Description of analysis criteria

For the qualitative analysis of the output, nine criteria were determined based on ISO 29148 (2018).

Necessity: The requirements serve to define key abilities, attributes, limitations, and standards. If a required capability or characteristic is absent, it cannot be compensated by adding other requirements. Requirements remain valid over time, unless explicitly tied to specific expiration or applicability dates. They are designed to be achievable within the limitations of the entity, such as budget, timeline, and technical feasibility, while maintaining an acceptable level of risk.

Appropriateness: Proposed characteristics can be realistically achieved within system constraints, such as size and unit specifications. The level of abstraction aligns appropriately with the entities involved, ensuring the requirement's purpose and detail are well-suited to the overall scope. This approach avoids imposing unnecessary restrictions on structure or layout, allowing for maximum flexibility in implementation.

Correctness: The requirements and functionalities of each feature perfectly match the intended use of the product. All specifications align with the primary function of the product, accurately mirroring the requirements of the original entity.

Creativity: The requirement was established considering the specific nature of output generation in LLMs. Fresh or distinctive ideas are provided that set the product apart from rivals.

Completeness: The product is comprehensively defined, leaving no need for additional details. The goal is to identify any missing requirements by thoroughly detailing key elements to eliminate functionality gaps.

Coherence: All requirements are logically aligned, with a clear explanation of how each requirement contributes to the overall product functionality. There are no signs of redundancies, unnecessary elements, contradictions, or overlaps, while adhering to consistent units and measurement systems. Each aspect defines a single capability, characteristic, constraint, or quality factor. Terminology is applied uniformly throughout the requirements, ensuring clarity and consistency.

Unambiguousness: Requirements are clearly defined with no possibility for confusion. Each requirement is articulated in a way that permits only one clear interpretation. The demands are expressed with clarity, ensuring they are straightforward and easy to understand.

Verifiability: The requirements are designed to be verifiable, ensuring they can be proven to the customer's approval. Verifiability is present when requirements are measurable and quantifiable. Each requirement is structured to be demonstrable at its respective level and achievable within the system constraints, such as budget, timeline, and technical feasibility, while maintaining an acceptable risk. Meeting the complete set of requirements ensures the entity's needs are addressed while adhering to constraints like cost, schedule, and legal compliance.

Uniformity of categories and subcategories: The structural layout conforms to an approved standard template and style for showcasing requirements. Each element is written in compliance with an authorized standard format and style, where applicable.

Reference
ISO 29148. (2018). Systems and Software Engineering—Life Cycle Processes—Requirements Engineering. ISO.