Identify exactly three aspects in Section 1 and Section 2 that represent either strengths or weaknesses (e.g., 1 strength and 2 weaknesses, or 3 weaknesses, etc.). Support each identified aspect with proper arguments (one or two sentences) motivating your selection

A) Weakness 1: The goals are badly formulated. They are descriptive and force users to do certain actions, while they should be prescriptive and define what the stakeholders would like to achieve over world phenomena. This means they direct user actions rather than clearly defining desired outcomes and impacts, not fully capturing what the software should achieve. For example, it is said that: “Educators create code kata battles” while it should have been: “Enable educators to create and manage code kata battles”.

B) Weakness 2: Phenomena specification is insufficient and, in some cases, wrong. Wrong: For instance, looking at shared phenomena, the SP4 misunderstood the access process to tournaments and battles. Students join and eventually invite others to their team for each battle of a tournament, not for the entire challenge. Insufficient: the study of the end-of-the-game procedure is totally absent in the phenomena analysis. In SP9 it is pointed out the fact that CBK platform assigns badges to students, but this will become visible to everyone by looking into the user’s profile, not only by who earned them. Furthermore, CBK has to send a notification to all the students enrolled in a battle, with the final ranks. This procedure is also repeated for all the tournaments and should be included in the shared phenomena that are machine-controlled.

C) **Weakness 3:** The world phenomena WP1 is ambiguous because it states that educators code the automation scripts and create a test suite for the battle, but the specification states that the educator uses the CKB platform to upload test cases and build automation scripts. The problem is that they did not specify what is included in this phenomena, if they had clearly stated that the educator just thinks of the test suite, and there was a different shared phenomenon describing the upload of both the test cases and the automation scripts (which is not there) then it would have been ok to keep it as a world phenomenon.

Identify exactly three aspects in Section 3 that represent either strengths or weaknesses (e.g., 1 strength and 2 weaknesses, or 3 weaknesses, etc.). Support each identified aspect with proper arguments (one or two sentences) motivating your selection.

A) Weakness 1: Many requirements are multi-faceted and would be clearer if divided into smaller, testable requirements, which would make the system easier to validate and maintain. An example of this is R12:

"Educators can create a badge and a set of rules associated with that badge"

It is poorly structured because it doesn't define who allows who as it combines two distinct functionalities. It would be clearer if split into two separate requirements:
- "The system allows the educator to create a badge."
- "The system allows the educator to add a set of rules to assign the badge."

B) Weakness 2: There are some problems with the requirements about badges, in R13 The system lacks detail on who receives them, raising confusion about whether badges are assigned to individual students or entire teams. This information is crucial for correctly implementing badge distribution; while in R14 there is no information on where badges are displayed, specifically that they should appear on the student's profile. This detail is necessary to ensure users can view achievements as intended.

C) Strength 1: Despite the goals being somewhat vague, the connection between requirements, domain assumptions, and goals is well-defined, ensuring logical coherence and alignment (i.e., requirements and domain assumptions imply goals).

Identify exactly three aspects in Section 4 that represent either strengths or weaknesses (e.g., 1 strength and 2 weaknesses, or 3 weaknesses, etc.). Support each identified aspect with proper arguments (one or two sentences) motivating your selection.

A) Weakness 1: The modelers chose to focus on only one part of the system (ranking) without explaining why this was prioritized over other elements. The lack of reasoning behind this decision reduces the clarity and makes it harder to understand the significance of their verification efforts in the context of the whole system. Adding assertions to prevent counterexamples would also strengthen the model's reliability.
B) Weakness 2: The model is unclear regarding the requirements for tournament participation. More deeply, the fun "participants", implies that to participate in a tournament, one must be part of a group for each battle, something that wasn't specified anywhere else, leading to potential misinterpretation of participation conditions.
C) Weakness 3: The last assertion: stating that a relation can be both antisymmetric and symmetric is intrinsically wrong; it doesn't produce counterexamples but they say that there exists a tournament. The issue arises from the fact that they restricted the model to a single tournament instance. This single instance is expected to satisfy both symmetric and antisymmetric conditions on its ranking relation in some scenarios, which generally leads to a logical contradiction.

```
run {

        eventually some t: Tournament | #t.participants=2 and
symmetric[t.ranking];
        some t: Tournament | antisymmetric[t.ranking];
        some t: Tournament | symmetric[t.ranking]
 } for 3 but exactly 2 Student, 1 Tournament, 9 int
```