

Mass production no longer seems suitable for today’s market and is being replaced by mass customisation. The need for **satisfying the individual customer’s requirements** is now stronger than ever.

Towards that end, the e-CUSTOM project aimed at integrating the customer in the design phase of highly personalised products and allowing the decentralised manufacturing of these products at low costs, high quality and reduced environmental footprint. The project yielded **17 exploitable results** in close cooperation with committed end-users from the Automotive, CNC Machines and Healthcare sectors that expressed the true industrial needs. **The first set of exploitable results (User Adaptive Design System – UADS) engages the customers in the design and development of personalised products from the initial product design phase up to the after-market segment.**

- BRIDGE THE GAPS BETWEEN MASS PRODUCTION AND MASS CUSTOMISATION
- ENGAGE THE CUSTOMERS IN THE INITIAL DESIGN OF PRODUCTS
- MANUFACTURE PERSONALISED ADDED-VALUE PRODUCTS
- REACH AN EFFICIENT LEVEL OF DECENTRALISED ECO-FRIENDLY MANUFACTURING

The web-based platform allows customers to modify a set of characteristics, including materials choice as well as the modification of the standard geometry of parts belonging to a carefully chosen, personalisation-enabling, series of components of different models and variants. Augmented Reality visualisation and product personalisation tools have been developed and have also been deployed to mobile devices running Android OS. **The second set of exploitable results is the development of the Decentralised Manufacturing Platform – DEMAP**, also deployed as a mobile app, which focuses on reaching an **efficient level of decentralised manufacturing.**



Depending on the selected customisation options certain manufacturing processes will be possible to be carried out by the material/parts suppliers or by the local distributors and/or service providers in a coordinated manner. **The third set of exploitable results is the Environmental Assessment Module – EAM for the quantified estimation of the environmental footprint** of the possible solutions in order to consider it when deciding on the most appropriate manufacturing solution. **Finally, the development of the Network Infrastructure and Systems Integration - NISI ensured the integration and interoperability** between all software components through web services. The tools have been designed and developed using free and open-source software, the JAVA programming framework and non-proprietary database management systems.

*These set of seventeen exploitable results can support SMEs, which are the backbone of the European economy, towards designing, manufacturing and delivering high value-added products, contributing to the realisation of the major political and societal goals set by the EU, such as the manufacturing of highly competitive products, the creation of new jobs, the decrease in unemployment, the increase of EU GDP and the reduction of manufacturing environmental impact based on the concept “Produce More with Less”. The importance of SMEs for the EU Economy is obvious considering that more than 99% of all European business are in fact SMEs. SMEs contribute to wealth and economic growth, next to their key role in innovation and R&D. They provide two thirds of the private sector jobs and contribute to more than half of the total value-added created by businesses in EU. The automotive sector in particular, as the world’s largest vehicle producer (over 15 million vehicles per year), accounts for 2.3 million direct jobs and another 10.4 million in directly related manufacturing and other sectors. The CNC sector also contributes to the economy and balance of payments as it accounts for 158,000 jobs spread over 1,474 companies with a worth of 17,512 billion €. Finally, the healthcare sector is a major economy regulator, as even in a time of crisis, the share of GDP allocated to health was 9.0% on average across EU countries in 2010.*

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