



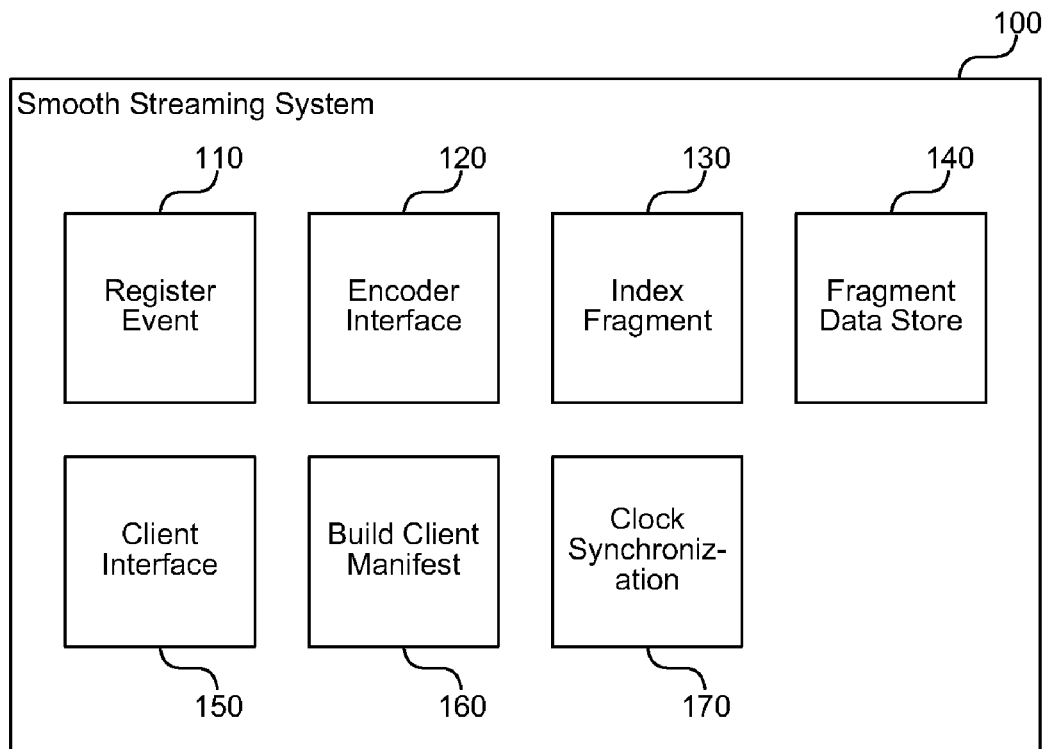
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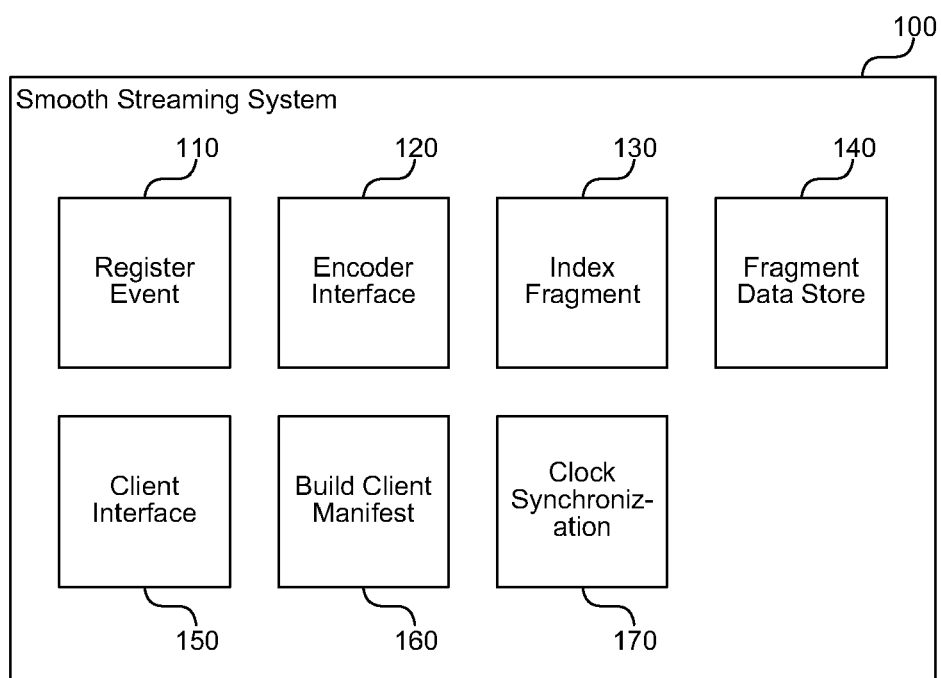
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Bocharov et al.(10) **Pub. No.: US 2010/023528 A1**(43) **Pub. Date: Sep. 16, 2010**(54) **DELIVERING CACHEABLE STREAMING
MEDIA PRESENTATIONS**(21) Appl. No.: **12/405,220**(22) Filed: **Mar. 16, 2009****Publication Classification**(51) **Int. Cl.**
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G06F 7/00 (2006.01)(52) **U.S. Cl. 709/231; 709/248; 707/E17.009;**
709/203; 707/E17.032(57) **ABSTRACT**

A smooth streaming system provides a stateless protocol between a client and server in which the server embeds incremental control information in media fragments. The server provides uniform media fragment responses to media fragment requests that are cacheable by existing Internet cache infrastructure. The smooth streaming system receives media data in fragments from one or more encoders, creates an index of each fragment, and stores the fragments. The server provides fragments to clients that contain metadata information describing the encodings available on the server and the encoding of the fragment. The server may also provide information within each fragment that allows the client to determine whether the client is requesting data too fast or too slow, so that the client can adapt its request rate to a cadence in tune with the rate at which the server is receiving encoder data.

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**FIG. 1**

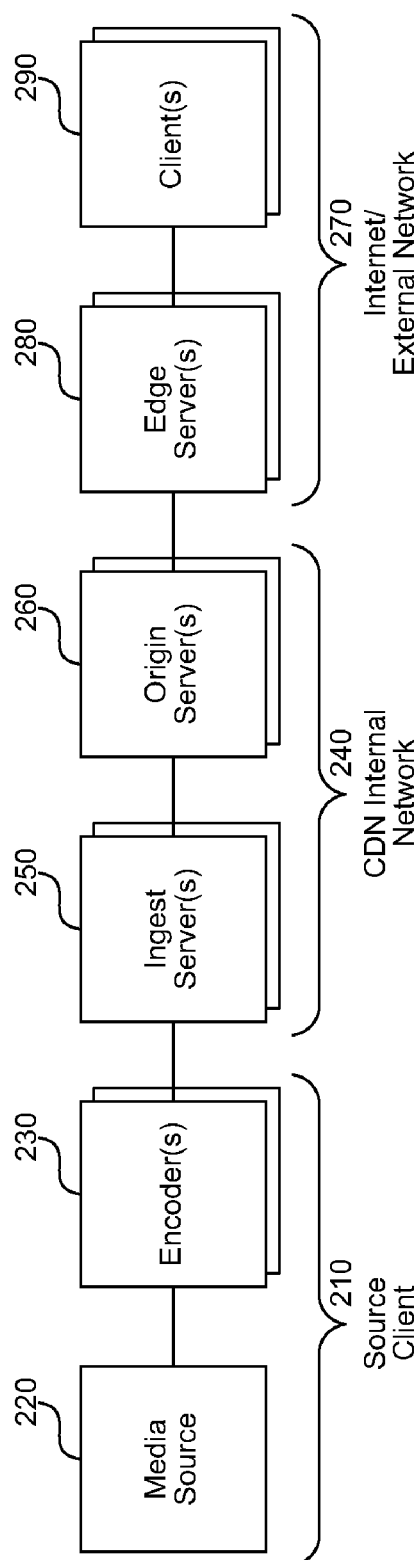
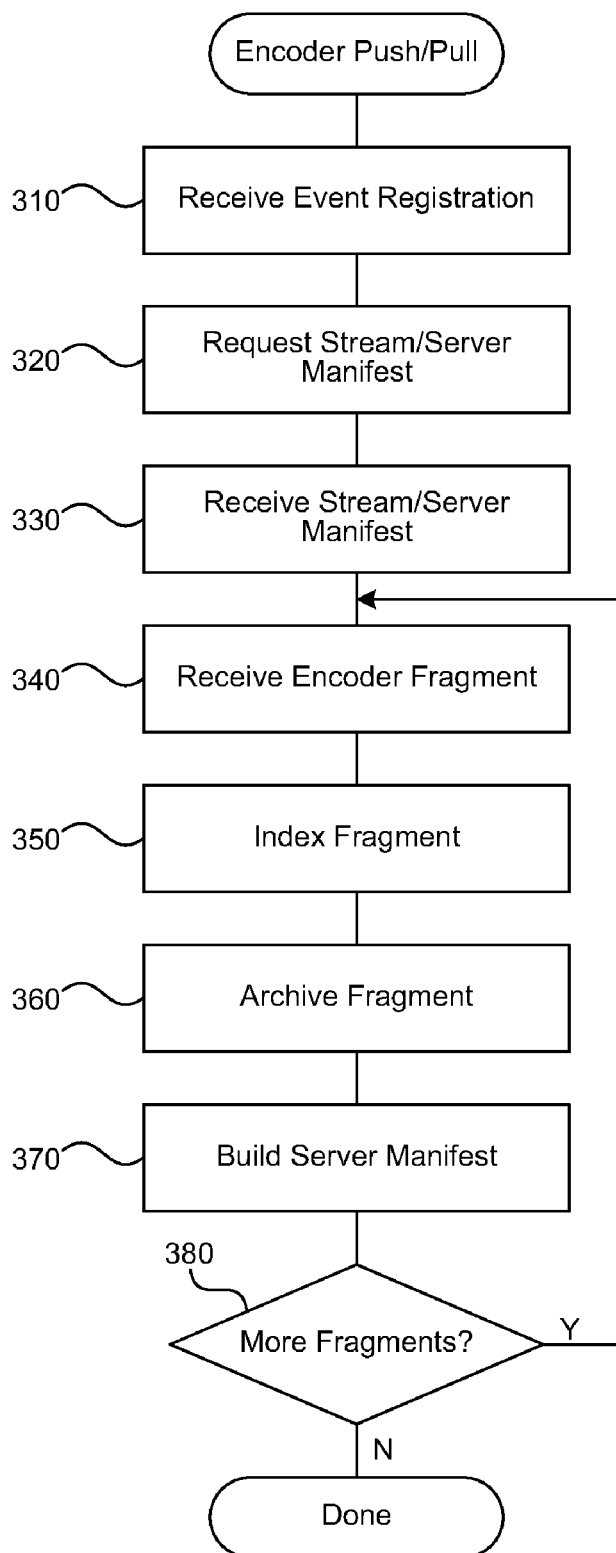
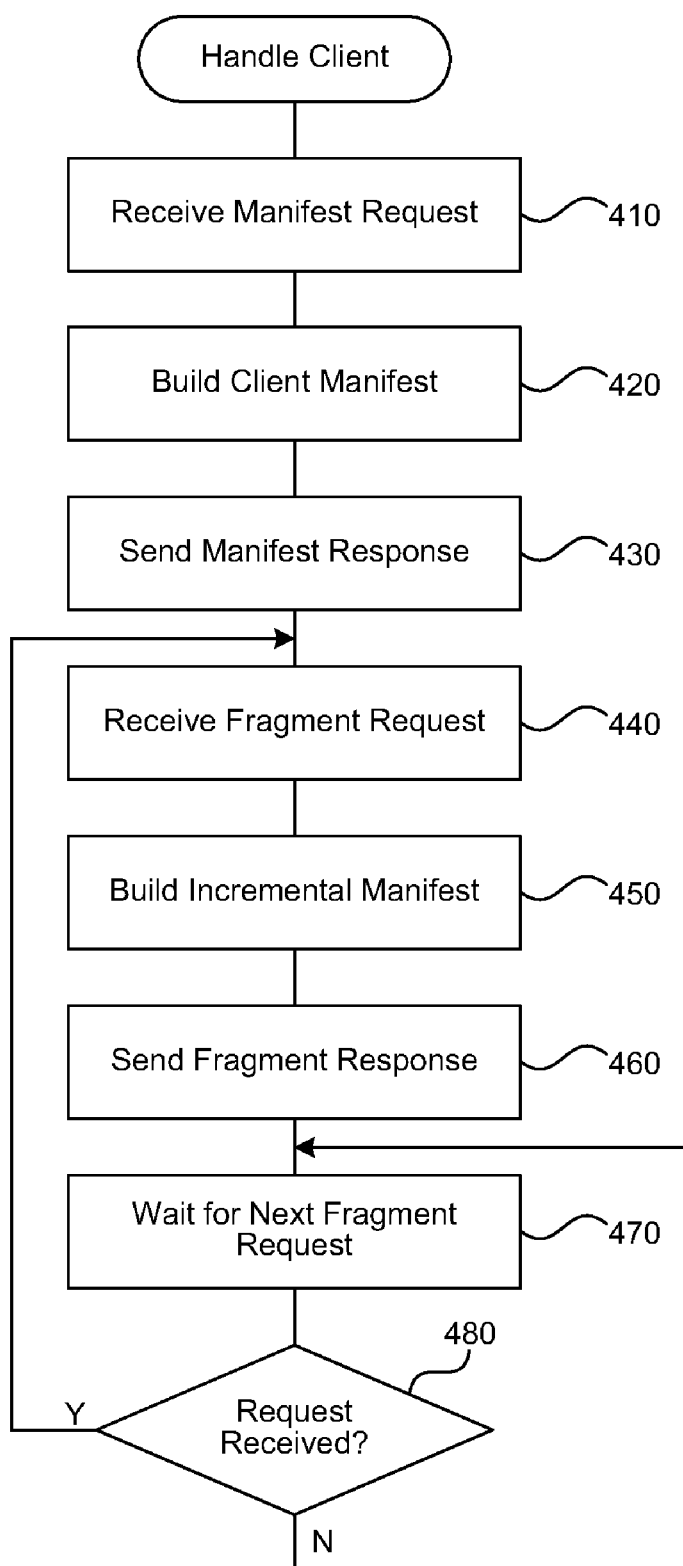


FIG. 2

**FIG. 3**

**FIG. 4**

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