EXHIBIT 1

US010270830B2

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

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(45) **Date of Patent: Apr. 23, 2019**

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

(71) Applicant: **Electronics and Telecommunications Research Institute**, Daejeon (KR)

(72) Inventors: **Truong Cong Thang**, Daejeon (KR); **Jin Young Lee**, Daejeon (KR)

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

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

(21) Appl. No.: **16/168,933**

(22) Filed: **Oct. 24, 2018**

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(30) **Foreign Application Priority Data**

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(51) **Int. Cl.**

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H04N 21/2343	(2011.01)
H04N 21/258	(2011.01)

(Continued)

(52) **U.S. Cl.**

CPC ***H04L 65/601*** (2013.01); ***H04L 65/4084*** (2013.01); ***H04L 65/602*** (2013.01); ***H04N 21/23439*** (2013.01); ***H04N 21/25825*** (2013.01); ***H04N 21/6125*** (2013.01);
(Continued)

(58) **Field of Classification Search**

None

See application file for complete search history.

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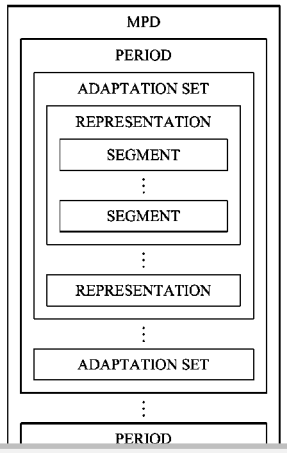
Primary Examiner — Melvin H Pollack
(74) *Attorney, Agent, or Firm* — NSIP Law

(57) **ABSTRACT**

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.

35 Claims, 5 Drawing Sheets



Related U.S. Application Data

continuation of application No. 14/004,644, filed as application No. PCT/KR2012/001922 on Mar. 16, 2012, now Pat. No. 9,860,293.

(51) **Int. Cl.**

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H04N 21/8543	(2011.01)

(52) **U.S. Cl.**

CPC ***H04N 21/84*** (2013.01); ***H04N 21/8456*** (2013.01); ***H04N 21/8543*** (2013.01)

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FIG. 1

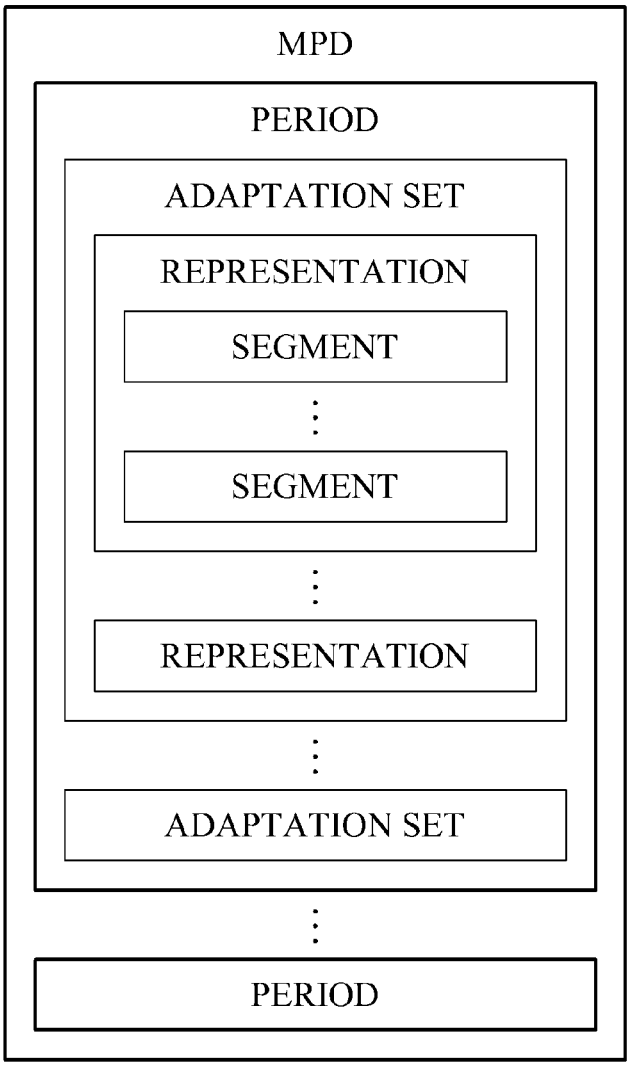
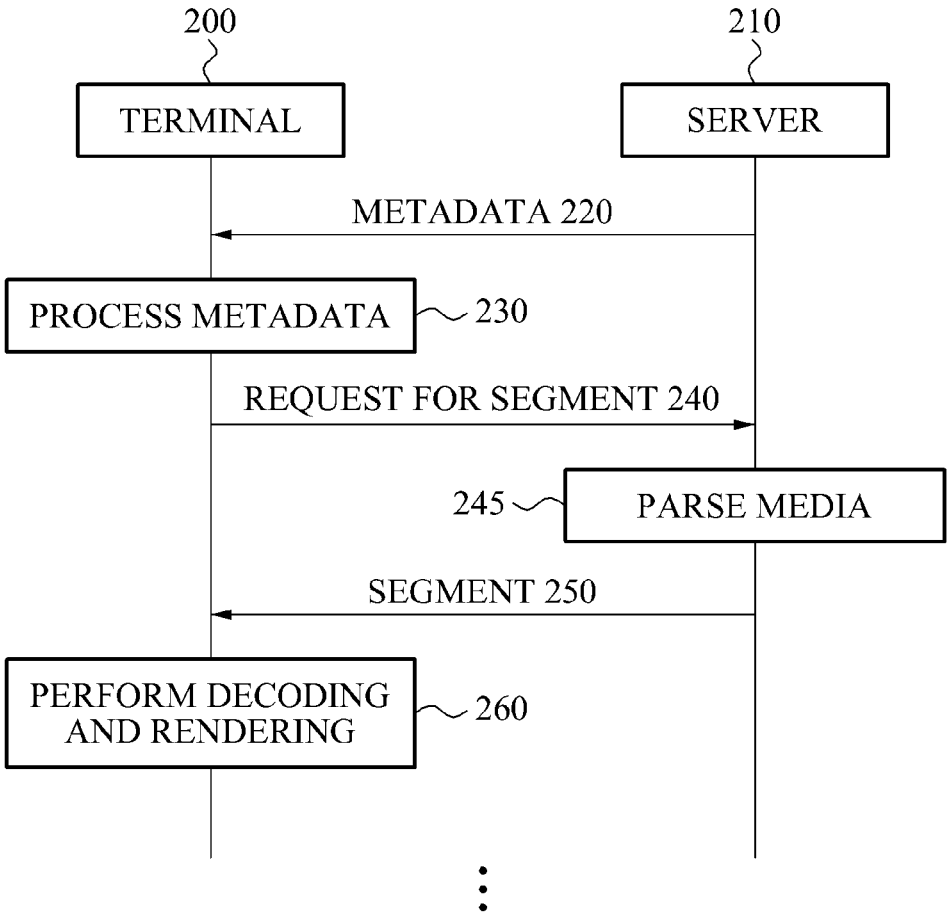


FIG. 2



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