

## Milestone 1 - Identify a Problem to Solve

Milestone 1 is where you begin working on your course project, a proposal for your own autonomous AI. Your goal is to: propose a use case, describe the value of the problem, and analyze the current system and its limitations. You may use one of the case studies presented in the course as examples, but we strongly encourage you to be innovative and curious enough to create your own.

### 1 | Use Case Title:

### 2 | Use Case Overview

(≤100 words) Provide a brief description of the use case and the system that your autonomous AI will improve.

### 3 | Use Case Value

(≤100 words) Explain the value of improving the performance of this system.

### 4 | Current Methods

Select and explain the current methods used to control or optimize the system

	Method Check all that apply	Description
<input type="checkbox"/>	Human Operator / Engineer	
<input type="checkbox"/>	Expert System	
<input type="checkbox"/>	Control Theory (PID, MPC)	
<input type="checkbox"/>	Optimization Techniques	
<input type="checkbox"/>	Other	

## 5 | Limitations of current methods

*Select and explain the limitations of current methods*

	<b>Limitation</b> Check all that apply	<b>Description</b>
<input type="checkbox"/>	Ability to control well across scenarios / conditions	
<input type="checkbox"/>	Multiple or changing optimization goals	
<input type="checkbox"/>	Human Operator / Engineer Limitations  May include <ul style="list-style-type: none"> <li>· Difficulty managing many variables and dimensions</li> <li>· Difficulty adapting to changing conditions</li> <li>· Large performance discrepancy between novice and expert operators</li> <li>· Inconsistency across expert operators</li> </ul>	
<input type="checkbox"/>	Uncertainty in the measurement of the inputs or the process make it difficult to control or optimize.	
<input type="checkbox"/>	Time to develop control or optimization system is prohibitive	

### Milestone 1 – Ends Here

The remainder of this worksheet (Part 2) can be completed after you have finished the “Learning the Solution” module (which includes course items 3.1 to 3.4).

## Milestone 2 - Identify Autonomous AI Components to Use

For this week's milestone, we will continue working on the proposal for an autonomous AI that you began last week. This week, you will propose an autonomous AI solution, determine which of the components you've learned about the system will include, and explain the autonomous AI superpowers that your autonomous AI brain will exhibit.

*You may want to update Sections 1 & 2 with any new insights you've gained.*

### 6 | Autonomous AI Overview

*(≤100 words) Provide a brief description of how your proposed autonomous AI would improve the process.*

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### 7 | Optimization Goal

*List and describe the key performance indicators that will define control/optimization of the system (Example: maximize (throughput))*

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## 8 | Autonomous AI Components

*Select and explain the automation methods your AI will use.*

<b>Method</b> Check all that apply		<b>Description</b>
<input type="checkbox"/>	Math (control systems)	
<input type="checkbox"/>	Menus (optimization)	
<input type="checkbox"/>	Manuals (expert rules and systems)	
<input type="checkbox"/>	Machine learning	
<input type="checkbox"/>	Deep reinforcement learning	

## 9 | Autonomous AI Superpowers

*Select the superpowers that your autonomous AI brain will exhibit and explain how they will lead to an improvement in the process.*

	<b>Superpower</b> Check all that apply	<b>Description</b>
<input type="checkbox"/>	Makes human-like decisions	
<input type="checkbox"/>	Perceives, then acts	
<input type="checkbox"/>	Learns and adapts	
<input type="checkbox"/>	Spots patterns	
<input type="checkbox"/>	Infers from experience	
<input type="checkbox"/>	Improvises and strategizes	