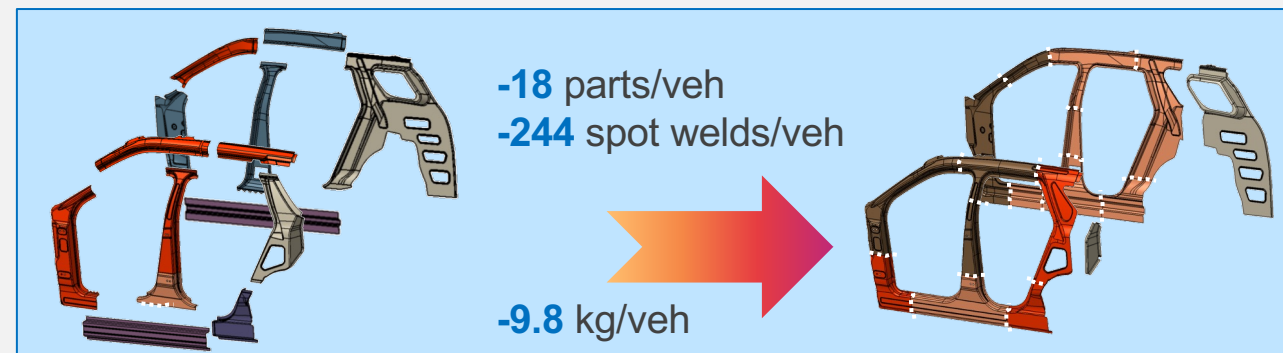
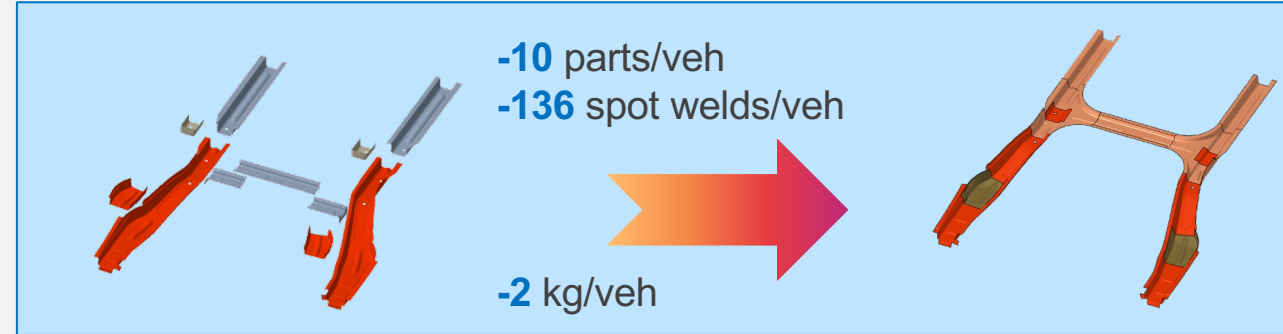
Why apply ArcelorMittal Multi Part Integration™ solutions?

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> Part reduction | → Assembly sequence |
| <input type="checkbox"/> Assembly spot welds reduction | → Assembly sequence |
| <input type="checkbox"/> Part mass reduction | → CO ₂ eq / Vehicle range |
| <input type="checkbox"/> Engaged mass reduction | → CO ₂ eq |
| <input type="checkbox"/> Cost assessment | → Cost position |
| <input type="checkbox"/> CO ₂ eq reduction | → CO ₂ eq Target |
| <input type="checkbox"/> Cycle time | → OEM productivity |
| <input type="checkbox"/> Workshop area reduction | → Plant optimization |

Industrial validations were performed with external companies, to assess MPI impact on OEM plant:

bertrandt : Rear H-Frame & Double Door Ring

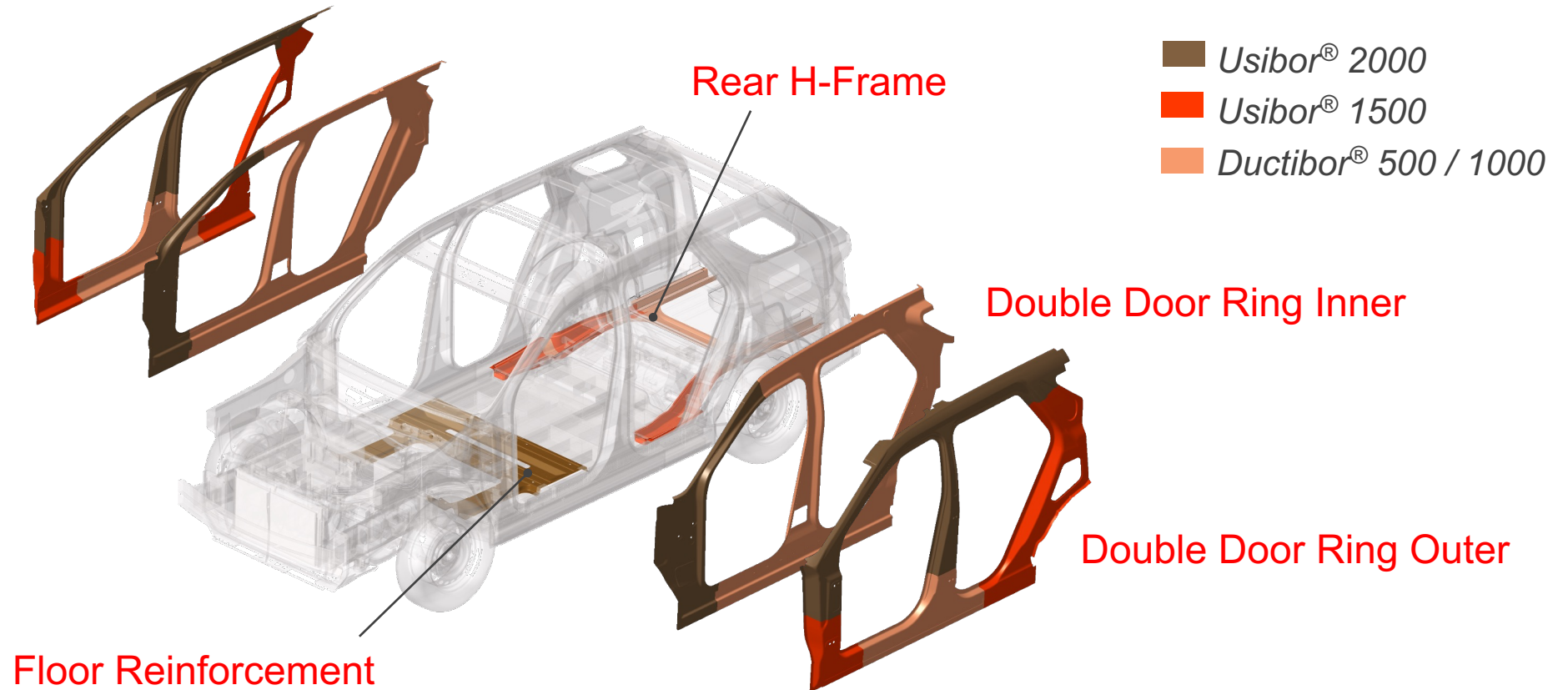
- Cycle time
- Workshop area reduction
- Assembly sequence



Total: -32 parts & -450 spot welds

ArcelorMittal Multi Part Integration™ Solutions Catalogue

- A first set of 3 MPI solutions were developed based on ArcelorMittal's generic S-in-Motion® SUV BEV:

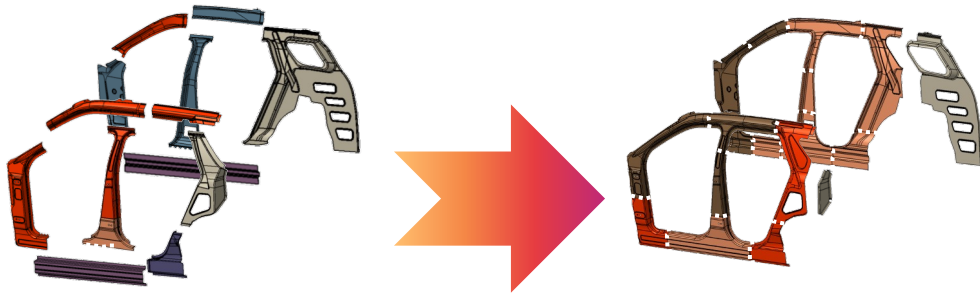


- Other MPI solutions in development – more to come in next months

ArcelorMittal Multi Part Integration™ brings additional CO₂eq savings

- Manufacturing context: EU-28
- Metal production: Steel sourcing – Europe
- CO₂eq savings thanks to
 - Material utilization reduction
 - Part mass reduction

Example: Double Door Ring application



Raw material savings
-22Kg/veh (-16,4%)

Part mass reduction
-9,8Kg/veh (-10,7%)

