

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
12 August 2004 (12.08.2004)

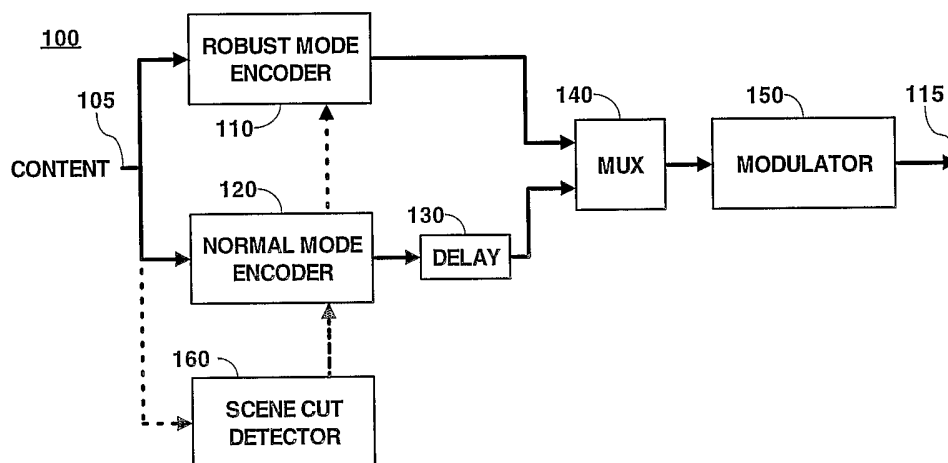
PCT

(10) International Publication Number
WO 2004/068838 A3

- (51) International Patent Classification⁷: **H04N 7/12**
- (21) International Application Number:
PCT/US2004/001746
- (22) International Filing Date: 22 January 2004 (22.01.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/443,672 28 January 2003 (28.01.2003) US
- (71) Applicant (for all designated States except US): **THOMSON LICENSING S.A.** [FR/FR]; 46, Quai A. Le Gallo, F-92648 Boulogne (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **COOPER, Jeffrey** [US/US]; 11 Toth Lane, Rocky Hill, NJ 08553 (US). **RAMASWAMY, Kumar** [IN/US]; 71 Sayre Drive, Princeton, NJ 08540 (US). **BOYCE, Jill** [US/US]; 3 Brandywine Court, Manalapan, NJ 07726 (US).
- (74) Agents: **TRIPOLI, Joseph S.** et al.; c/o Thomson Licensing Inc., 2 Independence Way, Suite 200, Princeton, NJ 08540 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ROBUST MODE STAGGERCASTING REDUCED RESOLUTION VIDEO FOR MOBILE RECEIVER



Transmitter

(57) Abstract: A method and apparatus for staggercasting to a mobile receiver (Fig. 1), includes encoding a first signal representing content at a first quality (120) and encoding a second signal representing the content at a second quality different than the first quality (110). A composite signal (115) comprising the first and second encoded signals, wherein the first encoded signal is delayed (130) with respect to the second encoded signal (110), is broadcast. The broadcast composite signal receiving at the mobile receiver where the received encoded signal having the lower quality is extracted from the received composite signal and the extracted encoded signal is decoded (Fig. 2).



Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

29 December 2005

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01746

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04N 7/12

US CL : 375/240.01

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)

U.S. : 375/240.01, 240, 370/487

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,822,324 A (KOSTRESTI et al) 13 October 1998 (13.10.1998), see fig.4, 6A, 6B, 7-9, see col.5, ln.45 to col.7, ln.25, col.10, ln.18-60, col.12, ln.17 to col.36, ln.21	1-15



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

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

20 October 2005 (20.10.2005)

Date of mailing of the international search report

14 NOV 2005

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Mehrdad Dastouri

Telephone No. (703) 305-4700