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Learning path for patent examiners

Game rules:
Intermediate level

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Introduction

This publication, "Game rules, Intermediate level", is part of the "Learning path for patent examiners" series edited and published by the European Patent Academy. The series is intended for patent examiners at national patent offices who are taking part in training organised by the European Patent Office (EPO). It is also freely available to the public for independent learning.

Topics covered include novelty, inventive step, clarity, unity of invention, sufficiency of disclosure, amendments and search. Also addressed are patenting issues specific to certain technical fields:

- patentability exceptions and exclusions in biotechnology
- assessment of novelty, inventive step, clarity, sufficiency of disclosure and unity of invention for chemical inventions
- the patentability of computer-implemented inventions, business methods, game rules, mathematics and its applications, presentations of information, graphical user interfaces and programs for computers
- claim formulation for computer-implemented inventions

Each publication focuses on one topic at entry, intermediate or advanced level. The explanations and examples are based on the European Patent Convention, the Guidelines for Examination in the EPO and selected decisions of the EPO's boards of appeal. References are made to the Patent Cooperation Treaty and its Regulations whenever appropriate.

The series will be revised annually to ensure it remains up to date.

Disclaimer

All references to natural persons are to be understood as applying to all genders.

Contents

Legal references

1. Learning objectives

Participants to this course will learn:

- The definition of Game Rules (GR)
- To apply the two hurdle approach for a GR application

2. Games and game rules

Game rules, Article 52 (2) and (3) EPC

In Article 52(2)(c), the EPC deemed game rules to be subject-matter that is excluded from patent protection. Alongside other non-technical activities such as performing mental acts and doing business, it explicitly states that schemes, rules and methods for playing games are not patentable if claimed "as such" (Article 52(3) EPC).

The "as such" in paragraph (3) ensures that the exclusion is applied narrowly. For instance, a game apparatus, which is to be distinguished from a game and its rules, is therefore categorically not excluded. At the same time, the exclusion in paragraph (2), which also mentions mental acts, aesthetic creations, mathematical methods and presentations of information, should be understood as a non-exhaustive list of subject-matter excluded for being non-technical. Games may well involve artwork, and game rules may well involve mathematical methods.

The case law of the boards of appeal provides valuable guidance on what falls under the scope of game rules as per the exclusion – most notably T 0336/07 and T 1543/06 for a definition of what characterises game rules in general, especially if traditional games are concerned, and T 0012/08 for a broader perspective of what game rules would be in more contemporary forms of game play, i.e. rules in a "wider sense".

The case law on game rules forms the legal basis for the relevant section of the EPO Guidelines dedicated to the examination of games (G-II, 3.5.2).

Examples

Would you say that rules of conducting a tournament, such as

- the succession of rounds and matches
- corresponding elimination schemes
- how ties breaks are decided
- whether matches have limited durations

qualify, by analogy, as game rules within the meaning of Article 52(2)(c) EPC?

Legal references:

Art. 52(2)(c) EPC, T 336/07, T 1543/06, T 0012/08

What is a game?

In practice, there any many different types of game-related patent applications, ranging from traditional games (such as card games, board games and toys), gambling machines (traditionally mechanical and nowadays usually electronic) and computer games (primarily video games). They are dealt with in specific branches of the CPC, mostly for historic reasons. Online gambling or video

games can barely be conceived of without the underlying network and computer technologies that have made these genres of gameplay feasible in the first place. Games and game systems based on that technology are nevertheless governed by otherwise abstract game rules, i.e. a pre-technical conception of how the game is meant to proceed and be played.

The seminal decision T 336/07 used a common dictionary to adopt definitions of what a game is and what game rules are and applied them to the case in hand in respect of the game rules exclusion. This practice was confirmed in later decisions and developed further for technology-based games, which typically involve a mix of technical and non-technical features.

Examples

Reasons 3.3.1 of the decision:
"The Board reads 'game' in its general sense as meaning 'a diversion of the nature of a contest, played according to rules, and displaying in the result the superiority either in skill, strength, or good fortune of the winner or winners' (from the Oxford English Dictionary or OED)."

Legal references:

Art. 52(2)(c) EPC, T 336/07

Game rules in traditional games

Although the Guidelines refrain from specifically defining the term "game" (common sense should suffice), they follow the case law and specify that game rules *"define a conceptual framework of conventions and conditions that govern player conduct and how a game evolves in response to decisions and actions by the players. They comprise the setup of the game, options that arise as gameplay unfolds, as well as goals defining progress in the game"*. The abstract, purely mental nature of game rules is further characterised by emphasising that they normally are *"meaningful only in the gaming context"* and are *"perceived (or even agreed to) by the players as rules serving the explicit purpose of playing the game"*.

Thinking of rulebooks or how children learn to play a game, it should be apparent that the conceiving of a game in terms of rules can be distinguished from the concrete products used or required to play the game according to its rules.

Examples

Game rules as an abstract, regulatory framework:

- a condition requiring two randomly drawn numbers to match to score a win
- a rule allowing a pawn that has reached the eighth rank to be "promoted" i.e. replaced by a chess piece of choice
- a rule that automatically assigns a red card when a player is given a second "yellow"
- the duration of a football match, or the dimensions of a goal, a sports field or the penalty area
- the regulations regarding a bicycle's technical features to be allowed to participate in the Tour de France

NB: as apparent from the above examples, game rules may well refer to technical parameters.

Legal references:

Art. 52(2)(c) EPC, GL G-II, 3.5.2

Game rules in contemporary games

Nowadays, many games, especially video games, simply require a computer, a screen and a game controller. These devices are as essential as counters and dice are in board games. Nonetheless, video games also involve abstract game elements to the extent that these devices operate in accordance with, i.e. implement, a conceptual or pre-technical game design that constitutes a framework of regulations that is quite similar to rules.

Thinking of the huge range of finely differentiated game characters and corresponding narratives that typically make up the content of a modern online role-playing game, it should be apparent that these forms of gameplay have elements that are non-technical "in their own right" and relate to traditional game rules only by analogy.

Video games (see GL G-II, 3.5.2) are often *characterised by complex interactive and narrative elements of a virtual game world. Such game elements govern how the game proceeds of its own accord (e.g. evolving characters and storylines) as well as how it proceeds in interaction with the player(s)*, i.e. what inputs the player is meant to provide or perform.

For example, game mechanics involving rhythmic tapping that causes a virtual character to dance better the closer the player's rhythm matches the game soundtrack amount in effect to a purely conceptual game idea. These game mechanics govern how the player may act and make progress in the game.

Given that these elements are conceptual in nature, they qualify, in a wider sense, as rules for playing games within the meaning of Article 52(2)(c) EPC. This holds true irrespective of the fact that such game design elements might be untold or revealed only while playing.

Decision T 12/08 was the first to devise this approach, followed by T 2449/10 for a game of chance and T 1385/12 for an input mechanism of a video game.

Examples

A variant of scrabble, played on mobile phones, that challenges players to form valid words using the multi-tap keypad (think of typing SMS on early mobile phones) when confronted with a set of digits, the latter effectively corresponding to the number keys of the keypad. (see T 1547/09)

A variant of Tetris that shows in advance which game piece is next to appear (by analogy with T 1782/09)

A variant of Tetris that clears filled rows, not immediately but according to a predetermined time scheme, e.g. every three seconds (by analogy with T 2127/09)

A roulette-inspired gambling scheme that allows a player to place a wager and make roulette-like bets, e.g. odd vs. even, on outcomes on the financial markets (see T 414/12)

Legal references:
Art. 52(2)(c) EPC, GL G-II, 3.5.2, T 336/07, T 0012/08, T 2449/10, T 1385/12

3. First hurdle applied to games

Technical character

A claim must have a technical character to qualify as an invention within the meaning of Article 52(1) EPC, "in all fields of technology". In principle, a claim can overcome this "first hurdle" if it comprises at least one technical feature, i.e. a technical means or a method step carried out by a technical means which necessarily relates to a field of technology. The presence of a – or rather any – technical means therefore conveys a technical character to the claimed subject-matter. In other words, technicality as per the first hurdle can only be answered in relation to a claim as a whole.

Consider a game of chance, for example. A game apparatus that comprises uniformly sectored reels in order to generate a random number, such as a slot machine or a wheel of fortune, would pass the first hurdle. A method of playing a game that comprises the step of drawing a random number does not strictly require a technical means and therefore fails the first hurdle. As soon as this step is further limited to operating said reel, the method has technical character too.

Put another way, adding features relating to a game rule cannot deprive, or "take away", the technical character of subject-matter that is otherwise already technical.

Examples

Drawing of random numbers by:
- mechanical means, e.g. cubic dice, uniformly sectored reels
- a computer, e.g. configured to calculate a pseudo-random sequence

(Questions, Discussion)
- Calculating a pseudo-random sequence mentally? "By hand"?
- Tossing a coin?
- Determining whether the last digit of a stock index is odd or even?

Legal references:

Art. 52(1) EPC; Art. 52 (2)(c) EPC; Art. 52 (3) EPC, GL G-II, 3.5.2

4. Second hurdle applied to games

Mixed-type inventions

The consideration of technicality does not end with Article 52 EPC. It is also relevant in conjunction with inventive step (Article 56 EPC), a second prerequisite for allowability in substance besides novelty.

An inventive step can only be acknowledged if the claims define a technical solution to a technical problem, i.e. a solution that is brought about by a technical effect that serves a technical purpose, e.g. overcomes a technical constraint. Beyond that, the features that make this "technical contribution" must not be obvious to a person of technical skill.

This examination, in particular if a mix of technical and non-technical features is claimed, e.g. a mix of game rules and game devices, is carried out in accordance with an augmented form of the problem-solution approach as introduced with the COMVIK decision, T 641/00. This legal

assessment procedure, also called the COMVIK approach, is detailed in GL G-VII, 5.4 and explains in particular how to properly define the objective technical problem with mixed-type inventions.

The second hurdle is overcome only if a non-obvious solution to the established objective technical problem is present. In a nutshell, non-technical features may appear in the formulation of the problem as a given constraint.

COMVIK approach

Although COMVIK was originally pronounced for a business method, the COMVIK approach has since been confirmed to also be applicable to game rules as excluded matter, e.g. decisions T 0928/03 or T 1543/06 to name some early cases.

The rationale at the core of the COMVIK decision was expressed in two headnotes. The first headnote can be paraphrased for game rules as follows:

- Game rules, by themselves, cannot support the presence of an inventive step.
- Game rules which, in the context of the invention, contribute to producing a technical effect are factored into the assessment of inventive step.

In other words, they are taken into account in line with the problem/solution approach for mixed inventions, which was summarised in headnote II.

As a consequence of the two hurdles, especially the first hurdle, certain drafting techniques aim at establishing technicality for games, sometimes merely by making a claim "sound more technical".

These drafting approaches – reformulating otherwise non-technical game elements by paraphrasing them in language that is technical only on the surface – might in some cases be sufficient to overcome the first hurdle, e.g. drafting a counting rule as a "computing means configured to monitor the total number of games", which is at best an electronic means. However, these formulations are usually insufficient to overcome the second hurdle.

Similarly, another drafting technique that is not always particularly useful is to eliminate all references to a game and the like from the claim language by using abstract terminology to seemingly "generalise away" all the game-related features. For instance, substituting a generic first, second and third object at every occurrence of a concrete game object such as a game token or piece. It should be immediately apparent that all game-related embodiments, even non-technical ones, would indeed fall under the scope of the abstract terms.

Examples

Game rules, non-technical features:

- declaring the first player to collect more than six chips the winner
- "winner computation means" for "monitoring" the number of game tokens and "determining" whether that number meets a win condition
- "computation means" monitoring the number of "objects" and "testing" that number against a "predetermined condition".

Scope of claim covers other administrative schemes that are not directed to game rules, after abstraction:

- monitoring the number of goods in a parcel to determine if the order is completely packed.

Legal references:
Art. 56 EPC, GL G-VII, 5.4, T 0641/00, T 1543/06, T 0928/03

Skilled person and game designer

In order to reflect the COMVIK rationale, headnote II, a legal fiction is applied with the mixed problem-solution approach: the fiction of the person of technical skill and of another person, a notional game designer or another creative role, who is assumed to lack any technical skill. In this context, the conceptual or creative design of a game in terms of game rules may thus be understood as pre-technical requirements that may – or rather must – be included in the formulation of an objective technical problem as a given requirements specification, in particular as a constraint to be met by the technically skilled person implementing a game design.

To illustrate this, take a game rule relating to rolling pairs as given and consider the corresponding problem formulation, which would read:

"How to implement a game in which players take turns, draw two random numbers per turn, and the first player to draw a pair (i.e. two of the same number) proceeds to the next stage."

The technically skilled person who proposed to use a pair of dices or who implemented the turn-taking using a computer and pseudo-random numbers would arguably have solved this objective technical problem without exercising inventive skill.

In summary, obviousness should always be assessed with regard to the objective technical problem and through the eyes of a technically skilled person, e.g. a game programmer. The objective technical problem must be formulated properly, i.e. it may not contain pointers to a technical solution and must cover all the relevant constraints that constitute the conceptual i.e. non-technical, design of the game.

Examples

How to define the game of Tetris without using technical terms (see T 2127/09)

- Tetronimo-shaped objects
  - appear in a random sequence at the top of a rectangular field and fall downwards
  - stop falling when they hit either the ground or an object that had stopped previously, spawning a new object at the top
  - stack upwards until they reach the top, which ends the game
  - may be moved by the player while falling: pushed to the left or right, rotated 90° clockwise or anti-clockwise, or dropped to fill a row
- Completed rows disappear; objects above that row fall into and fill the cleared space
- The number of rows cleared in one go determines the score

Legal references:
Art. 52(2)(c) EPC, Art. 56 EPC, GL G-II, 3.5.2, G-VII, 5.4, T 0641/00, T 2127/09

Non-inventive aspects, obviousness and technical effects

Most game rules, for instance score counting, turn-taking and determining hit-or-miss conditions, can be readily automated as doing so typically requires only customary programming or engineering

skills. Apart from a straightforward technical implementation, some effects might actually be caused as a direct or inevitable consequence of an automation because they are already inherent to the rules.

Such inherent effects therefore cannot be understood as having a technical cause aimed at overcoming a technical constraint, i.e. a solution of a technical nature.

In this regard, a "further" technical effect is required to achieve an inventive step – "further" in a sense that the effect is caused by a specific technical implementation that achieves a well-framed technical purpose beyond what is inherent to the rules and their automation.

Conversely, if game rules are devised or modified in order to avoid or circumvent a technical constraint, a corresponding feature normally cannot be accepted as a technical contribution, even if it is automated. In essence, it amounts to a non-technical circumvention of a technical constraint, such as achieving small or reduced computational or memory footprints, in case this is caused by simple or simplified game rules or by limiting the size of the game.

From the skilled person's perspective, any such gains in efficiency are achieved by merely implementing some newly devised game rules, which usually requires no more technical skill than implementing "just another game design".

Examples

See T 1543/06, Reasons 2.7-2.8: *"… the same principle* [i.e. further technical effect] *holds also for other categories of excluded subject-matter which may inherently possess some 'technical' effect. In fact, inherent and arguably technical effects may be easily identified for practically all excluded subject-matter, for example such a simple one as reducing time when using or performing it. This is why it needs to be stressed that the 'further' technical effect cannot be the same one which is inherent in the excluded subject-matter itself."*

Legal references:

Art. 52(2)(c) EPC, Art. 56 EPC, GL G-II, 3.5.2, GL G-VII, 5.4, T 1543/06

Non-technical aspects

Games are often devised to bring about benefits or effects which are not technical in the first place, or they serve a non-technical purpose by design. Effects of this kind therefore cannot support the presence of inventive step, no matter how important they might be for a game's popularity.

Without a direct technical cause, any such benefits are just incidental to the skilled person's work and do not warrant an inventive step. A game product's commercial success is typically an incidental effect, in particular if it gains market share owing to newly fashionable or otherwise popular ways of gameplay, e.g. games that are easy to play or quick to learn.

Playing games usually involves psychological effects such as amusement, entertainment, suspense and surprise. These, therefore, are non-technical effects even if technical means are involved, e.g. a timer controlling a pause that increases suspense before the winner is announced.

The same applies to aspects of a game that cause balanced, fair or otherwise rewarding gameplay, e.g. a timer controlling the start delays in a handicap race. However, these effects are also non-technical.

For similar reasons, rules for determining the game score, skill ratings (e.g. the ELO rating in chess) or handicaps (e.g. in golf) are non-technical, no matter how complex or reliable they might be.

Examples

According to T 1281/10 and T 0042/10:

- The overall aim of keeping players interested is not technical.
- The intermediary aim of assessing and comparing playing performance is not technical.
- Representing performance using probability distributions, updating these and predicting future outcomes are mathematical methods.

In the cart racing simulation of T 0188/11 (see 7.3), players can control a virtual driver and a co-pilot character. These characters are allowed to swap roles, which in turn changes the cart's steering characteristics owing to the characters' applying their virtual body weights differently.

The element of surprise provided as a result was deemed to be a psychological rather than technical effect. In particular, surprise was not considered to be attributable to how the swapping rule was technically implemented.

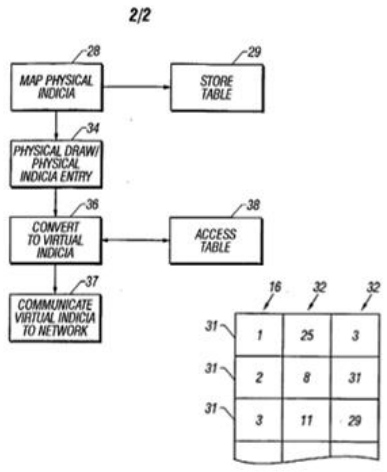
Legal references:

Art. 52(2)(c) EPC, Art. 52 (3) EPC, Art. 56 EPC, GL G-II, 3.5.2, GL G-VI, 5.4, T 1281/10, T 0042/10, T 0188/11

5. Game rules – examples

Example: game security – remote gambling

This example draws from appeal case T 1644/06, which concerns the security of remote gambling. We will only mention a few specific aspects of the case here.



In a nutshell, players may bet on a number or have obtained a lottery ticket, such as in bingo. The winning number(s) is/are drawn physically at a remote host of the game, where a human operator enters the results manually for further notification, i.e. electronic transmission to the players.

As a result of this set-up and procedure, there is a risk of fraud or collusion on the host's side since the remote players cannot monitor the operator, who might collude with a partner and enter a fake number, e.g. the partner’s number, to cheat to their benefit.

The problem of increasing security and reducing exposure to fraud is solved by a computer that "scrambles" the entered number before transmission, in this case in line with a random mapping, in order to obtain a scrambled "virtual number".

The virtual number – not the one initially drawn – is ultimately transmitted to the players. Since the mapping is not accessible to the operator, this risk of fraud and collusion is eliminated. It is important to note that gameplay is agnostic to this scrambling step, i.e. players can proceed according to the game rules as if the winning number were not subject to scrambling, or rather without realising that it is. That is to say, the realm of the game rules remains unaffected.

The decision read (see 5.4):

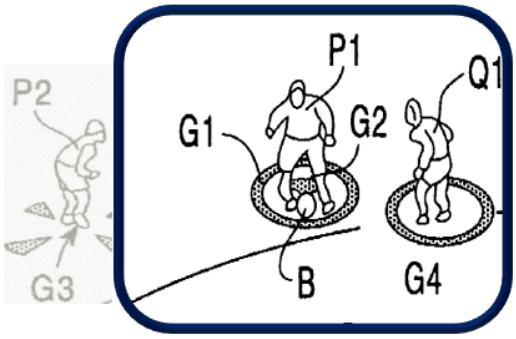
"[T]he board also holds both the underlying problem as well as its claimed solution to be technical in nature. Both must be seen within the specific technical context of a bingo system where a computer communicates draw results to a player input by an operator. Within that context the problem of preventing fraud between player and operator at input and output ends respectively of the computer acquires technical character.

Likewise, the solution, which relates to the manner in which random numbers are generated by manipulating data input into the computer, is undoubtedly technical. Forms of mapping may be conceivable which could be carried out in a traditional (non-computer based) bingo scheme, and which might therefore arguably lie within the domain of game rules. However, the board is convinced that the *substantially random* mapping *carried out by a computer* for the purposes of a bingo-type game as claimed cannot be so seen as a game rule, but is rather a solidly technical measure contributing to the solution of the above technical problem."

Legal references:
T 1644/06

Example: game output – pass guide marks

This example draws from appeal case T 928/03, which concerns a football video game. We will only mention a few specific aspects of the case here. Please also refer to the board's decision for a full appreciation of the case.



In a nutshell, a player controls game characters that may move on the football field and shoot the ball to play a pass or score a goal. A virtual camera tracks the character in close-up perspective. Additional on-screen indicators are superimposed onto the views taken by a virtual camera, the indicators pointing to a free teammate of the player's character and thus representing pass guide marks.

Numerous features in the claim were deemed to reflect or be a consequence of the rules of football, e.g. the player actions, the role of opponents and teammates, and the interest in spotting a free teammate.

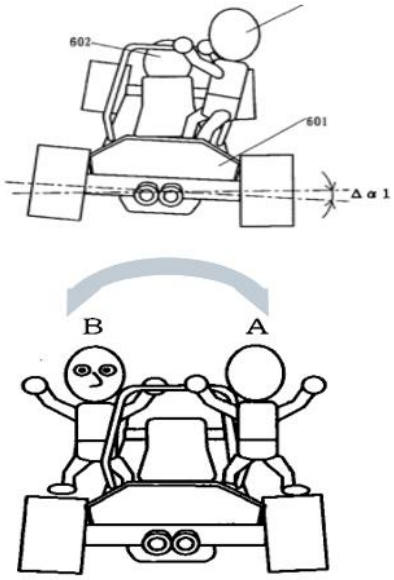
These implications were considered insufficient to suggest the display of the claimed pass guide marks, i.e. an on-screen indicator at the screen boundaries when the teammate is outside the field of view of the virtual camera, pointing in the direction a pass may be played.

The board found (Reasons 5.3) that conflicting technical requirements were present, namely displaying an enlarged portion in close-up versus keeping an overview of a zone of interest which is larger than the display area. This conflict was resolved by a simple pass guide mark on the boundaries of the display area which occupied a minimal peripheral display area and still enabled the user to maintain orientation when viewing an enlarged portion of an image. As a conclusion, finding a solution in order to avoid conflicting technical requirements is considered as solving a technical problem.

Legal references:
T 0928/03

Example: game loop - racing simulation

This example draws from appeal case T 188/11, which concerns a cart racing video game. We will only mention a few specific aspects of the case here. Please also refer to the board's decision for a full appreciation of the case.



In a nutshell, two players controlling a driver and a co-pilot can pilot the cart by steering or shifting their body weight, respectively. In addition, players can command their characters to swap roles on the cart.

The applicant argued that swapping roles increased the video game's excitement and appeal, especially since the player characters have differing body weights, which introduced an additional tactical element to the gameplay. It argued that these body weights represented a meaningful physical parameter and provided a more realistic simulation of cart racing.

The board rejected these arguments and found that swapping roles was an abstract game idea and that excitement and tactical appeal were not technical effects. Body weight was evidently a virtual weight, not a physical one, and took effect primarily by altering the (virtual) response in the virtual world to interactions by the players.

The board reasoned that (see 3.4.3-3.4.4) the change in dynamics of the driver/co-pilot/cart body at the time the characters swapped roles was a direct consequence of swapping characters having differing weights. It was in fact also inherent in the very idea of cart movement simulation, and therefore followed directly from the rules themselves rather than from their implementation.

In turn, it was concluded that the implementation features followed in an obvious manner when the skilled person, a software engineer specialising in gaming software, is asked to implement the new game scheme to make it possible to choose different characters with different characteristics in the different roles and to swap roles in the game space during game play.

Legal references:
T 0188/11

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