

Comparison of Challenged Claims in U.S. Pat. No. 10,708,618

Claims 1-4	Claims 5-7	Claims 8-11	Claims 12-13	Claims 14-16	Claims 17-19
[1.1] A method of decoding an encoded representation of a picture in a video stream of multiple pictures, the method comprising:	[5.1] A method of decoding an encoded representation of a picture in a video stream of multiple pictures, the method comprising:	[8.1] A decoder configured to decode an encoded representation of a picture in a video stream of multiple pictures, the decoder comprising: [8.2] at least one processor; and [8.3] a memory storing instructions which, when executed by the at least one processor causes the decoder to:	[12.1] A decoder configured to decode an encoded representation of a picture in a video stream of multiple pictures, the decoder comprising:	[14.1] A receiver comprising: [14.2] an input section circuit configured to receive encoded representations of multiple pictures in a video stream; [14.3] a decoder circuit configured to decode the encoded representations of the multiple pictures; and [14.4] an output section circuit configured to output decoded pictures of the video stream, wherein the decoder circuit comprises:	[17.1] A computer program product comprising a non-transitory computer-readable medium storing program instructions for decoding an encoded representation of a picture in a video stream of multiple pictures, the program instructions when executed by a processor of a node in an access network cause the node to perform operations comprising:
[1.2] retrieving, from the encoded representation of the picture, buffer description information defining a plurality of reference pictures;	[5.2] retrieving, from the encoded representation of the picture, buffer description information defining a plurality of reference pictures;	[8.4] retrieve buffer description information defining a plurality of reference pictures, wherein the buffer description information is retrieved from the encoded representation of the picture; [9.2] retrieve the buffer description information defining multiple reference pictures from the encoded representation of the picture; and	[12.2] a data retriever circuit configured to retrieve buffer description information defining a plurality of reference pictures, wherein the buffer description information is retrieved from the encoded representation of the picture;	[14.5] a data retriever circuit configured to retrieve buffer description information defining a plurality of reference pictures, wherein the buffer description information is retrieved from the encoded representation of a picture;	[17.2] retrieving, from the encoded representation of the picture, buffer description information defining a plurality of reference pictures;
			[12.3] a picture identifier	[14.6] a picture identifier	

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			determiner circuit configured to:	determiner circuit configured to	
[1.3] determining, based on the buffer description information, a reference picture identifier that identifies a respective reference picture among the plurality of reference pictures, the respective reference picture comprising a decoding reference for the picture, wherein determining the reference picture identifier comprises:	[5.3] determining, based on the buffer description information, a reference picture identifier that identifies a reference picture among the plurality of reference pictures that comprises a decoding reference for the picture;	[8.5] determine, based on the buffer description information, a reference picture identifier that identifies a respective reference picture among the plurality of reference pictures, the respective reference picture comprising a decoding reference for the picture, wherein the decoder is configured to	[12.4] determine, based on the buffer description information, a reference picture identifier that identifies a respective reference picture among the plurality of reference pictures, the respective reference picture comprising a decoding reference for the picture;	[14.7] determine, based on the buffer description information, a reference picture identifier that identifies a respective reference picture among the plurality of reference pictures, the respective reference picture comprising a decoding reference for the picture, wherein the picture identifier determiner is configured to	[17.3] determining, based on the buffer description information, a reference picture identifier that identifies a respective reference picture among the plurality of reference pictures, the respective reference picture comprising a decoding reference for the picture, wherein determining the reference picture identifier comprises:
	[7.1] The method according to claim 5, wherein determining the reference picture identifier comprises:				
[1.4] (i) retrieving, based on the buffer description information, a delta identifier comprising a difference between the reference picture identifier and a picture identifier identifying the picture; and	[7.2] (i) retrieving, based on the buffer description information, a delta identifier comprising a difference between the reference picture identifier and a picture identifier identifying the picture; and	[8.6] i) retrieve, based on the buffer description information, a respective delta identifier comprising a difference between the reference picture identifier and a picture identifier identifying the picture, and		[14.8] i) retrieve, based on the buffer description information, a respective delta identifier comprising a difference between the reference picture identifier and a picture identifier identifying the picture, and	[17.4] (i) retrieving, based on the buffer description information, a delta identifier comprising a difference between the reference picture identifier and a picture identifier identifying the picture; and
[1.5] (ii) calculating the reference picture identifier based on the picture identifier and the delta identifier; and	[7.3] (ii) calculating the reference picture identifier based on the picture identifier and the delta identifier.	[8.7] ii) calculate the reference picture identifier based on the picture identifier and the respective delta identifier; and		[14.9] ii) calculate the reference picture identifier based on the picture identifier and the respective delta identifier; and	[17.5] (ii) calculating the reference picture identifier based on the picture identifier and the delta identifier; and

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[1.6] updating a decoded picture buffer based on the reference picture identifier.	[5.6] updating a decoded picture buffer based on the reference picture identifier.	[8.8] update a decoded picture buffer based on the reference picture identifier.	[12.7] a buffer manager circuit configured to update a decoded picture buffer based on the reference picture identifier.	[14.10] a buffer manager circuit configured to update a decoded picture buffer based on the reference picture identifier.	[17.6] updating a decoded picture buffer based on the reference picture identifier.
[2.1] The method according to claim 1, wherein:		[9.1] The decoder according to claim 8, wherein the memory stores further instructions which, when executed by the at least one processor causes the decoder to:			
[2.2] determining the reference picture identifier comprises determining, based on the buffer description information,		[9.3] determine, based on the buffer description information,			
[2.3] i) a picture identifier identifying a respective reference picture among the plurality of reference pictures as the decoding reference for the picture and		[9.4] i) a picture identifier identifying a respective reference picture among the multiple reference pictures as the decoding reference for the picture and			
[2.4] ii) a picture identifier identifying a respective reference picture among the plurality of reference pictures as a decoding reference for a subsequent, according to a decoding order, picture in the video stream.		[9.5] ii) a picture identifier identifying a respective reference picture among the multiple reference pictures as a decoding reference for a subsequent, according to a decoding order, picture in the video stream.			
[3.1] 3. The method according		[10.1] The decoder		[15.1] The receiver	[18.1] The computer

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to claim 1, further comprising:		according to claim 8, wherein the memory stores further instructions which, when executed by the at least one processor causes the decoder to further configured to:		according to claim 14, wherein the decoder circuit is further configured to perform operations comprising:	program product according to claim 17, wherein the instructions comprise further instructions that are executable by the processor of the node in the access network to perform operations comprising:
[3.2] determining whether the reference picture identified by the reference picture identifier is one of missing or non-existing; and	[5.4] determining whether the reference picture identified by the reference picture identifier is one of missing or non-existing;	[10.2] determine whether the reference picture identified by the reference picture identifier is one of missing or non-existing; and	[12.5] determine whether the reference picture identified by the reference picture identifier is one of missing or non-existing;	[15.2] determining whether the reference picture identified by the reference picture identifier is one of missing or non-existing; and	[18.2] determining whether the reference picture identified by the reference picture identifier is one of missing or non-existing; and
[3.3] responsive to determining the reference picture identified by the reference picture identifier is one of missing or non-existing, generating a non-existing picture with parameters set to parameters of the reference picture identified by the reference picture identifier.	[5.5] responsive to determining the reference picture identified by the reference picture identifier is one of missing or non-existing, generating a non-existing picture with parameters set to parameters of the reference picture identified by the reference picture identifier; and	[10.3] responsive to determining the reference picture identified by the reference picture identifier is one of missing or non-existing, generate a non-existing picture with parameters set to parameters of the reference picture identified by the reference picture identifier.	[12.6] responsive to determining the reference picture identified by the reference picture identifier is one of missing or non-existing, generate a non-existing picture with parameters set to parameters of the reference picture identified by the reference picture identifier; and	[15.3] responsive to determining the reference picture identified by the reference picture identifier is one of missing or non-existing, generating a non-existing picture with parameters set to parameters of the reference picture identified by the reference picture identifier.	[18.3] responsive to determining the reference picture identified by the reference picture identifier is one of missing or non-existing, generating a non-existing picture with parameters set to parameters of the reference picture identified by the reference picture identifier.
[4.1] The method according to claim 3, wherein generating the non-existing picture with parameters comprises at least one of:	[6.1] The method according to claim 5, wherein generating the non-existing picture with parameters comprises at least one of:	[11.1] The decoder according to claim 10, wherein generating the non-existing picture with parameters comprises at least one of:	[13.1] The decoder according to claim 12, wherein generating the non-existing picture with parameters comprises at least one of:	[16.1] The receiver according to claim 15, wherein generating the non-existing picture with parameters comprises at least one of:	[19.1] The computer program product according to claim 18, wherein generating the non-existing picture with parameters comprises at least one of:
[4.2] setting a picture order	[6.2] setting a picture order	[11.2] setting a picture order	[13.2] setting a picture order	[16.2] setting a picture order	[19.2] setting a picture order

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count (POC) of the non-existing picture to a POC of the reference picture;	count (POC) of the non-existing picture to a POC of the reference picture;	count (POC) of the non-existing picture to a POC of the reference picture;	count (POC) of the non-existing picture to a POC of the reference picture;	count (POC) of the non-existing picture to a POC of the reference picture;	count (POC) of the non-existing picture to a POC of the reference picture;
[4.3] setting an additional_picture_id of the non-existing picture to an additional_picture_id of the reference picture;	[6.3] setting an additional_picture_id of the non-existing picture to an additional_picture_id of the reference picture;	[11.3] setting an additional_picture_id of the non-existing picture to an additional_picture_id of the reference picture;	[13.3] setting an additional_picture_id of the non-existing picture to an additional_picture_id of the reference picture;	[16.3] setting an additional_picture_id of the non-existing picture to an additional_picture_id of the reference picture;	[19.3] setting an additional_picture_id of the non-existing picture to an additional_picture_id of the reference picture;
[4.4] setting a temporal_id of the non-existing picture to a temporal_id of the reference picture; and	[6.4] setting a temporal_id of the non-existing picture to a temporal_id of the reference picture; and	[11.4] setting a temporal_id of the non-existing picture to a temporal_id of the reference picture; and	[13.4] setting a temporal_id of the non-existing picture to a temporal_id of the reference picture; and	[16.4] setting a temporal_id of the non-existing picture to a temporal_id of the reference picture; and	[19.4] setting a temporal_id of the non-existing picture to a temporal_id of the reference picture; and
[4.5] marking the non-existing picture with a non-existing mark and used for reference mark.	[6.5] marking the non-existing picture with a non-existing mark and a used for reference mark.	[11.5] marking the non-existing picture with a non-existing mark and a used for reference mark.	[13.5] marking the non-existing picture with a non-existing mark and used for reference mark.	[16.5] marking the non-existing picture with a non-existing mark and used for reference mark.	[19.5] marking the non-existing picture with a non-existing mark and used for reference mark.