[Hub MSO ED]

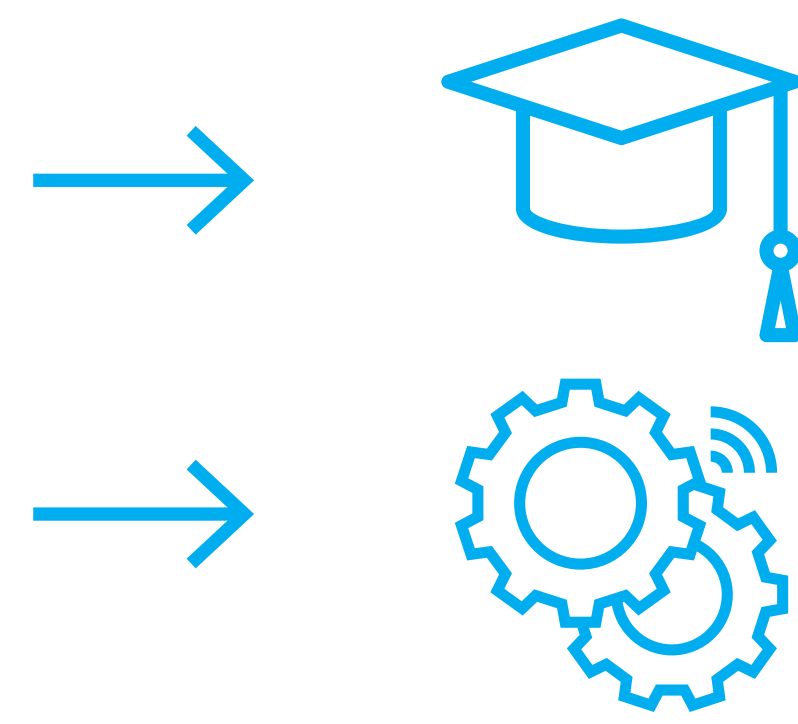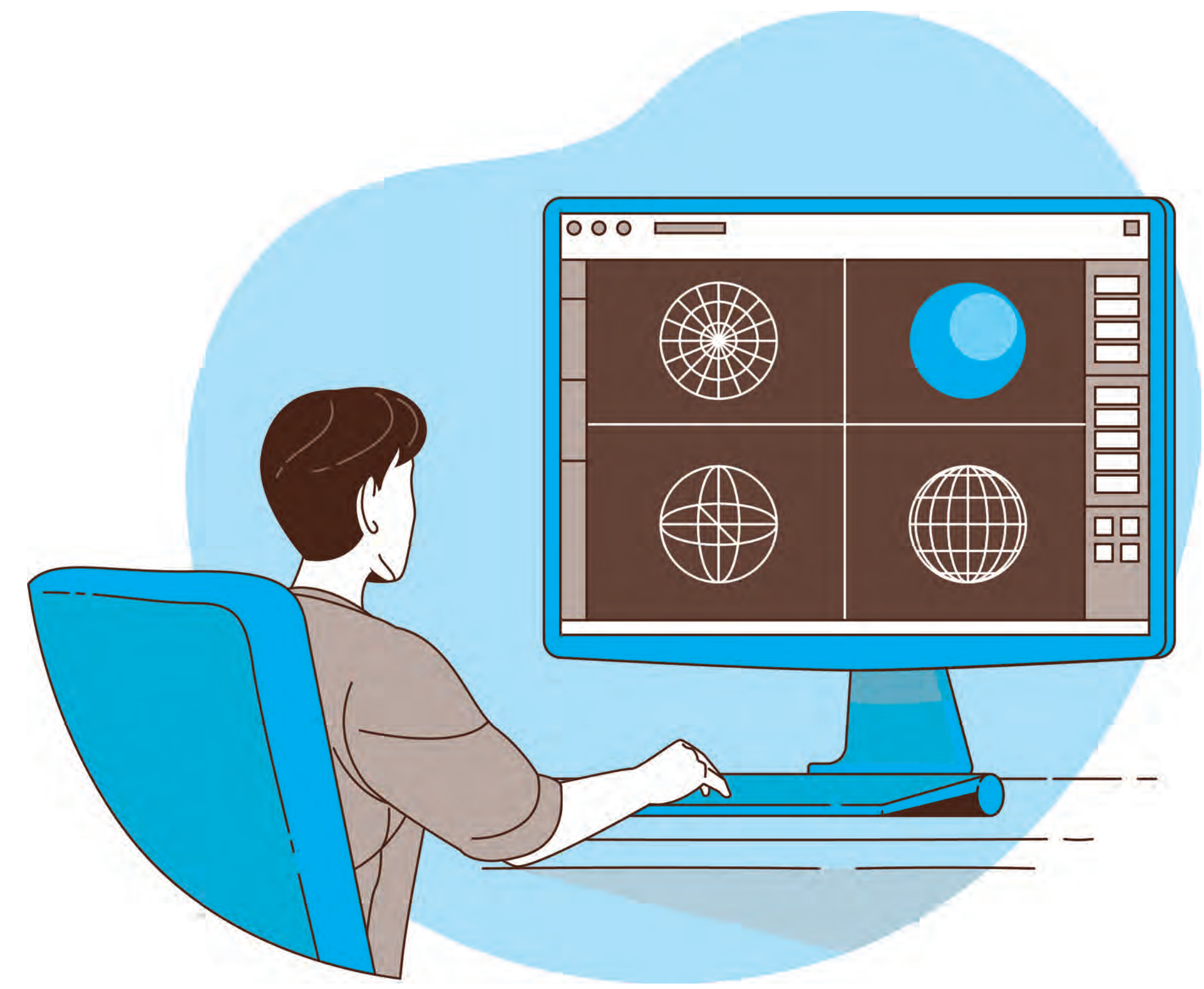## SPANISH HUB OF MODELLING, SIMULATION AND OPTIMISATION TECHNOLOGIES IN A DIGITAL ENVIRONMENT

The MSO-ED Hub is an open counter for **modelling, simulation, optimisation and data science technologies** for innovative companies and organisations from all industrial sectors.

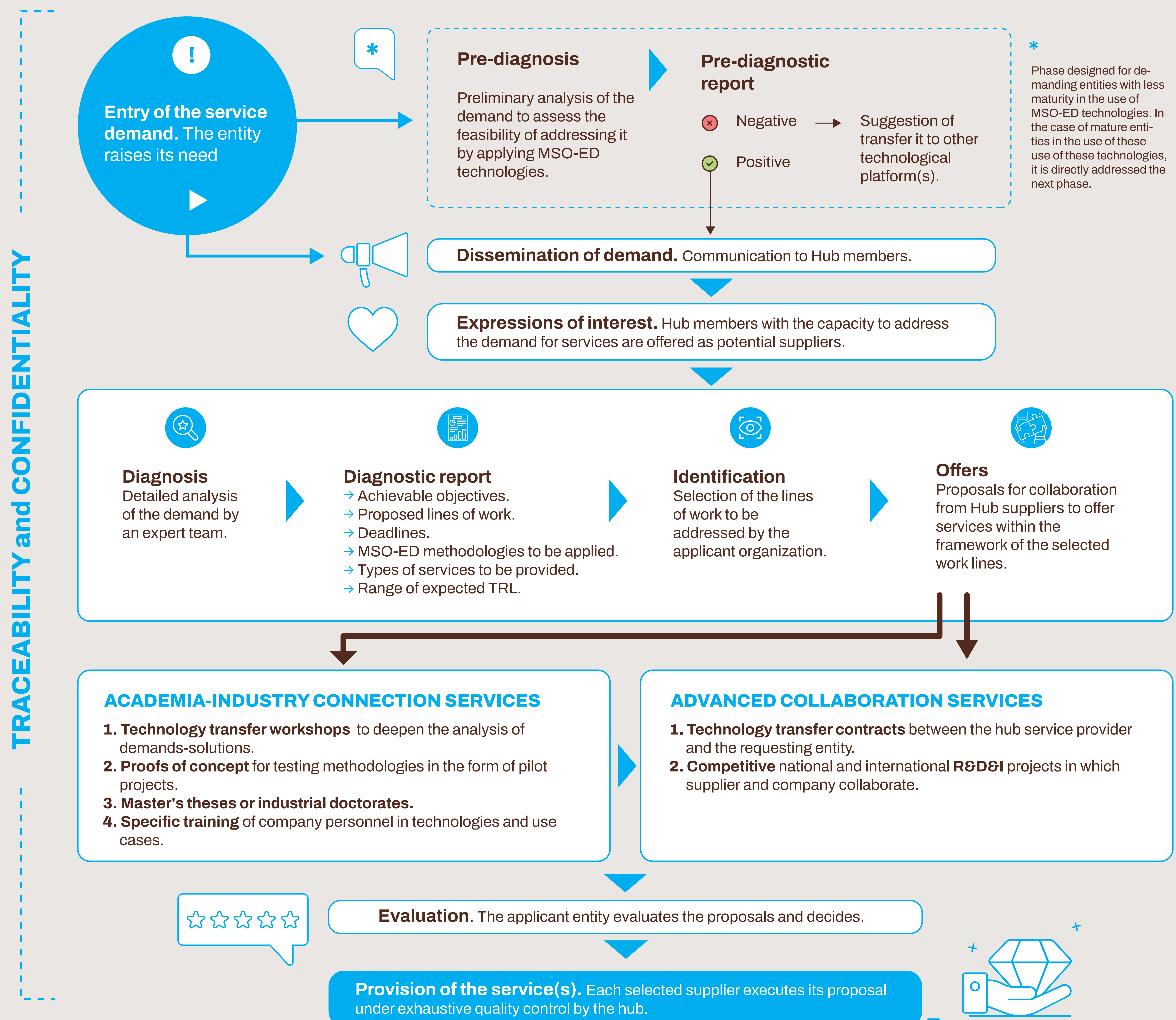Its services are provided by members of the **Spanish Platform of MSO-ED Technologies**:

Entities in the academic world: universities, research centres and scientific organisations.

Non-academic entities: industry, companies, hospitals, technology centres and administrations.
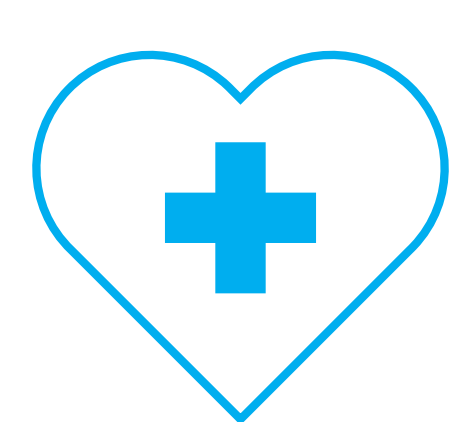
PROCESSES AND SERVICES

The requesting entities present to the Hub their innovation needs that are susceptible to being solved through MSO-ED technologies. Through **a process of accompaniment led by expert professionals**, the best path towards the solution is sought.

Entry of the service demand. The entity raises its need

Pre-diagnosis

Preliminary analysis of the demand to assess the feasibility of addressing it by applying MSO-ED technologies.

Pre-diagnostic report

✗ Negative → Suggestion of transfer it to other technological platform(s).

✓ Positive

* Phase designed for demanding entities with less maturity in the use of MSO-ED technologies. In the case of mature entities in the use of these technologies, it is directly addressed the next phase.

Dissemination of demand. Communication to Hub members.

Expressions of interest. Hub members with the capacity to address the demand for services are offered as potential suppliers.

Diagnosis
Detailed analysis of the demand by an expert team.

Diagnostic report
→ Achievable objectives.
→ Proposed lines of work.
→ Deadlines.
→ MSO-ED methodologies to be applied.
→ Types of services to be provided.
→ Range of expected TRL.

Identification
Selection of the lines of work to be addressed by the applicant organization.

Offers
Proposals for collaboration from Hub suppliers to offer services within the framework of the selected work lines.

ACADEMIA-INDUSTRY CONNECTION SERVICES

1. **Technology transfer workshops** to deepen the analysis of demands-solutions.
2. **Proofs of concept** for testing methodologies in the form of pilot projects.
3. **Master's theses or industrial doctorates.**
4. **Specific training** of company personnel in technologies and use cases.

ADVANCED COLLABORATION SERVICES

1. **Technology transfer contracts** between the hub service provider and the requesting entity.
2. **Competitive** national and international **R&D&I** projects in which supplier and company collaborate.

Evaluation. The applicant entity evaluates the proposals and decides.

Provision of the service(s). Each selected supplier executes its proposal under exhaustive quality control by the hub.

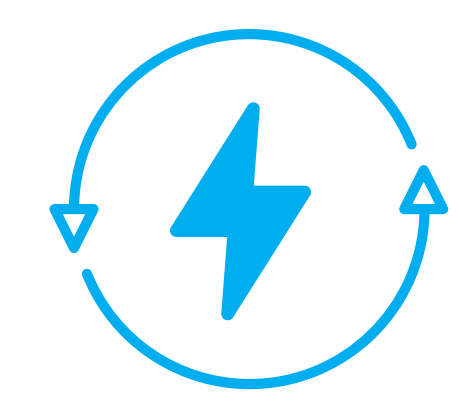*TRACEABILITY and CONFIDENTIALITY*

PRIORITY AREAS OF SERVICE PROVISION

[Challenges 1, 3 and 5 of the State Plan for Scientific and Technical Research and Innovation 2017-2020]

Health, demographic change and well-being
→ Modelling of drug-cell receptor interactions.
→ Diagnosis of cancer and infectious diseases.
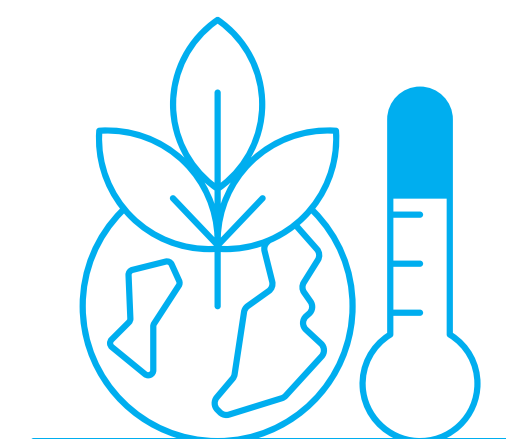→ Projection of the spread of epidemics.
   [...]

Safe, efficient and clean energy
→ Analysis of demand response, power transmission and distributed generation.
→ Smart grid management.
→ Efficiency improvement of power plants, batteries, solar panels, etc.
   [...]

Climate change and use of natural resources and raw materials
→ Natural disaster prediction models.
→ Simulation of the evolution of global warming.
   [...]