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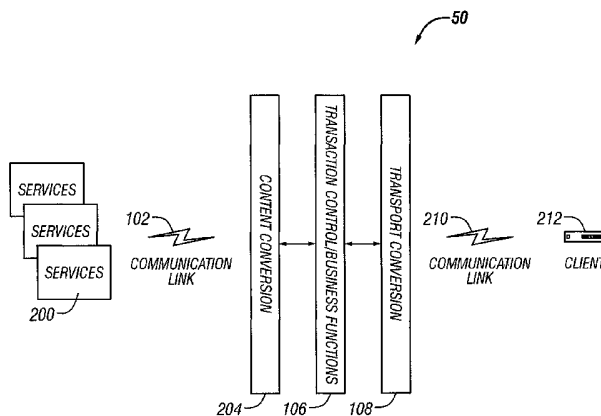
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[Continued on next page]

(54) Title: A DIGITAL TELEVISION APPLICATION PROTOCOL FOR INTERACTIVE TELEVISION



(57) Abstract: A common communication language that can address all the applications running in a multitude of set top boxes (STBs) or client devices and application servers. The present invention, DATP protocol encapsulates a Meta language that provides a generic portable communication application programmer interface that requires light process or utilization and is well suited for a typical STB possessing limited processing power. DATP requires relatively few processing cycles compared to typical Internet communication protocols. DATP reduces the overhead of the communication protocol handler at the STB and makes the communication protocol handler common for all STBs applications. The preferred DATP protocol is portable for all STBs since it is written in a native language that interfaces with the underlying operating system of the STB. A SGW (SGW) performs as a DATP server. The SGW translate between DATP messages and standard communication protocols. SGW enables SP clients at STBs utilizing DATP to communicate with service applications using a variety of communication protocols. A content converter is provided to convert standard Web content into content suitable for display on a client-viewing device, e.g., a TV.



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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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

EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|--|
| X | WO 00 24192 A (GEN INSTRUMENT CORP ;MEANDZIJA BRANISLAV N (US)) 27 April 2000 (2000-04-27) | 1, 3, 4, 6, 9, 13, 19, 21, 23, 24, 26, 29, 33, 39, 41, 43, 44, 46, 49, 53, 59, 61, 63, 64, 66, 69, 73, 79, 81, 83, 84, 86, 89, 93, 99, 101, 103, 104, 106, 109, 113, -/-- |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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

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Z document member of the same patent family

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|---|
| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | <p>page 5, line 2-20 page 29, line 24 -page 30, line 24 page 44, line 13 -page 45, line 10 page 46, line 1-4 page 49, line 5-12 -----</p> <p>WO 01 06784 A (UNITED VIDEO PROPERTIES INC) 25 January 2001 (2001-01-25)</p> <p>page 2, line 20-23 page 8, line 23 -page 9, line 8 page 10, line 4-24; figure 1 -----</p> | <p>119</p> <p>1,9, 13-16, 21,29, 33-36, 41,49, 53-56, 61,69, 73-76, 81,89, 93-96, 101,109, 113-116</p> |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 02/02829

| Patent document cited in search report | | Publication date | | Patent family member(s) | | Publication date |
|--|---|------------------|----|-------------------------|--|------------------|
| WO 0024192 | A | 27-04-2000 | AU | 6158499 A | | 08-05-2000 |
| | | | BR | 9914604 A | | 11-12-2001 |
| | | | CA | 2346891 A1 | | 27-04-2000 |
| | | | CN | 1326638 T | | 12-12-2001 |
| | | | EP | 1123620 A1 | | 16-08-2001 |
| | | | JP | 2002528971 T | | 03-09-2002 |
| | | | WO | 0024192 A1 | | 27-04-2000 |
| <hr/> | | | | | | |
| WO 0106784 | A | 25-01-2001 | AU | 5926500 A | | 05-02-2001 |
| | | | WO | 0106784 A2 | | 25-01-2001 |
| <hr/> | | | | | | |