

## 1. Entity posing the challenge

**ERAIKUNE:** Fhimasa, Fulcrum, Repair, Obras Especiales, Zikotz

## 2. Challenge

**How can we optimise the capture and analysis of data generated in the different processes linked to construction, both at a project and business level?**

## 3. Possible solutions that can be applied

- Software for managing work, consolidating and managing information.
- AI for exploiting and analysing data.
- Other techniques for data capture and exploitation: OCR, NLP, etc.

## 4. Context

The construction sector is undergoing a major process of strategic reflection motivated by the need to evolve and transform its current production model around digitalisation and new technologies. This sector is marked by very low productivity and yields, a severe lack of technology and a great need to optimise and improve all of the processes linked to construction projects.

In this context, the companies proposing the challenge are either **construction companies** dedicated to **building projects** (both residential and non-residential buildings, as well as infrastructures of all types) such as Fhimasa, Zikoitz, Repair and Obras Especiales, or **engineering companies** such as Fulcrum, which specialise in designing infrastructures. All of these companies have the opportunity to improve the **capture and analysis of the data and information they generate** during their work processes and, more generally, to digitalise and **optimise all of the processes** associated with them.

We are faced with a sector of activity that generates a high volume of data in all of its processes (production, commercial, administrative, financial, etc.), and the capacity to analyse this data is quite scarce right now. However, good data management and analysis can bring about a qualitative and critical leap in improving the competitiveness of these SMEs. 4 potential areas were identified:

- 1) Decision-making and actions based on metrics and indicators, such as those related to price or time when bidding for a project.
- 2) Improvement in the traceability of purchases and materials.
- 3) Increase in the productivity of work teams.
- 4) Reduction in analogue and low value-added processes

## 5. Subsidiary challenges and objectives

As mentioned earlier, the companies proposing the challenge generate a high volume of data in all their processes (production, commercial, administrative, financial, etc.), and currently do not have the knowledge and capabilities to capture, analyse and manage it correctly. which means that the opportunity to establish metrics and indicators while executing their projects, to guide **intelligent decision-making in critical processes such as budgeting, procurement and the purchase of materials, etc.**, is wasted.

Likewise, there is **little digitalisation of all the processes and documentation most closely linked to carrying out works**, such as timetables, plans, inspection and access documentation, etc.

Bearing this in mind, the companies proposing the challenge visualise 2 lines of projects to be developed with startups, related to capturing and analysing their data:

1. **Optimisation of business-linked internal processes** by collecting and exploiting valuable data applied to business processes:
  - **Budgeting:** standardising and/or reusing budget items, identifying cost and profit ratios, monitoring actual costs, certifying work (invoices), etc.
  - **Generation of offers:** automatic preparation of sales proposals using machine learning based on sets of historical data on prices, materials to be used, execution times, machinery required, etc., combining information on purchases and sales and the production process itself to achieve a smart formulation of offers.
  - **Purchasing and procurement:** in order to contract in a better way and comply with schedules, by making intelligent forecasts based on previous market information, correctly allocating materials to work parts, etc.
  - **Planning:** forecasts of working hours, coordination with employees, customers and suppliers.
  
2. **Digitalisation of on-site processes and elimination of analogue methods for capturing and recording information and managing documents** such as: work reports, timetables, incidents, plans, site access documentation, etc., using technologies or solutions that address the reality of the situation of workers on site. Some of the opportunities identified are:
  - **Digitalisation of inspections:** inspection templates, uploading of photos, preparation of reports based on historical data for monitoring, etc.
  - **Digitalisation of plans:** mobile app or similar that allows operators to work efficiently by having version control, being able to set up alerts for incidents or make annotations, etc.
  - **Digitalisation of work reports:** in order to make forecasts of working hours, allocate them to projects using work reports and analyse differences between the time forecast and the time actually spent, etc.