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Estipona

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(54) **TIME SHIFTING ENHANCED TELEVISION TRIGGERS**

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H04N 7/173 (2006.01)

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(58) **Field of Classification Search** 725/27, 725/28, 29, 52, 54, 58, 136; 707/9–10
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,390,027	A	*	2/1995	Henmi et al.	386/65
5,818,441	A	*	10/1998	Throckmorton et al.	345/717
5,937,331	A	*	8/1999	Kalluri et al.	725/146
6,061,719	A	*	5/2000	Bendinelli et al.	709/218
6,065,050	A	*	5/2000	DeMoney	709/219
6,338,094	B1	*	1/2002	Scott et al.	709/245
6,351,467	B1	*	2/2002	Dillon	370/432
6,415,438	B1	*	7/2002	Blackketter et al.	725/136
6,460,180	B1	*	10/2002	Park et al.	725/40
6,473,137	B1	*	10/2002	Godwin et al.	348/725
6,560,777	B2	*	5/2003	Blackketter et al.	725/110
6,571,392	B1	*	5/2003	Zigmond et al.	725/110
6,574,795	B1	*	6/2003	Carr	725/71
6,591,420	B1	*	7/2003	McPherson et al.	725/29
6,643,692	B1	*	11/2003	Philyaw et al.	709/219
6,668,378	B2	*	12/2003	Leak et al.	725/136
6,725,461	B1	*	4/2004	Dougherty et al.	725/40
6,766,524	B1	*	7/2004	Matheny et al.	725/23
2002/0010926	A1	*	1/2002	Lee	725/40
2002/0056129	A1	*	5/2002	Blackketter et al.	725/112

FOREIGN PATENT DOCUMENTS

WO   WO 01/26369   4/2001

OTHER PUBLICATIONS

Steinhorn et al., How to Enhance TV with ATVEF, Miller Freeman, Inc., 1999, pp. 1-8.*
Vijay, Computer Hardware and Software, Jan. 19, 1998, p. 4.*
Advanced Television Enhancement Forum Specification (ATVF), Version 1.1 revision 26, (Feb. 2, 1999).
Estipona, Jim B., Announcing the Availability of an Electronic Programming Guide to Receivers of Enhanced Television Transmissions, U.S. Appl. No. 09/652,695, filed Aug. 31, 2000.

(Continued)

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(57) **ABSTRACT**

Enhanced television broadcasts including triggers with expires attributes may be utilized in a variety of situations where the expires attribute may adversely affect the utilization of the trigger. For example, in situations where the broadcast is recorded, playback may be enabled even after the trigger expiration. Similarly, local affiliates or FNOCs may rebroadcast enhanced television content by adjusting the expires attributes of the original trigger.

30 Claims, 8 Drawing Sheets
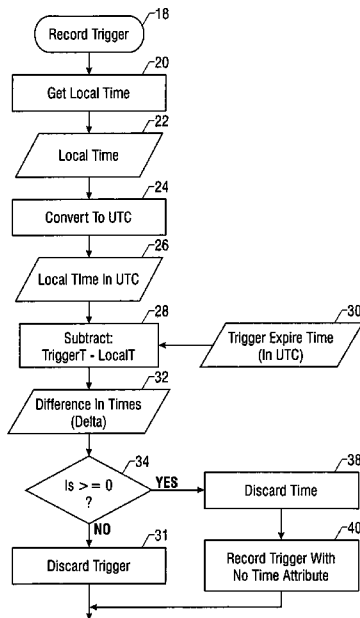
OTHER PUBLICATIONS

Estipona, Jim B., "Mapping Enhancements to Network Identifiers", U.S. Appl. No. 09/652,692, filed Aug. 31, 2000.

Advanced Television Enhancement Forum (ATVEF), Enhanced Content Specification, Version 1.1, Revision 26, 1998-1999.

Web pages downloaded from http://www.replaytv.com, "What is Replay TV?", 1998-2000.

Web pages downloaded from http://tivo.com,"What is TiVo?", 2000.

* cited by examiner

FIG. 1

FIG. 2

Retransmit Trigger — 50

Get Enhancement Start Time — 52

Enhancement Start Time — 54

Convert To UTC — 56

StartT In UTC — 58

Trigger Expire Time In UTC (TriggerT) — 62

Subtract: TriggerT - StartT — 60

Difference In Times (DeltaT) — 64

Is >= 0 ? — 66

NO → Discard Trigger — 68 → End

YES → Retransmission StartT + DeltaT — 70

Retransmission Start Time (Local Time) — 72

Convert To UTC — 74

Retransmission Start Time In UTC — 76

New Trigger Expire Time (In UTC) — 78
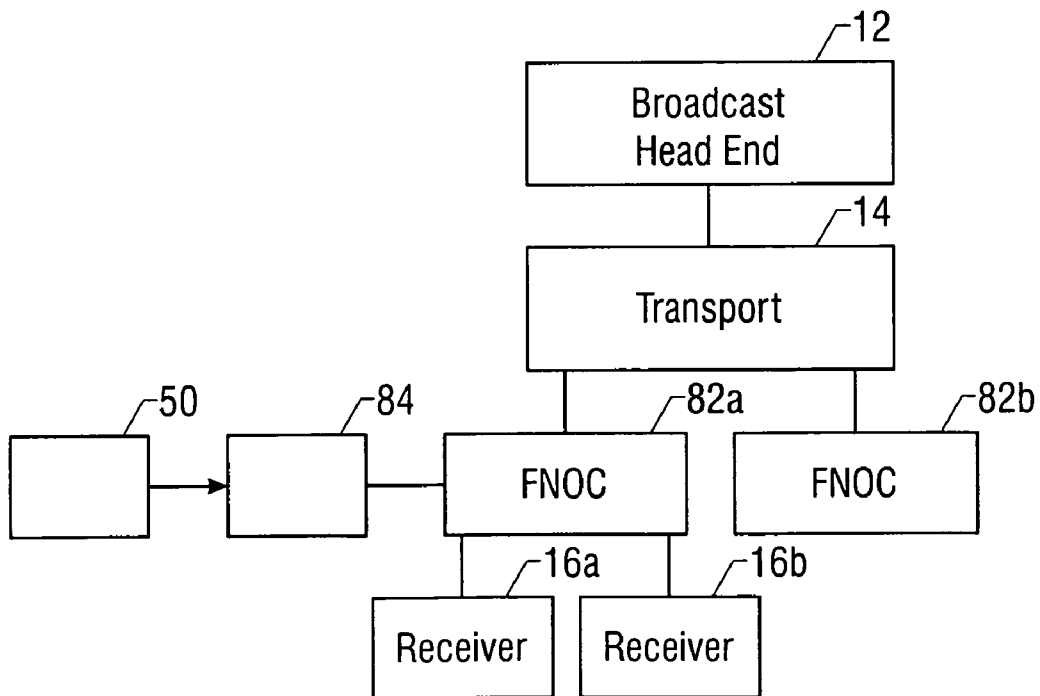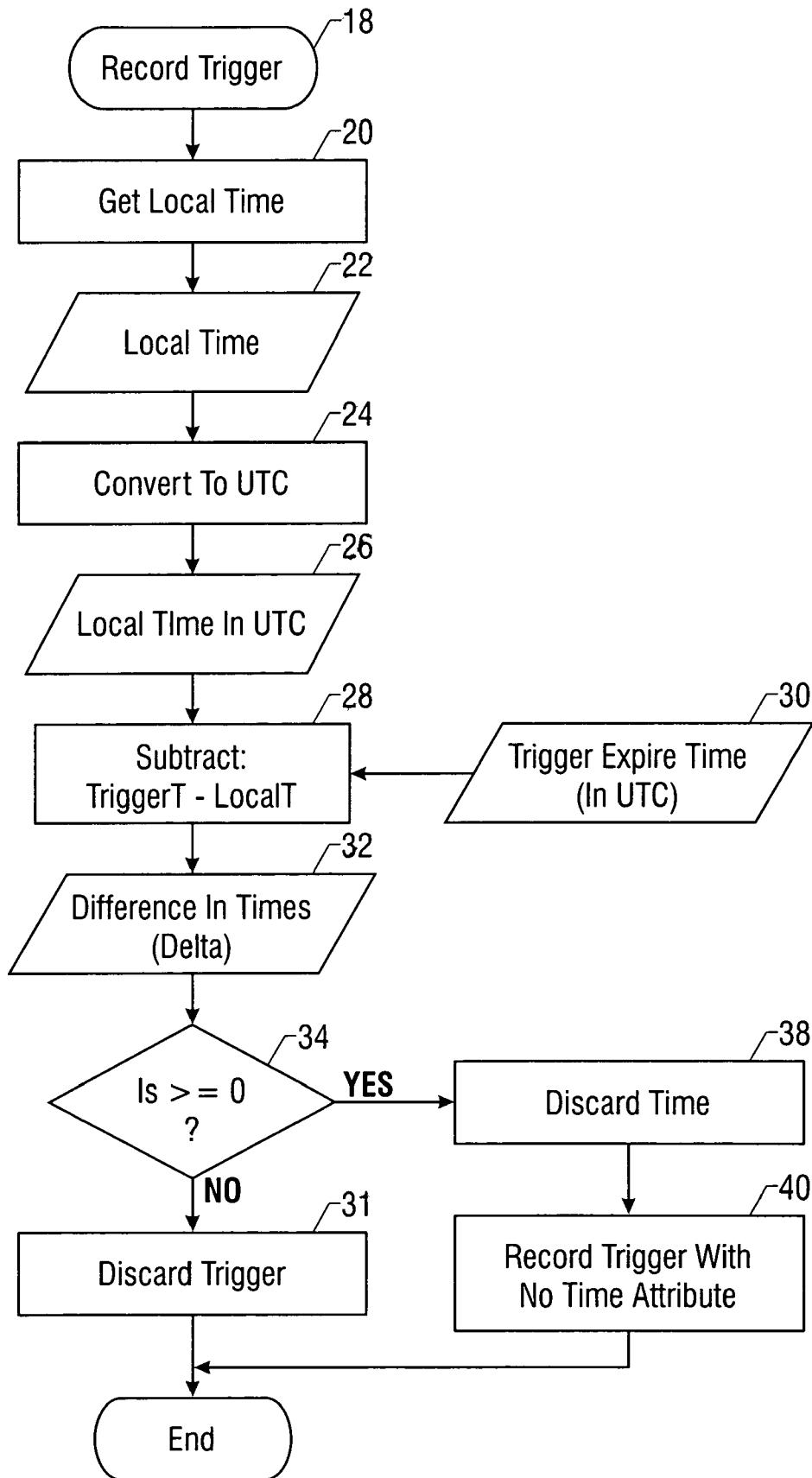
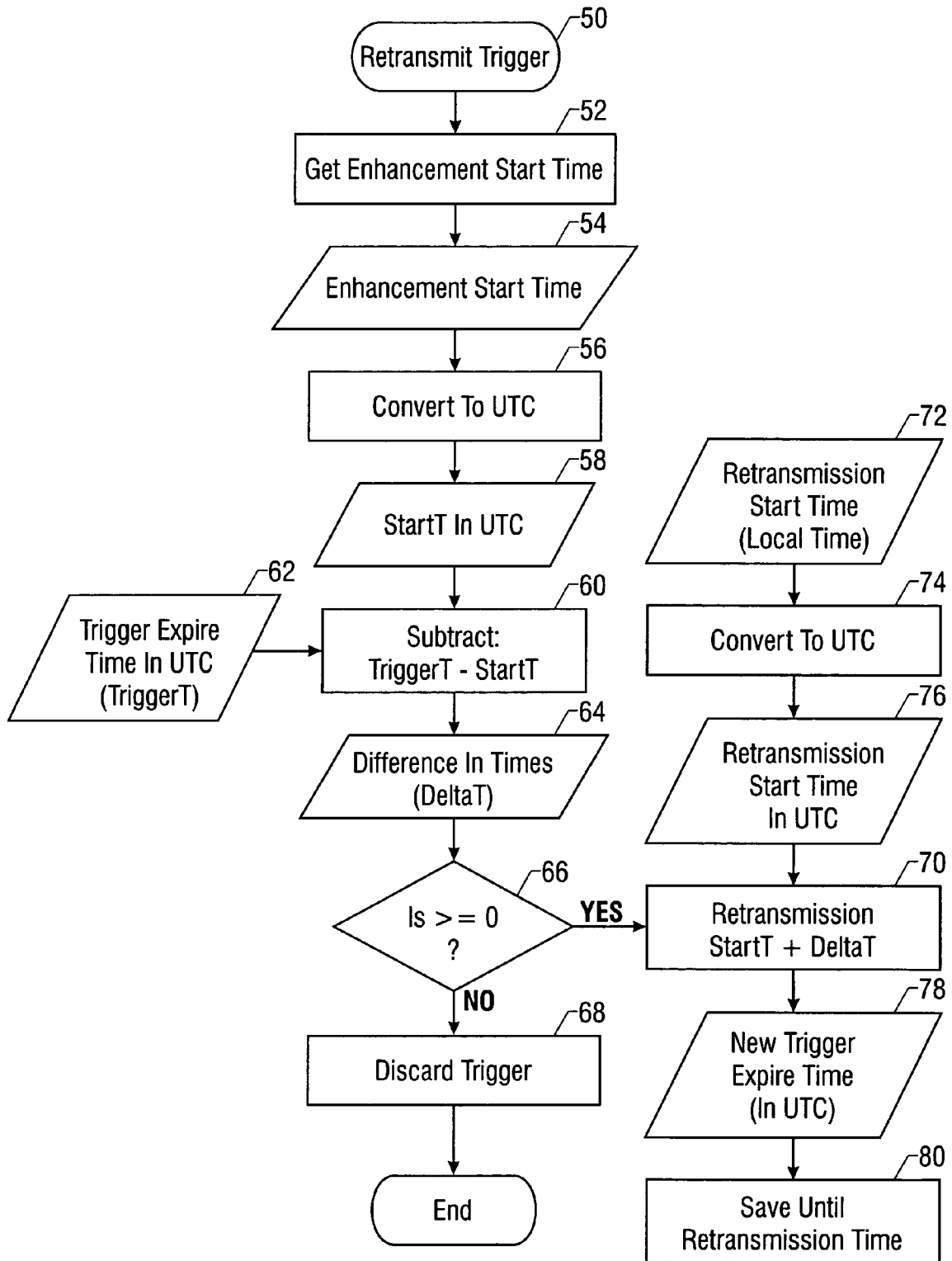Save Until Retransmission Time — 80

FIG. 4

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