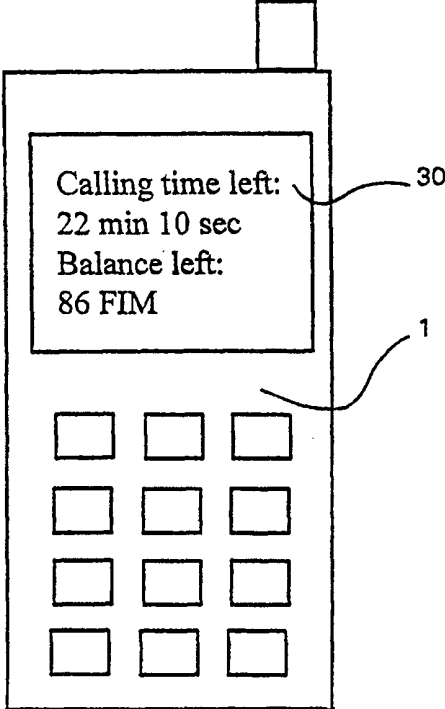




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁷ : H04M 7/00, H04Q 3/00, H04L 12/14</p>	<p>A3</p>	<p>(11) International Publication Number: WO 00/19702</p> <p>(43) International Publication Date: 6 April 2000 (06.04.00)</p>
<p>(21) International Application Number: PCT/FI99/00807</p> <p>(22) International Filing Date: 30 September 1999 (30.09.99)</p> <p>(30) Priority Data: 982117 30 September 1998 (30.09.98) FI</p> <p>(71) Applicant (for all designated States except US): TELEFON-AKTIEBOLAGET LM ERICSSON (publ) [SE/SE]; S-126 25 Stockholm (SE).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): AHOLA, Kalevi [FI/FI]; Kotiniityntie 16, FIN-02400 Kirkkonummi (FI). TIURI, Markku [FI/FI]; Elsankuja 2 F 55, FIN-02230 Espoo (FI). KESKITALO, Pasi [FI/FI]; Framnäsintie 3 C 16, FIN-02430 Masala (FI).</p> <p>(74) Agent: BORENIUS & CO OY AB; Kansakoulukuja 3, FIN-00100 Helsinki (FI).</p>	<p>(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p> <p>(88) Date of publication of the international search report: 3 August 2000 (03.08.00)</p>	
<p>(54) Title: PREPAID SERVICES IN A COMMUNICATIONS SYSTEM</p>		
<p>(57) Abstract</p>		
<p>The present invention relates to a method and an arrangement for providing prepaid calls or services for a user of a telephone. The arrangement comprises a prepaid calling service and a telephone terminal enabling an access to the prepaid calling service. In addition, means for providing the user with an individual code and an account dedicated for the individual code are used. The communications network apparatus includes means for triggering the call to a desired destination, means for dynamically charging the costs for the call from the account, and means for informing during the call dynamically the user of the remaining calling time on the basis of the balance remaining in the account and the costs for the call and/or of the remaining balance in the account.</p> <div style="text-align: right; margin-top: 20px;">  </div>		

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 99/00807

A. CLASSIFICATION OF SUBJECT MATTER		
IPC7: H04M 7/00, H04Q 3/00, H04L 12/14 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)		
IPC7: H04M, H04Q, H04L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
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.
Y	WO 9615633 A1 (OY LM ERICSSON AB), 23 May 1996 (23.05.96), page 10, line 26 - page 11, line 17, figure 5	1-4,6,8, 10-12,14
Y	page 11, line 18 - line 29	7
Y	page 11, line 8 - line 11	9,13,15
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Y	EP 0698987 A2 (ALCATEL N.V.), 28 February 1996 (28.02.96), the whole document	1-4,6-15
	--	
A	US 5134651 A (ORTIZ ET AL), 28 July 1992 (28.07.92), column 4, line 20 - line 42; column 15, line 63 - column 16, line 3	
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 document but 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		Date of mailing of the international search report
31 May 2000		01-06-2000
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer Jenny Eriksson/cs Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 99/00807

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2731860 A1 (LOPEZ DE MONTIEL GILLES), 20 Sept 1996 (20.09.96), page 1, line 13 - line 20; page 2, line 17 - line 19 --	
A	WO 9705729 A1 (TELECOM ITALIA MOBILE S.P.A.), 13 February 1997 (13.02.97), page 4, line 22 - line 23 --	
P,Y	CA 2218587 A1 (HIGGINS, STEVEN ROBERTSON ET AL), 17 April 1999 (17.04.99), page 2, line 16 - page 3, line 2; page 3, line 22 - page 4, line 3 --	5,16
A	WO 9705732 A1 (AMERICAN EXPRESS TRAVEL RELATED SERVICES COMPANY, INC.), 13 February 1997 (13.02.97), page 5, line 1 - page 6, line 9 -- -----	5,16

INTERNATIONAL SEARCH REPORT

International application No.
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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

- 2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

- 3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a):

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Invention 1: Claims 1, 2, 8, 11, 14.

Invention 1: Claims 3, 4, 6.

Invention 1: Claims 5, 16.

Invention 1: Claim 7.

Invention 1: Claims 10, 12.

Invention 1: Claims 9, 13, 15.

Claims 1, 2, 8, 11 and 14 discuss a method and arrangement for informing and displaying information. .../...

- 1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
- 3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

- 4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

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Claims 10 and 12 discuss modifying parameters included in the database.

Claims 9, 13 and 15 discuss deducting charges from the user's account.

The corresponding technical features of the inventions are mentioned in claims 1 and 11. The claims 1 and 11 discuss a method and an arrangement for providing prepaid calls wherein a user by use of a telephone terminal and a code is able to reach a desired destination. During the call, the account is charged and the user is informed about the remaining balance in the account.

Document WO, 9615633, A1, discloses systems for providing users with prepaid calls. The user has an account code and a PIN code. The user's call is triggered to the service control point (SCP) where the authority of the user is controlled, e.g. based on the PIN code. The SCP controls the account balance and notifies the user of this information. If the account balance is positive, the call is triggered to the desired destination. The charges are made during the call. At the end of the call, the account's real balance is shown (see page 10, line 26 - page 11, line 18).

Document EP, 0698987, A2, discloses a system where a user prepays an amount to an account. As the user dials out and makes a call, his account balance will be decremented and may be observed on the handset read out. A variety of accounting information can be made available to the subscriber (see column 3, line 16 - line 26).

The method and arrangement described in claims 1 and 11 of the present invention differ from what is mentioned in WO, 9615633, A1, mainly in that information is available for the user during the call. However, displaying the remaining calling time during the call and displaying other accounting information, is known from EP, 0698987, A2. Thus, from knowing the displaying functions in EP, 0698987, A2, it would be obvious for a person skilled in the art to modify the system in WO, 9615633, A1, so that the user also can be informed about the remaining balance in the account during the call. Therefore, the invention as claimed in claims 1 and 11 is not considered to involve an inventive step.

Thus, the six groups of inventions mentioned above lack common or corresponding technical features over the prior art and thereby lack unity of invention *à posteriori*. Thus, the invention contains six independent inventions.

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/12/99

International application No.

PCT/FI 99/00807

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9615633 A1	23/05/96	EP 0792561 A FI 100075 B FI 945340 D FI 945368 A	03/09/97 00/00/00 00/00/00 12/05/96
EP 0698987 A2	28/02/96	ZA 9506867 A	22/03/96
US 5134651 A	28/07/92	AU 1913392 A BR 9205910 A CA 2108581 A EP 0580769 A FI 934573 A JP 6507528 T MX 9201786 A NO 933748 A US 5361297 A WO 9219066 A	17/11/92 10/01/95 19/10/92 02/02/94 15/12/93 25/08/94 01/10/92 17/12/93 01/11/94 29/10/92
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WO 9705732 A1	13/02/97	AU 6767196 A	26/02/97