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**Datasheet for the decision
of 16 November 2012**

Case Number: T 1544/08 - 3.5.02

Application Number: 00927183.4

Publication Number: 1183912

IPC: H05B 3/86, H05B 3/84

Language of the proceedings: EN

Title of invention:

Automotive glazing panel having an electrically heatable solar control coating layer

Patentee:

AGC Flat Glass Europe SA

Opponent:

Saint-Gobain Glass France

Headword:

-

Relevant legal provisions:

EPC Art. 54(2), 56, 100(b), 123(2)

EPC R. 106

RPBA Art. 12(2), 13(1)(3)

Keyword:

"Admissibility of late-filed documents - no"

"Sufficiency of disclosure - yes"

"Added subject-matter (main request) - no, after amendment"

"Novelty (main request) - yes"

"Inventive step (main request) - yes"

"Rule 106 EPC objections - one addressed, one dismissed"

Decisions cited:

-

Catchword:

1. In some circumstances it can be appropriate to respond to an objection raised under Rule 106 EPC during oral proceedings before a board of appeal by (re-)opening the discussion of the issue in question (see point 10.2 of the reasons).

2. The wish to avoid giving commercially valuable information to competitors is not necessarily a valid reason for not complying with the requirement of Article 12(2) RPBA (see point 2.2 of the reasons).

3. If drawings are originally filed in colour at the date of filing of an application, then the technical content of these original colour drawings should be determined taking into account the available evidence when establishing the content of the application as filed for the purpose of examining compliance of amendments with Article 123(2) EPC (see points 4.4 and 4.5 of the reasons).



Case Number: T 1544/08 - 3.5.02

DECISION
of the Technical Board of Appeal 3.5.02
of 16 November 2012

Appellant: Saint-Gobain Glass France
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Representative: Jamet, Vincent
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Respondent: AGC Flat Glass Europe SA
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Representative: Müller-Boré & Partner
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
3 June 2008 concerning maintenance of the
European patent No. 1183912 in amended form.

Composition of the Board:

Chairman: M. Ruggiu
Members: R. Lord
W. Ungler

Summary of Facts and Submissions

I. This is an appeal of the opponent against the interlocutory decision of the opposition division concerning the European patent No. 1 183 912 that, account being taken of the amendments made according to the patent proprietor's main request as defined during the oral proceedings on 11th April 2008, the patent and the invention to which it related met the requirements of the EPC.

II. The following documents of the state of the art played a role in the appeal proceedings:

A1: US 5 898 407 A;

A2: US 5 012 255 A; and

A3: EP 0 378 917 A1.

The following documents filed by the parties are also referred to in this decision:

from the appellant:

D11(a): PCT Newsletter, March 2001, pages 7 and 8;

D12: Copy of presentation entitled "Study the effects of extra busbar around decoated area on the homogeneity of heating power in ws with kappa-42V heating system";

from the respondent:

D11(r): Cover letter of international application on which patent in suit is based, dated 27th April 2000.

III. In the statement of grounds of appeal dated 8th October 2008 the appellant requested *inter alia* that the document A3 be admitted into the proceedings.

With a letter dated 18th March 2009 the respondent filed sets of claims according to auxiliary requests 1 to 5. In that letter the respondent also requested *inter alia* that the document A3 not be admitted into the proceedings.

With a letter dated 14th September 2012 the appellant filed the document D12 and requested that it be admitted into the proceedings.

In a letter dated 16th October 2012 the respondent announced his intention to file sixth and seventh auxiliary requests, and also requested that the document D12 not be admitted into the proceedings.

Oral proceedings before the board took place on 16th November 2012.

The appellant (opponent) requested that the decision under appeal be set aside and that the European patent No. 1 183 912 be revoked.

The respondent (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained in amended form on the basis of the main request (as amended during oral proceedings) in the following version:

Description

Pages 3 and 4 of the patent specification
Pages 1a and 2 filed during oral proceedings on
11th April 2008

Claims

Numbers 1 to 13 filed during oral proceedings on
16th November 2012

Drawings

Figures 2 to 4 of the patent specification
Figure 1 received on 11th March 2008 with letter of
11th March 2008

or, on the basis of the auxiliary requests 1 to 5
defined in the letters of 18th March 2009 and
16th October 2012.

The board decided not to admit documents A3 and D12
into the proceedings.

IV. The independent claims 1, 2 and 12 of the respondent's
main request read as follows:

"1. An automotive glazing panel having an electrically
heatable solar control coating layer, spaced first and
second bus bars adapted to relay electrical power to
the coating layer and a data transmission window
positioned at least partially in contact with the
heatable solar control coating layer characterised in
that at least a portion of the periphery of the data
transmission window is bounded by an electrically
conductive band having an electrical resistance of less
than 0.35 ohms per square.

2. An automotive glazing panel having an electrically heatable solar control coating layer, spaced first and second bus bars adapted to relay electrical power to the coating layer and a data transmission window positioned at least partially in contact with the heatable solar control coating layer characterised in that at least a portion of the periphery of the data transmission window is bounded by an electrically conductive band having an electrical resistance measured in ohms per square significantly less than the electrical resistance measured in ohms per square of the heatable solar control coating layer.

12. A method of reducing the phenomena of hot spots in glazing panel being provided with an electrically heatable solar control coating layer and a data transmission window positioned at least partially in contact with the heatable solar control coating layer, comprising arranging an electrically conducting band bounding at least a portion of the periphery of the data transmission window, the electrically conductive band having an electrical resistance measured in ohms per square which is:

- (a) less than 0.35; or which is
- (b) significantly less than the electrical resistance measured in ohms per square of the heatable solar control coating layer."

Claim 3 is dependent on claim 1, claims 4 to 11 are dependent on claims 1 and 2, and claim 13 is dependent on claim 12.

V. The appellant essentially argued as follows:

Since the element 11a of document A3 could be considered as an electrically conductive band within the meaning of the present claims, and since that document was cited in the patent in suit, the document was *prima facie* relevant, and should therefore be admitted into the procedure.

The document D12 should also be admitted into the procedure, because although it had been produced on 18th January 2010, its filing had been delayed because of concerns that it might have provided technical information of use to competitors. In the meantime these had become less significant, in particular following the commercialisation of the appellant's product under the name "ClimaCoat" from December 2011.

The patent in suit provided no clear teaching regarding the width of the conductive band, so that even in the arrangements depicted in Figs. 3 and 4 of the patent the skilled person was not presented with all the information necessary to carry out the invention. This deficiency was more apparent when considering that the claims did not define the position of the data transmission window within the coating layer. Moreover the claims also covered arrangements in which the conductive band did not extend around the entire periphery of the data transmission window, for which the patent contained no teaching concerning either the extent or position of that band with respect to the window. The claims of the patent were indeed of such a broad scope that they included arrangements in which the data transmission window was not between the bus

bars, since even areas outside the bus bars would be heated by conduction. For these arrangements the technical problem described in the patent would not even arise. The claims also covered arrangements in which the coating layer and conductive band were not in contact with one another, for which it was not apparent how the desired effects could be achieved. Therefore the patent did not meet the requirement of sufficiency of disclosure of Articles 83 and 100(b) EPC.

Comparison of Figs. 2 and 3 of the patent in suit showed that the example of Fig. 3 did not solve the technical problem as indicated in paragraph [0008] of the patent, because the hot spots in that example were hotter than those shown in Fig. 2. Moreover it was clear from Fig. 3 that in that example each of the three different types of perturbation listed in paragraph [0008] was still present. Since this example fell within the terms of the independent claims of the patent, but did not solve the technical problem indicated in the patent, this confirmed that the requirement of sufficiency of disclosure was not satisfied over the full scope of the claims.

The insufficiency of the disclosure was also illustrated by the absence of any explanation for the major differences between the temperature profiles of the examples of Figs. 3 and 4.

The figures of the granted patent introduced technical teaching beyond the content of the application as originally filed, thus contravening Article 123(2) EPC. Contrary to what had been stated by the respondent, the originally filed figures could not have been in colour,

because this was forbidden by both the PCT and the EPC, as shown by their submission D11(a) and by the Guidelines for Examination in the EPO, sections A-X, 1.2 and 7.1. That the original figures were black and white was confirmed by the objection raised by the examiner that they were "too dark". The reference in the application to colour could have related to shades of grey in such figures. The respondent's arguments concerning the identity of the colour figures filed with the letters of 31st March 2006 and 18th March 2009 were put in doubt by the differences between them, in particular the date stamps and file numbers on the latter.

Even if the figures had been originally filed in colour, it would not have been appropriate to consider these as the originally filed documents for the assessment of conformity with Article 123(2) EPC, because third parties had no access to any information relating to those figures, either concerning their existence or their content, since the European Patent Register contained only the figures as in the international publication. Therefore in order to safeguard third party rights these black and white figures should be taken as being those originally filed.

The different copies of the figures available were such that it was not possible to determine what was the content of those originally filed figures, as could be seen by comparing the different number of distinct colours which could be identified in different parts of the two sets of colour figures and the shades of grey which could be identified in the figures of the published application. The shading of the figures of

the granted patent resulted in them containing information which could not be derived from any of these available sets of figures, so that the figures of the patent as granted and as maintained by the opposition division contravened Article 123(2) EPC.

The opposition division made an error in allowing the correction of the scale of Fig. 1 under Rule 139 EPC.

The independent method claim 12 as granted and the amended claim 12 according to the respondent's main request had been amended in such a way that they defined a combination of features which was not disclosed in the original application. Specifically, they defined a combination of the features of the original independent method claim 11 with features of independent device claims 1 and 2. That combination had no basis in the original application, because the only disclosure there relating to the method, other than in the claims, was that of page 5, lines 17 to 21, which did not mention any of the features which had been introduced into claim 12. Therefore this claim of the respondent's main request contravened Article 123(2) EPC.

The opposition division was wrong in concluding that the claimed subject-matter was new with respect to the teaching of documents A1 and A2. With respect to A1, the statement at column 3, lines 13 to 16 relied upon by the division was not sufficient to establish that the "small conductive strip" was of the same material as the coating layer. With respect to A2, the "T-shaped structure" could be considered as corresponding to the claimed data transmission window, and either the "strip

conductor" 42 or the edges 43 and 44, which according to column 3, line 38, could function as supply busses, could be considered as corresponding to the claimed conductive band. Thus the subject-matter of at least claims 1 and 2 of the respondent's main request was not new with respect to either A1 or A2.

The appropriate starting point for the assessment of inventive step was the glazing panel depicted in Fig. 2 of the patent in suit, all elements of which were well known to the skilled person. Starting from this prior art, an obvious option would have been to position the data transmission window directly adjacent to a portion of one of the bus bars, in which case that portion could be considered to correspond to the claimed conductive band. Given the broad scope of the claims as discussed previously, the technical problem indicated in the patent would not necessarily have been solved in such an arrangement, and indeed might not even have arisen. Therefore such an obvious arrangement would not have involved an inventive step according to Article 56 EPC.

VI. The arguments of the respondent which are relevant for this decision can be summarised as follows:

The document A3 should not be admitted into the procedure because the decision of the opposition division in this respect was correct.

The reasons given by the appellant for the delayed filing of the document D12 were of a purely commercial nature, and could therefore not represent a valid reason for not complying with the requirement of

Article 12(2) of the Rules of Procedure of the Boards of Appeal that the grounds of appeal should contain the appellant's complete case. It would in any case have been possible for the appellant to carry out the modelling in a manner unrelated to their product. Moreover the filing of these modelling results only two months before the oral proceedings before the board had not given the respondent sufficient time to carry out further modelling to confirm those results or to provide counter-evidence.

The claims should according to the case law of the boards of appeal be interpreted by a mind willing to understand, on which basis the skilled person would have understood that arrangements in which the data transmission window was not between the bus bars or in which the coating layer was not in contact with the conductive band were not covered by the claims. The skilled person would in particular not consider areas of the coating layer outside the bus bars to be electrically heatable. Within the resultant narrower scope of the claims the patent in suit provided the skilled person with sufficient teaching for him to be able to carry out the invention, because he would have understood the basic principle of using the band with higher conductivity to redistribute the current around the data transmission window, and on the basis of his common knowledge would have been able to apply that principle to arrangements other than those described in detail, such as those in which the window was at one side of the coating layer. Thus the requirement of sufficiency of disclosure was satisfied.

The appellant's arguments concerning the comparison of Figs. 2 and 3 were not justified, because the example of Fig. 3 did have reduced hot spots to the extent that they were smaller in area. Moreover that example was improved with respect to Fig. 2 in that the temperature uniformity over the important central area of the windscreen was improved. Since it was clear from paragraphs [0008] and [0012] of the patent that the technical problem concerned either reducing or eliminating the perturbations, the fact that the example of Fig. 3 did not completely eliminate them did not mean that it did not represent a solution of the stated technical problem. The appellant's arguments in this respect also did not take into account the statements in paragraph [0007] of the patent regarding the interpretation of the figures.

The originally filed figures were in colour, as indicated in the statement signed by Guy Farmer (who had signed the original application, as shown in the respondent's submission D11(r)) in the letter of 31st March 2006. Under both the PCT and the EPC the filing of colour drawings was not prohibited, it merely represented a formal deficiency which could be remedied on invitation. That this was the case was confirmed by the reference on page 2, lines 11 and 12 to the colours in Fig. 1, which the skilled person would not have understood as relating to shades of grey. As indicated in the letter of 31st March 2006, the figures enclosed with that letter were a copy of those originally filed, which as required by the PCT and indicated in D11(r) were filed in triplicate. The colour figures filed with the letter of 18th March 2009 had been provided by the EPO formalities officer, and according to information

given by the EPO were copies derived from the one of the three filed copies which had been forwarded from the PCT Receiving Office at the EPO to the International Search Authority at the EPO, the date stamped on them being the date of that forwarding, not the filing date.

The appellant's arguments concerning protection of third party rights were not valid, because Article 123(2) EPC was entirely clear that the assessment of added subject-matter had to be by comparison with the originally filed documents.

Comparison of the two sets of colour figures and the figures of the published international application indicated unambiguously that the set of figures filed with the letter of 31st March 2006 contained all of the information in each of the other two sets, and therefore that this set provided the best evidence of the content of the original drawings. With the exception of the scale of Fig. 1, the drawings of the patent as granted contained no information which could not be derived from that set of colour figures. The discrepancy in that scale was removed with the amendment to Fig. 1 filed during the procedure before the opposition division, so that the drawings as maintained by the opposition division did not contravene Article 123(2) EPC.

The skilled person would have understood from the application as a whole, and in particular from the wording of page 3, lines 7 to 15 and page 5, lines 17 to 19, that the application related to a single inventive concept, of which the three independent

claims represented different aspects. This was also apparent from the fact that this general discussion of the invention is followed from page 5, line 22 onwards by the detailed description of the embodiments, which the skilled person would have understood as relating to all of the different aspects. Therefore the combination of features from the different original independent claims did not result in the present claim 12 defining subject-matter beyond the content of the application as originally filed, so that the claim did not contravene Article 123(2) EPC.

Document A1 did not clearly teach that the resistance of the small conductive strip was either less than 0.35 ohms per square or significantly less than that of the remainder of the coating layer. As regards the "T-shaped structure" of A2, the vertical part of this, as depicted in Fig. 4a, could not be considered as corresponding to the data transmission window, because according to column 3, lines 32 and 33 it was covered by the "metallic insulating layer 47", and so could not have functioned as a data transmission window within the meaning of the claims. If the horizontal part were to be understood as corresponding to the data transmission window, then the strip conductor 42 would not correspond to the conductive band of the claims because it merely crossed the middle of that window, so could not be considered to bound at least a portion of it, as required by the claims.

The glazing panel depicted in Fig. 2 of the patent in suit could not be taken as the starting point for the assessment of inventive step, because it did not form part of the prior art according to Article 54(2) EPC.

Regardless of whether the individual elements of that panel might have been known to the skilled person, the appellant had provided no evidence that they were known in combination in the manner depicted in that figure. In the absence of such evidence the appellant's argument could not demonstrate the absence of an inventive step.

VII. During the course of the oral proceedings before the board the appellant raised two objections under Rule 106 EPC (see the hand-written annexes to the minutes of those oral proceedings).

The first of these related to the manner in which the board had concluded that a particular set of figures represented the most reliable evidence as to the content of the originally filed figures, and which were therefore to be used as the basis for the assessment of whether the figures of the patent in suit met the requirements of Article 123(2) EPC. In response to this objection the board reopened the discussion of this issue. At the conclusion of this further discussion, the board indicated that in its opinion the objection raised by the appellant in this respect had been overcome.

The second objection related to the fact that a decision had been reached on the question of sufficiency of disclosure (opposition ground under Article 100(b) EPC) before the identity and content of the figures as originally filed had been established (requirement of Article 123(2) EPC). The board dismissed this objection.

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of documents A3 and D12*
 - 2.1 In the decision under appeal the opposition division decided not to admit the document A3 into the procedure, this document having been filed by the appellant (then opponent) only in his letter of 10th March 2008 (in reply to the summons to oral proceedings).
 - 2.1.1 The reason for this decision was that the document was not *prima facie* relevant, in particular because the element 11a as depicted in Fig. 1 of that document was part of the bus bar 11, so could not be considered to correspond to the conductive band of the claims of the patent in suit, and because this had the consequence that the region between that part of the bus bar and the coating layer 15 could not be considered to correspond to the data transmission window of the claims of the patent in suit.
 - 2.1.2 During the appeal procedure the appellant has merely repeated that in his opinion the element 11a of A3 could be considered as a conductive band within the meaning of the patent, and that the document should be admitted into the procedure because it is *prima facie* relevant, in particular because it was cited in the patent in suit.
 - 2.1.3 The board does not consider that the fact that a document is mentioned in the patent in suit means that

it can automatically be considered to be *prima facie* relevant. Given that the remainder of the appellant's comments in this context are only repetitions of his submissions before the opposition division, the board sees no reason to go against the decision of the division not to admit document A3 into the procedure. Therefore the objections of lack of novelty and lack of inventive step raised by the appellant on the basis of this document during the procedure before the opposition division and maintained in the appeal procedure are of no relevance for the present decision.

2.2 With his letter of 14th September 2012 the appellant filed, in support of his objection under Article 100(b) EPC, modelling results to which he gave the document number D12. The respondent requested that this document not be admitted into the procedure.

2.2.1 In his letter of 14th September 2012 the appellant stated that the results presented in this document had been produced on 18th January 2010, but that they had not been filed at that stage of the procedure because of concerns that they might provide technical information which would have been of use to competitors. In the meantime these concerns had become less significant, in which respect the appellant referred to the commercialisation by them of a product under the name "ClimaCoat" from December 2011.

2.2.2 The board is of the opinion that a purely commercial consideration as indicated above cannot represent a valid reason for not complying with the requirement of Article 12(2) of the Rules of Procedure of the Boards of Appeal (RPBA) that the grounds of appeal should

contain the appellant's complete case. The board notes also that the filing of these modelling results only slightly more than two months before the oral proceedings, and not (for instance) sooner after the start of commercialisation of the appellant's product, gave the respondent little time to carry out modelling in response to these submissions. The board also agrees with the respondent that it should have been possible for the appellant to select parameters for the modelling which were unrelated to their product so as to avoid the competition issues. The board therefore considers it appropriate to make use of its discretion under Article 13(1) and (3) RPBA to not admit document D12 into the procedure.

3. *Sufficiency of disclosure - Article 100(b) EPC (Main request)*

3.1 The appellant has raised a number of objections under Article 100(b) EPC, as described in detail on pages 6 to 15 of the grounds of appeal. The board considers it appropriate for the purpose of this decision to divide these different objections into two groups, firstly those concerning the disclosure of the patent in relation to the broad scope of the claims, and secondly those relating specifically to the figures of the patent.

3.2 When considering the scope of the claims of the patent in suit, the board is of the opinion that it is initially necessary to establish the interpretation of certain terms within the claims, since this will exclude some of the possible interpretations alleged by the appellant.

3.2.1 Firstly, the appellant has argued that the data transmission window need not be between the bus bars (as illustrated for example on page 9 of the appeal grounds). The board considers that this interpretation is not consistent with the wording of the independent claims of the patent (in the form of the main request), which specify that the data transmission window be "*positioned at least partially in contact with the heatable solar control coating layer*". These claims define moreover that the heatable solar control coating layer is electrically heatable. The board interprets these definitions as specifying that the data transmission window must be positioned between the bus bars, since only in this region is the coating layer electrically heatable. The appellant has argued in this context that any area of the coating layer close to but outside the bus bars would in use be heated by conduction from the areas between the bus bars. The board is however of the opinion that the skilled person would not consider such regions to be electrically heatable, as required by the claims, and thus concludes that the claims only cover those arrangements in which the data transmission window is positioned between the bus bars.

3.2.2 Secondly, the appellant has argued that because the claims define only that the data transmission window is positioned "*at least partially in contact with the heatable solar control coating layer*", and that "*at least a portion of the periphery of the data transmission window*" is bounded by the electrically conductive band, they cover the case that the electrically conductive band and the heatable solar

control coating layer are not in physical contact with one another. The board considers however that the skilled person would not understand the claims in this way, because he would understand that the data transmission window is inherently a window in the coating layer, so that its boundaries are determined (entirely or mainly) by the edges of the coating layer. On this basis he would understand the definition that at least a portion of the periphery of the data transmission window is bounded by the electrically conductive band as meaning that the conductive band is positioned at a portion of the boundary of the data transmission window as defined by the edge of the coating layer, and is therefore in contact with that layer.

3.3 Given these two implicit limitations of the scope of the independent claims, the board considers that the disclosure of the patent in suit would be sufficient to enable the skilled person to carry out the claimed invention.

3.3.1 Considering firstly the position of the data transmission window with respect to the bus bars, the interpretation indicated in paragraph 3.2.1 above implies that the data transmission window must be in a position where it would lead to non-uniformity of heating and to hot spots, as discussed in the patent in suit. These effects would clearly be greater in the case in which the data transmission window is entirely surrounded by the coating layer, as in the examples of Figs. 2 to 4 of the patent, but the board considers that the skilled person would recognise that such effects would also arise, although probably to a lesser

degree, if the data transmission window was at one side of the coating layer so that it would not be completely surrounded by that layer.

3.3.2 Starting from this conclusion, and taking into account the interpretation of paragraph 3.2.2 above, the board considers that the skilled person would understand from the patent that the concept of the claimed invention is to arrange a band of material having higher conductivity than the coating layer in such a manner as to redistribute the current around the data transmission window in an appropriate manner. It would be clear to him from the teaching of the patent that the greatest redistribution effect would be achieved if the conductive band completely surrounds the data transmission window, as in the examples of Figs. 3 and 4, but that this need not be the case. Moreover, the board agrees with the respondent that the skilled person, making use of the teaching of the patent in combination with his general knowledge, would be able to select appropriate values for the width of the conductive band, for its resistance (in ohms per square), and in the case where it does not completely surround the data transmission window, for its length and position around the window. In particular, it would be clear to him from general physical principles that if an experiment demonstrated that the redistribution effect with a certain selection of these parameters was insufficient, then he would need to try one or more of increasing the width of the band, decreasing its resistance, or increasing its length around the window, so that the absence of any specific teaching in this respect in the patent does not imply that its disclosure is insufficient.

3.4 The appellant has additionally argued that the disclosure of the patent is insufficient within the meaning of Article 100(b) EPC, because the example of Fig. 3 of the patent does not solve the problem defined in the patent, despite the fact that this example makes use of the preferred arrangement in which the data transmission window is completely surrounded by the coating layer and the conductive band bounds the entire periphery of the window, and that the resistance of the conductive band is explicitly below the limit defined in claim 1, and implicitly below that defined in claim 2.

3.4.1 This argument is based primarily on the observation that from a comparison of Figs. 2 and 3 of the patent it is apparent that the hot spots 32 and 33 in the example of Fig. 3, which is described as being an embodiment of the claimed invention, are hotter than those in Fig. 2 (reference numbers 23 and 24), in which no conductive band is provided. On this basis the appellant argued that this embodiment does not solve the technical problem as set out in paragraph [0008] of the patent, since each of the three perturbations listed in that paragraph is still present in the example of Fig. 3, and in particular that it does not solve the problem of hot spots explicitly mentioned in claim 12. With regard to this last problem the appellant noted that the maximum temperature indicated in Fig. 3 is between 130 and 140°C, whereas that in Fig. 2 is between 100 and 110°C.

3.4.2 The board does not find this argument convincing for four reasons. Firstly, the appellant's argumentation is

based on the assumption that, in order to be considered to solve the technical problem as indicated in paragraph [0008] of the patent, the perturbations must be completely suppressed. The board is however of the opinion that the skilled person would understand that the problem described there and elsewhere in the patent could be considered to be addressed also if these perturbations were only reduced, not completely suppressed, because this also would represent an improvement compared to the counter-example of Fig. 2. This is apparent for example from paragraph [0012] of the patent. Secondly, the argument ignores the statement in paragraph [0007] of the patent concerning the meaning of the figures, from which the board considers that the skilled reader would understand that a direct comparison between the temperatures shown in the figures should not be understood in such a restrictive manner. Thirdly, it concentrates only on the maximum temperature of the hot spots, whereas, as the respondent has argued, it can also be seen from these figures that the area of the hot spot above a particular temperature (e.g. 60°C or 70°C) is smaller in Fig. 3 than in Fig. 2. Thus at least with respect to the size of the hot spots, it can be seen that the embodiment of Fig. 3 does represent an improvement over Fig. 2. Finally, for claims 1 and 2 it has to be taken into account that the technical problem as described in paragraphs [0008] and [0012] of the patent is not restricted to the reduction of hot spots, but is also concerned with the general reduction of temperature variations. In this respect the board agrees with the respondent that the skilled reader would realise that temperature uniformity across the central area of the windscreen would be of most significance to the driver,

and that a comparison of Figs. 2 and 3 does indicate that the embodiment of Fig. 3 leads to an improvement in this respect.

3.4.3 Thus the board concludes that the skilled person would understand from the patent that the embodiment of Fig. 3 does represent a solution of the technical problem as disclosed in the patent, so that, contrary to what has been argued by the appellant, it does not suggest that the skilled person would not be able to carry out the invention. In this respect the board considers it significant that although the patent describes that it would be desirable to eliminate hot spots, it does not suggest that this is an essential aspect of the invention, but rather that merely reducing the hot spots is also advantageous.

3.4.4 The appellant has additionally argued that the disclosure of the patent is insufficient because it provides no explanation of the major difference between the temperature profiles of Figs. 3 and 4. It is however not clear to the board why the absence of such a disclosure would result in the patent not meeting the requirement of Article 100(b) EPC.

3.5 For the above reasons the board concludes that the patent according to the respondent's main request meets the requirement of Article 100(b) EPC regarding sufficiency of disclosure.

4. *Added subject-matter in the figures - Articles 100(c) and 123(2) EPC (Main request)*

- 4.1 The appellant has objected that the figures of the patent as granted have no basis in the application as originally filed, and has also objected to the amendment to the scale of Fig. 1 which was carried out by the respondent (proprietor) during the procedure before the opposition division (i.e. in the amended figure filed with the letter of 18th March 2008).
- 4.2 The figures of the patent as granted were filed by the then applicant with letter of 14th January 2004, in response to an objection raised by the examiner relating to the quality of the figures then on file. In order to examine whether these figures meet the requirements of Article 123(2) EPC, it is first necessary to establish which figures they should be compared with. In this context the board notes that in addition to the figures as granted, in which the different temperature ranges are indicated in black and white by different patterns of shading, hatching etc., a number of other versions of the figures are presently on file:
- (a) the figures of the published international application WO 00/72635, which are also in black and white, but in which the temperatures ranges are indicated by different shades of grey;
 - (b) a set of colour figures which were filed with the proprietor's response to the grounds of opposition (letter dated 31st March 2006); and
 - (c) a further set of colour figures filed with the respondent's letter of 18th March 2009.
- 4.3 The appellant has disputed that the figures were originally filed in colour. In this context the board

notes that the letter from the EPO formalities officer which accompanied the respondent's submission of 18th March 2009 indicates that the colour figures annexed to that letter were as originally filed, that the board's own internal enquiries have confirmed that this was the case, and that the description of the application relating to Fig. 1 states that it is in colour (see page 2, lines 11 and 12). The board therefore sees no reason to doubt the respondent's statements that the figures were originally filed in colour, in particular the statement in section I.2 of the proprietor's letter of 31st March 2006 confirming that the colour drawings filed with that letter were a copy of the drawings as filed. As noted by the respondent, this letter was signed by Guy Farmer, one of the European Patent Attorneys who also signed the cover letter of the original international application (see the respondent's submission numbered D11(r)).

4.3.1 The appellant's argument that the word "colour" in the application could refer to shades of grey in a black and white figure is not found convincing, because in the view of the board that does not represent the normal meaning of this word. Concerning the apparent discrepancy between the date on the figures filed with the respondent's letter of 18th March 2009 and the filing date of the application, see paragraph 4.5.1(ii) below.

4.3.2 The appellant has also argued that since the objection to the quality of the drawings in section VII. 2 of the International Preliminary Examination Report stated that they were "too dark", this had to be understood as meaning that they were in black and white, not in

colour. The board understands however that this reflects the internal practice of the EPO to provide the examiner not with the original documents of the application, but instead with a black and white copy. Thus, the expression "too dark" used by the examiner could be understood as meaning that the black and white copy of the figures in his file was of such limited contrast that the different areas in those figures could not be distinguished from one another.

4.3.3 Hence, taking into account the evidence on file as indicated in paragraph 4.3 above, the board concludes that the use of the expression "too dark" in the International Preliminary Examination Report is not evidence that the originally filed figures were in black and white.

4.4 The appellant has moreover argued that even if the figures were originally filed by the then applicant in colour, these cannot form the basis for the comparison required under Article 123(2) EPC for two reasons.

4.4.1 The appellant has firstly argued that the colour figures could not be considered as being the originally filed figures of the application because the filing of colour figures is not allowed under either the PCT or the EPC. In this respect he has referred to an excerpt from the PCT Newsletter of March 2011 (filed with the letter of 14th September 2012 as D11(a)) and to the Guidelines for Examination in the EPO, sections A-X, 1.2 and 7.1 (this numbering reflecting the version of the Guidelines which was in force at the time of filing the application, not the current version, in which

these provisions appear essentially unchanged in chapter A-IX).

4.4.2 The board does not find this argumentation convincing, because according to both the PCT and the EPC the filing of colour figures in the original application is merely a formal deficiency which can be remedied on invitation. Specifically, under the PCT this is a formal deficiency under Article 14(1)(a)(v) in combination with Rule 11.13(a), which can be remedied upon invitation under Article 14(1)(b). Similarly under EPC 1973 (as in force at the time of filing of the original application and of the replacement figures) this was a formal deficiency under Rule 32(2)(a) in combination with Rule 40, which could be remedied upon invitation under Rule 41.

4.4.3 The second reason given by the appellant as to why the colour figures should not form the basis of the comparison required under Article 123(2) EPC is based on the argument that no information concerning colour figures is available to the public. Specifically the appellant has noted that the European Patent Register and the electronic file to which it is linked contain only black and white figures, and contain no indication that the figures were originally filed in colour, let alone information as to what the content of those figures was. On this basis the appellant argued that the rights of third parties can only be satisfied if it is assumed that the originally filed figures are those available to the public, i.e. the black and white figures of the published application.

4.4.4 However, the board cannot agree with this conclusion, because Article 123(2) EPC refers explicitly to "the content of the application as filed", an expression which leaves no room for interpretation. Thus, if the figures of the originally filed application were in colour, it is these figures which must be used as the basis for determining whether subsequently filed figures contain added subject-matter within the meaning of that Article.

4.5 The board thus concludes that in order to assess whether the redrawn figures as in the respondent's main request contain added subject-matter within the meaning of Article 123(2) EPC it is necessary to compare their content with that of the (colour) figures as originally filed. However, owing to the exceptional circumstances of the present case, no original copy of those figures is available to the board. It is therefore necessary to establish what evidence concerning their content is available.

4.5.1 Before considering that evidence in detail, the board considers it to be useful to establish the relevant procedures on filing of a PCT application, since this is pertinent to the provenance of the different sets of figures listed as (a), (b) and (c) in paragraph 4.2 above (which designations will be used in the remainder of this discussion). The regulations covering the filing of a PCT application at the date of the filing required that three copies of the application documents be filed. That this was done in the present case is apparent from the copy of the covering letter dated 27th April 2000 filed by the respondent as document

D11(r) with his letter of 16th October 2012. These three copies are then processed as follows:

- (i) one is retained by the PCT Receiving Office, in this case the EPO. Enquiries carried out both by the respondent and by the board with the relevant section of the EPO have established that this copy is no longer available.

- (ii) the second copy of the application is forwarded to the International Search Authority, in this case also the EPO. The board is satisfied on the basis of its internal enquiries that the copy of the figures which was sent by the EPO formalities officer to the respondent with letter dated 5th March 2009, a copy of which was then filed by the respondent with his letter of 18th March 2009, is a copy of that set of figures. The board is also satisfied that the date stamped on those figures (29th May 2000) is the date on which they were received, as part of the "search copy" by the section of the EPO acting as International Search Authority from the section of the EPO acting as Receiving Office, thus explaining the discrepancy between this date and the recorded filing date of the application (1st May 2000), and that both this date stamp and the file number on these figures were applied by the EPO.

- (iii) the third copy is forwarded to the International Bureau, and therefore it can be assumed that this copy formed the basis of international publication WO 00/72635.

4.5.2 It is thus apparent that each of the three sets of figures identified in paragraph 4.2 above is a copy of figures related to the originally filed figures, the set (a) in the international publication being a black and white copy of the figures forwarded to the International Bureau, the set (b) filed by the respondent (proprietor) with his letter of 31st March 2006 being a copy derived from the figures used for the original filing, and the set (c) filed by the appellant with his letter of 18th March 2009 being a copy derived from the figures forwarded to the International Search Authority. Given that any copying process can be assumed to result in a loss of information to a greater or lesser extent, the board considers it to be appropriate to compare these three sets of figures to discover whether it can be determined consistently that one of these sets contains the most information, and that the other two sets contain only information contained in that one set, on which basis it would then be logical to assume that the originally filed figures contained at least the information in that one set.

4.5.3 Such a comparison was carried out in detail during the oral proceedings before the board. The result of this comparison is that sets (a) and (c) contain different, and not completely overlapping amounts of information, but that all of the information in each of these two sets is present in set (b). For example, considering the areas with temperature between 10 and 20°C in the bottom corners of Fig. 1, these can be seen very clearly in set (b), reasonably clearly in set (a), and barely at all in set (c). On the other hand the area with temperature between 20 and 30°C at the top of the same figure, which can also be seen very clearly in set

(b), can also be seen reasonably clearly in set (c) but is barely discernible in set (a). On this basis it could be concluded that set (b) contains the most information. A similar conclusion can be reached on the basis of the boundaries at 30°C and 40°C towards the top corners of Fig. 2, the former of which can be seen in set (a), the latter in set (c), and both in set (b). Consideration of the other figures did not lead to any information being identified which was present in either or both of sets (a) and (c) but which was not present in set (b). The board thus concludes that in order to assess whether the redrawn figures in the patent as maintained by the opposition division contain subject-matter extending beyond the content of the patent as filed, it would suffice if it could be determined that these figures contain no information extending beyond the content of the figures designated as set (b). The board also notes that this conclusion is not rendered invalid by the possibility that some teaching in that set of figures cannot be unambiguously derived from either set (a) or set (c), since it cannot be excluded that certain information has been lost during the copying process for both of these sets.

4.5.4 No difference in teaching between the figures designated as set (b) and the figures of the patent as maintained by the opposition division (i.e. the patent according to the respondent's main request) has been identified. The only difference in appearance is in the scale of Fig. 1, which was amended during the procedure before the opposition division (amended figure filed with proprietor's letter of 11th March 2008). From a comparison of the amended figure with the colour figure of set (b) it is clear that the only difference is the

omission from the scale of those blocks corresponding to temperature ranges which do not appear in the depicted modelling results. This omission thus does not result in any change to the technical teaching of the figure. Therefore the board concludes that the figures of the patent according to the respondent's main request do not contravene Article 123(2) EPC.

4.5.5 The appellant has argued that the opposition division committed an error in deciding to allow the amendment to the scale of Fig. 1 as a correction under Rule 139 EPC. The board agrees that the opposition division should not have allowed this amendment under that rule, since the figures referred to in the decision to grant form an integral part of that decision. However, the board also considers that this erroneous choice of the legal basis has no substantive impact on the final decision taken by the opposition division because, as indicated above, the modification of the scale of the figure does not contravene Article 123(2) EPC. Moreover, the board regards it as an amendment which is admissible in opposition proceedings pursuant to Rule 80 EPC.

5. Independent method claim 12 according to the respondent's main request has been amended by incorporating into it a number of features corresponding to those of independent device claims 1 and 2, in particular the two alternative definitions of the resistance of the conductive band.

5.1 The appellant has raised an objection to this amendment under Article 123(2) EPC, arguing that there is no basis for amending the method claims in this manner.

Specifically the appellant argued that the only disclosure in the original application relating to the method other than the claims was that of page 5, lines 17 to 21, which did not mention any of the features which have been introduced into claim 12.

5.2 The board does not find this argument convincing, because the skilled person would understand from the application as filed that it relates to a single inventive concept, of which the three independent claims are different aspects. This is apparent from the wording of page 3, lines 7 to 15 and page 5, lines 17 to 19, and from the fact that this general discussion of the invention is followed from page 5, line 22 onwards by the detailed description of the embodiments, which the skilled person would clearly understand as relating to all of the different aspects. Thus the skilled person would understand from the application as a whole that the method of the invention could be understood in its most general sense as relating to the use of the glazing panel described, so that the introduction of features from the independent device claims into the independent method claim does not lead to the introduction of any subject-matter beyond the content of the application as originally filed.

6. The board therefore concludes that the patent in the form of the respondent's main request does not contravene Article 123(2) EPC.

7. *Novelty - Article 54 EPC (Main request)*

7.1 During the course of the appeal procedure the appellant has argued that the subject-matter of the independent

claims as maintained by the opposition division is not new with respect to either of documents A1 or A2.

7.2 Concerning the decision of the opposition division that the claimed subject-matter was new with respect to A1, the appellant's argument consists only of a statement that the passage of that document (column 3, lines 13 to 16) cited in the decision under appeal does not establish that the "small conductive strip" is of the same material (and hence the same resistance in ohms per square) as the coating layer. This argument does not however demonstrate that the decision was incorrect in this respect, because it merely suggests that the document A1 did not contain any clear disclosure regarding that material, whereas in order to establish lack of novelty over that document the burden of proof lies with the appellant to show that the resistance of that conductive strip satisfied at least one of the criteria defined in claims 1 and 2 of the patent in suit. The board therefore concludes that the subject-matter of the independent claims 1, 2 and 12 according to the respondent's main request is new with respect to document A1.

7.3 The appellant's objection of lack of novelty with respect to document A2 is based on the embodiment described with reference to Figs. 4 and 4a. According to different aspects of that objection, the data transmission window of the present claims could be considered to correspond to different sections of the "T-shaped structure" referred to in column 3, lines 26 and 27 of that document, either the horizontal section labelled "40" in the figures, or the vertical part between edges 43 and 44. Also the electrically

conductive band of the present claims could be understood as corresponding respectively to either the "strip conductor" 42 or to the edges 43 and 44, in the case where as indicated at column 3, line 38 they function as supply busses.

- 7.4 The board does not find this argumentation convincing. Considering firstly the alternative in which the horizontal section 40 described in document A2 is argued as corresponding to the data transmission window, the board is of the opinion that, since the strip conductor 42 merely crosses the middle of that window from below, it cannot be considered to bound at least portion of that window, as required by the present claims. According to the other alternative, the appellant argued that the vertical section of the T-shaped structure corresponds to the data transmission window, but as stated at column 3, lines 32 and 33 of A2, that strip is "covered by a metallic insulating layer 47", so that it could not function as a data transmission window within the meaning of the patent in suit. The board therefore concludes that the subject-matter of the independent claims 1, 2 and 12 of the respondent's main request is new also with respect to document A2.

8. *Inventive step - Article 56 EPC (Main request)*

- 8.1 Other than the objection based on document A3 as mentioned in paragraph 2.1.3 above, the only objection relating to inventive step raised by the appellant in the appeal procedure was based on an argument starting from a prior art automotive glazing panel as depicted in Fig. 2 of the patent in suit. Nonetheless, the

appellant provided no evidence that such a glazing panel actually formed part of the prior art at the priority date of the patent in suit. The board does not doubt that, as the appellant argued, the individual elements of that glazing panel (specifically a glazing panel with an electrically heatable solar control coating layer, a glazing panel with a data transmission window, and the positioning of the sensor/emitter for a toll system in the vicinity of the rear-view mirror) were known to the skilled person at that date. However, there is no evidence available that the combination of these features in the manner described with reference to Fig. 2 of the patent in suit was known at that date. In particular, the fact that this glazing panel was disclosed in the original application underlying the patent in suit in order to illustrate the technical problem addressed by the claimed invention cannot be considered as implying that it formed part of the prior art at the priority date of the application.

8.2 Given this conclusion that there is no evidence that the glazing panel which formed the starting point for the appellant's argument relating to inventive step formed part of the state of the art within the meaning of Article 54(2) EPC, this objection of lack of inventive step must fail.

8.3 The board concludes therefore that the subject-matter of claims 1, 2 and 12 of the respondent's main request involves an inventive step in the sense of Article 56 EPC. The subject-matter of claims 3 to 11 and 13, which depend on these claims, is thereby also to be considered as being new and involving an inventive step.

9. Since for the reasons indicated above, the respondent's main request meets the requirements of the EPC with respect to sufficiency of disclosure, added subject-matter, novelty and inventive step, and since the appellant has not raised any further objections to this request, the board concludes that this request meets the requirements of the EPC, so that the patent is to be maintained in amended form on this basis. It is therefore not necessary to consider the respondent's auxiliary requests.

10. *Objections under Rule 106 EPC*

10.1 During the course of the oral proceedings of 16th November 2012 the appellant filed two objections under Rule 106 EPC (see the handwritten annexes to the minutes of those oral proceedings).

10.2 According to the appellant's first objection under Rule 106 EPC the board had committed a substantial procedural violation in "*deciding*" that the figures of the application as originally filed were those filed by the respondent (then opponent) with the letter of 31st March 2006.

10.2.1 As a preliminary point, the board emphasises that no "decision" as such was taken by the board concerning that specific question, contrary to the assumption obviously underlying the appellant's objection. Rather, the board expressed its opinion without even having closed the debate on this issue.

10.2.2 The board understands the objection in the sense that the essence of the appellant's objection to the

procedure lies in the assertion that the appellant was taken by surprise by the board's "decision". In this respect, the board considers it important to note that the question as to whether the figures of the application as originally filed were in colour or black and white had been discussed extensively in the parties' written submissions during the appeal procedure, and that the board itself had pointed out in the communication accompanying the summons to oral proceedings (see point 3. of that communication) that clarification of this issue was necessary before a decision could be reached on the appellant's objections under Article 100(c) EPC. Thus, the fact that there was a need to reach a conclusion on this topic during the oral proceedings must have been clear to the parties.

10.2.3 When discussing this objection under Rule 106 EPC during the oral proceedings it became apparent to the board that a misunderstanding had arisen, in particular with respect to the fact that the opinion expressed by the board before the filing of the objection was not that these figures were those originally filed, but rather that these were considered as providing the most reliable evidence regarding the content of the originally filed figures. Therefore, in order to remedy this obvious misunderstanding, during the oral proceedings the board further explained the previously expressed opinion, and in particular the general purpose of the assessment of the evidence on file. In view of these considerations, the board gave the parties a further opportunity to discuss the issue of what was the content of the originally filed drawings and to present their evaluation of the evidence on file. The subsequent discussion dealt in particular with the

topics summarised in paragraphs 4.5.2 and 4.5.3 above. Following this discussion the board indicated that it considered that the procedural objections raised by the appellant in his first objection under Rule 106 EPC had been overcome.

10.3 According to the appellant's second objection under Rule 106 EPC the board had committed a substantial procedural violation in deciding on the issue of sufficiency of disclosure before deciding on the question as to which figures constituted those of the application as filed.

10.3.1 The board decided to dismiss this objection, because the decision concerning sufficiency of disclosure within the meaning of Article 100(b) EPC concerned the patent, not the application, so that the only figures which were of relevance to that decision were those of the patent as granted and Fig. 1 as amended during the procedure before the opposition division. The question as to which figures were filed as part of the original application was relevant for the ground of opposition under Article 100(c) EPC, but not for the question of sufficiency of disclosure of the patent, so that the fact that the decision on the latter question was reached only after that on the former cannot constitute a fundamental procedural defect within the meaning of Article 112a EPC.

10.3.2 In addition, the board notes that it came to the conclusion that the figures of the respondent's main request do not contravene Article 123(2) EPC (see point 4.5.4 above), so that the question as to the order in which these two grounds were discussed could not in any

case have had any impact on the issue of sufficiency of disclosure.

10.3.3 The board notes also that at the beginning of the oral proceedings of 16th November 2012 both parties had agreed to the suggestion of the board to discuss the issue of sufficiency of disclosure before the other substantive issues.

Order

For these reasons it is decided that:

The decision under appeal is set aside.

The case is remitted to the department of first instance with the order to maintain the patent in amended form in the following version:

Description

Pages 3 and 4 of the patent specification
Pages 1a and 2 filed during oral proceedings on 11th April
2008

Claims

Numbers 1 to 13 filed during oral proceedings on 16th November
2012

Drawings

Figures 2 to 4 of the patent specification
Figure 1 received on 11th March 2008 with letter of
11th March 2008.

The Registrar:

The Chairman:

L. Fernández Gómez

M. Ruggiu