

Veröffentlichung im Amtsblatt	Ja/ <input checked="" type="checkbox"/> /Nein
Publication in the Official Journal	Yes/ <input checked="" type="checkbox"/> /No
Publication au Journal Officiel	Oui/ <input checked="" type="checkbox"/> /Non

Aktenzeichen / Case Number / N<sup>o</sup> du recours : T 163/85  
Anmeldenummer / Filing No / N<sup>o</sup> de la demande : 82 902 076.7  
Veröffentlichungs-Nr. / Publication No / N<sup>o</sup> de la publication : 0 083 352

Bezeichnung der Erfindung: Colour television signal  
Title of invention:  
Titre de l'invention :

Klassifikation / Classification / Classement : H04 N7/00

### ENTSCHEIDUNG / DECISION

vom / of / du 14 March 1989

Anmelder / Applicant / Demandeur : British Broadcasting Corporation

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence : Colour television signal/BBC

EPÜ / EPC / CBE Articles 52(1), (2), (3), 56

Schlagwort / Keyword / Mot clé : - Colour television signal patentable (yes) -  
- Inventive step (yes) -

#### Leitsatz / Headnote / Sommaire

A colour television signal characterised by technical features of the system in which it occurs, i.e. in which it is being generated and/or received does not fall within the exclusions of Article 52(2) and (3) EPC and is regarded as an invention within the meaning of Article 52(1) EPC.

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Headnote follows

Europäisches  
Patentamt

European Patent  
Office

Office européen  
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number : T 163/85



**D E C I S I O N**  
of the Technical Board of Appeal 3.5.1  
of 14 March 1989

**Appellant :** British Broadcasting Corporation  
Broadcasting House  
London W1A 1AA  
GB

**Representative :** Abnett, Richard Charles  
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16 Theobalds Road  
London WC1X 8PL  
GB

**Decision under appeal :** Decision of Examining Division 058  
of the European Patent Office  
dated 1 February 1985 refusing European  
patent application No. 82 902 076.6  
pursuant to Article 97(1) EPC

**Composition of the Board :**

**Chairman :** P.K.J. van den Berg

**Members :** W.B. Oettinger  
P. Ford

## Summary of Facts and Submissions

- I. European patent application No. 82 902 076.7, publication number 0 083 352, filed on 12 July 1982 and claiming a priority of 13 July 1981, based on GB 8 121 490, was refused by a decision of Examining Division 058 of the European Patent Office, dated 1 February 1985.
- II. That decision was based on Claims 1-5 submitted by letter dated 31 October 1984. These claims were refused because of lack of inventive step (Articles 52, 56 EPC) of their subject-matter.

The decision refers to the following documents:

- (1) SMPTE Journal, Vol. 89, No. 9, September 1980, pages 663-669.
- (2) US-A-2 820 091.
- (3) FK TG, Tagungsband von der 7. Jahrestagung, der FK TG, 17. bis 21. September 1979, Seiten 562-567 (Prof. Wendland).
- (4) FK TG, Tagungsband von der 8. Jahrestagung der FK TG, 6. bis 9 Oktober 1980, Seiten 381-392 (J. Polonsky).

In fact, however, independent Claim 1 and dependent Claim 5 were rejected for lack of inventive step on the basis of common technical knowledge. The features of dependent Claims 2 to 4 were considered as known from document (2) and as not adding anything inventive to the non-inventive subject-matter of Claim 1.

- III. Against this decision, the Applicant, now Appellant, filed a notice of appeal, on 11 March 1985. The fee was paid on 8 March 1985 and a Statement of Grounds was filed on 30 May 1985.

With the Statement, two sets of claims were filed, set A comprising eight claims and set C comprising seven claims.

The Appellant requested the grant of a patent based on set A of claims, and if these would not be allowed, on the basis of set C of claims.

In the case that neither of these two sets would be allowed, he requested an oral hearing.

IV. Set A of claims reads as follows:

1. A colour television signal adapted to generate a picture with an aspect ratio of greater than 4:3, and in which the active-video portion of a line constitutes at least 85% and preferably 90% of the line period.
2. A colour television signal according to Claim 1, in which colour synchronising information is transmitted separately from the normal line period.
3. A colour television signal according to Claim 2, in which colour synchronising information is transmitted during the vertical blanking interval.
4. A colour television signal according to Claim 2, in which the colour synchronising information is transmitted in or with the sound signal or a data signal.
5. A colour television signal according to Claim 1, in which a d.c. clamping reference is transmitted in each line during the non-active-video portion thereof.

6. A colour television signal according to Claim 1, in which the line period is substantially equal to 64 microseconds.
  7. A colour television receiver for receiving a signal according to Claim 1, including means responsive to at least 85% and preferably 90% of the line period to separate the active-video line portion, and means for displaying a picture in response thereto with an aspect ratio greater than 4:3.
  8. A colour television receiver according to Claim 7, including means for increasing the line and/or field rate of the displayed picture above that of the received signal.
- V. In the Statement of Grounds, the Appellant argues essentially as follows:

The invention as claimed provides sufficient increase in the active-video portion of the line to allow increase of the aspect ratio without any increase in the overall bandwidth of the signal.

Much work of recent years has taken place in this field in anticipation of improved high definition television standards and several proposals for 5:3 aspect ratios have been cited by the Examining Division, but none of these teaches or in any way suggests the very simple expedient proposed according to the invention.

The practical importance of compatibility at different levels in the signal chain must be appreciated. Of course, there are several elements in this chain, the cameras and

studio processing equipment, encoding systems, transmission links and receivers.

The importance of compatibility at the transmission link level should not be underestimated.

In order to be able to receive the much improved pictures according to the present invention, new equipment at the studio and for encoding and also new receivers are necessary, but no new transmission links are necessary, the cost of which would have been formidable.

The situation was not that there was a clear problem to be solved, namely to provide an improved television system which gave a wider aspect ratio and which was at least partially compatible with the existing systems. High aspect ratio films have existed for years; it is not as if the problem of portraying them in television had just appeared.

The invention resides essentially in the appreciation that such a problem exists and that it is capable of being solved. Only after it has been solved is it clear that the steps involved in its solution are simple ones.

Enclosed with the Statement of Grounds was an affidavit from Mr A.J. Seeds, Lecturer at Queen Mary College, University of London, confirming the non-obviousness of the invention claimed.

- VI. In a communication, the rapporteur objected against Claims 1-6 of set A and Claims 1-5 of set C in that a signal, be it a colour television signal, cannot constitute a patentable invention and that such a signal is excluded from patentability by the non-exhaustive list of exclusions

summed up in Article 52(2) EPC with the proviso of Article 52(3) EPC.

Claims 7 and 8 of set A and Claims 6 and 7 of set C, which all concern a colour television receiver, were considered to comprise subject-matter lacking inventive step. In particular, the features of the characterising parts of Claim 7 of set A and 6 of set C were considered to be known from document (2) and it was inferred that in a system as described in (2) the active portion of a line must already comprise a higher percentage of the line period than in a standard T.V. system.

- VII. At oral proceedings, the Appellant maintained his main request based on set A of claims and as an auxiliary request, the grant of a patent based on set C of claims.

The Appellant emphasised that the subject-matter of Claim 1 of both sets was novel and showed inventive step in particular with regard to document (2), which concerns old prior art (1958) dealing only with synchronisation in T.V. systems, but certainly not with modern developments such as obtaining higher aspect ratios.

This document does not give the slightest hint to increasing the active line period, on the contrary, it leads away from the invention. The documents which do mention a higher aspect ratio are all concerned with High Definition T.V. which needs greater bandwidth than conventional systems.

The application obtains a higher aspect ratio without higher bandwidth. It intends to use the transmission paths which are available and these are at the time designed for standard bandwidth and because of that, not suitable for HDTV. The achievement of the invention, therefore, lies in



obtaining with the old transmission systems nevertheless, an increased aspect ratio. This is inventive and it is not correct to reconstruct an invention, because the measures taken look simple, once one has read the application.

So far as any objection based on Article 52(2), (3) EPC was concerned, the Appellant was prepared to revert to the original form of claims if necessary.

VIII. In a further communication dated 28 October 1988 the Appellant was informed that the composition of the Board had been changed after the oral proceedings. In conformity with Article 7 of the Rules of Procedure the Appellant was offered the opportunity to request fresh oral proceedings.

Moreover, he was informed that the Board in its new composition held the view that the decision under appeal must be set aside and that subject only to minor amendments in the description a patent should be granted on the basis of his main request, i.e. set A of Claims 1-8 as filed on 30 May 1985.

IX. With his reply received 20 December 1988 the Appellant submitted amended pages 1, 1a, 3 and 4 to the description and declared that, on the assumption that the Board now finds the application acceptable, the right to new oral proceedings is waived.

#### Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is, therefore, admissible.

2. The Board no longer maintains its view that a claim pertaining to a colour television signal would be excluded from patentability according to Article 52(2) and (3) EPC.

As the Examining Division noted in its decision, there is no substantial difference between Claim 1 as originally filed, which was directed to a colour television system and the Claim 1 which they had to judge upon and which was directed to a colour television signal; the features of the system claim also in essence only defined a T.V. signal. This T.V. signal as now claimed is specific for the television system in which these signals occur.

The description has been adapted accordingly.

No objection arises under Article 123(2) since by the system as described in the application as originally filed, the signal as it is now claimed is also adequately described.

The Board previously put forward, of its own motion, the objection that the T.V. signal as claimed could be considered as a presentation of information, which, as such, is excluded from patentability according to Article 52(2)(d) and (3) EPC.

However, the T.V. signal as claimed seems to be more than a mere presentation of information "as such". In fact, the T.V. signal as claimed inherently comprises the technical features of the T.V. system in which it is being used and if it is considered to present information then it represents exactly that kind of information which exhibits the technical features of the system in which it occurs.

The Board considers it to be appropriate to distinguish between two kinds of information, when discussing its presentation.

According to this distinction, a T.V. system solely characterised by the information per se, e.g. moving pictures, modulated upon a standard T.V. signal, may fall under the exclusion of Article 52(2)(d) and (3) EPC but not a T.V. signal defined in terms which inherently comprise the technical features of the T.V. system in which it occurs.

As the list of exclusions from patentability summed up in Article 52(2) EPC in connection with Article 52(3) EPC is not exhaustive in view of the phrase "in particular" in the first line of paragraph 2, the exclusion might be arguably generalised to subject-matter which is essentially abstract in character, which is non-physical and therefore is not characterised by technical features in the sense of Rule 29(1) EPC.

The T.V. signal as claimed would also not fall under this more general interpretation of the exclusions of Article 52(2) and (3) EPC, because it is a physical reality which can directly be detected by technological means and, therefore, cannot be considered as an abstract entity, despite its transient character.

So, in conclusion, the subject-matter of those claims of set A and set C, which pertain to a colour television signal, are not excluded from patentability on the basis of paragraphs 2 and 3 of Article 52 EPC.

### 3. Novelty

A signal according to Claim 1 of set A is certainly novel, also with regard to (1) SMPTE Journal, September 1980, pages 663-669 (cited on new page 1 of the description, filed 20 December 1988), which recites on page 665, right-hand column under the heading "4.1 High-definition Television Systems" a T.V. system with an aspect ratio of 5:3. Although the latter falls within that part of the wording of the claim which states "greater than 4:3", the cited passage mentions an effective horizontal scan rate of 83.5% which clearly is excluded by that feature of the claim which requires that the active-video portion of a line constitute at least 85% of the line period.

4. Inventive step

Whenever the desirability of a higher aspect ratio than the traditional standard value of 4:3 is being discussed in the cited prior art, this is always done in the context of High Definition Television, i.e. the said desirability is always mentioned in connection with other aims, like higher resolution (by a larger number of horizontal lines), reduction of large area flicker etc. with the proviso that the latter aims are to be realised at the accepted cost of larger bandwidth than the standard bandwidth.

The cited passage from SMPTE Journal mentions an aspect ratio of  $5:3 = 1.67$  and an effective horizontal scan rate of 83.5%.

A conventional television line has a line period of  $64 \mu\text{s}$  of which  $52 \mu\text{s}$  constitutes the active video signal, this is 81.25% for an aspect ratio of  $4:3 = 1.333$ . It is clear that the higher aspect ratio of  $5:3 = 1.67$  mentioned in SMPTE Journal cannot be obtained by solely increasing the effective horizontal scan rate from the standard value of

81.25% to the value given in that article 83.5%. Starting from an aspect ratio of 4:3, an effective horizontal scan rate of 83.5% alone would lead to an increased aspect ratio of only  $\frac{83.5}{81.25} \times \frac{4}{3} = 1.027 \times \frac{4}{3} \sim 1.369$ .

So, the aspect ratio of 5:3 = 1.67, mentioned by the SMPTE Journal, is not only obtained by increasing the effective horizontal scan rate but by decreasing the height of the image at the same time. The invention, however, aims at increasing the aspect ratio by solely increasing the effective horizontal scan rate.

For an increase of the aspect ratio from the standard value of 4:3 to 5:3, the effective horizontal scan rate would have to be increased by a factor  $\frac{5:3}{4:3} \sim 1.25$  which results

starting from the standard effective horizontal scan rate of 81.25%, into a value of  $\frac{5}{4} \times 81.25\% \sim 101.55\%$ . This means

that an aspect ratio of 5:3 cannot be achieved by the present invention contrary to what is being stated on page 4, lines 29-32 of the description as originally filed. The maximum aspect ratio obtainable according to the invention based on the maximum value of 97 1/2% for the effective horizontal scan rate mentioned in lines 25-58 of page 4 of the description would be  $\frac{97.5}{81.25} \times \frac{4}{3} = 1.6008$ .

With his submission of 20 December 1988 the Appellant has amended page 4 of the description accordingly.

However this may be, the invention achieves a considerable increase in aspect ratio up to values considered in the

literature as desirable for the future, by an increase in effective horizontal scan rate alone, i.e. at standard bandwidth. The Board considers this achievement as non-obvious, because the citations (1), (3) and (4) only mention the desirability of this higher aspect ratio solely in the context of H.D.T.V., i.e. implying an increase in bandwidth and as far as these documents indicate real measures to be taken with this aim, the contribution to an increase of the aspect ratio by an increase of the effective horizontal scan rate is negligible (as in the cited passage from the SMPTE Journal). These three documents do not contain the slightest hint at an effective increase of the aspect ratio to be obtained by an increase of the effective horizontal scanning rate alone according to the invention. On the contrary they lead away from the invention.

Although the features which the dependent Claims 2-6 of set A add to Claim 1 of that set, and which features pertain to embodiments for carrying out the invention according to Claim 1, may be considered as known as such from document (2), this document does not even mention the concept of effective horizontal scan rate and therefore certainly does not say how to increase it.

Therefore, Claims 1-6 of set A comprise, in the view of the Board, subject-matter which is novel and non-obvious.

For the same reasons, this also applies to independent Claim 7 of set A and its dependent Claim 8.

With regard to Claim 8 it should be noted that its characterising part solely consists of the inclusion into a colour television receiver of means for increasing the line and/or field rate of the displayed picture above that of the received signal. This feature has not been claimed

before, neither in the Claims 1-4 originally filed nor in Claims 1-5 received 2 November 1984.

Claim 8 does, however, satisfy Article 123(2) because the said feature is disclosed on page 3, lines 25-33 of the description as originally filed in combination with the features of Claim 7 on which it is dependent. The said feature is also comprised in the priority document of the present application i.e. GB 8 121 490, page 2, lines 14-18. The cited passages from the application as filed and from the priority document refer, in connection with the said feature to GB 2 050 109. The latter document and its corresponding EP 18 856 were both published before the priority date of the present application. Therefore the characterising features of Claim 8 are not novel per se, but known from GB 2 050 109 and EP 18 856. However, no objection arises against this claim, since it is dependent on a claim which is now considered as allowable.

Claim 8 only constitutes a further limitation of the scope of Claim 7 and is properly based on the application as originally filed.

5. Since the complete set A of Claims 1-8 is considered allowable, the auxiliary set C of claims need not to be considered.

#### Order

For these reasons, it is decided that

1. The impugned decision is set aside.
2. The case is remitted to the first instance to grant a patent on the basis of the following documents:

- Claims 1 to 8 of Appendix A, filed 30 May 1985
- description pages 1, 1a, 3, 4 filed 20 December 1988 and page 2 as originally filed
- Figures 1-3 as originally filed.

The Registrar

The Chairman

S. Fabiani

P.K.J. Van den Berg