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Consulenti in Proprietà Industriale

# Paper C EQE 2023

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FÉDÉRATION INTERNATIONALE DES CONSEILS EN PROPRIÈTÉ INTELLECTUELLE

INTERNATIONAL FEDERATION OF INTELLECTUAL PROPERTY ATTORNEYS

INTERNATIONALE FEDERATION VON PATENTANWÄLTEN



## DISCLAIMER

- The following presentation contains private opinions of the tutors. It is intended to provide the best advice according to the knowledge of the tutors.
- Each paper is different, and there is no single "methodology" guaranteed to yield the correct solution of the paper. The best methodologies are called "knowledge" and "common sense".
- This presentation is not intended as a "methodology"



## WHAT DO YOU RECEIVE?

#### PART C(I)

- first Client´s letter
- A1 patent to be opposed: only a part of the claims and/or description!
- Annexes A2 to A? (typically A2 to A6) prior art documents provided by the client. In general, all prior art documents provided, also those not usable for attacking claims of PART C(I)!
- Annexes may be printed

#### <u>PART C(II)</u>

- second Client's letter
- A1 patent to be opposed: complete version
- Annexes A2 to A? (typically A2 to A6) comprising any Annex not available in the first part



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## WISEFLOW

- Electronic tool for EQE 2021, EQE 2022, EQE 2023 and ...?
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- Possible last-minute updates: stay tuned!
- Mock exams available in exam mode conditions



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## WHAT ARE YOU REQUIRED TO PREPARE?

#### FOR EACH PART

- A notice of opposition against A1
- Attack all claims (all the claims must be attacked)
- Art. 100(a) grounds: not patentable under Art. 52-57
- Art. 100(c) grounds: added subject-matter
- Do NOT use Art. 100(b) ground





## ATTENTION

- All the information necessary to oppose the patent is found in the examination documents.
- Do not use any special knowledge of the technical field of the invention.
- Examination documents comprise definitions of technical nature related to claim features, aspects of the related technical effects and objective technical problems as well as motivations and hints.
- Marks were awarded for use of this information and argumentation based on it.



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## NOTICE OF OPPOSITION

- $\checkmark$  Identify the patent to be opposed and the opponent.
- $\checkmark$  Payment of the opposition fee has to be indicated.
- ✓ The intended opponent is the company and not the person signing the client's letter.
- All relevant information, a statement of the extent to which the European patent is opposed, opposition grounds, evidence, facts and arguments have to be in the answers.



## STEPS

- I. Read the client's letter
- 2. Establish the number of claims and their dependency
- 3. Establish effective dates of the claims
- 4. Establish dates of the prior art annexes and their usability
- 5. Read the claims
- 6. Read and analyze A1
- 7. Read and analyze prior art annexes A2 AX (X = 5 or 6 typically)
- 8. Establish attacks
- 9. Draft the Notice of Opposition (features table are not awarded marks)







## EFFECTIVE DATES OF CLAIMS AND PRIOR ART 10 marks available

- Priority claim invalid (priority application filed by joint applicants, see GL A-III 6.1)
- issues on prior art:

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Annex 2: published <u>after</u> the effective date, but refers to a public prior use that took place <u>before</u> the filing date (posters shown at Eurobike 2017) (public prior use, see GL G-IV 7.2)

Annex 5: social media post published <u>one day before</u> the effective date (publication date of Internet disclosures, see GL G IV 7.5) Public prior use mentioned in Annex 5 took place <u>on</u> the effective date <u>not usable!</u>





## NOVELTY ATTACK (I)

- Basically copy the claim and for each feature explain in parentheses <u>where</u> it can be found in the cited Annex and <u>why</u> it is the same (if not indicated by the same word)
- You gain marks for finding the feature (use of information marks), but more importantly for arguing where it is found and why it is the same feature (argumentation marks)
- Correspondances and definitions may be provided in the same document OR in another document (maybe not usable as such) OR in the patent to be opposed



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## NOVELTY ATTACK (II)

- Generic vs. specific (specific disclosure takes away the novelty of generic disclosure, but not vice versa - e.g. copper vs. metal and ranges, see GL G VI 5 and 8)
- Implicit features only if there is a strong case (sometimes hinted on by other documents) – do not speculate or overthink, do not use your specialist knowledge
- "Apparatus for ...", "product for ..." (an apparatus or product which possesses all the features specified in the claim but is unsuitable for the stated purpose is not considered as anticipating the claim, see GL F IV 4.13.1)



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## CLAIM 1 – PART C(I)

1. A road racing pedal comprising a pedal body (101) with a pedal cavity (102), a pedal spindle (103) for attaching the pedal body (101) to a bicycle crank arm (105) and a sensor for detecting dead spots in the pedal stroke.



## ANNEX 1 – PART C(I)

#### Road racing pedal

Road racing pedals are clipless pedals for on-road racing. A clipless pedal is built such that a cleat affixed to the sole of a cycling shoe can engage with the pedal. [...] These pedals differ from regular platform pedals, to which a shoe cannot be attached. Road racing pedals need to be sealed to protect the internal components from the elements (par. 0010)



During the downstroke, [...] the cyclist's heel is ideally in a heel-down position. During the upstroke, [...] the heel is ideally in a heel-up position. Most cyclists, however, deviate from the ideal heel movement during a pedal stroke, due to irregular up and down movements of the heel [...]. These irregular heel movements result in a lower power output than would ideally be produced. These spots of lower power output, [...] are called "instantaneous dead spots". Thus, by measuring irregular heel movements in the pedal stroke, instantaneous dead spots can be identified (par. 0005)

[...] the pedal spindle drive 106 can function as a pedal angle sensor [...] When the cycling shoe and the clipless pedals are engaged, they move as a single entity and the angle described by the pedal thus corresponds substantially to the angle described by the heel of the cyclist. Using this information, the position of the heel of the cyclist throughout the pedal stroke can be determined. Wherever the real heel-up, heel- down movement during the pedal stroke differs from the ideal heel-up, heel-down movement, an instantaneous dead spot is identified (par. 0017)



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## **ANNEX 4**

#### Clipless pedal for on-road racing





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## **ANNEX 5**





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## **NOVELTY ATTACK TO CLAIM 1**

CLAIM 1	Annex 1	Annex 4	Annex 5
A road racing pedal	road racing pedal is a particular type of clipless pedal (par. 10)	clipless pedal for on-road racing	clipless pedal designed for road racing (par. 0001 + reply to question of P. Zagan)
comprising a pedal body (101)		pedal body 420 or pedal housing (par. 0008)	pedal housing
with a pedal cavity (102),		several pedal cavities or chambers (par. 0005)	pedal axle chamber 502
a pedal spindle (103) for attaching the pedal body (101) to a bicycle crank arm (105)		pedal axle or pedal spindle (par. 0002)	pedal axle
and a sensor for detecting dead spots in the pedal stroke	measuring pedal angle in a clipless pedal corresponds to measuring dead spots in the pedal stroke (par. 17)	strain gauges not disclosed to be suitable for detecting deaspots	pedal angle measurement sensor 506



## GOOD ATTACK TO CLAIM 1?

Claim 1 lacks novelty in view of A5.

A5 discloses a road racing pedal comprising.

a pedal body (A5[003])

with a pedal cavity (A5[003])



A5 discloses a pedal spindle for attaching the pedal body to a bicycle crank arm (A5 [0004] discloses that the pedal axle rotates inside the bearing 504 placed in the crank arm 505, at the attachment hole. Thus, the pedal spindle attaches the pedal body to the bicycle crank arm)

A5 further discloses *a sensor for detecting dead spots in the pedal stroke* (A5[0004], "pedal angle measurement sensor 506").



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## GOOD ATTACK TO CLAIM 1! (I)

Claim 1 lacks novelty in view of A5.

A5 discloss *a road racing pedal* (see comment below the post of A5 with the same date stamp about Marvin products disclosing "Our pedals are designed for road racing cycling") *comprising*.

*a pedal body* (A5[003] disclosing a "pedal housing", a pedal housing is a pedal body, see A4[0008])

*with a pedal cavity* (A5[003] "pedal axle chamber 502", a pedal chamber is a pedal cavity, see A4[0005])



## GOOD ATTACK TO CLAIM 1! (II)

A5 discloses *a pedal spindle* (A5[004] "pedal axle"; a pedal axle is a pedal spindle, see A4[0002]) for attaching the pedal body to a bicycle crank arm A5 [0004] discloses that the pedal axle rotates inside the bearing 504 placed in the crank arm 505, at the attachment hole. Thus, the pedal spindle attaches the pedal body to the bicycle crank arm)

A5 further discloses *a sensor for detecting dead spots in the pedal stroke* (A5[0004], "pedal angle measurement sensor 506". According to A1[0006], in a clipless pedal the foot and pedal move as a single entity; hence, with a pedal angle sensor the position of the heel during the pedal rotation can be identified, and thus the presence of dead spots. The sensor 506 of A5 is therefore suitable for detecting dead spots in the pedal stroke, see Guidelines F-IV, 4.13.1).



## **NOVELTY ATTACK - SUMMARY**

- cite specific reference in the relevant document (paragraph, line, page, figure)
- if prior art uses different terminology, explain <u>why</u> it has the same meaning (using information provided in the annexes, <u>not based on your knowledge</u>)
- repeating claim wording (or the corresponding wording of the Annex) without specific references in the relevent document and without explanations on different terminology gives you <u>very few marks</u>.



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## NOVELTY ATTACK – SUMMARY (II)

- The use of information requires <u>citation of the specific</u> <u>reference in the relevant document</u> (e.g. paragraph, line, claim, figure, as appropriate). If prior art uses different terminology to the feature in a claim, a full reasoning requires an explanation <u>why the meaning is the same</u>, on the basis of the information provided in the Annexes
- For example, in this year's paper the correspondence of terms such as "spindle" and "axle" or "cavity" and "chamber" was to be established based on definitions found in Annex 4.



## **INVENTIVE STEP ATTACK (I)**

- 1. determine closest prior art (CPA)
  - add reasoning for selecting the CPA
  - not necessarily the document used for a novelty attack of the independent claim
  - not necessarily the document having the highest number of features in common
- 2. mention features in common with the claim
  - similar to a novelty attack
- 3. determine the difference between claim and CPA
  - > in term of object
- 4. technical effect of that difference
  - as presented in A1



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## **INVENTIVE STEP ATTACK (II)**

- 5. formulate objective technical problem
  - 1. Choose the "macroscopic effect"
  - 2. Effect is the same as in the CPA the OTP is to find an alternative
  - 3. No technical effect of the different feature no OTP
- 6. combine CPA with another document/disclosure and mention why said document may be considered by skilled person
  - 1. Motivation of the skilled person to find the second document (e.g., same field, more general field, neighboring field why the SP would look there)

7. argue why skilled person is motivated to use solution from said document (could/would approach)

1. compatibility of materials, no need for further technical modifications, direct hint in the second document that the solution is generally utilizable, etc..

#### 8. Conclusion



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## CLAIM 2 – PART C(I)

2. A road racing pedal according to claim 1 [comprising a pedal body (101) with a pedal cavity (102), a pedal spindle (103) for attaching the pedal body (101) to a bicycle crank arm (105) and a sensor for detecting dead spots in the pedal stroke],

wherein the pedal spindle (103) is placed within the pedal cavity (102) and the sensor comprises a pedal spindle drive (106), with at least four electromagnets (108) placed on the pedal spindle (103) and at least four permanent magnets (107) placed on the pedal body (101) within the pedal cavity (102) and facing the electromagnets (108), the road racing pedal further comprising a pedal controller (109) for actuating the spindle drive (106).



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## Annex 1 – PART C(I)

#### Road racing pedal

Road racing pedals are clipless pedals for on-road racing. A clipless pedal is built such that a cleat affixed to the sole of a cycling shoe can engage with the pedal. [...] These pedals differ from regular platform pedals, to which a shoe cannot be attached. Road racing pedals need to be sealed to protect the internal components from the elements (par. 10)



magnets

*The electromagnets 108 (functioning as stators) and the permanent magnets 107 (functioning as rotors) constitute an electric motor that can apply torque on the pedal spindle 103 when an electric current is applied to the electromagnets 108 (par. 0014)* 

*The pedal spindle drive 106 is actuated by a pedal controller 109 placed on one end of the pedal spindle 103. Thus, by selectively applying current to the electromagnets 108, the rotation resistance of the pedal body 101 around the pedal spindle 103 can be adjusted at will (par. 0015)* 

*This resistance adjustment has the advantage of signalling to the cyclist the crossing of certain positions around the pedal stroke, e.g. points of maximum ankle extension. Using this information, the upstroke or downstroke can be specifically trained or certain muscles rehabilitated (par. 0016)* 



## ANNEX 2

## Stationary bicycle pedal

[...] our pedals will remain stationarybicycle pedals as they are clearly not ready to endure road conditions such as water, dirt or bumps (par. 0003)





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## **ANNEX 4**

## Clipless pedal for on-road racing The pedal body or pedal



Future uses are allowed by the provision of the large interior cavity 480. [...] **stator and rotor** charging systems for providing energy to the sensors are currently being discussed in the technical field. Such a large space would clearly allow for the installation of such a system without the need to replace the pedal as a whole, yet still ensure a low weight. Further uses, such as **measuring and signalling the pedal position along the stroke, currently in development, could also be envisioned for this cavity**. (par. 0009)



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## **INVENTIVE STEP ATTACK TO CLAIM 2**

CLAIM 2	Annex 2	Annex 4
A road racing pedal	stationary bycicle pedal	clipless pedal for on-road racing
comprising a pedal body (101)	pedal body 205	pedal body 420
with a pedal cavity (102),	cavity of open cylinder 202 not in the pedal body	interior cavity 408
a pedal spindle (103) for attaching the pedal body (101) to a bicycle crank arm (105)	pedal shaft 203	pedal axle 410 or pedal spindle
and a sensor for detecting dead spots in the pedal stroke	electric motor provides angle position signals allowing dead spots to be directly identified	no sensor for detecting dead spots (other kinds of sensors, no one suitable for detecting dead spots)
the pedal spindle (103) is placed within the pedal cavity (102)	pedal shaft 203 in cavity of open cylinder 202	interior cavity 408 provided around the pedal axle (par. 0008)
the sensor comprises a pedal spindle drive (106), with at least four electromagnets (108) placed on the pedal spindle (103) and at least four permanent magnets (107) placed on the pedal body (101) within the pedal cavity (102) and facing the electromagnets (108)	electric motor comprising rotor with 6 permanent magnets and stator with 6 electromagnets	no sensor comprising electromagnets and permanent magnets
the road racing pedal further comprising a pedal controller (109) for actuating the spindle drive (106).	controller 207 switching electric motor on and off	no controller disclosed



## WHICH ANNEX IS THE BEST CPA?

#### Annex 2 is good CPA?

 distinguishing features: the pedal is a road racing pedal and the cavity in which the pedal shaft is placed is comprised in the pedal body

#### Annex 4 is good CPA?

 distinguishing features: the pedal comprises a sensor for dead spots comprising a pedal splindle drive with electromagnets and permanent magnets and a controller for actuating the pedal spindle drive



GOOD ATTACK TO CLAIM 2?

Claim 2 is dependent on claim 1.

Claim 2 lacks of inventive step in view of the combination of A4 and A2.

A4 is the closest prior art for the invention of claim 2 and discloses: *a road racing pedal* ([0005], "a clipless pedal for on-road racing" which according to A1[0010] is a road racing pedal)

*comprising a pedal body ([0007*], "pedal body 420") with a pedal cavity ([0008], "interior cavity 480")

- *a pedal spindle ([0007], "pedal axle 410", a pedal axle is a pedal spindle, see A4[0002])* 

- *for attaching the pedal body to a bicycle crank arm* ([0007], "pedal axle 410 adapted to be coupled to a crank arm")

- wherein the spindle is placed within the pedal cavity ([0008], "interior cavity 480 around the pedal axle 410")



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GOOD ATTACK TO CLAIM 2?

A4 does not disclose:

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- a sensor (107, 108) for detecting dead spots in the pedal stroke comprising a pedal spindle drive (106), with at least four electromagnets (108) placed on the pedal spindle (103) and at least four permanent magnets (107) placed on the pedal body (101) within the pedal cavity (102) and facing the electromagnets (108), the road bicycle further comprising a pedal controller (109) for actuating the spindle drive (106).

The **technical effect** achieved by these distinguishing features is defined in A1[0014] that: "*constitute an electric motor that can apply torque on the pedal spindle 103 when an electric current is applied to the electromagnets 108*".



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GOOD ATTACK TO CLAIM 2?

The **objective technical problem** of the invention is to selectively apply current to the electromagnets so as to adjust the rotation resistance of the pedal body 101 around the pedal spindle 103.

The person skilled in the art desiring to solve the objective technical problem of the invention would consider A2.

A2[0002] discloses an electric motor comprising 6 permanent magnets (201) spaced evenly around the interior wall of an open cylinder (202). The cylinder forms a cavity (see figure of A2) encompassing the pedal shaft (203), which comprises another 6 electromagnets (204) evenly spaced.

Thus, A2 discloses a pedal spindle drive.



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GOOD ATTACK TO CLAIM 2?

A2 further discloses that the electric motor provides angle position signals ([0002]), which according to A1[0006] makes the sensor suitable for detecting dead spots.

A2[0002] further discloses a controller (207), placed on the crank arm (208) that switches the electric motor on and off.

A2[0002] discloses that by switching on and off the electric motor, the rotation resistance is increased and thus the system signals to the cyclist the position of dead spots such that the cyclist internalizes their positions. The person skilled in the **art would combine the teachings of these two documents** and in this way **would arrive at the subject-matter of dependent claim 2.** 

Thus, the subject-matter of claim 2 lacks inventive step (Article 56 EPC) in view of the combination of A4 and A2



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GOOD ATTACK TO CLAIM 2 (I)

Claim 2 is dependent on claim 1.

Claim 2 lacks of inventive step in view of the combination of A4 and A2.

A4 is the closest prior art for the invention of claim 2 since it is the only document disclosing a road racing pedal having a pedal spindle placed within the pedal cavity.

A4 discloses: *a road racing pedal* ([0005], "a clipless pedal for on-road racing" which according to A1[0010] is a road racing pedal) *comprising a pedal body ([0007*], "pedal body 420") with a pedal cavity ([0008], "interior cavity 480")



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## GOOD ATTACK TO CLAIM 2 (II)

A4 further discloses *a pedal spindle ([0007],* "pedal axle 410", a pedal axle is a pedal spindle, see A4[0002])

- *for attaching the pedal body to a bicycle crank arm* ([0007], "pedal axle 410 adapted to be coupled to a crank arm")
- wherein the spindle is placed within the pedal cavity ([0008], "interior cavity 480 around the pedal axle 410")

#### A4 does not disclose:

- a sensor (107, 108) for detecting dead spots in the pedal stroke comprising a pedal spindle drive (106), with at least four electromagnets (108) placed on the pedal spindle (103) and at least four permanent magnets (107) placed on the pedal body (101) within the pedal cavity (102) and facing the electromagnets (108), the road bicycle further comprising a pedal controller (109) for actuating the spindle drive (106).



# What does A1 disclose about these distinguishing features?

[0014] The electromagnets 108 (functioning as stators) and the permanent magnets 107 (functioning as rotors) constitute an electric motor that can apply torque on the pedal spindle 103 when an electric current is applied to the electromagnets 108. 
> no mention about pedal controller

[0015] The pedal spindle drive 106 is actuated by a pedal controller 109 placed on one end of the pedal spindle 103. Thus, by selectively applying current to the electromagnets 108, the rotation resistance of the pedal body 101 around the pedal spindle 103 can be adjusted at **will.** *E.* of distinguishing features

[0016] This resistance adjustment has the advantage of signalling to the clist the crossing of certain positions around the pedal stroke, e.g. points of maximum ankle extension. Using this information, the upstroke or downstroke can be specifically trained or certain muscles rehabilitated.



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## GOOD ATTACK TO CLAIM 2 (III)

The technical effect achieved by these distinguishing features is defined in A1[0015] that: "*by selectively applying current to the electromagnets, the rotation resistance of the pedal body 101 around the pedal spindle 103 can be adjusted*".

Therefrom the objective technical problem can be derived as *"signalling to the cyclist the crossing of certain positions around the pedal stroke", (A1[0016]*). By signalling certain positions to the cyclist it is possible to obtain information about for example points of maximum ankle extension.

Using this information about the upstroke or downstroke it is possible to train or rehabilitate certain muscles.



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18 marks

GOOD ATTACK TO CLAIM 2 (IV)/

The person skilled in the art for solving the technical problem would consider A2 as it relates to sensors in bicycle pedals and specifically to the identification of dead spots in the pedal stroke (A2, [0001]).

A2[0002] discloses an electric motor comprising 6 permanent magnets (201) spaced evenly around the interior wall of an open cylinder (202). The cylinder forms a cavity (see figure of A2) encompassing the pedal shaft (203), which comprises another 6 electromagnets (204) evenly spaced.



GOOD ATTACK TO CLAIM 2 (V)

Thus, A2 discloses a pedal spindle drive. A2 further discloses that the electric motor provides angle position signals ([0002]), which according to A1[0006] makes the sensor suitable for detecting dead spots.

A2[0002] further discloses a controller (207), placed on the crank arm (208) that switches the electric motor on and off.

A2[0002] discloses that by switching on and off the electric motor, the rotation resistance is increased and thus the system signals to the cyclist the position of dead spots such that the cyclist internalizes their positions.



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GOOD ATTACK TO CLAIM 2 (V)

The skilled person is prompted to apply this teaching of A2 to that of A4, as A2 hints that the integration of this system into high-end clipless pedals for road racing is sought after (A2[0003]).

Further A4[0009] discloses that the interior cavity 480 allows for the positioning of rotors and stators for battery charging.

Thus, the person skilled in the art, would not hesitate to combine the teachings of these two documents and introduce the electric motor of A2 in the interior cavity 480 of A4 and attach the controller of A2 to the crank arm of A4.

In this way, the person skilled in the art would arrive at the subjectmatter of dependent claim 2.



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## MIXED TYPE CLAIMS

- Technical and non-technical features
- When assessing inventive step, only features contributing to the technical character of the invention shall be considered (COMVIK approach, see GL G-VII 5.4)
- A feature which is not technical when taken in isolation may contribute to the technical character of the invention (e.g. mathematical steps of an algorithm having a technical purpose)



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## CLAIM 7 – PART C(II)

7. A bicycle computer (110) for the pedalling efficiency improving system of claim 4, the bicycle computer (110) displaying a heart icon on the computer display when the pedalling efficiency of the pedalling efficiency improving system surpasses 80% and displaying an angry emoticon when the pedalling efficiency is below 80%

the only distinguishing features over A3 are non technical (presentation of information, GL G II 3.7)



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## ADDED SUBJECT MATTER ATTACK

- Compare the text of the application <u>as filed</u> with the text of the granted claim
- Explain why the claim has no basis in the application as filed
- If also the relevant part of the description has been added after filing, the claim has nonetheless <u>NO</u> basis in the application as filed
- ATTENTION: the reference for a 123(2) attack is A1 as filed, NOT the priority document!
- ATTENTION: all the combination of features of the claim must have BASIS in the application as filed, check if the claim is a dependent claim



## CLAIM 6 – PART C(II)

Please now prepare the second part of the notice of opposition so that we can combine it with the first part already prepared.





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## CLAIM 6 – PART C(II)

6. A bicycle with a pedalling efficiency improving system comprising a chain drive, clipless pedals, a sensor, and a bicycle computer (110) in communication with said sensor wherein the clipless pedals further comprise ceramic ball bearings (104).



## ATTACK TO CLAIM 6 (I)

Claim 6 has been added during the examination proceedings.

Basis for the feature of claim 6 is in par. [0024] of the application as filed which recites: *The sealing pedal bearings 104 of the present invention are ceramic bearings. They comprise ceramic ball bearings made of zirconia combined with ceramic races and provide reduced friction and an increased life span as compared with standard steel bearings.* 

*Zirconia ball bearings and ceramic races need to be combined to achieve the above-mentioned improvements.* 



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## ATTACK TO CLAIM 6 (II)

Therefore, according to [0024] in order to achieve a reduced friction and an increased life span when compared to standard steel bearings Zirconia ball bearings and ceramic races **need to be combined together**.

The ceramic races and the zirconia ball material have however not been introduced into dependent claim 6.



## ATTACK TO CLAIM 6 (III)

The extraction of the feature "ceramic ball bearings" in isolation from the originally disclosed combination of features to which it is functionally related is an unallowable intermediate generalisation (Guidelines H-V, 3.2.1).

Additionally, the skilled man when reading claim 6 is faced with new information not immediately and undoubtedly derivable form the application as filed.

Therefore, the subject matter of claim 6 extends beyond the content of the patent application as originally filed and therefore contravenes Art. 123(2) EPC.



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