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**Datasheet for the decision
of 18 February 2026**

Case Number: T 2488/22 - 3.4.03

Application Number: 10163331.1

Publication Number: 2256579

IPC: H01L31/02, H02M7/487, H02M1/00,
G05F1/67, H02J3/38

Language of the proceedings: EN

Title of invention:
Solar inverter and control method

Patent Proprietor:
GE Grid Solutions LLC

Opponent:
SMA Solar Technology AG

Headword:

Relevant legal provisions:
EPC Art. 100(c), 123(2)

Keyword:
Grounds for opposition - added subject-matter (yes)

Decisions cited:

G 0001/24, G 0002/10, T 0177/22, T 1473/19

Catchword:

1. The description and drawings should be consulted to interpret the claims not only when assessing patentability under Articles 52 to 57 EPC but also when assessing compliance with other requirements of the EPC. Claims must be interpreted in a consistent and uniform manner when assessing compliance with the EPC (Reasons 16).

2. Limiting the claims based on the description and drawings when such limitations are not derivable from the claims' wording would deprive Articles 123(2) EPC and 100(c) EPC from their meaning and purpose (Reasons 20 and 21).



Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
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Case Number: T 2488/22 - 3.4.03

D E C I S I O N
of Technical Board of Appeal 3.4.03
of 18 February 2026

Appellant: GE Grid Solutions LLC
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted/electronically
transmitted on 15 September 2022 revoking
European patent No. 2256579 pursuant to Article
101(3)(b) EPC.**

Composition of the Board:

Chair E. Mille
Members: M. Papastefanou
J. Thomas

Summary of Facts and Submissions

- I. The appeal of the patent proprietor is against the decision of the opposition division revoking the European patent with number 2 256 579.

The opposition was based on all grounds for opposition under Article 100(a), (b) and (c) EPC. In the decision under appeal, the opposition division concluded, among others, that claim 1 as granted contained subject-matter extending beyond the content of the application, as originally filed so that the ground for opposition under Article 100(c) EPC prejudiced the maintenance of the patent as granted.

- II. At the end of the oral proceedings before the board, the parties' requests were as follows:

The appellant/patent proprietor ("proprietor") requested that the decision under appeal be set aside and that the patent be maintained as granted (main request). As an auxiliary measure, the proprietor requested that the decision under appeal be set aside and the patent be maintained according to one of auxiliary requests 0A, 0B, 1, 1A, 1B, 2, 2A, 2B, 3A, or 3B, filed with the statement setting out the grounds of appeal.

Auxiliary requests 4, 4A, 4B, 5A and 5B, also filed with the statement setting out the grounds of appeal, were withdrawn during the oral proceedings.

The respondent/opponent ("opponent") requested that the appeal be dismissed.

III. Claim 1 of the **patent as granted** is worded as follows (features' numbering as in the impugned decision):

- [M1]** A power generation system (40) comprising:
 - [M2]** a photovoltaic (PV) module (12) to generate direct current (DC) power;
- characterised by:
- [M3]** a boost side MPPT (maximum power point tracking) controller (50) for determining a maximum power point for the power generation system;
 - [M4]** an inverter side MPPT controller (52) operable to sense voltages and current from the PV module (12);
 - [M5]** a boost converter (42) for receiving control signals from the boost side MPPT controller (50) to boost the power from the PV module (12) to a threshold voltage required to inject sinusoidal currents into the grid;
 - [M6]** a direct current (DC) to alternating current (AC) multilevel inverter (48) to supply the power from the PV module (12) to a power grid;
 - [M7]** a split DC link (46) connecting the boost converter (42) to the multilevel inverter (48);
 - [M8]** a first bypass circuit (44) for bypassing the boost converter (42) when an input voltage of the DC to AC multilevel inverter (48) is higher than or equal to the threshold voltage, and a second bypass circuit (44),
 - [M9]** wherein the inverter side MPPT controller (52) is operable to receive a signal from the second bypass circuit (44) to determine when the second bypass circuit (44) is working,
 - [M10]** said inverter side MPPT controller (52) being operable to provide switching command signals to the multilevel inverter (48) so as to extract

maximum power from the PV module (12).

- IV. The detailed wording of the auxiliary requests is not relevant for the decision. Claim 1 of all of them includes at least one of features M8, M9 or M10 worded as in granted claim 1.
- V. The parties' relevant argument could be summarised as follows:
- The **proprietor** argued essentially that after consultation of the description and the drawings as ordered by G1/24, there was only one possible interpretation of claim 1 as granted. Claim 1 interpreted in that way did not contain any subject-matter extending beyond the originally filed content of the application.
 - The **opponent** argued that the claims should not be limited only to what could be derived from the description. Claim 1 comprised embodiments which were technically plausible and had no basis in the originally filed application.

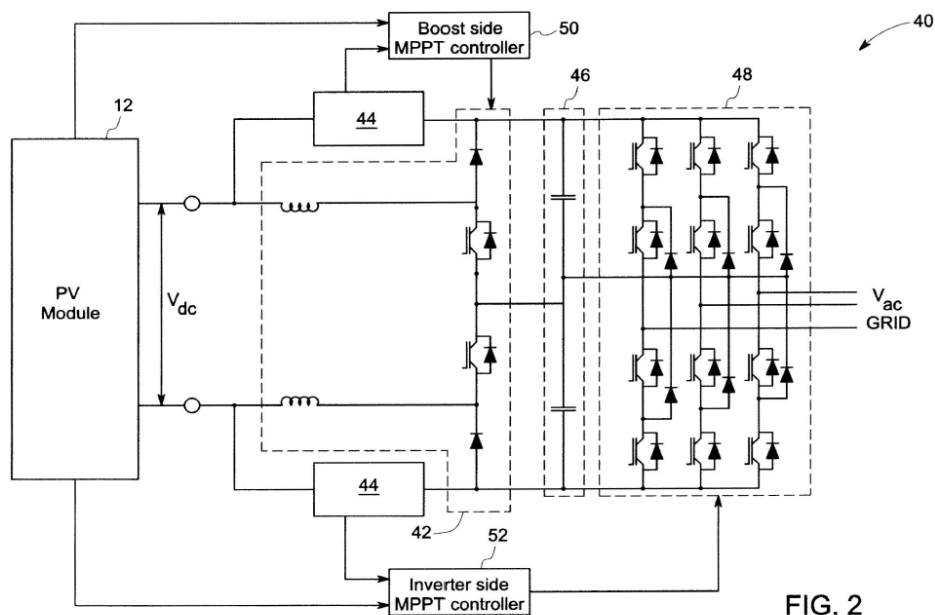
Reasons for the Decision

The invention

1. The invention relates to a power generation system comprising a photovoltaic (PV) module. The claimed invention focuses on the connection of the PV module to the grid.
2. It is known that in order to connect a PV module to the grid, a series of steps are necessary. One step is the conversion of the DC power produced by the PV module to

AC power. Therefore, a DC/AC converter ("inverter") is necessary between the output of the photovoltaic system and the grid. Another frequent problem that has to be overcome is the matching of the voltage of the PV module to the voltage of the grid. A so-called "booster" or "boost converter" is therefore installed between the PV module and the grid to adjust the voltage of the PV module output to the voltage of the grid.

3. As the circuit between the PV module and the grid becomes longer and more complicated, the conduction losses in the current flowing from the photovoltaic system to the grid increase. The present invention addresses this problem by introducing the possibility to bypass the booster converter circuit (see paragraphs [0001] to [0005] of the patent).
4. In the claimed system, when the output voltage of the PV module is over a certain threshold value (e.g the grid voltage), the booster converted is bypassed since there is no need to adjust the voltage to match the grid. In this way, the circuit becomes shorter and the conduction losses are decreased.
5. For ease of understanding, Figure 2 of the opposed patent ("patent") is reproduced below.



The circuit between the PV module 12 and the grid comprises a booster converter 42, split DC link 46 and a three-phase inverter 48. When the output voltage of the PV module (V_{dc}) is over a certain threshold, the bypass circuits 44 are activated and the PV module is directly connected to the DC link 46 and the inverter 48, bypassing the booster converter 42.

Patent as granted, added subject-matter (Article 100(c) EPC)

6. In the following, any text references to the application as originally filed or the application in general are referring to the application as published (EP 2 256 579 A1) the content of which is taken to be identical to the one of the originally filed application.
7. In the decision under appeal, the opposition division concluded that features M8, M9 and M10 of granted claim 1 contained subject-matter extending beyond the

content of the application as originally filed.

8. Regarding features M8 and M9, the opposition division held that the application as originally filed did not disclose two different bypass circuits, but only one bypass circuit, which was used to bypass the booster converter. The application did not disclose that it was the second bypass circuit that generated the signal which the inverter side MPPT controller received, either (see grounds of the impugned decision, points 35 to 37). As to feature M10, the opposition division held that the omission of the condition "if the boost converter is bypassed", which related to when the inverter side MPPT controller provides switching command signals to the multilevel inverter, constituted an unallowable intermediate generalisation (see *idem*, point 40).
9. The proprietor's main argument was that the skilled person reading claim 1 as granted in the light of the description and the drawings would not have been faced with any new information. According to the proprietor, the skilled person consulting the description and the drawings as ordered by the decision of the Enlarged Board of Appeal G1/24 would have understood that there was only one possible way of operation of the power generation system. With this in mind, there was only one way to interpret the claims, namely in accordance with the embodiment described in the description and the drawings.
10. The proprietor pointed to Figure 2 (see point 5. above; the figure is the same in the application and the patent) and to paragraphs [0010] to [0012] of the application, which explained the operation of the circuit in the figure. The purpose of the circuit shown

in Figure 2 was to control the voltage of the PV module 12 so that it can be fed into the grid. The inverter 48 and the split DC link 46 were standard elements in such circuits. The purpose of the boost converted 42 was to raise the voltage of the PV module (Vdc). There were two MPPT controllers or two parts of an MPPT controller, one at the boost side (50) and one at the inverter side (52). This was technically equivalent to what was defined in claim 1 of the patent.

11. Regarding the disputed features, the proprietor argued that the skilled person would have understood that the terms "first bypass circuit" and "second bypass circuit" in features M8 and M9 were referring to two branches of the same bypass circuit, as described in the description and in Figure 2. It was evident that both of these circuits were necessary for the boost converter to be bypassed, so when one of them was active, the other one had to be active, as well. The omitted condition in feature M10 was already included in the claim, since the inverter side MPPT controller 52 was active when the boost converted was bypassed, i.e. when the bypass circuit 44 was active. The functional relationship of the parts in Figure 2 as described in paragraphs [0010] to [0012] was reflected in claim 1.

12. Although claim 1 did not explicitly define that the second bypass circuit also bypassed the boost converter, the skilled person having consulted the description and the drawings would have readily understood that this had to be the case. Interpretations including two different bypass circuits with different functions were not derivable from the description or the drawings and therefore the skilled

person would not have considered such interpretations when interpreting claim 1 as granted.

13. The board is not convinced by these arguments of the proprietor.

The "gold standard" and G1/24

14. It is undisputed that the established criterion for assessing whether the subject-matter of an amended application or patent has been extended beyond the originally filed content of the application is the so-called "gold standard". According to the gold standard, any amendment to the parts of a European patent application or a European patent relating to the disclosure (description, claims, drawings) can only be made within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of the application documents as filed. In other words, after the amendment, the skilled person should not be presented with new information (see G2/10, Reasons 4.3).
15. The relevant part of the order of G1/24, referred to by the proprietor, reads as follows: *"The description and drawings shall always be consulted to interpret the claims when assessing the patentability of an invention under Articles 52 to 57 EPC, and not only if the person skilled in the art finds a claim to be unclear or ambiguous when read in isolation"*.
16. Despite the mention of the specific context of assessing patentability of an invention under Articles 52 to 57 EPC, the present board considers that the description and drawings should also be consulted

to interpret the claims when compliance with other requirements of the EPC is being assessed. Firstly, it does not seem logical to forbid the skilled reader to consult the description and the drawings when interpreting claims in any other context than assessing patentability under Articles 52 to 57 EPC. Secondly and more importantly, the claimed subject-matter should be interpreted in a uniform and consistent manner. It cannot be that claims are interpreted differently when assessing patentability under Articles 52 to 57 EPC on one hand, and when assessing compliance with any of the remaining requirements of the EPC on the other hand (see e.g. T 177/22, *Catchword*, or T 1473/19, *Reasons 3.12 to 3.13*). The board, therefore, agrees with the proprietor in that the skilled person assessing the extend of the (amended) claimed subject-matter should consult the description and the drawings to interpret the (amended) claims.

17. At the same time, the board notes that neither the order nor the reasoning of G1/24 contain any indications of any possible result of such a consultation of the description and the drawings or any possible impact it might have on the interpretation of the claims. In particular, there is no basis in G1/24 to conclude that a claim must be interpreted in a more limited manner based on features found in the embodiments of the description.

18. Indeed, it is established case law, before and after G1/24, that a claim should not be interpreted, based on features of embodiments in the description, as having a meaning narrower than the wording of the claims as understood by the skilled person (see "*Case Law of the Boards of Appeal*", 11th Ed., II.A.6.3.4). In other words, "consulting" the description and the drawings

should not result in reading limitations into a claim which are not included in or cannot be derived from the claim wording.

19. The skilled person reads the claims (and any other parts of the application or the patent) with a mind willing to understand. Consulting the description and the drawings may result, for example, in setting the claimed subject-matter in a particular technical context. Based on this context, the skilled person may reject interpretations of the claims that do not make technical sense.
20. What the proprietor suggests, however, is to limit the interpretation of granted claim 1 to the embodiment described in the description and the drawings, even if the wording of the claims leaves room for other interpretations. According to the proprietor, the skilled person would understand from the description and the drawings how the claimed power generation system operates and interpret the claimed features accordingly. In that context, the proprietor repeatedly criticised that the interpretations of claim 1 by the opponent were not derivable from the description and the drawings of the application.
21. The board cannot follow the proprietor in this argument. The very essence of assessing whether the subject-matter of an amended claim extends beyond the content of the originally filed application consists in determining whether it possibly comprises embodiments that are not derivable from the description, the drawings and the claims of the application as originally filed. The proprietor's argument leads to a tautology: if an amended claim is interpreted so that its subject-matter is limited to what can be derived

from the application as originally filed, the comparison of this claim to the content of the application as originally filed would inevitably lead to the conclusion that the claimed subject-matter does not extend beyond the content of the application as originally filed. In such a case both Articles 123(2) and 100(c) EPC would be deprived for any meaning or purpose.

22. The board's conclusion is therefore that the skilled person, having consulted the description and the drawings, would interpret granted claim 1 based on what can be derived from the claim's wording, excluding any interpretation that would not make sense in the technical context of the application/patent, but including all other technically reasonable interpretations encompassed by the wording of the claim.

The case at hand

23. The board agrees with the opposition division and the opponent that features M8, M9 and M10 of claim 1 as granted contain subject-matter extending beyond the originally content of the application.
24. It was undisputed by the parties that the description as originally filed mentions only one bypass circuit ("a bypass circuit 44" in paragraphs [0004] and [0010], "the bypass circuit 44" or "the circuit 44" in paragraph [0012]). There is no mention of a first or a second bypass circuit. Therefore, the skilled person looking at Figure 2 would understand that both parts with the reference number 44 are parts (or "branches") of the same, unique, bypass circuit.

25. This also corresponds to the described operation of the power generation system of Figure 2. Paragraph [0012], for example, states that "[w]hen the PV module voltage ... is higher than the threshold voltage ... the bypass circuit 44 bypasses the boost converter" (underline by the board). The skilled person understands that the two parts with the reference number 44 in Figure 2 have to be active simultaneously for the boost converter 42 to be bypassed. Similarly, the description mentions that the inverted side MPPT controller 42 "receives a signal from the bypass circuit 44 to determine when the circuit 44 is working" (see column 4, lines 10 to 12; underline by the board). Given that there is only one bypass circuit mentioned, the skilled person understands that when the signal is sent to the inverter side MPPT controller, both parts of the bypass circuit 44 of Figure 2 are working.
26. In contrast to that, feature M8 defines two bypass circuits, a "first bypass circuit" and a "second bypass circuit". It defines a function for the first ("*for bypassing the boost converter (42) when an input voltage of the DC to AC multilevel inverter (48) is higher than or equal to the threshold voltage*") but provides no details about the second bypass circuit. As the opponent pointed out, neither feature M8 nor claim 1 as a whole provide any details about how these circuits are connected within the claimed power generation system or how they are supposed to operate together. For example, the skilled person would not necessarily consider that the "first bypass circuit" refers to circuit 44 at the upper side of the power generation system in Figure 2 and the "second bypass circuit" refers to circuit 44 at the bottom of the Figure. It is not technically excluded from the wording of feature M8 that the "first bypass circuit" is

connected in such a way that it is sufficient to bypass the boost converter or that the term "first bypass circuit" refers to both circuits 44 of Figure 2. This seems all the more plausible, since the description mentions only one bypass circuit.

27. Feature M9 defines a function of the second bypass circuit (*"wherein the inverter side MPPT controller (52) is operable to receive a signal from the second bypass circuit (44) to determine when the second bypass circuit (44) is working"*; underline by the board) that is different from the function of the first bypass circuit defined in feature M8 (*"for bypassing the boost converter when ... "*). There is no mention of the first bypass circuit in feature M9. It is not clear from the wording of claim 1 that the second bypass circuit plays any role in bypassing the boost converter. The board also notes that according to feature M9, the second bypass circuit sends a signal to the inverter side MPPT controller 52 when *it is working* and not when the boost converter is bypassed. Therefore, contrary to the proprietor's argument, the skilled person reading feature M9 would not conclude that when the second bypass circuit is working, the boost converter is being bypassed or the first bypass circuit is also working.
28. Consequently, features M8 and M9 define two different bypass circuits having different functions. There is no basis in the originally filed application for two distinct bypass circuits. Therefore, the board cannot accept that this is only a matter of language between the expressions "two bypass circuits" or "two branches of the same bypass circuit" as the proprietor argued. The board's conclusion is that the subject-matter of features M8 and M9 cannot be directly and unambiguously derived from the content of the application as

originally filed, i.e. it does not meet the gold standard.

29. Regarding feature M10, the proprietor argued that the omitted condition was already included in the claim, since according to feature M9 the inverter side MPPT controller 52 was active when the boost converter was bypassed. So, when the inverter side MPPT controller 52 provided switching command signals according to feature M10, the controller was active, which necessarily implied that the boost converter was being bypassed. Accordingly, there was no need to repeat this again in feature M10.

30. The board cannot follow this argument, either. The omitted condition is "*[i]f the boost converter is bypassed, the controller 52 provides switching command signals ...*" (see column 4, lines 12 and 13 of the application; underline by the board). As stated earlier, feature M9 mentions only that the signal to the inverter side MPPT controller 52 is sent when the second bypass circuit is working. There is no mention in feature M9 of the boost converter being bypassed or any suggestion that when the second bypass circuit is working the boost converter is bypassed. In addition, as the opponent also pointed out, feature M10 defines only that the controller is *operable* to provide switching command signals. This is to be understood as a function that the MPPT controller can execute but does not necessarily define that this function is being executed at any particular time or under any particular operating conditions. So, even if the skilled person were to deduce from feature M9 that the inverter side MPPT controller was active when the boost converter was bypassed, they would not necessarily understand from feature M10 that it was only during that period that

the controller could provide the switching command signals.

31. Consequently, the board concludes that feature M10 represents an intermediate generalisation which has no basis in the originally filed application.
32. The board's conclusion is therefore that each of features M8, M9 and M10 of claim 1 as granted defines subject-matter extending beyond the content of the application as originally filed. Accordingly, the ground for opposition under Article 100(c) EPC prejudices the maintenance of the patent as granted.

Auxiliary requests

33. Claim 1 of all auxiliary requests, 0A to 3B comprises at least one of the features M8, M9 or M10 in the same wording as in claim 1 as granted. The conclusions of the board regarding the main request (granted patent) apply therefore to the auxiliary requests, as well.
34. Claim 1 of auxiliary requests **0A** and **0B** has the same wording as claim 1 of the patent as granted. These auxiliary requests do not meet the requirements of Article 123(2) EPC for the same reasons as for claim 1 as granted.
35. Claim 1 is worded identically in auxiliary requests **1**, **1A** and **1B**. Feature M10 has been amended (the omitted condition has been added) but features M8 and M9 have the same wording as in claim 1 of the patent. The board's conclusions concerning features M8 and M9 apply to claim 1 of these requests as well, which are found to contain added subject-matter contrary to the

requirements of Article 123(2) EPC.

36. Claim 1 is worded identically in auxiliary requests **2**, **2A** and **2B**. In this claim, feature M9 has the same wording as in granted claim 1, while features M8 and M10 have been amended as follows (amendments marked by the board):

M8 *a first bypass circuit (44) and a second bypass circuit (44) for bypassing the boost converter (42) when an input voltage of the DC to AC multilevel inverter (48) is higher than or equal to the threshold voltage, and a second bypass circuit (44), the first bypass circuit (44) being connected between a first input and a first output of the boost converter (42) and the second bypass circuit (44) being connected between a second input and a second output of the boost converter (42),*

M10 *working, said inverter side MPPT controller (52) being operable, if the boost converter is bypassed, to provide switching command signals to the multilevel inverter (48) so as to extract maximum power from the PV module (12).*

37. During the oral proceedings the proprietor referred to auxiliary request 2B and argued that with the addition of the omitted condition, feature M10 met the requirements of Article 123(2) EPC. Feature M8 defined that the first and second bypass circuits were for bypassing the boost converter. With the added details to their corresponding connections there was no room for alternative interpretations any more. The proprietor also referred to the passage on column 4, lines 5 to 15 of the application and argued that the operation of the circuit system was explained there. It

was clear for the skilled person that the first and second bypass circuits had to operate simultaneously for the boost converter to be bypassed. So when feature M9 mentioned that the second bypass circuit was working, the skilled person would have understood that also the first bypass circuit was working at the same time.

38. The opponent pointed out that the details of the connection of the bypass circuits defined in amended feature M8 were not derivable from Figure 2. According to Figure 2, the boost converter had three outputs/connections to the DC link 46. Therefore it was not clear which ones corresponded to the "first" and the "second" outputs of feature M8. Moreover, feature M8 did not define that the first and second bypass circuit operated synchronously and feature M9 still defined that it was only the second bypass circuit which was working. The application passage cited by the proprietor did not mention a first and second bypass circuit, but only one bypass circuit. According to the opponent, the objections against claim 1 as granted were not overcome by those amendments.

39. The board agrees with the opponent. Features M8 and M9 of claim 1 of auxiliary request 2B (and of auxiliary requests 2 and 2A) still define a first and a second bypass circuits. They are both defined "for bypassing the boost converter" but this does not provide much information as to how they are supposed to operate within the claimed power generation system. The defined detailed connections do not solve this problem, as it is not clear how the two bypass circuits are supposed to be connected to the DC link, as the opponent pointed out. Therefore, there are still possible acceptable interpretations of features M8 and M9 which cannot be

derived from the application as originally filed. Consequently, the board's conclusion is that none of the auxiliary requests 2, 2A and 2B meets the requirements of Article 123(2) EPC.

40. Claim 1 is worded identically in auxiliary requests **3A** and **3B**. It has the same wording as claim 1 of auxiliary requests 2, 2A and 2B whereby features from the description have been added at the end. Accordingly, the board's conclusions regarding auxiliary requests 2, 2A and 2B apply to these requests, too, which are found to contain added subject-matter contrary to the requirements of Article 123(2) EPC.

41. Since the proprietor has not succeeded in convincing the board to set the decision under appeal aside, the appeal must fail.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



S. Sánchez Chiquero

E. Mille

Decision electronically authenticated