Appendix A: Prompting Details for ChatGPT-4.0 part 1

Prompt: no ```markdown and ``` at start and end
create a detailed and structured requirements list that can be used for product development for {product},
use Markup to structure the text,
do not use explanations, just provide the necessary information/facts about this list. End after you provided "4. Service Life and Maintainability and its points"
Follow this Structure:

Product Design Specifications Document for {product}

1. Main Function

Description	*Clearly define the primary purpose of the product. What is the product designed to achieve or facilitate? Specify the main functional goal.*
Key Features	*List the key features that enable the main function. These should include any unique selling points or critical operational capabilities.*

Key Features: List the key features that enable the main function. These should include any unique selling points or critical operational capabilities.

2. Functionally Determined Properties

Performance Requirements	*Specify the essential performance metrics that the product must meet, such as power output, inputs, modes of action, speed, efficiency, and capacity.*
Functionality	*List all required functionalities in detail, ensuring that each function aligns with the main purpose of the product.*

3. Operational Properties

Operating Conditions	*Detail the environmental and operational conditions under which the product is expected to perform. Be creative.*
User Interaction	*Outline how users will interact with the product. Include user interface requirements, mechanical controls, buttons, signals and feedback systems.*
Support Systems	*Specify any additional systems or services needed for the product to operate effectively, such as software, network requirements, or external devices.*

4. Service Life and Maintainability

Expected Lifespan	*State the expected operational lifespan of the product under typical usage conditions in years. Provide specific time frames or cycles of use. Outline the maintenance or service intervals and the type of maintenance activities required to maximize the product's lifespan. Define the reliability requirements in quantitative terms, such as expected mean time between failures (MTBF).*
Common pitfalls and important product parts	*Define the core product modules. Include any industry-specific testing protocols. Describe the level of fault tolerance required in specific operational usage time. Detail any redundancy or backup systems that must be in place.*
End-of-Life Handling	*Imagine an end-of-life plan for the product, including recycling, refurbishing, or disposal procedures. Include considerations for environmental impact and materials that could be recycled. Give specifications.*
Service Manuals	*Provide comprehensive service manuals with detailed instructions on maintenance procedures, including troubleshooting guides and schematic diagrams. Give specifications.*
Standardized Parts	*Use standardized parts where possible to minimize the variety of spare parts needed and simplify procurement. Give specifications.*

Appendix A: Prompting Details for ChatGPT-4.0 part 2

Prompt: no ```markdown and ``` at start and end; use Markup to structure the text,
start with "5. Safety" no extra title.End with "9. Economics"; no extra explanation afterwards
Follow this Structure as in instruction and adapt it to {product}. Execute on it:

5. Safety

Fail-Safe Mechanisms	*Design the product with auto-shutoff features, that prevent or minimize risk of injury or damage in the event of a malfunction. Give specifications.*
Protective Features	*Include necessary guards, testing methods and warnings to protect users from potential hazards inherent in the product's operation. Give specifications.*

6. Ergonomic Properties

User Interface	*Design interfaces that are intuitive and easy to use, with controls within easy reach and visibly labeled. Consider the use of touchscreens or voice-activated controls for enhanced usability. Give specifications*
Accessibility	*Design all components to be easily accessible for maintenance and repair. Components like batteries or filters should be reachable without specialized tools. Implement a modular design that allows individual components to be replaced or upgraded independently, reducing downtime and maintenance costs. Give specifications.*
Physical Comfort	*Ensure that any physical interaction with the product does not strain the user. If the product requires manual interaction, adjust height and angles to accommodate a wide range of users.*
Visual and Auditory Feedback	*Incorporate clear visual or auditory signals to indicate active processes or issues, enhancing user understanding and interaction. Give specifications.*
Dimensions	*Provide exact dimensions. Specify space for ventilation or connections (power, cables).*

7. Appearance and Design

Aesthetic Design	*Design a product that is visually appealing to the target market and that aligns with current design trends while remaining timeless. Consider the color, shape, and texture that reflect the product's branding and intended market. Give specifications.*
Finish and Materials	*Use finishes that are durable, easy to clean, and attractive. The material choices should also reflect the product's positioning in the three price categories. The user experience should ensure that the product is intuitive and easy to use. Give specifications.*
Branding	*Incorporate branding elements such as logos, color schemes and general usage to enhance the overall design so it is easily recognizable. Make specific design suggestions for user experience.*

8. Law and Standards

Regulatory Compliance	*Identify and comply with all relevant local, national, and international regulations affecting the product, such as safety, environmental, and import/export laws. List the laws and what they mean for the product. Give specifications.*
Certifications	*List required certifications (e.g., CE, FCC, ISO) that the product must obtain to be sold in specific markets. Provide a plan for achieving these certifications, including testing phases and responsible parties. What does the Standard do, and how does it it influence product design.*
Relevant Patents	*Ensure that any physical interaction with the product does not strain the user. If the product requires manual interaction, adjust height and angles to accommodate a wide range of users. Give specifications.*

9. Economics

Pricing Strategy	*Develop a pricing strategy and give 3 price brackets: budget pricing, middle of the market, and premium.*
Alternative Revenue Strategies	*Give different approaches to make revenue with the product. Like making the product cheap and making money with consumables. Show different ways other than selling the product with profit.*