CLAIMS

1. A method of processing media content, the method comprising: obtaining, at a current time instance, a current fragment comprising at least a current time component associated with a previous media sample of a previous fragment, wherein the current fragment is an empty fragment without media sample data; determining, based on the current time component, a modified duration for at least one media sample, the modified duration indicating a time duration by which a presentation of the previous media sample of the previous fragment is to be extended or reduced in relation to the current time instance; and presenting the at least one media sample based on the modified duration.

2. The method of claim 1, wherein the modified duration includes an extension duration, the extension duration indicating the time duration by which the presentation of the previous media sample is to be extended in relation to the current time instance.

3. The method of claim 1, wherein the modified duration includes a reduction duration, the reduction duration indicating the time duration by which the presentation of the previous media sample is to be reduced in relation to the current time instance.

4. The method of claim 1, wherein presenting the at least one media sample comprises extending a duration of presentation of the previous media sample by at least an extension duration.

5. The method of claim 1, wherein presenting the at least one media sample comprises presenting a new media sample at the current time instance for at least an extension duration.

6. The method of claim 1, wherein presenting the at least one media sample comprises reducing a duration of presentation of the previous media sample by a reduction duration.

7. The method of claim 1, wherein the previous media sample is obtained at a previous time instance, the previous time instance preceding the current time instance.

8. The method of claim 1, further comprising: obtaining an additional fragment comprising at least an additional time component associated with a media sample of an additional previous fragment, wherein the additional fragment comprises a redundant media sample, wherein the redundant media sample matches the media sample of the additional previous fragment.

9. The method of claim 8, wherein the additional fragment comprises a redundant media sample field, the redundant media sample field for providing an indication of the redundant media sample.

10. The method of claim 1, wherein presenting the at least one media sample comprises displaying video content of the at least one media sample.

11. The method of claim 1, wherein presenting the at least one media sample comprises presenting audio content of the at least one media sample.

12. The method of claim 1, wherein obtaining the current fragment comprises receiving and decoding the current fragment.

13. The method of claim 1, wherein the current fragment comprises a Track Fragment Decode Time Box (tfdt) box, the tfdt box comprising the current time component.

14. The method of claim 1, wherein the current time component comprises a baseMediaDecodeTime value.

15. The method of claim 1, wherein the previous fragment comprises a sample duration for presenting the previous media sample, and wherein the sample duration comprises a predetermined reasonable duration.

16. The method of claim 1, wherein the at least one media sample comprises sparse content, wherein a duration for presenting the sparse content is not known at a previous time instance when the previous fragment is decoded.

17. An apparatus for processing media content, the apparatus comprising: a memory; and a processor implemented in circuitry and configured to: obtain, at a current time instance, a current fragment comprising at least a current time component associated with a previous media sample of a previous fragment, wherein the current fragment is an empty fragment without media sample data; determine, based on the current time component, a modified duration for at least one media sample, the modified duration indicating a time duration by which a presentation of the previous media sample of the previous fragment is to be extended or reduced in relation to the current time instance; and present the at least one media sample based on the modified duration.

18. The apparatus of claim 17, wherein the modified duration includes an extension duration, the extension duration indicating the time duration by which the presentation of the previous media sample is to be extended in relation to the current time instance.

19. The apparatus of claim 17, wherein the modified duration includes a reduction duration, the reduction duration indicating the time duration by which the presentation of the previous media sample is to be reduced in relation to the current time instance.

20. The apparatus of claim 17, wherein, to present the at least one media sample, the processor is configured to extend a duration of presentation of the previous media sample by at least an extension duration.

21. The apparatus of claim 17, wherein, to present the at least one media sample, the processor is configured to present a new media sample at the current time instance for at least an extension duration.

22. The apparatus of claim 17, wherein, to present presenting the at least one media sample, the processor is configured to reduce comprises reducing a duration of presentation of the previous media sample by a reduction duration.

23. The apparatus of claim 17, wherein the previous media sample is obtained at a previous time instance, the previous time instance preceding the current time instance.

24. The apparatus of claim 17, wherein the processor is configured to: obtain an additional fragment comprising at least an additional time component associated with a media sample of an additional previous fragment, wherein the additional fragment comprises a redundant media sample, wherein the redundant media sample matches the media sample of the additional previous fragment.

25. The apparatus of claim 24, wherein the current fragment comprises a redundant media sample field, the redundant media sample field for providing an indication of the redundant media sample.

26. The apparatus of claim 17, wherein, to present the at least one media sample, the processor is configured to display video content of the at least one media sample.

27. The apparatus of claim 17, wherein, to present the at least one media sample, the processor is configured to present comprises presenting audio content of the at least one media sample.

28. The apparatus of claim 17, wherein, to obtain obtaining the current fragment, the processor is configured to receive and decode the current fragment.

29. The apparatus of claim 17, wherein the current fragment comprises a Track Fragment Decode Time Box (tfdt) box, the tfdt box comprising the current time component.

30. The apparatus of claim 17, wherein the current time component comprises a baseMediaDecodeTime value.

31. The apparatus of claim 17, wherein the previous fragment comprises a sample duration for presenting the previous media sample, and wherein the sample duration comprises a predetermined reasonable duration.

32. The apparatus of claim 17, wherein the at least one media sample comprises sparse content, wherein a duration for presenting the sparse content is not known at a previous time instance when the previous fragment is decoded.

33. The apparatus of claim 17, wherein the apparatus comprises a decoder.

34. The apparatus of claim 17, wherein the apparatus comprises a player device for presenting the media content.

35. A non-transitory computer-readable medium having stored thereon instructions that, when executed by one or more processors, cause the one or more processors to: obtain, at a current time instance, a current fragment comprising at least a current time component associated with a previous media sample of a previous fragment, wherein the current fragment is an empty fragment without media sample data; determine, based on the current time component, a modified duration for at least one media sample, the modified duration indicating a time duration by which a presentation of the previous media sample of the previous fragment is to be extended or reduced in relation to the current time instance; and present the at least one media sample based on the modified duration.

36. The non-transitory computer-readable medium of claim 35, wherein the modified duration includes an extension duration, the extension duration indicating the time duration by which the presentation of the previous media sample is to be extended in relation to the current time instance.

37. The non-transitory computer-readable medium of claim 35, wherein the modified duration includes a reduction duration, the reduction duration indicating the time duration by which the presentation of the previous media sample is to be reduced in relation to the current time instance.

38. The non-transitory computer-readable medium of claim 35, wherein presenting the at least one media sample comprises extending a duration of presentation of the previous media sample by at least an extension duration.

39. The non-transitory computer-readable medium of claim 35, wherein presenting the at least one media sample comprises presenting a new media sample at the current time instance for at least an extension duration.

40. The non-transitory computer-readable medium of claim 35, wherein presenting the at least one media sample comprises reducing a duration of presentation of the previous media sample by a reduction duration.

41. The non-transitory computer-readable medium of claim 35, wherein the previous media sample is obtained at a previous time instance, the previous time instance preceding the current time instance.

42. The non-transitory computer-readable medium of claim 35, further comprising instructions that, when executed by the one or more processors, cause the one or more processors to: obtain an additional fragment comprising at least an additional time component associated with a media sample of an additional previous fragment, wherein the additional fragment comprises a redundant media sample, wherein the redundant media sample matches the media sample of the additional previous fragment.

43. The non-transitory computer-readable medium of claim 42, wherein the additional fragment comprises a redundant media sample field, the redundant media sample field for providing an indication of the redundant media sample.

44. The non-transitory computer-readable medium of claim 35, wherein presenting the at least one media sample comprises displaying video content of the at least one media sample.

45. The non-transitory computer-readable medium of claim 35, wherein presenting the at least one media sample comprises presenting audio content of the at least one media sample.

46. The non-transitory computer-readable medium of claim 35, wherein obtaining the current fragment comprises receiving and decoding the current fragment.

47. The non-transitory computer-readable medium of claim 35, wherein the current fragment comprises a Track Fragment Decode Time Box (tfdt) box, the tfdt box comprising the current time component.

48. The non-transitory computer-readable medium of claim 35, wherein the current time component comprises a baseMediaDecodeTime value.

49. The non-transitory computer-readable medium of claim 35, wherein the previous fragment comprises a sample duration for presenting the previous media sample, and wherein the sample duration comprises a predetermined reasonable duration.

50. The non-transitory computer-readable medium of claim 35, wherein the at least one media sample comprises sparse content, wherein a duration for presenting the sparse content is not known at a previous time instance when the previous fragment is decoded.

51. An apparatus for processing media content, the apparatus comprising: means for obtaining, at a current time instance, a current fragment comprising at least a current time component associated with a previous media sample of a previous fragment, wherein the current fragment is an empty fragment without media sample data; means for determining, based on the current time component, a modified duration for at least one media sample, the modified duration indicating a time duration by which a presentation of the previous media sample of the previous fragment is to be extended or reduced in relation to the current time instance; and means for presenting the at least one media sample based on the modified duration.

52. The apparatus of claim 51, wherein the modified duration includes an extension duration, the extension duration indicating the time duration by which the presentation of the previous media sample is to be extended in relation to the current time instance.

53. The apparatus of claim 51, wherein the modified duration includes a reduction duration, the reduction duration indicating the time duration by which the presentation of the previous media sample is to be reduced in relation to the current time instance.

54. The apparatus of claim 51, wherein the means for presenting the at least one media sample comprises means for extending a duration of presentation of the previous media sample by at least an extension duration.

55. The apparatus of claim 51, wherein the means for presenting the at least one media sample comprises means for presenting a new media sample at the current time instance for at least an extension duration.

56. The apparatus of claim 51, wherein the means for presenting the at least one media sample comprises means for reducing a duration of presentation of the previous media sample by a reduction duration.

57. The apparatus of claim 51, wherein the previous media sample is obtained at a previous time instance, the previous time instance preceding the current time instance.

58. The apparatus of claim 51, further comprising: means for obtaining an additional fragment comprising at least an additional time component associated with a media sample of an additional previous fragment, wherein the current additional fragment comprises a redundant media sample, wherein the redundant media sample matches the media sample of the additional previous fragment.

59. The apparatus of claim 58, wherein the additional fragment comprises a redundant media sample field, the redundant media sample field for providing an indication of the redundant media sample.

60. The apparatus of claim 51, wherein the means for presenting the at least one media sample comprises means for displaying video content of the at least one media sample.

61. The apparatus of claim 51, wherein the means for presenting the at least one media sample comprises means for presenting audio content of the at least one media sample.

62. The apparatus of claim 51, wherein the means for obtaining the current fragment comprises means for receiving the current fragment and means for decoding the current fragment.

63. The apparatus of claim 51, wherein the current fragment comprises a Track Fragment Decode Time Box (tfdt) box, the tfdt box comprising the current time component.

64. The apparatus of claim 51, wherein the current time component comprises a baseMediaDecodeTime value.

65. The apparatus of claim 51, wherein the previous fragment comprises a sample duration for presenting the previous media sample, and wherein the sample duration comprises a predetermined reasonable duration.

66. The apparatus of claim 51, wherein the at least one media sample comprises sparse content, wherein a duration for presenting the sparse content is not known at a previous time instance when the previous fragment is decoded.

67. A method of providing media content, the method comprising: providing, at a previous time instance, a previous fragment comprising a previous media sample, wherein a duration for presenting the previous media sample is unknown at the previous time instance; and providing, at a current time instance, a current fragment comprising at least a current time component associated with the previous media sample, wherein the current fragment is an empty fragment without media sample data, and wherein the current time component includes a modified duration for the previous media sample, the modified duration indicating a time duration by which a presentation of the previous media sample is to be extended or reduced in relation to the current time instance.

68. An apparatus for providing media content, the apparatus comprising: a memory; and a processor implemented in circuitry and configured to: provide, at a previous time instance, a previous fragment comprising a previous media sample, wherein a duration for presenting the previous media sample is unknown at the previous time instance; and provide, at a current time instance, a current fragment comprising at least a current time component associated with the previous media sample, wherein the current fragment is an empty fragment without media sample data, and wherein the current time component includes a modified duration for the previous media sample, the modified duration indicating a time duration by which a presentation of the previous media sample is to be extended or reduced in relation to the current time instance.

69. A non-transitory computer-readable medium having stored thereon instructions that, when executed by one or more processors, cause the one or more processors to: provide, at a previous time instance, a previous fragment comprising a previous media sample, wherein a duration for presenting the previous media sample is unknown at the previous time instance; and provide, at a current time instance, a current fragment comprising at least a current time component associated with the previous media sample, wherein the current fragment is an empty fragment without media sample data, and wherein the current time component includes a modified duration for the previous media sample, the modified duration indicating a time duration by which a presentation of the previous media sample is to be extended or reduced in relation to the current time instance.

70. An apparatus for providing media content, the apparatus comprising: means for providing, at a previous time instance, a previous fragment comprising a previous media sample, wherein a duration for presenting the previous media sample is unknown at the previous time instance; and means for providing, at a current time instance, a current fragment comprising at least a current time component associated with the previous media sample, wherein the current fragment is an empty fragment without media sample data, and wherein the current time component includes a modified duration for the previous media sample, the modified duration indicating a time duration by which a presentation of the previous media sample is to be extended or reduced in relation to the current time instance.