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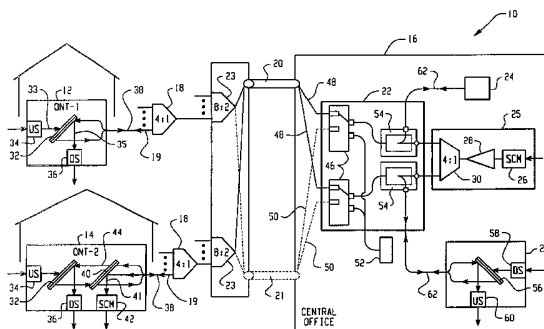
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(54) Title: UPGRADING OF PASSIVE OPTICAL NETWORK



(57) Abstract: A single fibre passive optical network (PON) wavelength division multiplex (WDM) overlay includes a central office (16), a fibre optic network (18-23), and a plurality of optical network termination (ONT) units (12, 14). The central office (16) has a baseline optical link that receives a baseline communication signal and converts the baseline communication signal into a downstream baseline optical signal within a first optical bandwidth, and has an additional optical link that receives a second type of communication signal and converts the second type of communication signal into a second downstream optical signal within a second optical bandwidth. The downstream baseline optical signal generated by the baseline optical link is combined with the second optical signal generated by the additional optical link to generate a broadband optical signal. The fibre optic network (18-23) is coupled to the central office and receives the broadband optical signal on at least one optic fibre. The fibre optic network splits the broadband optical signal to a plurality of fibre drops. The optical network termination (ONT) units are each coupled to a fibre drop. At least one of the ONT units is a baseline ONT unit (12) that receives the broadband optical signal from the fibre drop and splits the downstream baseline optical signal from the broadband optical signal, and at least one other of the ONT units (14) is an upgraded ONT unit that receives the broadband optical signal from the fibre drop and splits the downstream baseline optical signal and the signal and the second downstream optical signals from the broadband optical signal. In addition, the installation of the upgraded ONT unit to the PON does not effect baseline optical service to any other ONT unit.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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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)
 IPC 7 H04B H04Q

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FELDMAN R D ET AL: "BROADBAND UPGRADE OF AN OPERATING NARROWBAND SINGLE-FIBER PASSIVE OPTICAL NETWORK USING COARSE WAVELENGTH DIVISION MULTIPLEXING AND SUBCARRIER MULTIPLE ACCESS" JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, vol. 16, no. 1, 1998, pages 1-8, XP000739104 ISSN: 0733-8724 page 1, column 2, paragraph 2 page 2, column 1, paragraph 2 - paragraph 3 page 2, column 2, paragraph 2 -page 3, column 1, paragraph 1 figures 1,2	1-5, 12-20, 25, 34
Y	-/--	6-9, 21-24, 26-28,

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search

24 September 2003

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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.
Y	<p style="text-align: center;">---</p> LO C N: "A HYBRID LIGHTWAVE TRANSMISSION SYSTEM FOR SUBCARRIER MULTIPLEXED VIDEO AND DIGITAL B-ISDN SERVICES IN THE LOCAL LOOP" JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE. NEW YORK, US, vol. 7, no. 11, 1 November 1989 (1989-11-01), pages 1839-1848, XP000104019 ISSN: 0733-8724 page 1, column 1, paragraph 1 -column 2, paragraph 3 page 2, column 1, paragraph 4 -column 2, paragraph 3 page 3, column 1, paragraph 2 figure 1	30-33 6-9
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Y	<p style="text-align: center;">---</p> EP 1 041 852 A (NIPPON ELECTRIC CO) 4 October 2000 (2000-10-04) column 3, line 47 -column 4, line 10 column 5, line 7 - line 26 column 7, line 8 -column 8, line 20 figures 1,2	21-24
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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