

## Sustainability

- 1 out of every 10 new lifts in Europe is Orona
- 99 countries have Orona products installed
- 200,000 lifts worldwide with Orona technology
- First company in the lift sector worldwide certified in Eco-design (ISO 14006)

Latest zero-energy technology  
for elevators

Based on energy efficiency and accessibility, **Net0lift** has aimed to achieve zero-energy elevation systems which are also safer, more intelligent, accessible and friendly, and which are interconnected with the outside world. Therefore, the following objectives were set out for research into technologies for future development of sustainable elevators:

### Environmental Sustainability:

- Promote the generation of new energy neutral building concepts.
- Favour greater ground usage by generating more rational urban models that contribute to sustainable development: "Sustainable cities".
- Apply the 4 R's (Reduce, Reuse, Recycle and Recover) in elevation systems to minimize their environmental impact.

### Social Sustainability:

- Define elevation solutions for people with mobility limitations, which are more intelligent, integrated, friendly and safe, and enable greater autonomy. The full integration of the new communication and information technology possibilities into elevation systems as fundamental for this.
- Research new elevation concepts for optimum building evacuation in the light of potential risk scenarios.
- Incorporate "environmental intelligence" into elevation systems and configure friendly environments that eliminate the fear related to barriers generated by such means of transport.

### Financial Sustainability:

- Research more economical elevation solutions, that are more compact and thereby use less space and require smaller power installations.
- Consolidate Spain's position as the second largest manufacturer of elevation systems in the world (after China).
- Promote the research capability of national companies so they can generate high value-added products and services, and compete directly with the large multinational groups - today's big sector denominators - and allow them to generate new jobs, and tackle the current desolate panorama head on.

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Based on energy  
efficiency and  
accessibility





## Introduction

Given the situation in the construction sector which has a direct bearing on the Spanish vertical mobility sector, a consortium of companies launched **NetOlift**, a research project which has aimed to develop all manner of highly sustainable elevation systems over the last four years. This initiative, geared towards the future development of zero-energy elevators, complied with a set of objectives that distinguish between environmental, social and financial sustainability.

In times of crisis, innovation becomes increasingly important in order for companies to remain in the market. This and the fact that Spain is one of the principal elevator and elevator component manufacturers in Europe, has prompted the emergence of initiatives such as NetOlift, a strategically important industrial research project which, over a four year period, has aimed to develop highly sustainable elevation systems (elevators, platforms, moving walkways and urban mobility systems), of vital importance in markets such as today's.

To tackle the threats presented by the vertical mobility sector and consolidate Spain as a world leader in the elevation sector, NetOlift - the initiative of a consortium of 12 companies led by ORONA, with an approximate budget of 27.5 million Euros - has been researching technologies to help develop future elevation systems that are environmentally, socially and financially sustainable, and that can be installed in both new and pre-existing buildings.

The project has served as a launch pad for the elevation sector, and for other sectors such as architecture, energy and automotive.

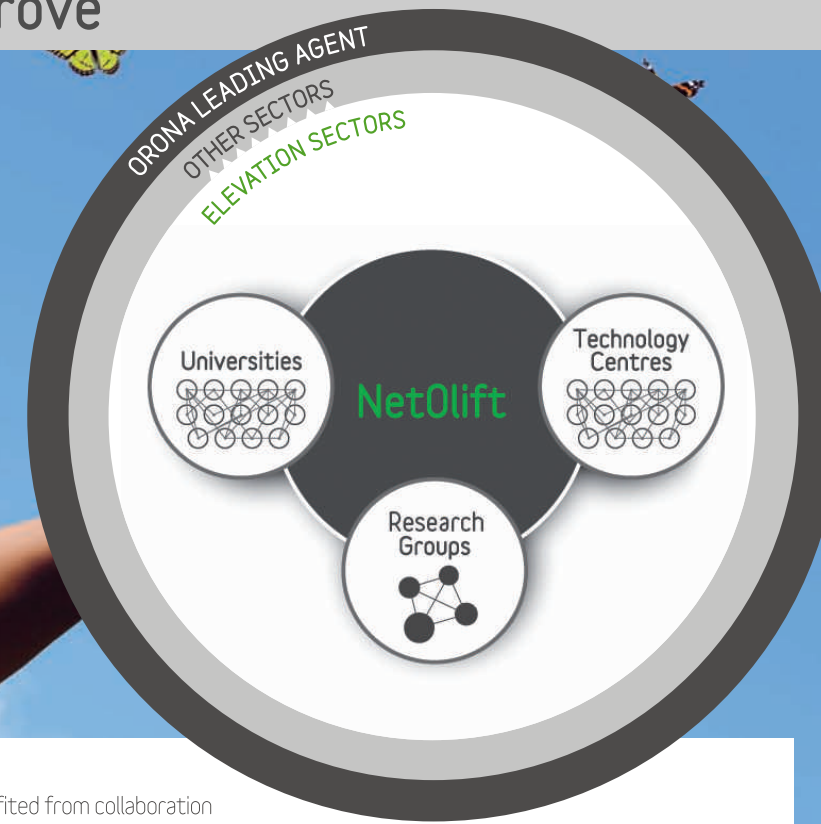
Strategic research project aimed to develop highly sustainable elevation systems

## Collaborate to improve

To achieve these ambitious objectives, **NetOlift** has benefited from collaboration with different public and private agents. Collaborative channels have been opened with universities and technology centres to generate synergies and new working guidelines for the sector, and its companies in order to become solid businesses, committed to research and with the ability to foresee and respond to new market challenges. In the University sector, the companies that made up the NetOlift consortium have had the support of 14 universities and technology centres from different regions (Ikerlan, Mondragón University, Cetena, Cidetec, Catalonia Polytechnic University-UPC, Gaiker, University of Navarre, University of the Basque Country, Rovira Virgil University in Tarragona, University of Oviedo, University of Valencia, University of Santiago de Compostela, Ingema and Ceapat).

One of the peculiarities of NetOlift is that the project has been of interest to companies in other sectors such as architecture, energy and automotive, amongst others, in order to diversify their business by entering the elevation sector and developing new value-added products in future for their current markets.

The project NetOlift has been of interest to companies in other sectors, such as architecture, energy and automotive



## Technological challenges

### NetOlift, a multidisciplinary consortium

#### Technological Challenges

On a technological level the principal challenges faced by the elevation sector can be addressed by sustainable solutions. These include an increase in the reversibility of elevation system energy processes and the generation of rational energy consumption, in addition to employing energy generated during elevator braking. Lift reuse, the definition of new material concepts and car configurations, and the creation of a new elevation system concept "MRL+" (equipped with accumulation drives and self bearing systems, eliminating counterweights, providing optimum shafts and generating an intelligent environment) are some of the other goals set by the sector.

#### NetOlift

**NetOlift**, a multidisciplinary consortium made up of 12 companies with complementary business activities, has been led by ORONA to facilitate the generation of veritable synergies between their respective lines of research.

The companies that have participated in NetOlift are manufacturers of full elevator systems (Orona and Electra Vitoria), participants in the elevator business value chain (Savera, Fermator, Emesa, Ikor, Lancor, Pocrés) and others linked to sectors such as automotive (Antolin), energy (Cegasa), architecture (Ah Associats) and composite materials (Abeki).

The NetOlift project has been part of a program run by the National Strategic Consortium for Technical Research (Cenit) which over four years has aimed to improve the technological position of Spanish manufacturing.



ORONA is the first company in the elevation sector worldwide to have been certified in Eco-design according to Standard ISO 14006