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**Datasheet for the decision
of 26 July 2023**

Case Number: T 2395/19 - 3.2.01

Application Number: 05814749.7

Publication Number: 1825943

IPC: B23B27/14, B23B51/00, B23C5/16,
C23C14/06

Language of the proceedings: EN

Title of invention:
COATED CUTTING TOOL

Patent Proprietor:
Sumitomo Electric Hardmetal Corp.

Opponent:
Iscar Ltd.

Headword:

Relevant legal provisions:
EPC Art. 52(1), 54, 56, 83, 84, 123(2)
RPBA Art. 12(4)
RPBA 2020 Art. 25(2)

Keyword:

Public Prior Use (yes)

Standard of Proof

Novelty - over public prior use - Main Request (no) - Auxiliary request (yes)

Inventive step - non-obvious alternative

Sufficiency of disclosure - (yes)

Claims - clarity in opposition proceedings - clarity (yes)

Amendments - allowable (yes)

Late-filed evidence - submitted with the statement of grounds of appeal and reply - admitted (yes)

Decisions cited:

G 0003/14, T 0055/01, T 1428/17, T 0042/19, T 1138/20

Catchword:



Beschwerdekammern

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Chambres de recours

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Case Number: T 2395/19 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 26 July 2023

Appellant: Sumitomo Electric Hardmetal Corp.
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Decision under appeal: **Interlocutory decision of the Opposition
Division of the European Patent Office posted on
2 August 2019 concerning maintenance of the
European Patent No. 1825943 in amended form.**

Composition of the Board:

Chairman G. Pricolo
Members: V. Vinci
P. Guntz

Summary of Facts and Submissions

I. The appeals filed by the appellant (patent proprietor) and the appellant (opponent) are directed against the interlocutory decision of the opposition division to maintain the European patent No. 1 825 943 in amended form.

In its decision the opposition division held that the subject-matter of independent claim 1 according to the main request and the auxiliary request 1 was not novel within the meaning of Articles 52(1) and 54 EPC. The opposition division also found that the auxiliary request 2 filed at the oral proceedings met the requirements of the EPC and decided to maintain the patent in this amended form. Novelty and inventive step were assessed in view of the following prior art:

D24: DE 10123554 A 1

Public prior use of a coated cutting tool of the type "**Tiger-tec WAK10**" manufactured by Walter AG substantiated by following pieces of evidence:

D26: Affidavit by Mr Na dated 23 October 2017.

D26a: Affidavit by Mr.Na dated 26 March 2019.

D28: SEM measurement report dated June 2, 2004 for Walter's grade WAK10 inserts.

D31: SEM measurement report dated September 9, 2003 for Walter's grade WAK10 inserts.

D49: Affidavit by Mr. Lee dated 27 March 2019.

D50: Photos of the box of Tiger-tec® inserts WAK10

D54: Experimental report and declaration by Mr. Lee dated 20 May 2019.

The following document:

D2 : "X-ray stress analysis in presence of gradients and texture (Ch. Genzel)"

was also cited as a proof of common general knowledge in the context of the discussion of the compliance with Article 83 EPC.

During the appeal proceedings the following additional pieces of evidence were submitted:

D57: Affidavit by Mr. Na dated 11 December 2019

D58: Affidavit by Mr. Lee dated 11 December 2019

D59: Enlarged color version of the photos of D58

D67: "*Design of CVD Coatings for Cutting Tools*" - Dipl.-Ing. Christoph Czettl

D71: Affidavit by Mr. Kim dated 28 April 2020

II. With a communication under Article 15(1) RPBA dated 3 March 2021, the Board informed the parties of its preliminary, non-binding assessment of the appeals.

Oral proceedings pursuant to Article 116 EPC were held before the Board on 26 July 2023.

III. The appellant (patent proprietor) requested to set aside the impugned decision and to maintain the patent based on the main request or, in the alternative, on the basis of any of auxiliary requests 1 to 10, whereby the main request and auxiliary requests 1 and 2 have been filed with the statement of grounds of appeal, auxiliary request 2 being equivalent to the patent as maintained by the opposition division, auxiliary requests 3 to 6 have been filed with the letter dated 22 April 2020, auxiliary request 7 with the letter

dated 2 May 2022 and auxiliary requests 8 to 10 with the letter dated 18 May 2022.

The appellant (opponent) requested to set aside the impugned decision and to revoke the patent.

IV. Independent claim 1 according to the main request reads as follows (labelling by the Board):

(A) *"A coated cutting tool (1) comprising a substrate (8) of cemented carbide and a coating (9) formed on the substrate (8),*

(B) *wherein the coating (9) includes a first coating (10) composed of TiCN and*

(C) *a second coating (11) composed of α -Al₂O₃,*

(D) *the first coating (10) is positioned between the substrate (8) and the second coating (11) and has tensile stress S1,*

(E) *the second coating (11) has compressive stress S2, and*

(F) *the tensile stress S1 and the compressive stress S2 are defined by the following equation (1):*

$$400 \text{ MPa} \leq |S2-S1| \leq 3500 \text{ MPa} \dots (1), \text{ wherein}$$

(G) *said tensile stress S1 of the first coating (10) is 5 MPa to 300 Mpa."*

In independent claim 1 according to the auxiliary request 1 the equation (1) of claim 1 according to the main request has been amended as follows:

(F') *"500 MPa ≤ |S2 - S1| ≤ 3000 MPa"*

Independent claim 1 of the auxiliary request 2, which corresponds to claim 1 of the patent as maintained by the opposition division, is based on independent claim 1 of the auxiliary request 1 and contains the following additional features (labelling by the Board):

(H) *"wherein the coating (9) includes a third coating other than the first and second coatings and the third coating is between the first coating and the second coating for improving the adhesion between the first coating and the second coating,*

(I) *the first coating (10) has a columnar structure with an aspect ratio of 7 to 200 and a crystal structure with an average grain diameter of 0.05 μm to 1.5 μm." "*

Independent claim 1 of the auxiliary request 3 is based on independent claim 1 of the auxiliary request 2, wherein feature (H) has been amended as follows (labelling by the Board and amendment emphasized):

(H') *"wherein the coating (9) includes a third coating other than the first and second coatings and the third coating is between the first coating and the second coating for further improving the adhesion between the first coating and the second coating, the first coating (10) has a columnar structure with an aspect ratio of 7 to 200 and a crystal structure with an average grain diameter of 0.05 μm to 1.5 μm." "*

Independent claim 1 of the auxiliary request 4 is based on claim 1 of the auxiliary request 3 and further

specifies that:

"the third coating is composed of TiN, TiC , TiCO, TiBN, ZrCN, TiZrCN, AlN, AlON, or TiAlN".

Independent claim 1 according to the auxiliary request 5 is based on claim 1 of the auxiliary request 3 and further specifies that:

"the third coating is composed of ZrCN, TiZrCN, AlN, AlON, or TiAlN".

Reasons for the Decision

APPEAL OF THE PATENT PROPRIETOR

Assessment of the Public Prior Use "Tiger-Tec WAK10"

1. The Board confirms the conclusion of the opposition division that the appellant (opponent) has convincingly and sufficiently proven that a public prior use of a coated cutting tool type *"Tiger-Tec WAK10"* manufactured by Walter AG took place before the priority date of the contested patent (December 2004). This coated cutting tool thus represents a state of the art according to Article 54(2) EPC as correctly stated in the decision under appeal.
- 1.1 With their appeal the appellant (patent proprietor) contested both the evaluation of the relevant facts and evidence submitted by the appellant (opponent) in support of the alleged public prior use and its technical content as assessed by the opposition division in the contested decision.

1.2 Regarding the evaluation of the relevant facts and evidence by the opposition division, the Board reminds that the principle of free evaluation of evidence is recognized to apply before the EPO. This principle also impacts the review of the evaluation of evidence of the first instance department in appeal proceedings. To the extent that there is no error in the application of law, in principle a Board has no reason to set aside the evaluation of evidence of a deciding body of the first instance and supersede it by its own unless the deciding body of first instance recognizably failed to consider essential aspects, included irrelevant considerations, or violated the rules of logic, such as when logical errors and contradictions are detected by the Board in the reasoning of the decision (see also T1418/17, point 1.3 of the Reasons, T 42/19, point 3.4 of the Reasons).

1.3 After assessment of the reasoning of the opposition division and of the submissions of the parties in the appeal proceedings, no one of the above mentioned circumstances which may lead to supersede the assessment of the public prior use provided by the opposition division arises in the present case for the reasons that will be presented below.

1.4 The burden is on the party challenging a fact on appeal to demonstrate that the first-instance department erred in its finding of fact. In doing so, the party must specifically point to each alleged error in the department's findings of fact or in its evaluation of the evidence and set out the reasons why this is considered erroneous (T 1138/20, point 1.2.5 of the Reasons).

When contesting the assessment of the alleged public

prior use of the opposition division the following points were raised by the appellant (patent proprietor):

Standard of proof

- 1.5 The appellant (patent proprietor) alleged that the opposition division, when evaluating the relevant facts provided by the appellant (opponent) in support of the alleged public prior use, mistakenly adopted the lower standard of proof of the "*balance of probabilities*" instead of the higher, and in the present case supposedly correct standard of proof of "*up to the hilt*". It was pointed out that all the declarants of the relevant affidavits submitted by the appellant (opponent) to substantiate the alleged public prior use were employees of TaeguTec Ltd. which was a subsidiary company of the appellant (opponent) and hence under their full control. The appellant (patent proprietor) put forward that since the 2 specimen of the "*Tiger-Tec WAK10*" coated cutting tool allegedly tested at the TaeguTec R&D center were in full possession of ISCAR Ltd via the controlled TaeguTec Ltd., the appellant (opponent) was "*de facto*" the only party at the opposition proceedings that had full access to the relevant information regarding the alleged public prior use. The appellant (patent proprietor) further pointed out that the fact that the appellant (opponent) was not able to show a copy of a written request to TaeguTec Ltd. to purchase and test the "*Tiger-Tec WAK10*" coated cutting tools or, at least, an invoice for the provision of the test reports demonstrated that TaeguTec Ltd. was indeed a subsidiary company under full control of the appellant (opponent). The appellant (patent proprietor) wondered why the tests had not been commissioned to an independent research institute, and

alleged that since the appellant (opponent) had full control on TaeguTec Ltd., it could not be excluded that the controlled company delivered precisely the results which were required to successfully support the appellant's (opponent's) position in the opposition proceedings. The appellant (patent proprietor) concluded that in view of all the circumstances above and according to established case law of the boards of appeal, the higher "*up to the hilt*" standard of proof should have been adopted by the opposition division instead of the lower standard of proof of the "*balance of probabilities*" in order to correctly assess all the relevant facts submitted by the appellant (opponent) in support of the alleged public prior use, this amounting to an error in the application of law justifying the request to set aside the result of the evaluation of evidence of the opposition division.

1.6 The Board does not agree with the arguments and conclusions of the appellant (patent proprietor) regarding the adopted standard of proof for the following reasons:

1.7 Firstly, the Board observes that from the reasoning of the opposition division it is not even evident which standard of proof was actually adopted to come to the conclusion that the alleged public prior use had been sufficiently proved. In any event, i.e even under the assumption of the appellant (patent proprietor) that the conclusion of the opposition division was mistakenly based on the lower and supposedly incorrect standard of proof of the "*balance of probabilities*", the Board concurs with the appellant (opponent) that this less demanding standard of proof is the correct one in the present case, and that it was correctly applied by

the department of the first instance.

- 1.8 As demonstrated by the appellant (opponent) who referred in this respect to the Wikipedia link <https://en.wikipedia.org/wiki/TaeguTec> and to a brochure accessible via the Taegutec's website at https://www.taegutec.com/pages/wp-content/uploads/2019/01/image_En.pdf, TaeguTec Ltd. is not a subsidiary of the appellant (opponent) as asserted by the appellant (patent proprietor), but rather a sister company belonging to the same parent company, namely the IMC Group to which both TaeguTec Ltd. and the appellant (opponent) ISCAR Ltd. are affiliate. This finding is also confirmed by the information presented in IMC Group web-side www.imc-companies.com consulted by the Board. Furthermore, as correctly pointed out by the opposition division and the appellant (opponent), the "*Tiger-Tec WAK10*" coated cutting tool which is the object of the disputed public prior use is manufactured and marketed by a third company, i.e the WALTER AG which is a direct competitor of the appellant (opponent) in the field of competition of the coated cutting tool inserts. Therefore, as correctly stated by the opposition division, it cannot be concluded that in the present case only the appellant (opponent) had access to all the relevant information concerning the contested public prior use and hence that according to established case law of the boards of appeal, the stricter standard of proof of "*up to hilt*" should have been applied by the opposition division as asserted by the appellant (patent proprietor). The Board also considers that it has been proved beyond any reasonable doubt (see affidavits D26, D26a and D49) that coated cutting tools of type "*Tiger tec*" with grades WAK10 manufactured by Walter AG were available on the market as a "*mass product*" to everyone - hence also to the

appellant (patent proprietor) - at least from July 2004, i.e. before the priority date of the contested patent (December 2004). In view of this circumstance, the Board concurs with the appellant (opponent) that the case law of the boards of appeal does not support the assertion of the appellant (patent proprietor) that the higher standard of proof of "*up to the hilt*" must be applied when a specific specimen of a product is analyzed by a party other than the patent proprietor, in the present case by TaeguTec Ltd. It appears to be normal that a party submits their own experimental data be it produced within their company or an affiliate company. This may lead to a need of the other party to run comparative tests and submit the results if they shed doubt on the other party's data. But it does not lead to a shift of the standard of proof since both parties are free to run their own tests on standard products available on the market. Should the other party contest the comparative results based on the fact that material properties may change within a series of products they would be under an obligation to provide a specimen out of the toolbox acquired by them for further inspection by the other party or by an expert appointed by the opposition division. Thus, as stated under point 4.1 of the Reasons of the decision T 55/01 referred to by the appellant (opponent), the higher standard of proof of "*up to the hilt*" does not apply to mass products available to everyone on the market as it is indeed the case with respect to the "*Tiger-Tec WAK10*" coated cutting tools.

- 1.9 In view of all the above, the Board concludes that even assuming that the opposition division applied the lower standard of proof of the "*balance of possibilities*" to come to its conclusion that the disputed public prior use had been sufficiently proven, this was the correct

standard of proof to be adopted in the present case whereby, contrary to the allegations of the appellant (patent proprietor), no error in the application of law occurred.

Credibility of the circumstances of the public prior as reported in the declarations of Mr. Na (D26 and D26A), Mr. Lee (D49 and D54) and Mr. Kim (D71).

- 1.10 The credibility of the declaration signed by the employees of TaeguTec was questioned by the appellant (patent proprietor) who submitted the following arguments:

- 1.11 The appellant (patent proprietor) recalled that according to the appellant (opponent) one of the tasks of TaeguTec Ltd. within the IMC Group was to monitor the market in order to identify, purchase, test and store competitor products after they became available to the public. The appellant (patent proprietor) argued that in view of this activity profile it was not credible that the appellant (opponent) was not able to provide any documentary evidence supporting the recollection of the events made by Mr. Na and Mr Lee in their declarations D26, D26a, D49 and D54, as for example an invoice proving the alleged purchase and delivery to the TaeguTec R&D center on the 7th of July 2004 of a box containing ten samples of "*Tiger-tec WAK10*" coated cutting tools and/or a report indicating the conditions and the parameters adopted in the residual stress tests allegedly carried out by Mr. Na and Mr. Lee.

- 1.12 Regarding the absence of any documentary evidence confirming the correctness of the statements of Mr. Na and Mr. Lee which was objected by the appellant (patent

proprietor), the Board is satisfied with the plausible explanation provided by the appellant (opponent) that at the time of the tests it was neither required nor customary practice at TaeguTec R&D center to produce and keep for long time written records regarding their monitoring and analysis activity of competitor products released on the market.

- 1.13 Regarding the alleged delivery date of the box with the "*Tiger-tec WAK10*" coated cutting tools to the Taegu-Tec R&D center indicated in the affidavits D26 and D26a , the appellant (patent proprietor) argued that the undecipherable handwritten text denoted on the box and barely visible in the photos labelled 50-2 and 50-5 of evidence D50 annexed to the affidavit D26 could not unambiguously confirm the delivery date of 7 July 2004 indicated by the declarants. The appellant (patent proprietor) also criticized that no information was available regarding who received and opened the box, how the cutting tools were sorted, manipulated and stored at TaeguTec, and whether the storing conditions where such as to preserve the mechanical characteristic of the tools over the time. It was alleged that storing coated cutting tools under uncorrect or uncontrolled environmental conditions in particular with regard to the temperature could have altered the original mechanical characteristics of the coatings and hence the original residual stress distributions, thereby rendering the measurements carried out by Mr. Na and Mr. Lee unreliable. Finally it was alleged that it could not be excluded that as a consequence of erroneous sorting and manipulating procedures occurred at the Taegu-tec R&D center the tests and analysis reported in the affidavits had been mistakenly carried out on different coated cutting tools, i.e on coated cutting inserts not taken from the box containing the

"Tiger-tec WAK10" cutting inserts. The appellant (patent proprietor) argued that the above observations were further supported by the absence of any documentation regarding the sorting, testing and storing procedures followed at the Taegu-Tec R&D center.

1.14 Also these arguments are not convincing:

Regarding the handwritten date reported on the box and the allegedly unclear circumstances of the reception, sorting, manipulating and storing of the coated cutting tools purchased by TaeguTec Ltd. and subject to residual stress analyses at their R&D center, the appellant (opponent) submitted with their reply to the statement of grounds of appeal of the appellant (patent proprietor) a further declaration labelled D71 and signed by Mr. Kim who was the TaeguTec's employee who personally received the box containing the "Tiger-tec" coated cutting tools, wrote the date on it and sorted, tested and stored the samples. The admissibility of this late filed evidence was challenged by the appellant (patent proprietor). In support of the admissibility, the appellant (opponent) recalled that it was for the first time during the opposition oral proceedings that the appellant (patent proprietor) raised doubts regarding the identity of the person who received the box containing the "Tiger-tec WAK10" coated cutting tools and the related circumstances. These doubts were not shared by the opposition division which came to the conclusion that the circumstances of the public prior use had been sufficiently and credibly substantiated. However, these objections were reiterated by the appellant (patent proprietor) in their statement of grounds of appeal. In view of the above circumstances of the opposition and appeal

proceedings, the Board concurs with the appellant (opponent) that as the amendment to the appeal case determined by the submission of the affidavit D71 was indeed occasioned by an argument that was (unsuccessfully) presented by appellant (patent proprietor) for the first time during the opposition oral proceedings and held in appeal, the submission of the affidavit D71 with the reply of the appellant (opponent) to the statement of grounds of appeal of the appellant (patent proprietor) represents a direct and timely appropriate reaction to the development of the opposition and appeal proceedings. Therefore, the Board does not see any reason to exercise the discretion conferred by Article 12(4) RPBA in version 2007, that in view of the transitional provisions of Article 25(2) RPBA 2020 applies to the present appeal, not to admit the affidavit D71 in the appeal proceedings.

- 1.15 The Board has no doubt regarding the credibility of the statements of Mr. Kim which are fully consistent with the information previously submitted by Mr. Na with the affidavit D26. The objection of the appellant (patent proprietor) that it was not plausible that Mr. Kim could correctly remember events which took place 16 years before the date of his declaration is merely based on allegation and, as such, cannot convince.
- 1.16 The statements of Mr. Kim credibly confirm the information provided in the affidavit D26 of Mr. Na regarding the date of reception of the box containing 10 "Tiger-tec WAK10" coated cutting tools, the fact that the tests referred to in the affidavit D26 have been carried out on two specimens taken from the box received on 7 July 2004, and that the cutting tools were stored under correct environmental conditions in order to maintain the mechanical properties of the

original product over the time. Also in view of the statements of Mr. Kim in the affidavit D71, the Board does not thus see any reason to deviate from the logical conclusion of the opposition division that the position of the appellant (patent proprietor) that it could not be excluded that different types of coated cutting tools have been tested instead of the "*Tiger-tec WAK10*" ones as a consequence of erroneous sorting and manipulating actions occurred at the Taegu-Tec R&D center, and that the reliability of the measurements could have been affected by uncorrect storage conditions was based on mere unsubstantiated and hence non-convincing allegations.

- 1.17 The appellant (patent proprietor) also pointed out that according to the set of photos included in the evidence D50, 4 specimens of the "*Tiger-tec WAK10*" coating cutting tools were missing from the box, whereas the tests described in the affidavit D26 had been conducted on only 2 specimens allegedly taken from the same box. In the appellant's (patent proprietor's) view this resulted in a further inconsistency and raised the question of what happened with the missing items. The appellant (patent proprietor) also complained that they did not have the opportunity to carry out counter-analyses on the same 2 samples of the "*Tiger-tec WAK10*" coated cutting tool examined by Mr. Na and Mr. Lee in order to verify and possibly confute the results disclosed in the affidavits. It was also alleged that it could not be excluded that the test conditions and parameters had been specially selected to lead to stress measurements falling within the scope of the independent claim 1. At a question of the Board, the appellant (patent proprietor) admitted that it would have been theoretically possible to purchase specimens of "*Tiger-tec WAK10*" coated cutting tools after

receiving the notice of opposition and to conduct own residual stress measurements in an attempt to verify and possibly confute the results presented by the appellant (opponent) in the affidavits filed in oppositions. The appellant (patent proprietor) however explained that the measurements could have been carried out only on "*Tiger-tec WAK10*" coated cutting tools produced longer after July 2004, i.e on specimens of the product with a composition and mechanical characteristics not necessarily identical to that of the specimens tested by Mr. Na and Mr. Lee whereby, irrespective of the results obtained, no indisputable conclusions could have been drawn.

1.18 Also these arguments are not convincing for the following reasons:

The Board, in accordance with the appellant (opponent), does not see why the circumstance that 4 and not only 2 coated cutting tools were missing from the box shown in D26 and D50 could be detrimental to the credibility of the statements of Mr. Na and Mr. Lee. It is plausible, as explained by the appellant (opponent), that further specimens of the "*Tiger-tec WAK10*" coated cutting tools initially contained in the box delivered on 7 July 2004 have been used to carry out further (destructive) tests and experiments.

1.19 The complaint of the appellant (patent proprietor) that they were not able to carry out counter-tests of the same specimens tested by Mr. Lee and Mr. Na is not justified either because, as confirmed by the appellant (opponent), no request in this sense was submitted by the appellant (patent proprietor) to the appellant (opponent) and the contrary has not been proven by the appellant (patent proprietor). The Board also observes

that the appellant (patent proprietor) did not make any attempt to purchase and counter-test specimens of "*Tiger-tec WAK10*" coated cutting tools which were available on the market at least as from the year 2004 in order to confute the results presented in the affidavits under discussion. The Board agrees with the appellant (patent proprietor) that even by doing so it would have not been possible to have the absolute certainty to test "*Tiger-tec WAK10*" coated cutting tools identical in composition and structure to the coated cutting tools tested in July 2004 by Mr. Na and Mr. Lee in view of potential changes in the composition and structure of the coating introduced by the manufacturer over the years. However, the Board is of the opinion that if the appellant (patent proprietor) was convinced that the claimed coated cutting tool was distinguishable from the "*Tiger-tec WAK10*" coated cutting tool, the results of counter-tests even if conducted on products manufactured after July 2004 could have represented an opportunity or at least a valid starting point to convincingly confute the results presented in the affidavit D26. This is especially true because major changes in the mechanical characteristics and compositions of the "*Tiger-tec WAK10*" coated cutting tools over the years (after 2004) were denied by the appellant (opponent) and the contrary was not convincingly demonstrated by the appellant (patent proprietor).

- 1.20 Therefore, the Board is of the opinion that the opposition division, without incurring in any logical error or disregarding any essential aspect, correctly assessed the credibility of the declarations presented by the appellant (opponent) and concluded that the objections of the appellant (patent proprietor) regarding the plausibility of the circumstances of the

reception, sorting, storing and testing of the "*Tiger-tec WAK10*" coated coating tools at the Taegu-Tec R&D center reported in particular in the affidavit D26 are based on mere unsubstantiated allegations which as such cannot convince.

Plausibility of the results of the residual stress measurements presented in the affidavits of Mr. Na (D26).

- 1.21 The appellant (patent proprietor) questioned also in the substance the technical plausibility of the tensile stress measurements presented in the affidavit D26.
- 1.22 Firstly it was criticized that D26 did not contain any information regarding the thickness and the structure of the coatings of the cutting inserts which were tested, this circumstance being detrimental to the correct evaluation of the results.
- 1.23 However, the Board is satisfied with the explanation of the appellant (opponent) according to which the tests and hence the statements in the declaration D26 were focused on the measurement of the residual compressive and tensile stresses in the respective layers. Since the structural features recited in claim 1 were limited to the indication of the material of the substrate and of the coatings which are also indicated in D26 and in the supplemental declaration D26a for the *Tiger-tec WAK10*" coated coating tools at stake no more detailed information was required.
- 1.24 The appellant (patent proprietor) pointed out that without considering a deviation of 10% arbitrary set by Mr. Na, only the second sample tested showed a residual tensile stress in the TiCN coating falling

within the range defined in independent claim 1 (i.e 5MPa to 300 MPa). The correctness of the results obtained was also contested in view of the fact that the real possibility to execute a precise measurement of the residual stresses was questioned by the appellant (opponent) itself in the context of their objection under Article 83 EPC.

1.25 However, as convincingly argued by the appellant (opponent), it is only required that a single specimen of a product which was available to the public before the relevant priority date falls within the scope of the protection afforded by an independent claim to render this product prejudicial to novelty within the meaning of Articles 52(1) and 54 EPC. This is the case of the sample N° 2. In any event and regarding the assumed and allegedly arbitrary deviation of 10%, the Board concurs with appellant (opponent) that considering a 10% error is an inherent practice when, as in the present case, no absolutely precise measuring method is available.

1.26 At the oral proceedings the appellant (patent proprietor) pointed out that the compressive residual stress measured in the α -Al₂O₃ coating of the "*Tiger-tec WAK10*" coated cutting tool referred to on page 16 of document D67 and represented in the chart in Figure 18 was much higher than the corresponding compressive stress measured by Mr. Lee in the same coating. The appellant (patent proprietor) further observed that the same considerations applied to the information provided in document D24, paragraph [0028] in combination with Table 2 showing that, contrary to the information presented in D26, also compressive residual stress was present in the TiCN coating of a "*Tiger-tec WAK10*" coated cutting tool, and that the compressive residual

stress in the α -Al₂O₃ coating was again much higher than the corresponding stress measured by Mr. Na. The appellant (patent proprietor) concluded that since these results were not in line with the results presented in the affidavit D26, the plausibility of the measurement results provided by Mr. Na and accepted by the opposition division was highly questionable.

1.27 Irrespective of the admissibility issue raised against this allegedly new line of arguments, the appellant (opponent) convincingly observed that the results in chart Figure 18 of D67 when related to the penetration depth, are in line with those of the affidavit D26, and this because, contrary to the measurements reported by Mr. Na, the measurements of D67 are expressed in terms of average values. Also the arguments based on D24 cannot convincingly question the plausibility of the results reported by Mr. Na because, as put forward by the appellant (opponent), the measurements in D24 have been obtained under specific conditions and a direct comparison with the measurements of Mr. Na does not make sense.

1.28 In view of all the above the Board cannot find any flaw, inconsistency, logic error or omission of relevant aspects in the reasoning which led the opposition division to conclude that a coated cutting tool type "*Tiger-tec WAK10*" was available to the public before the priority date of the contested patent, whereby this piece of prior art was correctly considered to represent a state of the art according to Article 54(2) EPC. Furthermore, as also correctly concluded by the opposition division, the results of the residual stress measurements and the analysis of the substrate of this known coated cutting tool as presented in the affidavits D26 and D26a of Mr. Lee

respectively are considered plausible. As a consequence of these findings, the taking of evidence in the form of a hearing of the witnesses Mr. Na and Mr. Lee offered by the appellant (opponent) was not required.

Main Request and Auxiliary Request 1

Novelty: Article 52(1) and 54 EPC

2. The subject-matter of independent claim 1 of the main request and the auxiliary request 1 does not meet the requirements of Articles 52(1) and 54 EPC as correctly assessed by the opposition division.
- 2.1 As it results from the credible and consistent statements presented in the affidavits D26 and D26a, the "*Tiger-tec WAK10*" coated cutting tool comprises, as the coated cutting tool recited in claim 1 of the main request, a substrate of cemented carbide (see affidavit D26a), a first coating composed of TiCN and a second coating composed of $\alpha\text{-Al}_2\text{O}_3$ with the first coating being positioned between the substrate and the second coating (see affidavit D26). Furthermore, according to the results of the residual stress analyses carried out on the the sample Nr. 2 of the "*Tiger-tec WAK10*" coated cutting tool reported in the affidavit D26, the first and second coatings show a residual tensile stress S1 and a residual compressive stress S2 respectively which satisfy the equation (1) recited in claim 1, and this with a residual tensile stress S1 in the first coating laying within the claimed range of 5 MPa to 300MPa.
- 2.2 Compared to claim 1 of the main request, the equation (1) in claim 1 of the auxiliary request has been modified to read:

$$"500 \text{ MPa} \leq |S2 - S1| \leq 3000 \text{ MPa}"$$

2.3 At the oral proceedings the parties referred in respect of lack of novelty of the auxiliary request 1 to the arguments provided in writing and did not make any further submission. The Board has thus no reason to deviate from its preliminary assessment of novelty of the subject-matter of claim 1 according to the auxiliary request 1 as set out in the communication according to Article 15(1) RPBA and herewith maintains that the amended equation is still satisfied by the value of the residual tensile and compressive stresses measured in the "*Tiger-tec WAK10*" coated cutting tool.

2.4 The subject-matter of claim 1 according to the main and to the auxiliary request 1 thus lacks novelty over the public prior use, whereby irrespective of the further issues raised by the appellant (opponent) these requests are not allowable as correctly stated by the opposition division.

Auxiliary request 2

3. The auxiliary request 2 corresponds to the patent in the version considered allowable by the opposition division. The appeal of the appellant (opponent) is directed to this interlocutory decision of the first instance department.

APPEAL OF THE OPPONENT - PATENT AS MAINTAINED

4. Compared to claim 1 of the main request claim 1 of the patent as maintained by the opposition division contains the following additional features:

(H) "a third coating other than the first and second coatings and the third coating is between the first coating and the second coating for improving the adhesion between the first coating and the second coating" and

(I) "the first coating has a columnar structure with an aspect ratio of 7 to 200 and a crystal structure with an average grain diameter of 0.05 μm to 1.5 μm ."

Novelty: Articles 52(1) and 54 EPC

5. Contrary to the assessment of the opposition division the Board is of the opinion that the subject-matter of independent claim 1 of the patent as maintained lacks novelty within the meaning of Articles 52(1) and 54 EPC over the public prior use.

5.1 To come to its conclusion, the opposition division held that while the results of the electron beam microscopy investigation conducted by Mr. Lee on a specimen of the "Tiger-tec WAK10" coated cutting tool and reported in the affidavit D54 clearly indicated the presence of a columnar structure in the first coating with an aspect ratio and a crystal structure within the range recited in claim 1, it was not possible to directly and unambiguously derive the presence of a third coating interposed between the first and second coatings as required by feature (H). The opposition division followed indeed the interpretation of the appellant (patent proprietor) that the alleged 3rd "bonding layer" visible in the microscope images attached to the declaration D54 was in reality a mere fuzzy interphase observable between the TiCN and $\alpha\text{-Al}_2\text{O}_3$ coatings in the SEM cross section picture. The opposition division considered that this fuzzy interphase was not

necessarily due to the presence of a distinguished and purposively deposited third coating, but rather the result of a mere interphase phenomenon at the interface between the first and second coatings.

- 5.2 This interpretation of the information contained in the affidavit D54 was contested by the appellant (opponent) that submitted with their statement of grounds of appeal new evidence D57 to D59 in support of their view that, contrary to the assessment of the opposition division, the "*Tiger-tec WAK10*" also comprised a third and well distinguishable individual coating.

Admissibility of evidence D57, 58 and 59

- 5.3 The appellant (patent proprietor) contested the admissibility of these new documents with the reason that since a third coating was already claimed in independent claim 1 of the original auxiliary request 2 filed two months before the oral proceedings in reaction to the preliminary opinion of the opposition division, the new piece of evidence should and could have been filed during the first instance proceedings.
- 5.4 The Board observes that the appellant (opponent) became aware for the first time at the opposition oral proceedings that the affidavit D54 was considered insufficient to demonstrate that the "*Tiger-tec WAK10*" coated cutting tool comprised a third coating within the meaning of claim 1 as maintained. In view of this circumstance the Board is of the opinion that the submission of evidence D57 to D59 for the first time in appeal was occasioned by the unfavorable and not fully predictable interpretation of the opposition division of the statement in the affidavit D54, point 3 reading "*My microscopic measurement confirms that there is a*

bonding layer between the TiCN and α -Al₂O₃-A203 layers of the test specimen", and hence that the late filing of these new pieces of evidence was not the result of negligence. Furthermore, when assessing the information contained in D54, the opposition division did not consider it useful to hear Mr. Lee as a witness in order to clarify the true nature of the *"third bonding layer"* described in D54, although this opportunity had been offered by the opponent. In view of all above the Board is convinced that the fact that new pieces of evidence D57 to D59 were not filed during the first instance proceedings was due to developments occurred for the first time at the opposition oral proceedings which justify the reaction of the appellant (opponent) and the submission of new evidence with the statement of grounds of appeal in order to support their position in the appeal proceedings.

- 5.5 In view of the above the Board does not see any reason to exercise the discretion provided by Article 12(4) 2007 to disregard evidence D57 to D59 which are thus part of these appeal proceedings.
- 5.6 The appellant (patent proprietor) maintained that when reading evidence D57 the person skilled in the art could not exclude, despite the use of the term *"coating"*, that the alleged third coating was in fact an artefact resulting from diffusion phenomena taking place at the interface between the first and second coating. They thus concluded that it could not be directly and unambiguously derived that the *"Tiger-tec WAK10"* coated cutting tool comprised an additional third coating for improving the adhesion between the first and second coatings as required by claim 1.

5.7 The Board is not convinced and concurs with the interpretation of the appellant (opponent) for the following reasons:

As it can be better appreciated from the enlarged TEM representation D59-3 included in the evidence D59, the layer visible between the first and second coating has a clearly different grain structure compared to the adjacent layers. Contrary to the appellant's (patent proprietor's) assumption, the person skilled in the art understands that this different grain structure must have been caused by a change in the deposition conditions which in turn indicates that an additional coating is deposited. Also the fact underlined by the appellant (opponent) that no smooth gradient between the first and the second coating can be appreciated clearly speaks for a purposive provision of an additional third distinguished coating within the meaning of claim 1 as maintained, whereby its subject-matter also lacks novelty over the public prior use "*Tiger-tec WAK10*".

AUXILIARY REQUESTS 3 and 4

Novelty: Articles 52(1) and 54 EPC

6. The parties at the oral proceedings referred to the arguments provided in writing in respect of these auxiliary requests and did not make any further submissions. The Board has thus no reason to deviate from its preliminary assessment of novelty as set out in the communication according to Article 15(1) RPBA which is herewith confirmed and reads as follows:

6.1 Claim 1 of the auxiliary request 3 has been amended by introducing the term "*further*" in feature (H) in order

to overcome an objection raised by the appellant (opponent) under Article 123(2) EPC. Since this amendment does not further limit the subject-matter of the claim 1, it cannot restore novelty over the public prior use.

6.2 Claim 1 of the auxiliary request 4 corresponds to claim 1 of the auxiliary request 3 and includes the further limitation that the material of the third coating is selected among TiN, Tic, TiCO, TiBN, ZrCN, TiZrCN, AlN, AlON, or TiAlN. However, according to evidence D58 and D59, TiN is one of the materials detected in the third coating of the "*Tiger-tec WAK10*" coated cutting tool by Mr. Lee (see point 7. of the affidavit D58), whereby also the subject-matter of claim 1 of the auxiliary request 4 lacks novelty over the public prior use.

6.3 It follows that irrespective of the further issues raised by the appellant (opponent) the auxiliary requests 3 and 4 are not allowable.

AUXILIARY REQUEST 5

7. The auxiliary request 5 is a new request based on the auxiliary request 4 in which the material of the third coating is selected among "*ZrCN, TiZrCN, AlN, AlON, or TiAlN*" only.

Admissibility

8. The appellant (patent proprietor) explained that this new request was filed as a reaction to the introduction of the new evidence D57 to D59 by the appellant (opponent) to demonstrate that the "*Tiger-tec WAK10*" coated cutting tool comprised a third coating according to claim 1. The appellant (opponent) did not object to

the admittance of this request and the Board does not see any reason not to admit it in the appeal proceedings.

Articles 83, 84 and 123(2) EPC

9. The auxiliary request 5 meets the requirements of Articles 83, 84 and 123(2) EPC.

9.1 In respect of these objections the parties at the oral proceedings either explicitly referred to their written submissions or essentially reiterated orally the same arguments. The Board sees no reason to deviate from its preliminary assessment of these issues as set out in the communication according to Article 15(1) RPBA which is herewith maintained and reads as follows:

Article 83 EPC

9.2 The objections raised under Article 83 EPC against the main request and the higher-ranking auxiliary requests are extended to the auxiliary request 5.

Enabling of feature (H)

9.3 The appellant (opponent) argued that the patent specification did not provide the person skilled in the art with sufficient information in order to enable feature (H) of claim 1 without undue burden.

9.4 The Board does not agree and concurs with the appellant (patent proprietor) that paragraph [0029] of the patent specification suggests a list of materials suitable for embodying a third coating according to the contested patent. Regarding the further objection that the patent specification fails to demonstrate that an improved

adhesion between the first and second coating is effectively achieved in the whole range of the protection covered by the patent, the Board concurs with the appellant (patent proprietor) that when assessing conformity with Article 83 EPC the burden of proof lies with the appellant (opponent) which however has not substantiated their allegations. In this respect, the Board also shares the view of the opposition division that the technical effect recited in claim 1 and allegedly determined by the provision of a third coating made of one of the materials listed in paragraph [0029], i.e improving the adhesion between the first coating and the second coating, is technically plausible, and that the contrary has not been convincingly demonstrated by the appellant (opponent).

Enabling features (E), (F') and (G)

9.5 Based on the results of tests carried out according to the coating treatment disclosed in paragraph [0067] of the contested patent and represented in table 1 of the affidavit D25, the opponent argued that D25 shows that, due to lack of information concerning the blasting conditions to be applied, undue and extensive experiments would be required in order to achieve a coated cutting tool showing the residual tensile and compressive stresses recited in independent claim 1.

9.6 Table 1 of the affidavit D25 shows indeed the results of 6 tests conducted under the conditions given in paragraph [0067] of the patent specification at different gun angles (45° and 90°) and under different blasting pressures (0.1, 0.2 or 0.3 MPa). Although it is true that the residual stress conditions required by claim 1 as maintained are fully met only under the

blasting conditions of test N°3 in Table 1 , the Board agrees with the appellant (patent proprietor) that the person skilled in the art would be able to deduce from the results of the 6 tests, without undue burden and experimentation efforts and based on common technical knowledge, how the missing parameters of the blasting process (blasting time, blasting angle and nozzle diameter) affect the results, and thus how they must be varied, adjusted to each other and combined in order to achieve the value for the $|S2 - S1|$ recited in claim 1. The Board thus shares the view of the appellant (patent proprietor) that also right in view of the affidavit D25 the invention can be carried out without undue burden on the basis of the information provided in the patent specification, and in particular in paragraph [0067].

Features (F') and (H)

- 9.7 The appellant (opponent) argued that the "*sin² Ψ method*" which according to the contested patent could be adopted for measuring the tensile and compressive residual stresses $S1$ and $S2$ in the coatings was actually not suitable for stress measurements in materials with a step residual stress gradient as it was allegedly the case of the materials of the coatings if they had to satisfy features (F') and (G). The appellant (opponent) supported this allegation by referring to common general knowledge demonstrated for example by document D2. In the appellant's (opponent's) view, the use of an unsuitable/unreliable measurement method would put into question all the numerical measurements of residual tensile and compressive stress resulting from the affidavits for which this method was adopted. The appellant (opponent) concluded that in absence of a suitable measurement method the person

skilled in the art was thus unable to determine, without undue burden, whether they were working within the range of the patent and whether the alleged technical effect was in fact achieved in correspondence of the claimed range.

9.8 The Board does not agree for the following reasons:

9.9 The appellant (patent proprietor) put pertinently forward that, as it resulted from the affidavit D26 submitted by the appellant (opponent) in order to demonstrate lack of novelty of the subject-matter of claim 1 of the previous requests, Mr. Na was perfectly able to measure the actual residual stress in the coatings and to assess the margin of error inherent to the "*sin² Ψ method*" applied in the tests (see points 7. to 9. of the affidavit). The appellant (patent proprietor) also pointed out that these measurements resulted, as it should be expected, in almost perfectly linear strain curves. This is an indication that the "*sin² Ψ method*" was sufficiently reliable, at least in the technical context of the patent, provided that appropriate margins of error were taken into account. Furthermore, the reasoning of the appellant (opponent) who on one hand considered that the measurements referred to by Mr. Na using the "*sin² Ψ method*" was reliable enough to conclude that claim 1 lacked novelty over the public prior use and, on the other hand, unreliable when discussing compliance with the requirements of Article 83 EPC, appears contradictory and therefore not convincing.

9.10 Having regard to the background provided by document D2 cited by the appellant (opponent) regarding the measurement of residual stresses in the layer of coating material, the Board shares the view of the

appellant (patent proprietor) that this document merely describes some theoretical approaches to this problem, but that the person skilled in the art, at least in view of the accuracy of the tensile and compressive stress measurement required in the context of the patent, would definitively consider that a quick stress analysis approach on the basis of the "*sin² Ψ method*" is well suitable for achieving sufficiently reliable information on the residual stress gradients. This is confirmed for example by D2, page 248 second paragraph. In conclusion the Board concurs with the opposition division and the appellant (patent proprietor) that the use of the suggested "*sin² Ψ method*" does not cause any difficulties to the person skilled in the art carrying out the invention as defined in claim 1.

Article 84 EPC

- 9.11 Feature (I) of claim 1 of the auxiliary request 5 incorporates a feature of dependent claim 2 as granted (dependent claim 3 as filed), wherein however the value of the aspect ratio ≥ 3 recited in the granted dependent claim is replaced by a range of 7 to 200 introduced from the description.
- 9.12 The appellant (opponent) submitted that the values measured for the aspect ratio are closely dependent on the measurement method adopted. It was held that the incorporation of numerical values of the aspect ratio from the description into the claim, i.e. the new range 7 to 200, without specifying the measurement method led to a lack of clarity pursuant to Article 84 EPC. It was pointed out that contrary to the scenarios underlying the decision G3/14 referred to by the opposition division, the examining division did not examine whether the new range 7 to 200 for the aspect ratio now

introduced from the description in claim 1 of the auxiliary request 5 to replace the the broader interval for the aspect ratio, i.e. ≥ 3 , recited in dependent claim 3 as filed without specifying the measurement method adopted, was in conformity with requirements of the 84 EPC, whereby claim 1 of the auxiliary request 5 was open for clarity objections.

9.13 The Board cannot follow the arguments of the appellant (opponent):

In claim 2 as granted a range ≥ 3 for the aspect ratio of the columnar structure of the first coating was already recited without specifying any measurement method. The contested amendment in claim 1 of the auxiliary request 5 consists in the introduction of the features of said granted claim 2 and in replacing the originally claimed aspect ratio ≥ 3 by an aspect ratio ranging between 7 and 200. As correctly observed by the opposition division, this amendment does not impact on or modify the nature of the alleged clarity issue which was present in claim 2 as granted and which was linked only to the missing indication of the aspect ratio measurement method adopted. The modification of the aspect ratio now introduced in claim 1 of the auxiliary request 5 does thus not cause any (alleged) further lack of clarity. The conclusions of the decision G3/14 thus applies to the present case, whereby claim 1 as maintained is not open for a clarity objection under Article 84 EPC.

Article 123(2) EPC

9.14 The appellant (opponent) objected that to arrive at the combination now defined in claim 1, the skilled person had to make several selections, namely they had to

select: (1) at least one of the three relative positions and functionalities of the third coating suggested in paragraphs [0027] and [0029]; (2) at least one of the suggested ranges of the aspect ratio disclosed in paragraph [0037]; and (3) only some material for building up the third coating among the larger list of materials mentioned in paragraph [0028]. It was concluded that the fact that selections from several lists are required to arrive at the combination of features of claim 1 demonstrated that this combination was not directly and unambiguously disclosed in the application as originally filed.

9.15 The Board does not agree for the following reasons:

According to established case law of the Boards of Appeal, the relevant criteria to be applied for assessing whether an amendment complies with the provisions of Article 123(2) EPC is the so called "*gold standard*" requiring that it must be established whether the person skilled in the art would have directly and unambiguously derived the subject-matter resulting from the amendment on the basis of all the information originally available. The Board shares the view of the appellant (patent proprietor) that the person skilled in the art would directly and unambiguously derive from the specification that the contested patent is directed to one first basic embodiment of the coated cutting tool (see for example wording of paragraph [0019], "*an embodiment is described below*") which however can be further implemented according to any of the preferred features/ranges and third coating materials described from paragraph [0021] onwards. In other words, there is no reason for the person skilled in art to assume for example that the introduction of a third coating (feature (H)) does not apply to the specific embodiment

now defined in claim 1. Furthermore, the Board shares the view of the appellant (patent proprietor) that the person skilled in the art, in absence of any evident technical incompatibility, would combine a third coating made of any specific selection of materials extracted from all the alternatives suggested in paragraph [0028] with any of the preferred ranges suggested for the tensile stress S_1 (see paragraph [0040]), for the difference $|S_2 - S_1|$ (see paragraph [0049]) and for the aspect ratio (see paragraph [0037]). In conclusion the Board, in agreement with the appellant (patent proprietor), is convinced that the person skilled in the art would directly and unambiguously derive from the application as originally filed the specific combination of preferred parameters and materials now presented in claim 1 of the auxiliary request 5.

9.16 The appellant (opponent) also argued that the introduction of the feature that the third coating is located *"between the first coating and the second coating"* without specifying that the third coating is formed *"in one layer or two or more layers"* resulted in an unallowable intermediate generalisation of the information disclosed in paragraph [0029] of the originally filed application.

9.17 However, contrary to this interpretation, a limitation of claim 1 to a third coating formed *"in one layer or two or more layers"* is not required because this solution is explicitly presented as optional in the first sentence of the same paragraph [0029] (see expression *"can be formed"*) and it is also not compulsorily linked to the position of the third layer specified in the second sentence of paragraph [0029] and now also in claim 1. In any event, as correctly

stated by the appellant (patent proprietor), paragraph [0029] presents, in alternative, the possibilities to have the third coating formed "*in one layer or two or more layers*", whereby the wording of claim 1 generally referring to "*a third coating*" at least covers the presence of a coating with at least one layer, i.e. one of the alternatives disclosed in paragraph [0029]. For these reasons no unallowable intermediate generalisation contrary to Article 123(2) EPC arises.

9.18 Regarding feature (I), the opponent argued that the range of the aspect ratio of 7 to 200 introduced in claim 1 and supported by paragraph [0037] of the description as filed was disclosed only in association with the particular method of measurement of the aspect ratio disclosed in previous paragraph [0036]. The omission of the indication of the specific method of measurement in the claim allegedly resulted in an unallowable intermediate generalisation infringing Article 123(2) EPC.

9.19 Also this argument is not convincing for the following reasons:

As explained by the opposition division and put forward by the appellant (patent proprietor), claim 3 of the application as filed disclosed an aspect ratio ≥ 3 in combination with the same range of the grain diameter now indicated in feature (I) of claim 1 of the auxiliary request 5 and this without any reference to a specific measurement method. The same applies to the disclosure of the preferred value of the aspect ratio now introduced in claim 1 (i.e aspect ratio 7 to 200) disclosed in the last lines of paragraph [37] of the application as filed. Therefore, no inextricable link between the claimed range of the aspect ratio and the

method adopted for its measurement is derivable from the specification as filed so that the omission of the method of measure does not cause any unallowable intermediate generalisation.

Inventive Step: Articles 52(1) and 56 EPC

10. The subject-matter of independent claim 1 of the auxiliary request 5 is novel and not rendered obvious by the prior art within the meaning of Article 52(1), 54 and 56 EPC respectively.

10.1 Novelty is not contested. Furthermore, there is agreement that the the public prior use of the coated cutting tool "*Tiger-tec WAK10*" represents the closest prior art from which the subject-matter of independent claim 1 of the auxiliary request 5 differs in that the third coating is made of:

"ZrCN, TiZrCN, AlN, AlON, or TiAlN".

10.2 The appellant (patent proprietor) put forward that the provision of a third layer consisting of one of the materials now recited in claim 1 in combination with the specific aspect ratio and crystal structure according to feature (I) achieved an optimal prevention of crack propagation which usually originated from the columnar structure of the first coating, and hence an enhanced wear resistance. The appellant (patent proprietor) further argued that the person skilled in the art had no motivation to replace the material of the third coating of the very successful "*Tiger-tec WAK10*" coated cutting tool by one of the materials recited in claim 1.

10.3 The appellant (opponent) replied that the synergistic effect alleged by the appellant (patent proprietor) was not mentioned at all in the contested patent, and even less in relationship with the provision of a third coating. It was thus argued that an objective technical problem could only be seen in providing an alternative coated cutting tool. Finally it was alleged that replacing the third coating of the "*Tiger-tec WAK10*" coated cutting tools by a third coating made of another material selected among materials commonly used as bonding layer represented an arbitrary choice that could not support any inventive step contribution over the prior art taking also into account that the appellant (patent proprietor) failed to demonstrate that the specific selection of materials claimed achieved any unforeseeable technical effect.

10.4 The Board agrees with the appellant (opponent) that the solution recited in claim 1 defines an alternative to the known "*Tiger-tec WAK10*" coated cutting tool because the advantageous technical effect claimed by the appellant (patent proprietor) is neither mentioned in the contested patent nor was this technical effect demonstrated by the appellant (patent proprietor). However, the Board considers that the elevate number of parameters at stake and the complexity of their interactions which, as it is well known, characterizes this kind of composite products, suggests to the person skilled in the art to apply extreme caution when considering to replace a component of a very well working composite material as the coatings of the "*Tiger-tec WAK10*" cutting tool with a different one. Therefore, the Board agrees with the appellant (patent proprietor) that the person skilled in the art has no motivation to replace the material of the third coating of the public prior use cutting tool with the materials

suggested in claim 1, whereby the subject-matter of claim 1 results in a non-obvious alternative to the solution known from the prior art.

Adaptation of the description

11. The parties agreed that it was appropriate to deal in writing with the question of how to adapt the description.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent on the basis of auxiliary request 5 as submitted with the letter dated 22 April 2020 and a description to be adapted.

The Registrar:

The Chairman:



A. Voyé

G. Pricolo

Decision electronically authenticated