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

Case Number: T 0179/09 - 3.5.02

Application Number: 99201443.1

Publication Number: 964381

IPC: G08G5/04

Language of the proceedings: EN

Title of invention:

Dynamic, multi-attribute hazard prioritisation system for aircraft

Patent Proprietor:

The Boeing Company

Opponents:

Airbus SAS/AIRBUS FRANCE SAS/AIRBUS UK Limited/
AIRBUS DEUTSCHLAND GmbH/AIRBUS España S.L

Headword:

Relevant legal provisions:

EPC Art. 56, 83, 84, 123(2), 123(3)

Keyword:

Clarity and support in the description - yes
Added subject-matter - no
Extension of scope of protection - no
Inventive step - yes

Decisions cited:

Catchword:



Case Number: T0179/09 - 3.5.02

D E C I S I O N
of the Technical Board of Appeal 3.5.02
of 16 March 2012

Appellants:
(Opponents)

Airbus SAS
1 Rond-Point Maurice Bellonte
31700 Blagnac (FR)

Airbus France SAS
316, Route de Bayonne
31060 Toulouse (FR)

Airbus UK Limited
New Filton House
Filton, Bristol, BS99 7AR (GB)

Airbus Deutschland GmbH
Kreetslag 10
21129 Hamburg (DE)

Airbus España S.L
Avenida de John Lennon S/N
Madrid (ES)

Representative:

Santarelli, Luc
Santarelli
14 Avenue de la Grande Armée
75017 Paris (FR)

Respondent:
(Patent Proprietor)

The Boeing Company
100 North Riverside Plaza
Chicago, IL 60606-2016 (US)

Representative:

Korenberg, Alexander Tal
Kilburn & Strode LLP
20 Red Lion Street
London WC1R 4PJ (GB)

Decision under appeal:

**Interlocutory decision of the Opposition
Division of the European Patent Office posted 10
November 2008 concerning maintenance of the
European Patent No. 964381 in amended form.**

Composition of the Board:

Chairman: M. Ruggiu
Members: R. Lord
R. Moufang

Summary of Facts and Submissions

I. This is an appeal of the opponents against the interlocutory decision of the opposition division concerning European patent No. 0 964 381 that, account being taken of the amendments made by the patent proprietor in his first auxiliary request, the patent and the invention to which it related met the requirements of the EPC.

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

D1: WO 97/40401 A

III. In a letter dated 16 February 2012 the respondent requested that the decision under appeal be set aside and that the patent be maintained on the basis of claims 1 to 4 of the main request filed with that letter, or on the basis of one of the first to fifteenth auxiliary requests also filed with that letter.

Oral proceedings before the board took place on 16 March 2012, at which only the respondent's main request was discussed.

The appellants (opponents) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the decision under appeal be set aside and that the patent be maintained in amended form in the following version:

Claims: 1 to 4 of the main request filed with the

letter dated 16 February 2012.

Description: Pages 2 and 3 filed at the oral proceedings before the opposition division on 29 September 2008, Pages 4 to 7 of the patent specification.

Drawings: Figures 1 to 6 of the patent specification.

The respondent also maintained the auxiliary requests filed with the letter of 16 February 2012.

IV. Claim 1 of the respondent's main request reads as follows:

"A method for realizing a hazard prioritization in an aircraft hazard alerting system, the method comprising the steps of;
providing at least two aircraft warning systems, each system operating to produce a hazard signal, the hazard signal having associated therewith a time to hazard signal (τ) and a severity signal (s); and
providing each of said at least two aircraft warning systems with means for producing a time to hazard signal (τ); and
implementing aircraft displays and alerts characterized by
providing a hazard database for storing a severity signal (s) for each of said at least two aircraft warning systems wherein the severity is based on the historical probability of an accident and the amount of damage associated with such an accident;
retrieving a severity signal (s) for each warning system from the database based on the respective hazard signal;

processing the time to hazard signal (τ) and said retrieved severity signal (s) through a predetermined hazard function $T(\tau, s)$ combining the real-time values of the time to hazard and retrieved severity signals from each of said at least two aircraft warning systems to continuously determine and assign a dynamic threat value for each hazard; and including activating said aircraft displays and alerts such that the hazard having the higher assigned threat value is given display and alert priority.

Claims 2 and 3 are dependent on claim 1, and claim 4 defines a system comprising the apparatus features corresponding to the method steps of claim 1 and using the method of any one of claims 1 to 3.

V. The arguments of the appellants which are relevant for the present decision are as follows:

The paragraph of claim 1 of the respondent's main request defining the "*providing at least two aircraft warning systems*" specified that not only the time to hazard signals but also the severity signals were produced by the warning systems. However, according to paragraph [0018] of the patent in suit, the time to hazard signals were produced by the respective warning systems, whereas the severity signals were retrieved from a database, this latter point being confirmed by the more detailed description of paragraphs [0037] and [0039]. The description therefore provided no support for the claimed feature that the severity signals were produced by the warning systems, thus not meeting the requirements of Article 84 EPC.

Claim 1 was unclear and was contradictory to the description with respect to the question as to whether

a separate database is provided for the severity signal of each warning system, or whether a single database is provided containing all of the severity signals.

The definition in claim 1 that the severity signal is retrieved from a database was unclear, because it was in contradiction to the definition earlier in the claim that the severity signal is produced by the respective warning system.

The application as filed disclosed three alternatives relating to the content of the severity signal database. The definition in claim 1 that the severity is based on the historical probability of an accident and the amount of damage associated with that accident implied that the claim was restricted to the second of these (i.e. that of paragraph [0039] of the patent in suit). The nature of this data was however such that it could not be generated in real time. The only one of these alternatives which could have been considered as providing real-time information was the third one (i.e. that of paragraph [0040] of the patent), and it was clear that paragraph [0049] of the patent in suit, as well as the other parts of the application referring to ranges of severities, also related only to that alternative. The definition in the present claim that the retrieved severity signal was a real-time signal therefore resulted in the claim defining a combination of features which was not disclosed in the original application, and thus contravened Article 123(2) EPC. The connection shown in Fig. 2 of the application between boxes 106 and 112 could not be considered as disclosing that the retrieved signal was a real-time signal through the implication that different severity signals could be retrieved from the database in the repeated execution of the program loop, because it

could equally well have been understood as indicating only that the hazard signal has to be monitored continuously to determine whether the hazard still exists.

Claim 1 of the respondent's main request defined that a dynamic threat value was determined and assigned "*for each hazard*", thus covering all hazards, both those detected and those which were merely potential hazards, whereas the original application, in particular claim 5, disclosed that such a threat value was produced only for each detected hazard. The claim therefore contravened Article 123(2) EPC.

Claim 1 of the patent in suit as granted specified that each warning system produced "*at least two hazard attributes*" and that severity signals were stored in a database, thus representing at least three signals for each warning system. This was confirmed by the respective use in that claim of the plural and singular forms in the phrase "*processing hazard related signals (τ) and said retrieved severity signal (s)*". Thus the granted claims required that the processing to produce the threat value should be on the basis of at least three signals for each hazard, and excluded the case of only two such signals. Exactly that case was however defined in the amended claims of the respondent's main request, so that the scope of protection of those claims was extended beyond that of the granted patent, contrary to the requirement of Article 123(3) EPC.

The patent in the form of the respondent's main request did not disclose the claimed invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art, contrary to the requirement of Article 83 EPC, because it contained no

disclosure as to how to produce a real-time severity signal based on the historical probability of an accident and the amount of damage associated with such an accident. The reasoning underlying this objection was similar to that relating to the same feature under Article 123(2) EPC.

The alert signals produced in the method of D1, as shown for instance in Tables 1 and 2, could be considered as time to hazard signals within the meaning of the present claims, because they were triggered by particular times to hazard being reached, and thus contained implicit information about the time to hazard. Thus the only differences between the method of D1 and that of claim 1 of the respondent's main request were the replacement of the probability of an accident (Hazard Integrity Factor in Fig. 2 of D1, see page 19, lines 8 and 9 of that document) with the associated risk (i.e. including also the associated damage) and the replacement of the consultation of Table 3 with the comparison of threat values. The first of these would have been obvious to the skilled person on the basis of common general knowledge, and the second was merely the use of an obvious equivalent. Therefore the subject-matter of the claim did not involve an inventive step according to Article 56 EPC.

VI. The relevant arguments of the respondent can be summarised as follows:

The appellants' objection of lack of support in the description was not valid because claim 1 of his main request did not specify that the severity signals were produced by the warning systems, but rather that each warning system produced a hazard signal, and that the severity signal (as well as the time to hazard) were

"*associated therewith*". This part of the claim therefore left open the question as to whether the time to hazard signal and severity signal were produced by the warning system (as defined later in the claim for the time to hazard signal) or produced elsewhere in a manner associated with the hazard signal (as defined for the severity signal in the definition that the step of "*retrieving*" is "*based on the respective hazard signal*"). This was therefore entirely consistent with the description of the application and patent. This conclusion also rendered invalid the corresponding objection of lack of clarity.

The retrieved severity signal described in the application as originally filed was a real-time signal, because at least for certain hazards the database contained different severity values depending on the details of the detected hazard. Thus, even though the values stored in the database were fixed, the retrieved severity value would vary in real time as the specific hazard signal changed. This was implied by the connection between boxes 106 and 112 of Figure 2 of the application, and by the reference to the "*nature and size*" of the hazard in paragraph [0039] of the patent (corresponding to paragraph [0034] of the published application), as well as by the description of the method with respect to Figures 3 and 6 of the application, in particular the passages corresponding to paragraphs [0041], [0042] and [0049] of the patent. The appellants' arguments in this respect were based on assumptions as to the relationships between the different paragraphs of the description which were not consistent with the overall structure and content of that description. Thus the introduction into claim 1 of the definition that the severity signal was a real-time signal did not result in added subject-matter.

The skilled person would have understood the definition in the claim relating to the threat value as applying only to those hazards which had been detected, since the assignment of threat values to hazards which had not been detected would be technically meaningless.

Concerning the question as to whether the granted claim 1 excluded the possibility of only two signals being used to produce the threat value for each hazard, the above point concerning the meaning of the word "associated" was relevant, because under the correct interpretation of that definition, there was no implication that there must be more than two signals. Moreover, the skilled person would have recognised a number of ambiguities and inconsistencies in that claim, which would have led him away from attempting a literal interpretation, and would instead have led him to consult the description in order to assess the scope of protection of the claim, in accordance with Article 69(1) EPC. Particularly relevant in this context was the fact that the phrase "*processing hazard related signals (r) and said retrieved severity signal (s)*" to which the appellants had referred included the expression "*hazard related signals*", which had no precedent in the claim, so that the reader would have been obliged to consult the description to determine its meaning. Such consultation would have clearly indicated that the claims of the patent in suit as granted included within their scope of protection methods in which only two signals (namely the time to hazard signal and the retrieved severity signal) were required for each hazard. Furthermore, the use of the plural form for the hazard related signals could have merely reflected the fact that there was a plurality of such signals because there was a plurality of hazards.

The alert signals generated in the method of D1 only contained information about the time to hazard to the extent that they were triggered when the time to hazard crossed a given threshold. Since they would not then change until that threshold was crossed again or a higher threshold was crossed, they did not represent a real-time time to hazard signal as defined in the present claim 1.

The differences between the prioritisation technique defined in the last two paragraphs of claim 1 of the main request and those of D1 reflected the entirely different concepts on which they were based, so that they could not be considered as mere equivalents, in particular because the claimed technique led to significant technical advantages.

In the embodiment of D1 using the prioritisation table (Table 3), if an additional warning system for a new hazard was to be added, then the up-dating of the table would require an analysis of the interactions between that new hazard and the hazards of each of the existing warning systems. The corresponding modification of the system of the patent in suit was much simpler, because it required only the up-dating of the severity database, which involved only consideration of the characteristics of the new hazard in isolation.

In the alternative embodiment of D1 using the prioritisation scheme of Fig. 2 of that document, it was clear from the description on page 20 that beyond the comparison of HIFs (hazard integrity factors) shown in box 62 of the figure, complex analyses were required of, for instance, flight paths and the effects of different alerts on the HIFs. Thus although this

embodiment involved a comparison which was similar to the comparison of threat values in the patent in suit, the prioritisation of alerts was not simply done by giving priority to the hazard with the higher HIF, so was much more complex than the scheme defined in the present claim 1.

As far as the embodiments of D1 combining the use of the scheme of Fig. 2 and Table 3 were concerned, to the extent that it was clear how these aspects should be combined, both of the above arguments would apply. Thus the method defined in claim 1 of the main request was not obvious with respect to any of the embodiments of D1. Moreover, none of the other prior art citations provided any suggestion to replace the prioritisation schemes with one as now claimed.

Reasons for the Decision

1. The appeal is admissible.

Claim 1 of Main Request

2. *Clarity and support in the description (Article 84 EPC)*
 - 2.1 The appellants have objected that claim 1 of the respondent's main request was unclear because the definition relating to the hazard database in which the severity signals for the warning systems are stored did not make clear whether there was a separate database for each warning system, or whether the severity signals for all of the warning systems were stored in a single database.

- 2.2 The board understands that the claim does indeed leave this choice open. It is however not apparent to the board why the fact that the claim encompasses both of these options for the database should be considered as resulting in the claim being unclear, and the appellants have submitted no reason why this should be the case. As a result no contradiction in this respect between the claims and the description is apparent.
- 2.3 The appellants have also objected that claim 1 of the respondent's main request was not supported by the description, because the claim defined that the severity signals were produced by the warning systems, whereas the description provided support only for methods in which the severity signals were not produced by the warning systems, but were instead retrieved from a separate hazard database.
- 2.4 The board considers that this objection is not justified because, as the respondent argued, the claim does not specify that the severity signals are produced by the warning systems. The relevant definition in the claim states that the warning systems "*produce a hazard signal, the hazard signal having associated therewith a time to hazard signal (t) and a severity signal (s)*". This definition, in particular the use of the abstract term "associated", leaves open the question as to whether the time to hazard signals and the severity signals are actually produced by the warning systems, or whether they are merely generated in such a manner that they can be considered to be associated with the hazard signals (which explicitly are produced by the warning systems). The claim then goes on to define that each warning system includes means for producing the time to hazard signal (i.e. that this signal is produced by the warning system), whereas each severity

signal is retrieved from the hazard database based on the respective hazard signal (i.e. that this signal is not produced by the warning system, but is associated with the hazard signal produced by the warning system as a result of the nature of the retrieving step). These method steps correspond directly to those of the description of the patent in suit, as described with reference to Fig. 2 (for instance in paragraphs [0018] and [0037]).

2.5 The appellants' argument that the definition that the severity signal is retrieved from a database was not consistent with the remainder of the claim was also based on their understanding that the claim defines that the severity signal is produced by the warning system. Since that understanding was incorrect, for the reasons given in paragraph 2.4 above, the board concludes that the claim contains no inconsistency in this respect.

2.6 Thus the board concludes that the aspects of the respondent's main request to which the appellants have objected under Article 84 EPC do not result in the claim being either unclear or unsupported by the description.

3. *Added subject-matter (Article 123(2) EPC)*

3.1 The appellants have objected that claim 1 of the respondent's main request defines subject-matter extending beyond the content of the application as originally filed, arguing that the original application did not disclose the generation of the severity signals in real time. In this context the board notes that it is not disputed that the expression "real-time" does not appear in the original application, but observes

also that the method described with respect to Fig. 2 is clearly in a general sense a real-time method.

3.1.1 The central point of the appellants' objection was that the claims of the main request were restricted to the second alternative for the database of hazard severities as described in paragraph [0039] of the patent, and that since this was based on the use of historical data, the values of the severity signals retrieved from this database could not vary in real time.

3.1.2 The board is not convinced by this line of argumentation, because it is based on the assumption that for any particular type of hazard there will be only one value of severity in the database. The board considers that this assumption is incorrect, and that the database would, at least for some types of hazard, contain a number of different severity values, dependent on the detailed characteristics of the hazard. Thus, since these characteristics, as detected by the warning system and forming part of the hazard signal, can change in real time, the value of the severity signal retrieved from the database on the basis of that hazard signal could also change in real time. This interpretation of the original application is consistent with Fig. 2, in which the connection between box 106 ("*Monitor existing hazards*") and box 112 ("*Compute severity hazards*") would be meaningful only if the value of the severity could change with time, and with the various references in the application to ranges of severity values, e.g. Fig. 3 and the passages corresponding to paragraphs [0041] and [0042] of the patent. (Note that here and in the remainder of this paragraph, in line with the parties' arguments, reference is made not to passages in the

application, but to the corresponding passages in the patent specification.) The appellants have argued that these aspects of the disclosure, and the mention of changes in severities in the last sentence of paragraph [0049], applied only to the third alternative for the database, as described in paragraph [0040]. In this respect the board agrees with the respondent that the wording of paragraph [0037] and the opening sentences of each of paragraphs [0041] and [0049] strongly suggest that the description from paragraph [0041] onwards applies for all three alternatives for the database. That this is the case for the second alternative (i.e. that defined in the present claims) is confirmed by the reference in paragraph [0039] to the "*nature and size*" of the hazard, which the board understands as relating to the considerations described in paragraphs [0041] and [0042]. Thus the method of the original application as described with reference to Figs. 2 and 3 involves a continuous monitoring of the hazards signals and up-dating of the severity signals when those hazard signals change, so that the values of the severity signals used in the processing which determines the threat values can be considered to be real-time values. The definition in the present claim 1 that this is the case therefore does not add subject-matter extending beyond the content of the application as originally filed.

- 3.1.3 The board notes that the appellants have argued that the connection between boxes 106 and 112 of Fig. 2 of the patent would be meaningful even if the value of the severity was constant, because it would nonetheless be necessary to continuously monitor whether the hazard still existed. Viewed in isolation, this statement is at least plausible. Nonetheless, in the view of the board, the skilled person, taking into account all of

the aspects of the original disclosure referred to in the previous paragraph, would have understood the original application as disclosing that the values of the retrieved severity signals used in the computation of box 112 of Fig. 2 are real-time values.

3.2 The appellants have also argued that the definition in claim 1 of the respondent's main request of assigning a "*dynamic threat value for each hazard*" contravenes Article 123(2) EPC.

3.2.1 The reasoning behind this objection was that in the corresponding definition in claim 5 as originally filed the wording "*to assign a threat value to the alert signal*" was used, the consequence of which was that according to the original disclosure the threat value was determined and assigned only if an alert signal had been generated, whereas according to the present claim such a value was determined and assigned for all hazards, whether detected or merely potential.

3.2.2 The board does not find this argumentation convincing, because the skilled person would, when considering the whole of the paragraph of the present claim in which this definition appears, understand that it relates only to those hazards which had been detected, thus corresponding in this respect to the original disclosure. Indeed, as the respondent has argued, the skilled person would immediately recognise that the determination and assignment of threat values to hazards which have not been detected would be a pointless exercise. Furthermore, it seems to the board that the possibility of interpreting this passage in the manner argued by the appellants arises primarily because in their analysis of the claim (section 2.1. A a) of the grounds of appeal) they divide this paragraph

into three separate features, thus artificially dividing what is, in the claim as filed by the respondent, a single phrase.

3.3 The board therefore concludes that claim 1 of the respondent's main request does not contravene the requirements of Article 123(2) EPC.

4. *Extension of scope of protection (Article 123(3) EPC)*

4.1 The appellants argued that the skilled person would have understood claim 1 of the patent in suit as granted as defining that the step of processing signals to determine the threat value made use of at least three signals for each warning system, whereas claim 1 of the present main request defines that this step can make use of only two such signals for each warning system, so that the scope of protection of the present claim extends beyond that of the granted claim, contrary to the requirements of Article 123(3) EPC.

4.2 That the present claim 1 encompasses the case of only two signals being used for the processing step for each warning system, namely the time to hazard signal and the retrieved severity signal, is not disputed. The issue to be decided in the context of this objection thus reduces to that of whether claim 1 as granted excluded the case of only two such signals.

4.3 The appellant has argued that according to the pre-characterising portion of the granted claim 1 each warning system produced at least two hazard attributes, and that additionally according to the characterising portion of the claim a retrieved severity signal was generated for the corresponding hazard, but that this could not be one of the two hazard attributes, because

it was not produced by the warning system. This interpretation was then consistent with the definition of the processing step which specifies processing of hazard related signals in the plural (i.e. the at least two hazard attributes) and the retrieved severity signal, on which basis they concluded that the claim specified that the processing must be based on at least three signals for each warning system.

4.4 The board agrees with the appellants' argumentation to the extent that the granted claim covers the option that the processing step involves three signals for each warning system, but considers that this claim cannot be interpreted as clearly excluding the possibility that it could involve only two signals, as defined in claim 1 of the present main request.

4.4.1 Concerning the first part of the appellants' argumentation as explained in paragraph 4.3 above, the board observes that the appellants' argument that the retrieved severity signal cannot be one of the at least two hazard attributes is based on the same misinterpretation of the expression "*associated therewith*" as the objection under Article 84 EPC discussed in paragraphs 2.3 and 2.4 above.

4.4.2 Concerning the second part of the appellants' argumentation, the board notes firstly that, as the respondent has argued, the use of the plural form in the expression "*hazard related signals*" does not unambiguously imply that there is more than one such signal for each warning system, since it could also reflect the fact that there is a plurality of hazard related signals because there is a plurality of warning systems. Moreover, as the respondent has also argued, the meaning of this expression is unclear because

"*hazard related signals*" has no precedent in the claim, so that it is not clear whether it refers to the previously defined "*hazard signals*" or "*hazard attributes*" or to some other combination of signals.

- 4.5 In the light of these considerations the board agrees with the respondent that the skilled person reading the granted claim 1 would have considered it to be unclear, so that he would be obliged to consult the description in order to determine the scope of protection, in accordance with Article 69(1) EPC, on which basis he would have concluded that the hazard attributes can be the time to hazard signal and the retrieved severity signal, and that the processing to determine the threat value can be on the basis of just these two signals. Thus the board concludes that the granted claim 1 did include within its scope of protection the subject-matter protected by claim 1 of the present main request, so that the present claim 1 does not contravene the requirements of Article 123(3) EPC.

5. *Sufficiency of disclosure (Article 83 EPC)*

- 5.1 The appellants have objected that the claimed invention was not disclosed in the patent in a manner which is sufficiently clear and complete for it to be carried out by a person skilled in the art, because there was no disclosure of how to produce a real-time severity signal.

- 5.2 As the appellants themselves have acknowledged, the substantial argument underlying this objection is the same as that underlying the objection under Article 123(2) EPC noted in paragraphs 3.1 and 3.1.1 above. The argumentation of paragraphs 3.1.2 and 3.1.3 above thus applies correspondingly. The board therefore concludes

that the patent in suit meets the requirements of Article 83 EPC.

6. *Inventive step (Article 56 EPC)*

6.1 Novelty of the subject-matter of claim 1 of the respondent's main request is not in dispute. Nor is it disputed that the document D1 represents the most relevant prior art for the assessment of inventive step.

6.2 The appellants have identified the following three technical features of the claim which could potentially represent distinctions over D1, and which correspond generally to the points addressed on page 10 of the decision under appeal:

- (a) that the time to hazard of the claim could be considered to be different from the alert times of D1;
- (b) that D1 does not disclose the processing of the time to hazard signal and the retrieved severity signal through a predetermined function to determine a threat value; and
- (c) that the severity signal in D1 does not take into account the amount of damage.

They argued moreover that the first of these was not in fact a difference, that the different types of processing in the second were equivalents, and that the third was an obvious development. These points are considered separately below.

6.3 D1 describes the relationship between the alert times and the alerts with reference to Tables 1 and 2. From this description it is apparent that the individual warning systems must measure the time to hazard for the corresponding hazard, and that when this measured time to hazard reaches particular values as specified in those Tables, particular alerts (e.g. advisory, caution, warning) are generated. It is thus apparent that, as the appellants have argued, the alert signals generated in the method of this document contain implicit information concerning the time to hazard. Nonetheless, the board agrees with the respondent that the present claim 1 defines a difference in this respect in that it requires that the time to hazard signal be a real-time signal. By contrast, when a particular alert signal is generated in the method of D1, this signifies only that the time to hazard has dropped below a particular threshold value, but the alert signal will then remain unchanged until the time to hazard either rises above that threshold value or drops below the threshold value for the next higher level of alert. The board therefore concludes that the alert signals of D1 cannot be considered to represent real-time time to hazard signals within the meaning of the present claim 1.

6.4 When comparing the step of processing the signals to determine the threat value used for the prioritisation in the present claim 1 with the corresponding steps of D1 it is necessary to consider the different embodiments described in that document.

6.4.1 In the first embodiment of D1, as described from page 13 onwards, with reference to Table 3, the prioritisation of the displays and alarms is achieved by consulting the parts of Table 3 which are relevant

for the alerts which have been generated. The appellants have argued that this procedure is equivalent to the processing and comparison of threat values defined in the present claim 1. However, as argued by the respondent and in the decision under appeal, the claimed method has the advantage that the system can be updated much more easily if a further warning system is added. This advantage arises because, in the claimed system, the prioritisation is carried out simply by giving priority to the hazard having the higher threat value. This has the consequence that, when adding a further warning system, the only significant additional programming which is required is to add to the database the severity values for the hazard detected by that new warning system. In contrast, when updating Table 3 as used in the system of the first embodiment of D1 to accommodate a new warning system, new entries must be provided defining the interactions of the alerts from the new warning system with those of each of the existing systems. Thus when expanding the system of the patent in suit it is only necessary to consider the nature of the new hazard itself, whereas in the case of D1 it is necessary to consider not only that new hazard, but its interactions with each of the existing hazards. Since the method of the present claim has this technical advantage with respect to that of D1, it cannot be considered to be merely an equivalent of that known method. Moreover, since neither D1 nor any of the other available prior art documents provides any suggestion that this advantage could be achieved by replacing the prioritisation table of D1 with the prioritising technique defined in the present claim, the board concludes that the claimed method would not be obvious in the light of this embodiment of D1.

6.4.2 The second embodiment of D1, as described from page 19 onwards, with reference to Fig. 2, in fact comprises two alternatives. In the first of these, the prioritisation scheme is as depicted in Fig. 2, and thus, like the claimed method, involves prioritisation on the basis of a comparison of values relating to the different hazards, in this case on the basis of the Hazard Integrity Factor (HIF, see box 62 in the figure), which according to page 19 of that document is a probability value based on historical data, and thus corresponds to one aspect of the severity signal in the patent in suit. However, in the method depicted in Fig. 2 of D1 the comparison of HIF values is only part of the overall prioritisation scheme, which also involves calculation and comparisons of flight paths (boxes 48, 50, 56 and 58) and comparisons of the alert commands and their effects on the HIF (boxes 64 and 68), which from page 20 of that document can be seen to be complex considerations. In contrast, the method of the present claim carries out the prioritisation purely by giving priority to the hazard with the higher threat value. The board therefore concludes that, regardless of the question as to whether the alert signals of D1 are time to hazards signals within the meaning of the patent in suit, the method of this embodiment of D1 differs distinctly from that of the present claim. Moreover, these differences are such that the claimed method has the advantage of being significantly simpler. Therefore the board concludes that the method of claim 1 of the respondent's main request would not be obvious to the skilled person in the light of this embodiment of D1.

6.4.3 In the other option of the second embodiment of D1, as described at page 21, lines 3 to 6, the techniques discussed in paragraph 6.4.2 above are combined with the criteria shown in Tables 1 to 3. The document does

not describe how this combination is carried out, but to the extent that this is clear, the board considers that the conclusions of paragraphs 6.4.1 and 6.4.2 above would apply correspondingly.

6.5 Given the above conclusions, the difference (b) identified in paragraph 6.2 above is sufficient to establish that the subject-matter of claim 1 of the respondent's main request involves an inventive step according to Article 56 EPC. It is therefore not necessary for the board to consider whether or not the inclusion of the amount of damage in the severity signal (i.e. difference (c)) would be obvious to the skilled person.

7. Other Matters

7.1 Claims 2 and 3 of the respondent's main request are dependent on claim 1, and claim 4 defines a system which comprises system features corresponding to the method steps of claim 1 and which makes use of a hazard prioritisation method according to any of claims 1 to 3, so that the above conclusion concerning inventive step applies also to these claims. Therefore, since no objections to these claims under Articles 83, 84, 123(2) and 123(3) EPC have been raised beyond those raised with respect to claim 1, the board concludes that none of the objections raised by the appellant prejudice the maintenance of the patent in the form of the respondent's main request.

7.2 Given this conclusion, it is not necessary for the board to consider any of the respondent's auxiliary requests.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to maintain the patent in amended form in the following version:

Claims: 1 to 4 of the main request filed with the letter dated 16 February 2012.

Description: Pages 2 and 3 filed at the oral proceedings before the opposition division on 29 September 2008,
Pages 4 to 7 of the patent specification.

Drawings: Figures 1 to 6 of the patent specification.

The Registrar:

The Chairman:



U. Bultmann

M. Ruggiu

Decision electronically authenticated