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D E C I S I O N
of 10 March 2005

Case Number: T 0753/01 - 3.5.3

Application Number: 94910525.8

Publication Number: 0645904

IPC: H04H 1/02

Language of the proceedings: EN

Title of invention:
Broadcasting communication system

Applicant:
Kabushiki Kaisha Toshiba

Opponent:

-

Headword:
Broadcasting communication system/TOSHIBA

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step - no"

Decisions cited:

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Catchword:

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Case Number: T 0753/01 - 3.5.3

D E C I S I O N
of the Technical Board of Appeal 3.5.3
of 10 March 2005

Appellant: Kabushiki Kaisha Toshiba
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 9 February 2001
refusing European application No. 94910525.8
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: F. van der Voort
R. Moufang

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division to refuse European patent application 94 910 525.8 (publication number EP 0 645 904 A).
- II. In the decision the examining division referred, *inter alia*, to the following documents:
- D1: EP 0 431 816 A; and
- D4: L. J. Leenders, "PTT brengt Engeland dichterbij Nederland", Studieblad PTT, vol. 41, No. 12, December 1986, The Hague, The Netherlands, pages 407 to 416.
- III. The reasons for the refusal were that the subject-matter of claims 1 and 33 to 38 of a main request and claims 1 to 38 of an auxiliary request did not involve an inventive step having regard to a combination of D1 and D4 (Articles 52(1) and 56 EPC).
- IV. With the statement of grounds of appeal the appellant requested that a patent be granted on the basis of the above-mentioned main request or, failing that, on the basis of the above-mentioned auxiliary request. Oral proceedings were conditionally requested. The appellant considered D1 to represent the closest prior art and argued that it did not teach, *inter alia*, a collection network for collecting and multiplexing broadcasting signals. With respect to D4 the appellant merely stated that "Document D4 does not disclose anything about the collecting network and the distributing network".

- V. The appellant was summoned by the board to oral proceedings. In a communication accompanying the summons, the board gave a preliminary opinion.
- VI. In response to the board's communication, the appellant filed a second auxiliary request and presented arguments in support of the pending requests.
- VII. Oral proceedings were held on 10 March 2005 during which the appellant filed a new second auxiliary request. The appellant requested that the decision of the examining division be set aside and a patent be granted on the basis of the main request or, alternatively, the first or second auxiliary request. At the end of the oral proceedings the board's decision was announced.
- VIII. Claim 1 of the main request reads as follows:

"A broadcasting communication system comprising:

a collection network (100;200) for collecting broadcasting signals transmitted from a plurality of broadcasting stations (108;208) and for multiplexing collected broadcasting signals; and

a distribution network (101;201) which is connected to said collection network (100;200) via at least one transmission path (104) which is smaller in number than the broadcasting signals transmitted from the broadcasting stations, has distribution nodes (107;207) connected to subscriber networks (310), receives the multiplexed collected broadcasting signals, and transmits the received multiplexed collected broadcasting signals to the distribution nodes (107;207), in the distribution network at least

one of the multiplexed collected broadcasting signals being selected by a subscriber or at least predetermined one [sic] of the multiplexed collected broadcasting signals are [sic] distributed to a subscriber network (310) corresponding to the subscriber."

Claim 1 of the first auxiliary request further limits the scope of claim 1 of the main request in that it defines that the distribution network is connected to the collection network "via a single transmission path".

IX. According to the second auxiliary request, claim 1 of the main request has been amended by replacing the final feature by the following feature:

", in the distribution network at least predetermined one [sic] of the multiplexed collected broadcasting signals are [sic] distributed to a subscriber network (310);

wherein said collection network (100;200) and said distribution network (101;201) transmit a digital broadcast signal, said subscriber network (310) transmits an analog broadcast signal, and said distribution nodes (107;207) comprise means (305) for converting the digital broadcast signal into the analog broadcast signal."

Reasons for the Decision

1. *Inventive step (main and first auxiliary requests)*
 - 1.1 The board agrees with the appellant that D1 represents the closest prior art.
 - 1.2 D1 discloses a cable television network including a switched star-type distribution network (see Figure 2) connected to a head end 26 via a single transmission path, *i.e.* a trunk cable connecting the head end 26 to a first amplifier 27 of the distribution network. The distribution network includes distribution nodes (hubs 29) connected to subscriber networks (subscribers 21A, drop cables 30) and receives a plurality of frequency-multiplexed television program signals supplied by the head end 26 via the single trunk cable. These signals are transmitted to the distribution nodes 29 via secondary cables 28 (column 2, lines 2 to 6 and 44 to 51). Switches at the distribution nodes are arranged such that one of the program signals may be selected by a subscriber and distributed via the respective drop cable 30 to the subscriber (column 3, lines 4 to 10). Additional non-switched channels may also be carried by the drop cable (column 3, lines 38 to 43) and provision may be made to facilitate communication between the head end and the subscribers for other purposes (column 3, lines 20 to 26). Hence, the distribution network and the head end together constitute a communication system.
 - 1.3 The communication system according to claim 1 of the main request is distinguished from the network disclosed in D1 in that according to claim 1 the head

end is formed by a collection network for collecting broadcasting signals transmitted from a plurality of broadcasting stations and for multiplexing collected broadcasting signals.

1.4 D1 does not provide further details about the head end 26. In the board's view, a person skilled in the art faced with the problem of implementing the head end would consider D4, since D4 also relates to a cable television network (see D4, page 407, the abstract, lines 1 to 3) comprising (see point 1.5 below) a distribution network and a collection network including a head end described in more detail.

1.5 More specifically, D4 discloses a system for communicating BBC1 and BBC2 television program signals broadcast by a TV broadcasting station in Dover, England, via a transmission chain extending through Belgium, to Dutch TV transmission towers, e.g. in Lopik (see Figure 1 at page 408 ("*Lpk*") and page 409, last four lines), the television signals having been multiplexed into an SHF-signal package (see Figure 2) and subsequently transmitted to regional receiving end stations, e.g. in Utrecht (see Figure 1), which feed the TV-signals into respective regional cable TV distribution networks (page 411, 2nd para.). Each regional receiving end station thus constitutes a head end of a collection network for feeding TV-signals into a regional cable TV distribution network connected thereto.

1.6 In D4, the regional cable TV distribution networks are said to be existing networks which had been or would soon be supplied with the BBC1 and BBC2 program signals

(D4, page 407, the abstract, lines 5 to 9), which implies that these networks were already in use for collecting and distributing other television program signals. Since the networks are in the Netherlands, it is obvious that Dutch television program signals would also be collected and distributed via these networks. Furthermore, these signals are broadcasted by Dutch TV broadcasting stations, e.g. by the broadcasting station in Lopik. Further, on page 410, last para., reference is made to the reception of German, Belgian and French television programs and their subsequent distribution via the existing cable television networks in the Netherlands.

It follows that the regional receiving end station of D4 forms a head end of a collection network for collecting a plurality of broadcasting signals transmitted from a plurality of broadcasting stations (see also Figure 2, television signals TV1, ... , TVh).

1.7 A person skilled in the art, faced with the problem of implementing the head end of D1, would find the solution in the teaching of D4 and by applying the teaching of D4 to the network of D1 would arrive at a broadcasting communication system including a collection network and a distribution network as defined in claim 1 of the main request. Moreover, according to D1 the distribution network is connected to the head end via a single trunk cable (see point 1.2 above), as defined in claim 1 of the first auxiliary request.

1.8 At the oral proceedings, the appellant argued that D4 disclosed a cable television network including a

plurality of distribution networks, whereas the system according to the invention had only one distribution network. The board however notes that the system according to claim 1 of all requests comprises a distribution network and therefore does not exclude a system including a plurality of distribution networks.

1.9 The subject-matter of claim 1 of the main and first auxiliary requests therefore lacks an inventive step having regard to the teaching of D4 when applied to the distribution network of D1 (Articles 52(1) and 56 EPC).

2. *Inventive step (second auxiliary request)*

2.1 According to claim 1 of the second auxiliary request (see point IX above) the collection network and the distribution network transmit a digital broadcast signal, whereas the subscriber network transmits an analog broadcast signal. Further, the distribution nodes comprise means for converting the digital broadcast signal into the analog signal.

2.2 In the course of the proceedings the appellant accepted that the transmission of digital television broadcast signals was known at the priority date of the application in suit (see also the application as published, column 3, lines 35 to 38). Nevertheless, D1 neither discloses the transmission of digital broadcast signals nor the provision of D/A-converters at the distribution nodes.

2.3 Starting from D1, the technical problem underlying the claimed subject-matter may therefore be seen in implementing the head end of the cable television

network of D1 (see point 1.4 above) and additionally in rendering the network suitable for digital broadcast signals.

2.4 The appellant argued that the skilled person faced with the problem of rendering the cable television network of D1 suitable for digital TV signals would follow the (in the appellant's view) usual approach of implementing a completely new digital network, in which the digital TV signals would be supplied all the way up to the subscribers who would have to be equipped with digital instead of analog receivers.

2.5 The board notes however that in the switched star-type distribution network of D1 (see Figure 2) conventional television receivers are used (see column 3, lines 33 to 38). The board considers that in 1989, i.e. at the priority date of D1, conventional receivers were analog receivers. Further, the board notes that D1 recognises the importance of a significantly reduced bandwidth of the drop cables as compared to that of the trunk cables and secondary cables, which supply the full bandwidth of frequency-multiplexed television signals, in order to reduce subscriber cabling costs (see column 3, lines 10 to 15, 29 and 38 to 43, and column 2, lines 44 to 52).

Therefore, if digital frequency-multiplexed television signals were to be supplied by the head end of the network of D1, it would be obvious to the skilled person to provide D/A-converters at the distribution nodes, namely at the interface between the wide-band secondary cables and the subscriber networks, in order to be able to make further use of the less expensive

drop cables and the conventional television receivers, which are designed for narrow-band analog signals. Further modification of the cable television network would not be necessary and neither does claim 1 define any further features specifically relating to digital broadcast signals.

2.6 In view of the above and the reasons as given in respect of claim 1 of the main request, the board concludes that the subject-matter of claim 1 of the second auxiliary request does not involve an inventive step.

3. There being no other requests, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland