

PROCESS FOR THE TRANSMISSION OF TELETEXT DATAPATENT CLAIM

Process for the transmission of preferably periodically repeating teletext data in a television signal, in which on the reception side the teletext data are separated from the television signal, the data belonging to in each case one teletext page are collected and the thus compiled teletext pages are placed in intermediate storage, in which on the transmission side in addition to the teletext basic data of conventionally constructed teletext pages supplementary data for in each case one teletext page are transmitted in the form of one or more associated supplementary pages with page numbers in the hexadecimal system, which are structured in the format of conventional teletext pages and on the reception side are placed in intermediate storage separately from the basic data of a desired teletext page, and in which the page numbers, encoded in the hexadecimal system outside the decimal system, of the supplementary pages are allocated, in accordance with a specified scheme, to the page numbers, which are allocated in the decimal system and which are selectable by means of a ten-key keypad, of the allocated, conventional teletext pages, characterized in that further supplementary data with independent image content are transmitted, instead of or in addition to the supplementary data, in the same encoding and formatting, and the further supplementary data are reproduced on a screen with an aspect ratio of 16:9 in the image area beside a conventional teletext page or beside a conventional television picture with in each case an aspect ratio of 4:3.

REPLACED SHEETS	SG
☒ Description : paged ...2... to paged ...5.....	
☒ Claim(s) : paged ...11... to paged ...7.....	
☒ Drawing(s) : paged ...13... to paged ...26.....	
☒ Abstract : paged ...4... to paged ...7.....	
DATE OF RECEIPT	

This Sheet Has Been Replaced



(New) DESCRIPTION

The invention relates to a process according to the preamble of the patent claim. Such a process is known from DE 39 14 697 A1.

5 In the conventional teletext system which is currently used in Europe (with the exception of France) the so-called "Level 1" of the WST (World System Teletext) teletext standard is used, which displays texts and graphic displays with a restricted set of basic
10 symbols on a screen having the aspect ratio 4:3. Special symbols, fine structures and coloured shadings are provided by the WST standard in its expansion stages "Level 2" and "Level 3", in which the transmission of supplementary data takes place in so-called pseudorows
15 (also called "ghost rows") which carry addressable row numbers which are not used by "Level 1" but which are kept free in the transmission format. If required, a plurality of rows with the same row number must be used for the transmission of the necessary volume of supplementary data, as is illustrated with reference to Fig. 1
20 for the row number # 26 (cf. "Rundfunktechnische Mitteilungen" Vol. 27 (1983), No. 3, pp. 116 to 134). Since the teletext receiver does not receive any information on the number of pseudorows transmitted in each instance for a
25 teletext page (basic data), the decoder does not "know" whether, which and where appropriate how many pseudorows have been outward-transmitted for a teletext page.

 Accordingly, a correct evaluation can take place only in circumstances in which the desired teletext page
30 and all allocated pseudorows are received completely. Furthermore, it is necessary to maintain constantly available in the decoder for each teletext page to be stored an additional memory space, e.g. 4 kbyte, which is not useable for any other purpose in the absence of
35 transmission of pseudorows.

 In order to permit a more efficient transmission



and more rapid processing of the supplementary data, without losing the full compatibility with existing teletext receiver operating according to "level 1", it is known from DE 39 14 697 A1 to transmit, in addition to
5 conventional teletext pages ("basic pages"), so-called supplementary pages which are preferably structured in the format of the teletext pages. As Fig. 2 shows, the supplementary page(s) allocated to a specified teletext page contain the data ("supplementary data") which are
10 absent for a higher WST level (e.g. level 2/3).

In the receiver, basic data and supplementary data are separated from the video signal and are compiled into in each case one teletext page on a screen with an aspect ratio 4:3. In the case of a screen with a
15 broadened aspect ratio of 16:9, the display of teletext pages in the 4:3 format is however possible only in an unsatisfactory fashion, since either, in the case of undistorted display, approximately 40% of a 16:9 screen remains unused (see Fig. 3) or, with appropriate format-
20 filling using horizontally stretched display, unacceptable distortions of the overall picture occur (Fig. 4).

It is furthermore known from DE 39 12 805 A1 to display the teletext information on a wide-picture television screen in the conventional aspect ratio of 4:3
25 and to use the free areas at the margins of the wide-picture television screen for the display of user guidance information. Furthermore, it is also already known (DE 39 23 907 A1) to display teletext signals and video signals simultaneously alongside one another on a
30 screen.

As against that, the object of the invention consists in enabling a compatible transmission of teletext pages for 16:9 screens.

According to the invention, this object is
35 achieved by the characterizing features of the patent claim.

The invention is explained in greater detail with reference to an illustrative embodiment shown in the drawings. In the drawings:



Fig. 1 shows a diagrammatic representation of the known WST teletext standard;

Fig. 2 shows a diagrammatic representation concerning the transmission of the supplementary data in supplementary pages;

Fig. 3 shows a conventional teletext page with an aspect ratio 4:3, which is displayed on a receiver with an aspect ratio 16:9;

Fig. 4 shows a 4:3 teletext page horizontally stretched to 16:9;

Fig. 5 shows a diagrammatic representation of the process according to the invention;

Fig. 6 shows an example of a 16:9 wide-format teletext page;

Fig. 7 shows an example of the use of a 16:9 wide screen by a conventional television picture in the 4:3 format and an additionally mixed-in supplementary field for teletext.

In the process according to the invention, in addition to the conventional teletext pages ("basic pages") and the supplementary pages containing the data which are missing for a higher WST level, further supplementary data for the display of an additional field on the 16:9 wide-picture receiver are transmitted (see Fig. 5).

While conventional decoders can display only 24 rows containing 40 symbols on each page, on the 4:3 screens, when using future 16:9 screens the display of a television page comprising 24 rows each containing for example 40 + 16 symbols is possible. In this additional field, which comprises 24 rows each containing 16 symbols, besides text information on the 4:3 page more extensive explanatory graphics and pictures, for example, can be displayed (see Fig. 6).

The supplementary data for the additional field are encoded and formatted in a similar manner (for example in accordance with the CEPT videotex encoding) to the supplementary data for the higher levels.

In receivers equipped with 16:9 screens, the



supplementary data transmitted by means of supplementary pages, for the supplementary field and for the higher levels are evaluated together with the basic data and are displayed on a teletext page with 56 characters per row, while the conventional receivers evaluate only the basic data, possibly together with the supplementary data for higher levels, and display them on the 4:3 screen.

Fig. 7 shows a further application for the supplementary field according to the invention, by which application the unused areas which arise in the case of display of television programmes in the 4:3 format on screens in the 16:9 format can be used in meaningful fashion. Thus, by way of example, a programme preview or further supplementary information (in this case, a share index) can be displayed, by appropriately equipped decoders, on the supplementary field on a 16:9 screen beside the 4:3 picture of the current television programme.

This Sheet Has Been Replaced

