

EXHIBIT 2



(12) **United States Patent**
Thang et al.

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 (45) **Date of Patent:** **Jun. 4, 2019**

(54) **APPARATUS AND METHOD FOR PROVIDING STREAMING CONTENT USING REPRESENTATIONS**

(58) **Field of Classification Search**
 CPC . H04L 65/601; H04L 65/4084; H04L 65/602; H04N 21/23439; H04N 21/25825;
 (Continued)

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(73) Assignee: **Ideahub, Seoul (KR)**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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Related U.S. Application Data

(63) Continuation of application No. 16/168,933, filed on Oct. 24, 2018, which is a continuation of application (Continued)

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(30) **Foreign Application Priority Data**

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 (74) *Attorney, Agent, or Firm* — NSIP Law

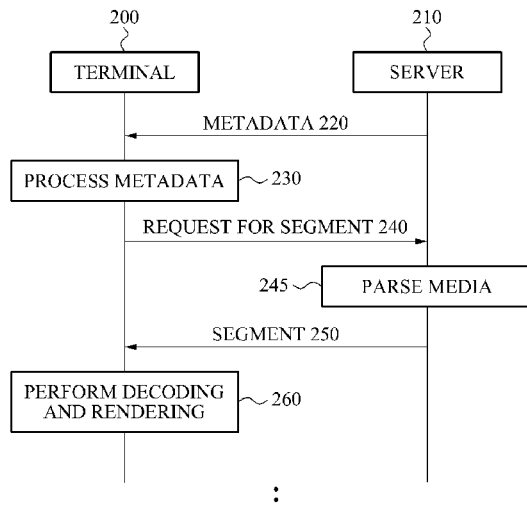
(57) **ABSTRACT**

(51) **Int. Cl.**
G06F 15/16 (2006.01)
H04L 29/06 (2006.01)
 (Continued)

A method and apparatus for an adaptive Hypertext Transfer Protocol (HTTP) streaming service using metadata of media content are provided. The media content may include a sequence of one or more periods. Each of the periods may include one or more representations. The metadata may include information used to describe a relationship between the representations, and include information for terminals having different display bit depth.

(52) **U.S. Cl.**
 CPC **H04L 65/601** (2013.01); **H04L 65/4084** (2013.01); **H04L 65/602** (2013.01);
 (Continued)

30 Claims, 5 Drawing Sheets



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H04N 21/61 (2011.01)
H04N 21/845 (2011.01)
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H04N 21/84 (2011.01)

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(58) Field of Classification Search

CPC H04N 21/6125; H04N 21/84; H04N 21/8456; H04N 21/8543

USPC 709/219

See application file for complete search history.

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FIG. 1

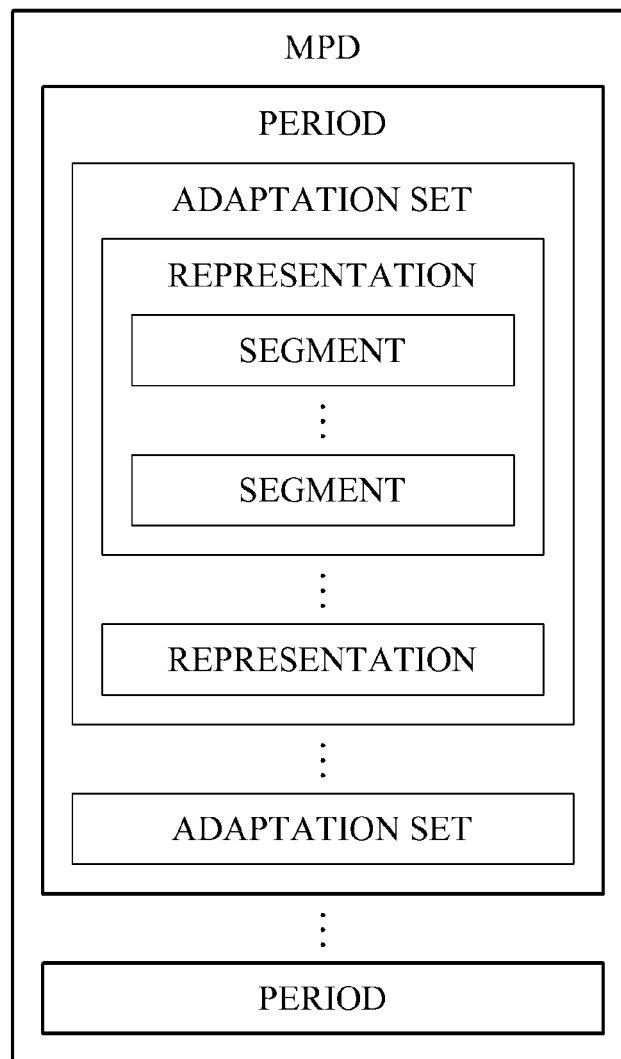
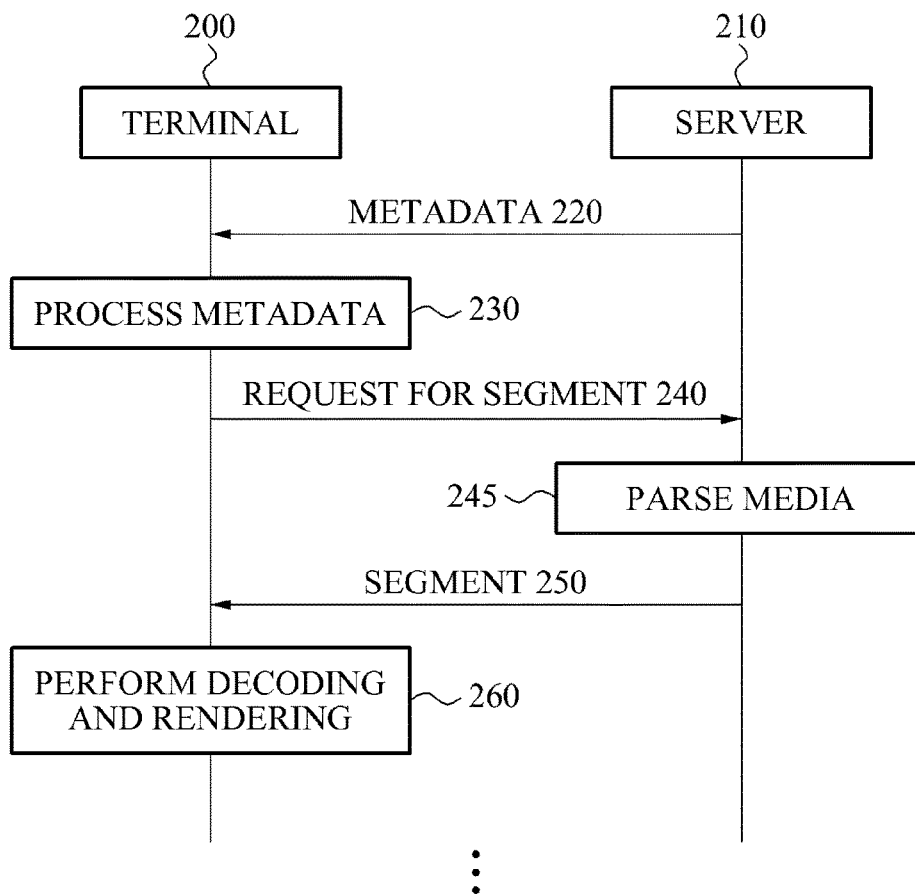


FIG. 2



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