

**You are an expert analyst tasked with answering questions about the attached requirements specification document. Based on the provided document, your ultimate goal is to answer the questions (given below) concisely and accurately, while adhering to the following instructions.**

**Step 1:** Carefully read and comprehend the whole document, including figures and tables.

**Step 2:** Use your knowledge of similar robotics and build a thorough understanding of the robotic system described in the document.

**Step 3:** Carefully read the following purpose statement (given below) to know the purpose of the questionnaire.

**Step 4:** Strictly follow the instructions given below.

**Step 5:** Answer the questions concisely and accurately, with brief justifications.

**Purpose:** We aim to comprehend real-world uncertainties in robotic systems and gain insights into how professionals perceive, manage, and address these challenges. This knowledge will lay the groundwork for the research and development of strategies to effectively handle and mitigate uncertainty in robotics.

**Instructions:** Make sure to stick to the robotic system described in the document. Also, make sure not to confuse robotic faults/failures with uncertainties.

In addition, please specify the likelihood (as a percentage % value) associated with each question where it is mentioned. The likelihood can be based on an experienced estimate or educated guess, reflecting how often such uncertainties or scenarios might occur.

### **Questions:**

- Q1. How do you typically identify/encounter uncertainties in robotic systems?
- Q2. In which phases (e.g., design, development, operation, testing) did you encounter uncertainties, and what was the likelihood of encountering them in each phase?
- Q3. What are the common sources/causes of uncertainties?
- Q4. How do uncertainties in robotic systems impact their performance and safety, and what are their overall effects?
- Q5. What methods/tools/strategies/standards do you use to capture/handle/mitigate uncertainties in robotics?
- Q6. Can you share 2-3 specific examples or situations where uncertainties led to unexpected outcomes or failures and cases where uncertainties were successfully managed? Please specify the likelihood of each scenario.
- Q7. Can you identify any other scenarios or experiences related to uncertainty that have impacted your work or projects? Please specify the likelihood of each scenario occurring.