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- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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(54) **Title:** METHOD AND APPARATUS FOR SESSION BANDWIDTH ESTIMATION AND RATE CONTROL

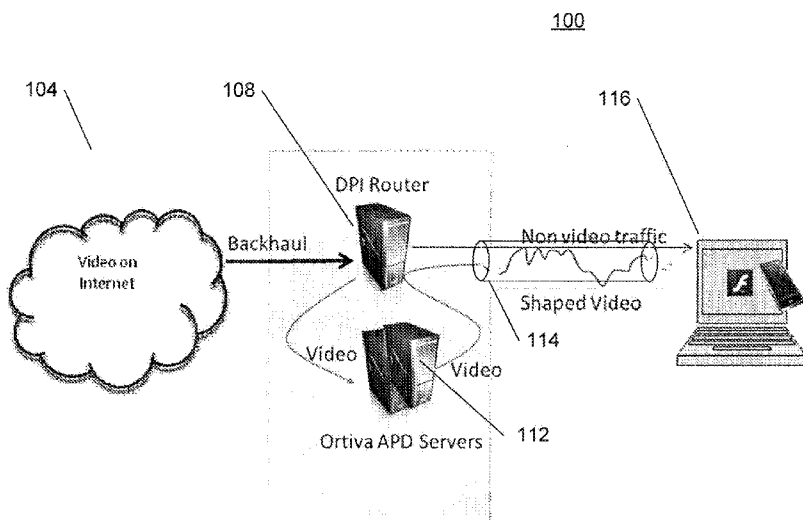


FIG. 1

(57) **Abstract:** An intermediate device receives a content data message addressed to a receiving device for a communication session between a source device and the receiving device. The intermediate device substitutes adapted content data for content data of the content data message and then sends the adapted content data to the receiving device such that it appears to the receiving device that the adapted content data originated from the source device. The communication from the source device to the receiving device is intercepted by the intermediate device in a manner that is transparent to the source device and receiving device.





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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/042811**A. CLASSIFICATION OF SUBJECT MATTER***H04L 12/56(2006.01)i, H04L 12/26(2006.01)i, H04L 29/06(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04L 12/56; H04L 29/02; G06F 15/16; H04N 7/18; H04N 7/173; H04W 72/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keywords: bandwidth, estimate, adjust, rate, transmit time, data size, streaming

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 2010-0195602 A1 (SURYA KUMAR KOVVALI et al.) 05 August 2010 See paragraphs 28, 30-40, 53-78; and figs. 4-8.	1-3,6-8 4,5,9-14
X A	US 2010-0333148 A1 (YOSHINORI MUSA et al.) 30 December 2010 See paragraphs 44-49, 60-72, 85-90, 96, 103-105; and figs. 1, 4, 7, 9, 11, 15.	11-14 1-10
A	US 2010-0020823 A1 (JUNFENG BAI et al.) 28 January 2010 See paragraphs 59-64; and figs. 5, 7, 9.	1-14
A	US 2005-0091696 A1 (ANDREW L. WOLFE et al.) 28 April 2005 See paragraphs 67-70; and fig. 5.	1-14
A	US 2009-0313330 A1 (TAKUYA SAKAMOTO) 17 December 2009 See paragraphs 26, 31-33, 51-60; and figs. 1, 4, 9.	1-14

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/042811

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