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Title of invention:
Method and apparatus for synchronizing data streams containing audio, video and/or other data

Applicant:
Thomson Licensing

Headword:
Data-stream synchronisation/THOMSON LICENSING

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
Amendments - allowable (no)

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Case Number: T 0206/18 - 3.5.07

D E C I S I O N
of Technical Board of Appeal 3.5.07
of 12 July 2018

Appellant: (Applicant)	Thomson Licensing 1-5, rue Jeanne d'Arc 92130 Issy-les-Moulineaux (FR)
Representative:	Ståhl, Björn Niclas TECHNICOLOR 1-5, rue Jeanne d'Arc 92130 Issy-les-Moulineaux (FR)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 20 September 2017 refusing European patent application No. 14175807.8 pursuant to Article 97(2) EPC**

Composition of the Board:

Chairman	R. Moufang
Members:	R. de Man
	M. Jaedicke

Summary of Facts and Submissions

I. The applicant (appellant) appealed against the decision of the Examining Division refusing European patent application No. 14175807.8, which is a divisional application claiming a priority date of 11 October 2002.

II. The Examining Division decided that the subject-matter of sole claim 1 of the sole substantive request extended beyond the content of the application as filed, contrary to Article 123(2) EPC.

III. With its statement of grounds of appeal, the appellant filed an amended sole substantive request comprising a sole claim 1.

IV. In a communication accompanying a summons to oral proceedings, the Board raised questions with respect to both sufficiency of disclosure and added subject-matter.

V. In a letter dated 22 May 2018, the appellant commented on the Board's communication.

VI. In a further communication, the Board informed the appellant that it was not yet convinced that the application complied with Articles 83 and 123(2) EPC.

VII. With a letter dated 20 June 2018, the appellant informed the Board that it would not attend the oral proceedings.

VIII. Oral proceedings were held in the appellant's absence on 25 June 2018. At the end of the oral proceedings,

the chairman announced that the decision would be given in writing.

IX. Claim 1 of the sole request reads as follows:

"Method for playing back data streams containing video, audio and/or other data, the method comprising the steps of:

decoding a stream path of descriptors (PlayItem), wherein the descriptors define the temporal order for playing back parts of an AV MPEG-2 transport stream of multiplexed elementary streams;

decoding sub stream paths for synchronous play back with the AV MPEG-2 transport stream, wherein the sub stream paths comprise one or more further descriptors (SubPlayItem) pointing to further data streams or to parts of said further data streams, wherein said further data streams are encoded in further elementary streams which are organized as a further AV MPEG-2 transport stream originating from a data source external to said basic AV MPEG-2 transport stream, and wherein said further descriptors define the start time and end time of the separate parts of the further data streams;

synchronously playing back the AV MPEG-2 transport stream and a further data stream; and

at a splice point in the further elementary streams, stop decoding of a first elementary stream among the further elementary streams and start decoding a second elementary stream among the further elementary streams,

wherein said AV MPEG-2 transport stream is pre-recorded on a storage disk and said further AV MPEG-2 transport stream is provided via Internet."

X. The appellant's arguments where relevant to this decision are discussed in detail below.

Reasons for the Decision

1. The appeal complies with the provisions referred to in Rule 101 EPC and is therefore admissible.

2. The background section of the application explains that known optical storage media contain a single audiovisual (AV) multiplex transport stream comprising one or more elementary streams. The elementary streams can contain audio data or subtitle data in different languages or video data corresponding to different recording angles.

3. The problem addressed by the invention is that of allowing additional data streams to be provided for use with an existing AV multiplex stream. Such additional data streams, located outside the multiplex stream, require synchronisation with the data streams recorded in the multiplex stream. On page 3, lines 27 to 36, of the description, the application explains that two types of synchronisation are relevant: synchronisation of (stream) components "concerning their relative relation in time" (referred to as the "first case") and synchronisation of components "concerning their switching" (referred to as the "second case"). The first case relates to determining when to start the playback of a component relative to other components. The second case requires the identification of "splice points" at which playback can seamlessly switch from one component to another, for example to allow playback of multi-angle video.

4. In its decision, the Examining Division argued *inter alia* that the feature "synchronously playing back the AV MPEG-2 transport stream and a further data stream" of the then claim 1, which is still contained in present claim 1, referred to the "first case" of synchronisation. It considered that this feature had no basis in the application as filed as required by Article 123(2) EPC, because it was not apparent how the data structures described in the application specified the "relative relation in time" of the various stream components.

5. In its statement of grounds of appeal, the appellant agreed that the "synchronously playing back" feature related to the "first case" of synchronisation. It explained that this synchronisation was achieved by means of fields in "PlayItem" and "SubPlayItem" descriptors which specified the start and end times of corresponding stream components. All that was needed was to start playback of a stream component at the specified start time and to stop playback at the specified end time.

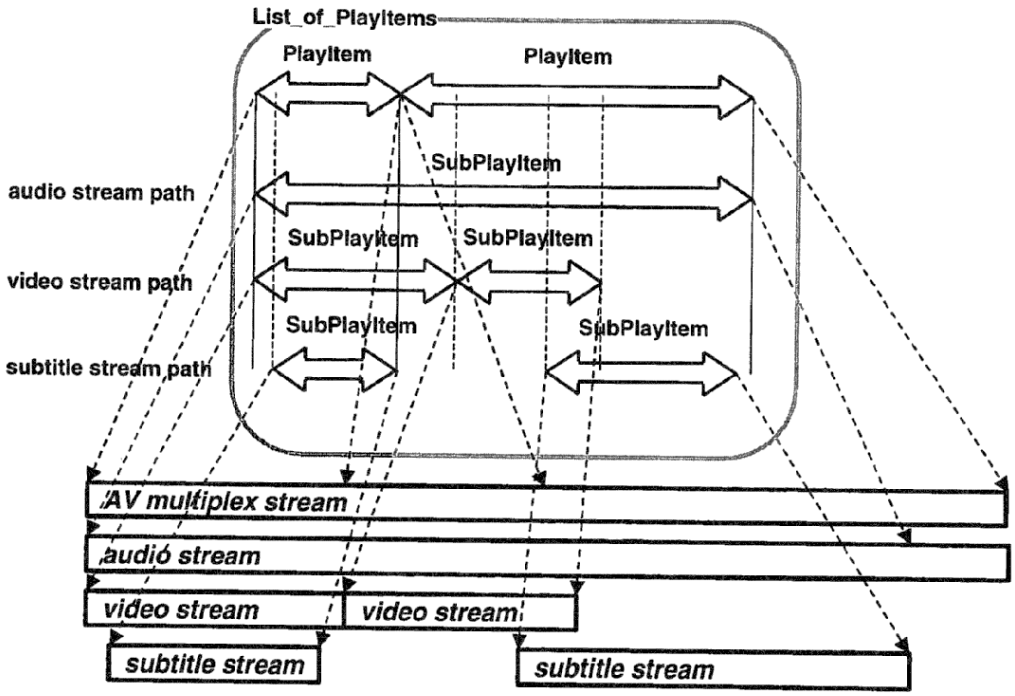
The appellant also amended claim 1 to include the feature "wherein said further descriptors define the start time and end time of the separate parts of the further data streams".

6. At this point, it is useful to discuss the various data structures described in the application. Most of the application's detailed description focuses on a "List_of_PlayItems" data structure (see Table 1). This data structure contains a list of "PlayItem" descriptors and a list of "SubPlayItem" descriptors. These descriptors define a number of "stream paths". The playitems form a stream path defining the temporal

order in which parts of the AV multiplex stream are to be played back (page 3, lines 11 and 12; original claim 1). The subplayitems form one or more substream paths corresponding to data streams located outside the AV multiplex stream (original claim 1).

7. Figure 1 of the application visually depicts a "List_of_PlayItems" data structure:

Figure 1: List_of_PlayItems Example



8. Each of the two playitems at the top of Figure 1 points to start and end points within the AV multiplex stream, thereby defining the order in which these two portions of the AV multiplex stream are to be played back.

The structure of a playitem descriptor is shown in Table 2:

Table 2: PlayItem – Syntax

Syntax	No. of bits	Mnemonic
PlayItem () {		
length	16	uimsbf
StreamFile	...	...
...		
Start_time	32	uimsbf
End_time	32	uimsbf
...		
reserved	11	bslbf
Seamless_presentation_flag	**1**	**bslbf**
...		
}		

According to the description on page 5, lines 5 to 11, the "StreamFile" field describes "a link to the elementary stream file" (as part of the AV multiplex stream; see point 6 above), and the "Start_time" and "End_time" fields contain the presentation start time and the presentation end time "of the PlayItem within the StreamFile". These fields hence correspond to the dashed arrows in Figure 1 pointing from the playitems into the AV multiplex stream.

9. The structure of a subplayitem descriptor is shown in Table 3:

Table 3: SubPlayItem – Syntax

Syntax	No. of bits	Mnemonic
SubPlayItem() {		
length	16	uimsbf
StreamFile	...	...
...		
Start_time...	32	uimsbf
End_time...	32	uimsbf
...		
reserved	6	bslbf
Seamless_presentation_flag	**1**	**bslbf**
Stream_path_end	**1**	**bslbf**
SubStream_type	**8**	**bslbf**
...		
}		

The passage on page 6, lines 3 to 10, of the description reads as follows:

"As defined within Table 3 a SubPlayItem structure is very similar to the structure of a PlayItem. It consists of length indicating the complete length of the structure in byte, StreamFile describing a link to the elementary stream file, Start_time describing the presentation start time of the PlayItem within the StreamFile and End_time describing the presentation end time of the PlayItem within the StreamFile."

10. In its statement of grounds of appeal, the appellant pointed to the similarity between this passage on page 6 and the passage describing the playitem descriptor on page 5, lines 5 to 11, and submitted that an evident copy-paste error was present in the former. Although it did not precisely identify the alleged error and its obvious correction, the Board understands the appellant to be referring to the two occurrences of "of the PlayItem", which both should read "of the SubPlayItem". Indeed, the appellant argued that the skilled person would realise that Tables 2 and 3 worked in the same way and that if a subplayitem did not provide information about its start and end times, there would be no real description of how subplayitems were handled.

The Board agrees that the skilled person studying Table 3 and its description would understand that "of the PlayItem" is to be read as "of the SubPlayItem" and that the passage on page 6 therefore discloses that the "Start_time" and "End_time" fields of a subplayitem descriptor describe the presentation start and end times "of the SubPlayItem within the StreamFile".

11. Turning back now to the question of whether the application as filed discloses how the "first case" of synchronisation is achieved, it is the appellant's position that the "Start_time" and "End_time" fields of each playitem and subplayitem descriptor specify, relative to a common time axis, the times at which playback of the playitem or subplayitem content is to be started and stopped. The appellant argued that the (sub)playitem's content was formed by the elementary stream to which the "StreamFile" field pointed.

12. The description, however, states that the "Start_time" and "End_time" fields define the presentation start and end times of the playitem or subplayitem "within the StreamFile". This wording suggests that the content of the (sub)playitem is not the complete elementary stream, but the part of the elementary stream from the specified start time until the specified end time. Figure 1 supports this interpretation in that each playitem identifies, by means of the dashed arrows, a portion of the time axis of the "AV multiplex stream". Likewise, the subplayitem in the "audio stream path" identifies only a portion of the "audio stream".

Further support for the interpretation that a (sub)playitem's content is not necessarily the complete elementary stream can be found in the passage on page 2, lines 23 to 29, which explains that the descriptors point to "parts of said data streams".

13. In the Board's view, the skilled person would therefore indeed understand the "Start_time" and "End_time" fields as defining start and end times "within the StreamFile", i.e. on a time scale specific to the elementary stream. Since the selection of a portion of

a data stream to define the content of a (sub)playitem gives no information on when the item is to be played back relative to other (sub)playitems, these descriptor fields do not achieve the "first case" of synchronisation in the manner suggested by the appellant.

14. In support of its position, the appellant referred to the description of Table 1 on page 4, line 29, to page 5, line 1, which states that "[t]he time axis of SubPlayItem(s) is referring to the time axis of the PlayItem(s)".

In the Board's understanding, the "time axis of the PlayItem(s)" refers to the "global time axis of the PlayList" mentioned in the description of Figure 1 on page 3, lines 16 to 18. The playitems and subplayitems depicted in Figure 1 are hence arranged on a common "global" time axis. But the passage cited by the appellant does not disclose that the "Start_time" and "End_time" fields refer to that time axis. It does therefore not contradict the Board's reading of the application.

15. The Board thus agrees with the Examining Division that the application as filed does not disclose in detail how the data structures proposed by the application support the claim feature "synchronously playing back the AV MPEG-2 transport stream and a further data stream". That in itself does not, however, mean that the feature lacks a basis in the application as filed within the meaning of Article 123(2) EPC, and the application as filed in fact makes various references to playing back the streams located in an AV multiplex in synchronisation with additional streams located outside the AV multiplex (see in particular page 3,

lines 8 to 14; page 3, lines 27 to 36; page 4, lines 5 to 12).

16. The lack of disclosure in the application as filed as to how synchronised playback of the different stream paths is to be achieved is rather relevant to the question of sufficiency of disclosure, although it appears to be arguable that the skilled person would be able to fill this gap - for example by including in each subplayitem descriptor a further field specifying the time with respect to the "global" time axis of the playlist at which playback of the subplayitem's content is to be started. The Board need not decide this question, as claim 1 now includes a feature that does lack a basis in the application as filed.

17. In its statement of grounds of appeal, the appellant amended claim 1 to include the feature "wherein said further descriptors define the start time and end time of the separate parts of the further data streams", but without indicating a basis for it in the application as filed. In its communication, the Board pointed out that it could not be based on the "Start_time" and "End_time" fields of the (sub)playitem descriptors, as those fields specified - more specifically - start and end times of a (sub)playitem "within the StreamFile".

18. In response, the appellant reiterated its position that the item's content corresponds to the complete elementary stream and that the "Start_time" and "End_time" fields do not refer to positions within the stream file but to the time axis of the playlist. But as explained above, the Board does not agree with this interpretation.

19. In the Board's judgment, the skilled person would - in line with the appellant's intention - understand the feature added to claim 1 as meaning that the "start time" and "end time" descriptor fields define the playback start time and end time of stream components of further elementary streams with respect to the time axis of the playlist. Since there is no basis for such descriptor fields in the application as filed, the subject-matter of claim 1 extends beyond the content of the application as filed and thus infringes Article 123(2) EPC.

20. The sole request on file not being allowable, the application is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

I. Aperribay R. Moufang

Decision electronically authenticated