

MAJOR

Maintenance, Joining, and Repair
innovation in multidomain defence



Developing advanced technologies for more resilient multidomain defence structures

The European Union's autonomy is being challenged daily and across all defence domains. The range of threats facing the EU is broadening, with direct implications for Europe's military capability. In this context, modernising current defence systems has thus become a priority. The European project **MaJor (Maintenance, Joining, and Repair innovation in multidomain defence)**, funded by the European Defence Fund (EDF) under the indirect management of the European Defence Agency (EDA) will address this strategic concern by developing advanced technologies destined to increase the durability of future platform designs from the air, land and sea domain.

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The impact on obsolete designs on the EU's strategic autonomy is already significant and the risk of ceding ground to non-EU competitors is real. MaJoR will deliver new systems with superior mission capability. They will be more affordable, scalable in production, and sustainable in manufacturing and service thus strengthening Europe's security and defence capability by 2030. The project has also an ambition to help to unlock the full potential of the EU's defence industry, in particular by supporting small and medium-sized enterprises (SMEs) and start-ups.

Approach

MaJoR answers this need for modernisation by advancing and demonstrating the benefits of various maintenance, joining and repair technologies through domain-specific demonstrators. Current designs have short life spans and face high repair and maintenance costs, ultimately resulting in surging replacement costs. They also depend on raw materials for their manufacturing, and enhance dependencies of the supply chain with non-EU suppliers.

To increase the air, land and sea platform durability, while decreasing the economic and geopolitical impacts of obsolete designs, MaJoR will:

- Level the playing field between achieved maturation of technologies and processes across domains. While advanced materials like composites are common in aerospace, it is an emerging technology for land-based vehicles and ships.
- Push technologies and test them using demonstrators in each domain, with the aim of reducing the cost, weight, lead time, vehicle signature, and increasing the space efficiency and vehicle availability.
- Use the partners' vast experience in their respective fields and synergistically help to shorten the development time despite contradicting requirements in each domain.
- Augment the platform development with financial support to third parties, such as SMEs, and introduce new technologies and services through funded developmental activities that the consortium can evaluate and absorb within the project.

Ultimately, MaJoR will strengthen the European industrial network by encouraging Europeans to cooperate more closely and ensure the future of their own Defence Technology Industrial Base.

Consortium

The MaJoR consortium is coordinated by Royal NLR – Netherlands Aerospace Centre (NLR) in Netherlands, and consists of 11 research centres, 2 universities, 14 large companies, 8 SMEs, and 3 other organization types. A total of 38 entities covering 10 Member States will help building a cross-border defence network.

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