

CLAIMS

1. A method comprising:
 - accessing with a server a plurality of distinct video feeds;
 - accessing time stamp information for at least a portion of the plurality of distinct video feeds;
 - determining by comparing each time stamp information to a reference clock a relative order of, and a relative time difference among, the portion of the plurality of distinct video feeds;
 - determining a synchronizing point in each of the plurality of distinct video feeds at which each is synchronized relative to the reference clock; and
 - combining the plurality of distinct video feeds to form a single stream comprising a plurality of synchronized distinct feeds based on the determined synchronizing point, the single stream including a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds, and wherein each of the plurality of distinct video feeds are separately managed such that only users with specific rights may view a rights-protected feed.
2. The method of claim 1, further comprising encoding the single video stream to form a composite mobile device compatible stream, wherein combining the plurality of distinct video feeds includes sub-sampling each of the distinct video feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct video feeds.
3. The method of claim 1, wherein the single video stream comprising a plurality of synchronized distinct video feeds comprises a mosaic of the plurality of the distinct video feeds.
4. A method comprising:
 - accessing with a server a plurality of distinct feeds;
 - accessing a feed clock associated with a source of at least one of the plurality of distinct feeds;
 - accessing a reference clock;
 - determining by comparing the feed clock to the reference clock latency between the at

least one of the portion of the plurality of distinct feeds and the reference clock;

determining a synchronizing point in each of the plurality of distinct feeds based on the determined latency at which each is synchronized relative to the reference clock;

aligning the synchronizing point in each of the plurality of distinct feeds to facilitate delivery of synchronized feeds; and

combining the plurality of distinct feeds to form a single stream comprising a plurality of synchronized distinct feeds, based on the determined synchronizing point, the single stream including a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds, and wherein each of the plurality of distinct video feeds are separately managed such that only users with specific rights may view a rights-protected feed.

5. The method of claim 4, wherein a synchronization point is a video frame.

6. The method of claim 4, further comprising encoding the single video stream to form a composite mobile device compatible stream, wherein combining the plurality of distinct feeds includes sub-sampling each of the distinct feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct feeds.

7. The method of claim 4, wherein the single stream comprising a plurality of synchronized distinct feeds comprises a mosaic of the plurality of the distinct video feeds.

8. A method comprising:

receiving a single stream comprising a plurality of distinct feeds, the single stream including a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds, wherein at least one of the plurality of distinct video feeds are separately managed for digital rights, and wherein each of the plurality of distinct video feeds are separately managed such that only users with specific rights may view a rights-protected feed;

receiving distinct feed data time information in a side channel associated with the stream; determining by comparing the time information for each of the distinct feeds a relative order of, and a relative time difference among, the plurality of distinct feeds;

determining a synchronizing point in each of the plurality of distinct feeds at which each is synchronized; and

presenting the plurality of distinct feeds synchronized in time based on the synchronizing point.

9. The method of claim 8, wherein the synchronizing point in each of the plurality of distinct feeds is associated with a single time value.

10. The method of claim 8, wherein the single stream is presented as a mosaic of the plurality of the distinct video feeds.

11. The method of claim 1, further comprising replacing the rights-protected feed for an unauthorized user in the single stream with other content.

12. The method of claim 1, further comprising replacing the rights-protected feed for an unauthorized user in the single stream with an advertisement.

13. The method of claim 1, wherein at least one of the plurality of distinct video feeds provides content associated with another one of the one of the plurality of distinct video feeds, the at least one of the plurality of distinct video feeds is not synchronized to ensure fine grain coherency.

14. The method of claim 4, further comprising replacing the rights-protected feed for an unauthorized user in the single stream with other content.

15. The method of claim 4, further comprising replacing the rights-protected feed for an unauthorized user in the single stream with an advertisement.

16. The method of claim 4, wherein at least one of the plurality of distinct feeds provides content associated with another one of the one of the plurality of distinct feeds, the at least one of the plurality of distinct feeds is not synchronized to ensure fine grain coherency.

17. The method of claim 8, further comprising presenting other content for the rights-protected feed for an unauthorized user in the single video stream.

18. The method of claim 8, further comprising presenting an advertisement for the rights-protected feed for an unauthorized user in the single video stream.

19. The method of claim 8, wherein at least one of the plurality of distinct feeds provides content associated with another one of the one of the plurality of distinct feeds, the at least one of the plurality of distinct feeds is not synchronized to ensure fine grain coherency.

CLAIMS

1. A method comprising:
 - accessing with a server a plurality of distinct video feeds;
 - accessing time stamp information for at least a portion of the plurality of distinct video feeds;
 - comparing each time stamp information to a reference clock to determine a relative order of, and a relative time difference among, the portion of the plurality of distinct video feeds;
 - determining a synchronizing point in each of the plurality of distinct video feeds at which each is synchronized relative to the reference clock; and
 - combining the plurality of distinct video feeds to form a single video stream comprising a plurality of synchronized distinct video feeds based on the synchronizing point.
2. The method of claim 1 further comprising encoding the single video stream to form a composite mobile device compatible stream.
3. The method of claim 1, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.
4. The method of claim 1, wherein combining comprises delaying at least one of the plurality of distinct video feeds so that the delayed at least one of the plurality of distinct video feeds is time synchronized with at least one other of the plurality of distinct video feeds.
5. The method of claim 1, wherein combining the plurality of distinct video feeds includes sub-sampling each of the distinct video feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct video feeds.
6. The method of claim 1, wherein the stream is one of a device specific stream, a video player-specific stream, and a DASH-based stream.

7. The method of claim 1, wherein at least one of the distinct video feeds comprises a live event feed.
8. The method of claim 7, wherein time stamp information for the live event feed is the reference clock, and wherein the plurality of distinct video feeds is synchronized to the reference clock.
9. The method of claim 1, wherein the single video stream comprising a plurality of synchronized distinct video feeds is an internet protocol stream that comprises metadata for each of the distinct video feeds.
10. The method of claim 9, wherein the metadata facilitates converting the single video stream into the distinct video feeds for presentation on a mobile device screen.
11. The method of claim 9, wherein the metadata facilitates identifying each of the distinct video feeds to a user interface application of a mobile device on which the distinct video feeds are being presented.
12. The method of claim 1, wherein the single video stream comprising a plurality of synchronized distinct video feeds comprises a mosaic of the plurality of the distinct video feeds.
13. The method of claim 12, wherein the single video stream comprising a mosaic further comprises position information within the mosaic of each distinct video feeds.
14. The method of claim 1, wherein the single video stream comprising a plurality of synchronized distinct video feeds further comprises a single audio feed associated with one of the plurality of synchronized distinct video feeds.
15. A method comprising:
 - accessing with a server a plurality of distinct feeds;
 - accessing an feed clock associated with a source of at least one of the plurality of distinct feeds;
 - accessing a reference clock;

comparing the feed clock to the reference clock to determine latency between the at least one of the portion of the plurality of distinct feeds and the reference clock;
determining a synchronizing point in each of the plurality of distinct feeds based on the determined latency at which each is synchronized relative to the reference clock;
aligning the synchronizing point in each of the plurality of distinct feeds to facilitate delivery of synchronized feeds; and
combining the plurality of distinct feeds to form a single stream comprising a plurality of synchronized distinct feeds, based on the determined synchronizing point.

16. The method of claim 15, wherein a synchronization point is a video frame.

17. The method of claim 15 further comprising encoding the single stream to form a composite mobile device compatible stream.

18. The method of claim 15, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.

19. The method of claim 15, wherein combining comprises delaying at least one of the plurality of distinct feeds so that the delayed at least one of the plurality of distinct feeds is time synchronized with at least one other of the plurality of distinct feeds.

20. The method of claim 15, wherein combining the plurality of distinct feeds includes sub-sampling each of the distinct feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct feeds.

21. The method of claim 15, wherein the stream is one of a device specific stream, a player-specific stream, and a DASH-based stream.

22. The method of claim 15, wherein at least one of the distinct feeds comprises a live event feed.

23. The method of claim 22, wherein time stamp information for the live event feed is the reference clock, and wherein the plurality of distinct feeds is synchronized to the reference clock.
24. The method of claim 15, wherein the single stream comprising a plurality of synchronized distinct feeds is an internet protocol stream that comprises metadata for each of the distinct feeds.
25. The method of claim 15, wherein the single stream comprising a plurality of synchronized distinct feeds comprises a mosaic of the plurality of the distinct video feeds.
26. The method of claim 25, wherein the single stream comprising a mosaic further comprises position information within the mosaic of each distinct feed.
27. The method of claim 25, wherein the single stream comprising a plurality of distinct feeds further comprises a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds.
28. A method comprising:
- receiving a single stream comprising a plurality of distinct feeds;
 - receiving distinct feed data time information in a side channel associated with the stream;
 - comparing the time information for each of the distinct feeds to determine a relative order of, and a relative time difference among, the plurality of distinct feeds;
 - determining a synchronizing point in each of the plurality of distinct feeds at which each is synchronized; and
 - presenting the plurality of distinct feeds synchronized in time based on the synchronizing point.
29. The method of claim 28, wherein the synchronizing point in each of the plurality of distinct feeds is associated with a single time value.

30. The method of claim 28, wherein presenting comprises delaying at least one of the plurality of distinct feeds so that the delayed at least one of the plurality of distinct feeds is time synchronized with at least one other of the plurality of distinct feeds.
31. The method of claim 28, wherein the single stream is presented as a mosaic of the plurality of the distinct video feeds.
32. The method of claim 31, wherein the single stream further comprises mosaic position information for each distinct video feed.
33. The method of claim 28, wherein the single stream comprising a plurality of distinct feeds further comprises a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds.
34. A method comprising:
presenting a multi-view display, in a portion of a device screen, of a plurality of feeds that have been delivered to a mobile device as a single mobile internet protocol data network compatible stream; and
in response to a user action associated with the multi-view display, presenting a new view of content from at least one of the plurality of feeds.
35. The method of claim 34, wherein the plurality of feeds comprises a plurality of time synchronized distinct video feeds.
36. The method of claim 34, wherein the plurality of feeds comprises a plurality of distinct video feeds and time information for synchronizing the plurality of feeds.
37. The method of claim 36, wherein the time information is carried in a side channel of the single mobile internet protocol data network compatible stream.
38. The method of claim 34, wherein the user action comprises a selection via a user interface of the mobile device of a portion of the multi-view display that includes content from the at least one of the plurality of feeds.

39. The method of claim 34, wherein the new view comprises a single feed of the plurality of feeds that covers substantially the entire multi-view display on the device screen.

40. A method comprising:

receiving a plurality of feeds from a live event, wherein each feed is associated with a feed-specific time stamp; and

providing in a user interface of a mobile device that is receiving the feeds at least one interface feature that facilitates selecting between holding presentation of a portion of the plurality of feeds until an equivalent time stamp from all of the plurality of feeds is received and presenting at least one of the plurality of feeds when it is received.

41. The method of claim 40, wherein the plurality of feeds from a live event includes at least one video feed of the live event and a data feed derived from events at the live event.

42. The method of claim 41, wherein the data feed comprises event real-time properties data.

43. The method of claim 40, wherein the at least one of the plurality of feeds to be presented when it is received is the data feed derived from events at the live event.

44. The method of claim 40, further including providing in the user interface at least one interface feature that facilitates selecting between holding presentation of at least one of the plurality of feeds until an equivalent time stamp from at least one other of the plurality of feeds is received and presenting at least one of the plurality of feeds when it is received.

45. A method comprising:

receiving a plurality of distinct video feeds and video feed time information that facilitates determining a relative order of the distinct video feeds;

combining the plurality of distinct video feeds in the relative order; and

generating a mobile device compatible stream from the ordered, combined plurality of distinct video feeds by processing the ordered, combined plurality of distinct video feeds with an mobile device compatible encoder.

46. The method of claim 45, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.

47. The method of claim 45, wherein combining comprises delaying at least one of the plurality of distinct video feeds so that the delayed at least one of the plurality of distinct video feeds is time synchronized with at least one other of the plurality of distinct video feeds.

48. A method comprising:

- accessing with a server a plurality of distinct video feeds comprising a sequence of video frames;

- accessing time stamp information for at least a portion of the plurality of distinct video feeds;

- comparing each time stamp information to a reference clock to determine a relative order of, and a relative time difference among, the portion of the plurality of distinct video feeds;

- determining a synchronizing frame in each of the plurality of distinct video feeds at which each is synchronized relative to the reference clock; and

- combining the video frames of the plurality of distinct video feeds to form a single video stream comprising a plurality of synchronized distinct video feeds based on the determined synchronizing frame.

49. The method of claim 48, further comprising encoding the video frames of the single video stream to form a composite mobile device compatible stream.

50. The method of claim 48, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.

51. The method of claim 48, wherein combining comprises delaying at least one of the plurality of distinct video feeds so that the delayed at least one of the plurality of

distinct video feeds is time synchronized with at least one other of the plurality of distinct video feeds.

52. The method of claim 48, wherein combining the video frames of the plurality of distinct video feeds includes sub-sampling each of the distinct video feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct video feeds.

53. The method of claim 48, wherein the stream is one of a device specific stream, a video player-specific stream, and a DASH-based stream.

54. The method of claim 48, wherein at least one of the distinct video feeds comprises a live event feed.

55. The method of claim 54, wherein time stamp information for the live event feed is the reference clock, and wherein the plurality of distinct video feeds is synchronized to the reference clock.

56. The method of claim 48, wherein the single video stream comprising a plurality of synchronized distinct video feeds is an internet protocol stream that comprises metadata for each of the distinct video feeds.

57. The method of claim 56, wherein the metadata facilitates converting the single video stream into the distinct video feeds for presentation on a mobile device screen.

58. The method of claim 56, wherein the metadata facilitates identifying each of the distinct video feeds to a user interface application of a mobile device on which the distinct video feeds are being presented.

59. The method of claim 48, wherein the single video stream comprising a plurality of synchronized distinct video feeds comprises a mosaic of the plurality of the distinct video feeds.

60. The method of claim 59, wherein the single video stream comprising a mosaic further comprises position information within the mosaic of each distinct video feed.

61. The method of claim 48, wherein the single video stream comprising a plurality of synchronized distinct video feeds further comprises a single audio feed associated with one of the plurality of synchronized distinct video feeds.

62. A method comprising:

receiving a plurality of distinct feeds comprising at least one of audio and video and feed time information that facilitates determining a relative order of the distinct feeds;

combining the plurality of distinct feeds in the relative order; and

generating a mobile device compatible stream from the ordered, combined plurality of distinct feeds by processing the ordered, combined plurality of distinct feeds with an mobile device compatible encoder.

63. The method of claim 62, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.

64. A method comprising:

accessing with a server a plurality of distinct feeds comprising at least one of audio and video;

accessing time stamp information for at least a portion of the plurality of distinct feeds;

comparing each time stamp information to a reference clock to determine a relative order of, and a relative time difference among, the portion of the plurality of distinct feeds;

determining a synchronizing point in each of the plurality of distinct feeds at which each is synchronized relative to the reference clock; and

combining the plurality of distinct feeds to form a single stream comprising a plurality of synchronized distinct feeds based on the determined synchronizing point.

65. The method of claim 64, further comprising encoding the single stream to form a composite mobile device compatible stream.

66. The method of claim 64, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.
67. The method of claim 64, wherein combining comprises delaying at least one of the plurality of distinct feeds so that the delayed at least one of the plurality of distinct feeds is time synchronized with at least one other of the plurality of distinct feeds.
68. The method of claim 64, wherein combining the plurality of distinct feeds includes sub-sampling at least one of the distinct feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct feeds.
69. The method of claim 64, wherein the stream is one of a device specific stream, an audio/video player-specific stream, and a DASH-based stream.
70. The method of claim 64, wherein at least one of the distinct feeds comprises a live event feed.
71. The method of claim 70, wherein time stamp information for the live event feed is the reference clock, and wherein the plurality of distinct feeds is synchronized to the reference clock.
72. The method of claim 64, wherein the single stream comprising a plurality of synchronized distinct feeds is an internet protocol stream that comprises metadata for each of the distinct feeds.
73. The method of claim 72, wherein the metadata facilitates converting the single stream into the distinct feeds for presentation on a mobile device screen.
74. The method of claim 72, wherein the metadata facilitates identifying each of the distinct feeds to a user interface application of a mobile device on which the distinct feeds are being presented.

75. The method of claim 72, wherein the single stream comprising a plurality of synchronized distinct feeds comprises a mosaic of the plurality of the distinct feeds.

76. The method of claim 75, wherein the single stream comprising a mosaic further comprises position information within the mosaic of each distinct feed.

77. The method of claim 64, wherein the single stream comprising a plurality of distinct feeds further comprises a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds.

78. A method comprising:

- accessing with a server a plurality of distinct feeds comprising at least one of audio and video and further comprising a sequence of frames;

- accessing time stamp information for at least a portion of the plurality of distinct feeds;

- comparing each time stamp information to a reference clock to determine a relative order of, and a relative time difference among, the portion of the plurality of distinct feeds;

- determining a synchronizing frame in each of the plurality of distinct feeds at which each is synchronized relative to the reference clock; and

- combining the frames of the plurality of distinct feeds to form a single stream comprising a plurality of synchronized distinct feeds based on the determined synchronizing frame.

79. The method of claim 78, further comprising encoding the frames of the single stream to form a composite mobile device compatible stream.

80. The method of claim 78, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.

81. The method of claim 78, wherein combining comprises delaying at least one of the plurality of distinct feeds so that the delayed at least one of the plurality of distinct feeds is time synchronized with at least one other of the plurality of distinct feeds.

82. The method of claim 78, wherein combining the frames of the plurality of distinct feeds includes sub-sampling each of the distinct feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct feeds.
83. The method of claim 78, wherein the stream is one of a device specific stream, a player-specific stream, and a DASH-based stream.
84. The method of claim 78, wherein at least one of the distinct feeds comprises a live event feed.
85. The method of claim 84, wherein time stamp information for the live event feed is the reference clock, and wherein the plurality of distinct feeds is synchronized to the reference clock.
86. The method of claim 78, wherein the single stream comprising a plurality of synchronized distinct feeds is an internet protocol stream that comprises metadata for each of the distinct feeds.
87. The method of claim 78, wherein the single stream comprising a plurality of synchronized distinct feeds comprises a mosaic of the plurality of the distinct feeds.
88. The method of claim 87, wherein the single stream comprising a mosaic further comprises position information within the mosaic of each distinct feed.
89. The method of claim 78, wherein the single stream comprising a plurality of distinct feeds further comprises a plurality of video feeds and a single audio feed associated with one of the plurality of video feeds.
90. A method comprising:
receiving in a mobile device a single video stream comprising a plurality of time synchronized distinct video feeds;

accessing, in a memory of the mobile device, a distinct video feed selection criteria that indicates one or more of the plurality of time synchronized distinct video feeds for presenting to the user; and

selecting a portion of the plurality of time synchronized distinct video feeds received in the single video stream based on the accessed distinct video feed selection criteria; and

presenting the selected portion to a user of the mobile.

91. The method of claim 90, wherein the distinct video feed criteria is one of location of the mobile device, content subscription associated with the mobile device, identification of a network carrier providing service to the mobile phone, and user selection of one of the distinct video feeds.

92. The method of claim 90, wherein presenting the selected portion comprises arranging the selected portion into a unified mosaic display.

93. The method of claim 92, wherein the unified mosaic display includes alternate content for any distinct video feed not included in the selected portion.

94. A method comprising:

receiving a plurality of distinct video feeds and video feed time information that facilitates determining a relative order of the distinct video feeds;

accessing a distinct video feed selection criteria that indicates one or more of the plurality of time synchronized distinct video feeds;

selecting a portion of the plurality of distinct video feeds based on the accessed distinct video feed selection criteria; and

combining the selected portion of the plurality of distinct video feeds in the relative order; and

generating a mobile device compatible stream from the ordered, combined plurality of distinct video feeds by processing the ordered, combined plurality of distinct video feeds with an mobile device compatible encoder.

95. The method of claim 94, wherein the distinct video feed criteria is one of location for viewing a distinct video feed, content subscription, identification of a network

carrier providing service over which the mobile device compatible stream is to be transmitted, and user selection of one of the distinct video feeds.

96. The method of claim 94, wherein combining comprises at least one of interleaving, multiplexing, and concatenating.

97. The method of claim 94, wherein combining comprises delaying at least one of the plurality of distinct video feeds so that the delayed at least one of the plurality of distinct video feeds is time synchronized with at least one other of the plurality of distinct video feeds.

98. The method of claim 94, wherein combining the plurality of distinct video feeds includes sub-sampling each of the distinct video feeds so that the composite mobile device compatible stream takes no more bandwidth than one of the distinct video feeds.

99. The method of claim 94, wherein the stream is one of a device specific stream, a video player-specific stream, and a DASH-based stream.

100. The method of claim 94, wherein at least one of the distinct video feeds comprises a live event feed.

101. The method of claim 94, wherein the single video stream comprising a plurality of synchronized distinct video feeds is an internet protocol stream that comprises metadata for each of the distinct video feeds.

102. The method of claim 94, wherein the single video stream comprising a plurality of synchronized distinct video feeds comprises a mosaic of the plurality of the distinct video feeds.

103. The method of claim 102, wherein the single video stream comprising a mosaic further comprises position information within the mosaic of each distinct video feed.

104. The method of claim 94, wherein the single video stream comprising a plurality of synchronized distinct video feeds further comprises a single audio feed associated with one of the plurality of synchronized distinct video feeds.

105. A method, comprising

- receiving a selection of a live video feed comprising a plurality of video frames, wherein the live video feed includes time information associated with each frame;

- accessing the time information associated with a current frame of the selected live video feed;

- querying a server that generates a feed of event real-time properties data frames to determine an event real-time properties data frame that corresponds to the time information associated with the current frame of the selected live video feed;

- retrieving the determined event real-time properties data frame; and

- presenting the determined event real-time properties data frame with the current frame of selected live video feed on an audio/video user interface of a mobile device.

106. The method of claim 105, wherein presenting the determined event real-time properties data frame comprises displaying a leaderboard display comprising the event real-time properties data in a predefined format.

107. The method of claim 105, further comprising presenting subsequent frames of the selected live video feed and the event real-time properties data until at least one of a new live video feed is selected or an error conditions occurs.

108. A method, comprising

- receiving a user selection through a user interface of a mobile device of a live video feed;

- receiving the live video feed over a mobile device radio network in response to the user selection;

- retrieving with the mobile device a latest leaderboard frame that is periodically generated with a server based on event real-time properties data received by the server; and

presenting the live video feed as it is received along with each latest leaderboard frame as it is retrieved, wherein the presented latest leaderboard frame lags the presented live video feed by less than three seconds.