# The Challenge

<<Please describe the business challenge. (Less than 100 words).>>

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## Main Requirements

<<Key requirements for the solution.>>

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## Other Requirements

<<Other requirements.>>

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## Key Performance Indicators

<<Key performance indicators for the solution.>>



**Industry Sector:**  
<<Business Sector of the

company.>>

**Challenge classification:**

<<Challenge classification>>

**Time for Project Completion:**

<<Estimated time for project completion (in months)>> months

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## Other informations

The company expects to deploy <<How Many devices do you expect to deploy?>> devices.

Need for device management operations (such as managing or updating the software remotely)?

<<Do you need device management operations? (such as managing or updating the software remotely)>>

Strict deadlines in device operations for doing the tasks?

<<Does your device operations have strict deadlines for doing the tasks?>>

What competence does the company have with this project?

<<what competence does the company have with this project?>>

Use manufacturing execution systems (MES) or enterprise resource planning (ERP) systems?

<<Do you use manufacturing execution systems (MES) or enterprise resource planning (ERP) systems?>>

Type and operation of the MES or ERP system used?

<<Please state the kind and the operation of the MES or ERP system used.>>

Use of any existing cloud vendor (AWS IoT, Microsoft Azure, etc.)?

<<Do you use any existing cloud vendor? ( for example AWS IoT, Microsoft Azure...)>>

Cloud vendor and the services used on this cloud service:

<<Please state the cloud vendor and the services used on this cloud service.>>

Number of machines to be connected:

<<State the number of machines to be connected.>>

Configuration of each machine and the operation of each:

<<Please state the configuration of each machine and the operation of each.>>

Machines are equipped with PLC/PAC or CNC controllers and can provide data?

<<How many machines are equipped with PLC/PAC or CNC controllers and can provide data?>>

Machines are not equipped with any digital controller (Legacy Machines)?

<<How many machines are not equipped with any digital controller (Legacy Machines)?>>

Communication protocols, sensors or devices with which the solution needs to integrate?

<<Are there any communication protocols, sensors or devices with which the solution need to integrate?>>

# Research Phase

Taking into account the challenge description, its requirements and its information, elaborate at least 5 questions that can lead your research for a solution.

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## **Research questions**:

Given the questions and the main requirements of the challenge previously listed:

* identify possible technologies using the Planet4 Taxonomy Explorer;
* identify and analyze the sources (papers, articles, etc.) of those technologies that best suit the challenge;

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## Technologies identified in the taxonomy:

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## Sources of those technologies that best suit the challenge:

In light of the discoveries made:

* report the answers for the questions above;
* compare 2-3 of the more common solutions identified in the sources (how would they change the approach to the solution? What are the possible benefits/issues in such a use of these technologies?);
* draw initial conclusions on which path you want to take in proposing a solution.

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## Answers:

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## Comparison:

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## Conclusions:

# Proposed Solution

Making use of the technologies identified after the analysis of the sources, describe a possible solution to the challenge. Also, do not forget the constraints (time, number of devices to produce/connect, etc.): the solution must be applicable to the real context of the company that commissioned the challenge.

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## Solution Summary

Brief description of the solution (1-2 paragraph+ 1 image)

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## Solution Description

Describe the solution and its details

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## Implementation Plan

Describe the solution implementation plan considering among other things: gantt chart with milestones, high-level cost analysis, possible difficulties (at least 3 major issues or difficulties) and additional opportunities (at least 2 extra benefits).