US009208346B2

(12) **United States Patent**
Pitt et al.

(10) **Patent No.: US 9,208,346 B2**
(45) **Date of Patent: Dec. 8, 2015**

(54) **PERSONA-NOTITIA INTELLECTION CODIFIER**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 96 days.

(21) Appl. No.: **14/018,756**

(22) Filed: **Sep. 5, 2013**

(65) **Prior Publication Data**

US 2014/0068782 A1 Mar. 6, 2014

Related U.S. Application Data

(60) Provisional application No. 61/696,982, filed on Sep. 5, 2012, provisional application No. 61/696,986, filed on Sep. 5, 2012, provisional application No. 61/696,993, filed on Sep. 5, 2012, provisional application No. 61/868,311, filed on Aug. 21, 2013.

(51) **Int. Cl.**

H04L 9/32	(2006.01)
H04L 9/00	(2006.01)
G06F 21/62	(2013.01)

(52) **U.S. Cl.**
CPC ***G06F 21/6254*** (2013.01)

(58) **Field of Classification Search**
CPC . H04L 63/08; H04L 63/0869; H04L 63/0876; G06F 21/31; G06F 21/44; G06F 21/6254
USPC 713/168–170, 189, 193; 726/2–7, 726/27–30
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,103,073	A	7/1914	O'Connell
4,445,118	A	4/1984	Taylor

(Continued)

FOREIGN PATENT DOCUMENTS

KR	WO/2006/075856	7/2006
SE	WO9921380	4/1999

(Continued)

OTHER PUBLICATIONS

Intrado Inc., Qwest Detailed SR/ALI to MPC/GMLC Interface Specification for TCP/IP Implemenation of TIA/EIA/J-STD-036 E2 with Phase I Location Description Addition, Intrado Informed Response; Apr. 2004; Issue 1.11; pp. 1-57.

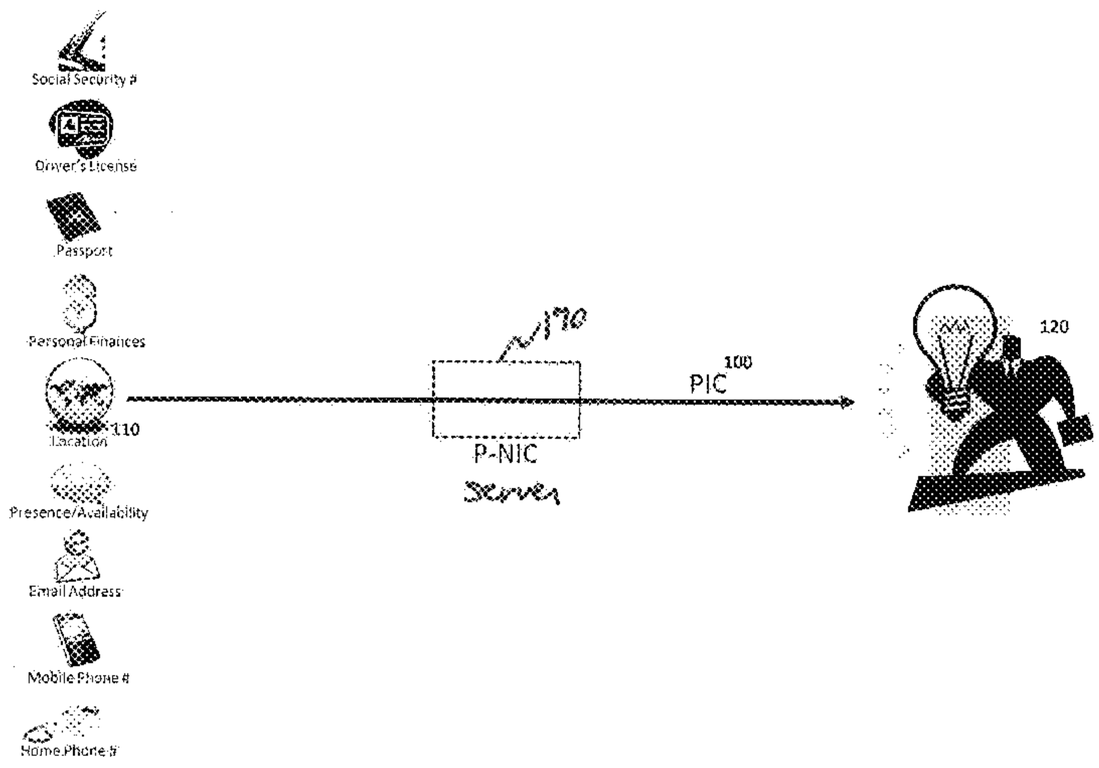
(Continued)

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(57) **ABSTRACT**

A persona-notitia intellection codifier (P-NIC) server intelligently codifies and disburses personal user information from a user device (smartphone, laptop, etc.) to a multiplicity of designee devices. Masking Persona-Notitia Intellection Codes (a.k.a. PICs) are created that each stipulate control(s) and parametric limitation(s) for the associated one of a variety of personal user information. The Persona-Notitia Intellection Codifier (P-NIC) server rapidly produces a mask comprising a multiple bit "key" value (i.e., a persona-notitia intellection code (PIC)) that is uniquely distinguishable from every other PIC that's ever been generated for a given user. The value of the PIC is typically many bytes in length, and associates attributes to a unique key value that describes a desired subset of all the user's available personal user information to be unlocked by the key value (i.e., by the PIC).

15 Claims, 4 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

4,494,119	A	1/1985	Wimbush	
4,651,156	A	3/1987	Martinez	
4,706,275	A	11/1987	Kamil	
4,868,570	A	9/1989	Davis	
4,891,638	A	1/1990	Davis	
4,891,650	A	1/1990	Scheffer	
4,910,767	A	3/1990	Brugliera et al.	
4,952,928	A	8/1990	Carroll	
4,972,484	A	11/1990	Theile	
5,014,206	A	5/1991	Scribner	
5,043,736	A	8/1991	Darnell	
5,055,851	A	10/1991	Sheffer	
5,068,656	A	11/1991	Sutherland	
5,068,891	A	11/1991	Marshall	
5,070,329	A	12/1991	Jasimaki	
5,081,667	A	1/1992	Drori	
5,119,104	A	6/1992	Heller	
5,126,722	A	6/1992	Kamis	
5,144,283	A	9/1992	Arens	
5,161,180	A	11/1992	Chavous	
5,166,972	A	11/1992	Smith	
5,177,478	A	1/1993	Wagai	
5,193,215	A	3/1993	Olmer	
5,208,756	A	5/1993	Song	
5,214,789	A	5/1993	George	
5,218,367	A	6/1993	Sheffer	
5,223,844	A	6/1993	Mansell	
5,239,570	A	8/1993	Koster	
5,265,630	A	11/1993	Hartmann	
5,266,944	A	11/1993	Carroll	
5,283,570	A	2/1994	DeLuca	
5,289,527	A	2/1994	Tiedemann	
5,293,642	A	3/1994	Lo	
5,299,132	A	3/1994	Wortham	
5,301,354	A	4/1994	Schwendeman	
5,311,516	A	5/1994	Kuznicki	
5,325,302	A	6/1994	Izidon	
5,327,529	A	7/1994	Fults	
5,334,974	A	8/1994	Simms	
5,335,246	A	8/1994	Yokev	
5,343,493	A	8/1994	Karimulah	
5,347,568	A	9/1994	Moody	
5,351,235	A	9/1994	Lahtinen	
5,361,212	A	11/1994	Class	
5,363,425	A	11/1994	Mufti	
5,365,451	A	11/1994	Wang	
5,374,936	A	12/1994	Feng	
5,379,344	A *	1/1995	Larsson et al.	380/251
5,379,451	A	1/1995	Nakagoshi	
5,381,338	A	1/1995	Wysocki	
5,387,993	A	2/1995	Heller	
5,388,147	A	2/1995	Grimes	
5,390,339	A	2/1995	Bruckery	
5,394,158	A	2/1995	Chia	
5,396,227	A	3/1995	Carroll	
5,398,190	A	3/1995	Wortham	
5,406,614	A	4/1995	Hara	
5,418,537	A	5/1995	Bird	
5,422,813	A	6/1995	Schuchman	
5,423,076	A	6/1995	Westergren	
5,432,841	A	7/1995	Rimer	
5,434,789	A	7/1995	Fraker	
5,454,024	A	9/1995	Lebowitz	
5,457,746	A *	10/1995	Dolphin	705/51
5,461,390	A	10/1995	Hoshen	
5,470,233	A	11/1995	Fruchterman	
5,479,408	A	12/1995	Will	
5,479,482	A	12/1995	Grimes	
5,485,161	A	1/1996	Vaughn	
5,485,163	A	1/1996	Singer	
5,488,563	A	1/1996	Chazelle	
5,494,091	A	2/1996	Freeman	
5,497,149	A	3/1996	Fast	
5,506,886	A	4/1996	Maine	
5,508,931	A	4/1996	Snider	
5,513,243	A	4/1996	Kage	
5,515,287	A	5/1996	Hakoyama	
5,517,199	A	5/1996	DiMattei	
5,519,403	A	5/1996	Bickley	
5,530,655	A	6/1996	Lokhoff	
5,530,914	A	6/1996	McPheters	
5,532,690	A	7/1996	Hertel	
5,535,434	A	7/1996	Siddoway	
5,539,395	A	7/1996	Buss	
5,539,398	A	7/1996	Hall	
5,539,829	A	7/1996	Lokhoff	
5,543,776	A	8/1996	L'Esperance	
5,546,445	A	8/1996	Dennison	
5,552,772	A	9/1996	Janky	
5,555,286	A	9/1996	Tendler	
5,568,119	A	10/1996	Schipper	
5,568,153	A	10/1996	Beliveau	
5,568,551	A *	10/1996	Kawashima	705/53
5,574,648	A	11/1996	Pilley	
5,579,372	A	11/1996	Åström	
5,588,009	A	12/1996	Will	
5,592,535	A	1/1997	Klotz	
5,594,780	A	1/1997	Wiedeman	
5,604,486	A	2/1997	Lauro	
5,606,313	A	2/1997	Allen	
5,606,618	A	2/1997	Lokhoff	
5,606,850	A	3/1997	Nakamura	
5,610,815	A	3/1997	Gudat	
5,611,050	A	3/1997	Theimer et al.	
5,614,890	A	3/1997	Fox	
5,615,116	A	3/1997	Gudat	
5,621,793	A	4/1997	Bednarek	
5,628,051	A	5/1997	Salin	
5,629,693	A	5/1997	Janky	
5,633,912	A	5/1997	Tsoi	
5,636,276	A	6/1997	Brugger	
5,661,652	A	8/1997	Sprague	
5,661,755	A	8/1997	Van de Kerkhof	
5,682,600	A	10/1997	Salin	
5,689,245	A	11/1997	Noreen	
5,699,053	A	12/1997	Jonsson	
5,704,029	A	12/1997	Wright, Jr.	
5,721,781	A	2/1998	Deo et al.	
5,731,785	A	3/1998	Lemelson	
5,740,534	A	4/1998	Ayerst	
5,761,618	A	6/1998	Lynch	
5,765,152	A	6/1998	Erickson	
5,767,795	A	6/1998	Schaphorst	
5,768,509	A	6/1998	Gunluk	
5,771,353	A	6/1998	Eggleston	
5,774,533	A	6/1998	Patel	
5,774,670	A	6/1998	Montulli	
5,787,357	A	7/1998	Salin	
5,794,142	A	8/1998	Vanttila	
5,797,094	A	8/1998	Houde	
5,797,096	A	8/1998	Lupien	
5,802,492	A	9/1998	DeLorme	
5,806,000	A	9/1998	Vo	
5,809,415	A	9/1998	Rossman	
5,812,086	A	9/1998	Bertiger	
5,812,087	A	9/1998	Krasner	
5,822,700	A	10/1998	Hult	
5,828,740	A	10/1998	Khue	
5,835,907	A	11/1998	Newman	
5,841,396	A	11/1998	Krasner	
5,857,201	A	1/1999	Wright, Jr.	
5,864,667	A	1/1999	Barkam	
5,874,914	A	2/1999	Krasner	
5,896,369	A	4/1999	Warsta	
5,920,821	A	7/1999	Seaholtz	
5,922,074	A	7/1999	Richard	
5,930,250	A	7/1999	Klok	
5,930,701	A	7/1999	Skog	
5,943,399	A	8/1999	Bannister et al.	
5,945,944	A	8/1999	Krasner	
5,946,629	A	8/1999	Sawyer et al.	
5,946,630	A	8/1999	Willars et al.	
5,950,130	A	9/1999	Coursey	
5,950,137	A	9/1999	Kim	

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,953,398	A		9/1999	Hill
5,960,362	A		9/1999	Grob
5,974,054	A		10/1999	Couts
5,978,685	A		11/1999	Laiho
5,983,099	A		11/1999	Yao
5,987,323	A		11/1999	Huotari
5,998,111	A		12/1999	Abe
5,999,124	A		12/1999	Sheynblat
6,014,602	A		1/2000	Kithol
6,032,051	A		2/2000	Hall
6,035,025	A		3/2000	Hanson
6,049,710	A		4/2000	Nilsson
6,052,081	A		4/2000	Krasner
6,058,300	A		5/2000	Hanson
6,061,018	A		5/2000	Sheynblat
6,061,346	A		5/2000	Nordman
6,064,336	A		5/2000	Krasner
6,064,338	A		5/2000	Kobayakawa et al.
6,064,875	A		5/2000	Morgan
6,067,045	A		5/2000	Castelloe
6,070,067	A		5/2000	Nguyen
6,075,982	A		6/2000	Donovan
6,081,229	A		6/2000	Soliman
6,081,508	A		6/2000	West
6,085,320	A		7/2000	Kaliski
6,101,378	A		8/2000	Barabash
6,104,931	A		8/2000	Havinis et al.
6,108,533	A		8/2000	Brohoff
6,121,923	A		9/2000	King
6,122,503	A		9/2000	Daly
6,122,520	A		9/2000	Want
6,124,810	A		9/2000	Segal
6,131,028	A		10/2000	Whitington
6,131,067	A		10/2000	Girerd
6,133,874	A		10/2000	Krasner
6,134,316	A		10/2000	Kallioniemi et al.
6,134,483	A		10/2000	Vayanos
6,138,003	A		10/2000	Kingdon et al.
6,148,197	A		11/2000	Bridges
6,148,198	A		11/2000	Anderson
6,148,342	A	*	11/2000	Ho 709/225
6,149,353	A		11/2000	Nilsson
6,150,980	A		11/2000	Krasner
6,154,172	A		11/2000	Piccionelli
6,169,891	B1		1/2001	Gorham
6,169,901	B1		1/2001	Boucher
6,169,902	B1		1/2001	Kawamoto
6,173,181	B1		1/2001	Losh
6,178,505	B1		1/2001	Schneider
6,178,506	B1		1/2001	Quick, Jr.
6,181,935	B1		1/2001	Gossman
6,181,939	B1		1/2001	Ahvenainen
6,188,354	B1		2/2001	Soliman
6,188,752	B1		2/2001	Lesley
6,188,909	B1		2/2001	Alanara
6,189,098	B1		2/2001	Kaliski, Jr.
6,195,555	B1		2/2001	Dent
6,195,557	B1		2/2001	Havinis
6,198,431	B1		3/2001	Gibson
6,199,045	B1		3/2001	Giniger
6,199,113	B1		3/2001	Alegre
6,205,330	B1		3/2001	Winbladh
6,208,290	B1		3/2001	Krasner
6,208,854	B1		3/2001	Roberts
6,215,441	B1		4/2001	Moeglein
6,219,557	B1		4/2001	Havinis
6,223,046	B1		4/2001	Hamill-Keays
6,226,529	B1		5/2001	Bruno
6,239,742	B1		5/2001	Krasner
6,247,135	B1		6/2001	Feague
6,249,680	B1		6/2001	Wax
6,249,744	B1		6/2001	Morita
6,249,873	B1		6/2001	Richard
6,253,074	B1		6/2001	Carlsson et al.
6,253,203	B1		6/2001	O'Flaherty
6,260,147	B1		7/2001	Quick, Jr.
6,266,614	B1		7/2001	Alumbaugh
6,275,692	B1		8/2001	Skog
6,275,849	B1		8/2001	Ludwig
6,278,701	B1		8/2001	Ayyagari et al.
6,289,373	B1		9/2001	Dezonno
6,297,768	B1		10/2001	Allen, Jr.
6,308,269	B2		10/2001	Proidl
6,313,786	B1		11/2001	Sheynblat
6,317,594	B1		11/2001	Gossman
6,321,091	B1		11/2001	Holland
6,321,092	B1		11/2001	Fitch et al.
6,321,257	B1		11/2001	Kotola
6,324,524	B1		11/2001	Lent
6,327,473	B1		12/2001	Soliman
6,327,479	B1		12/2001	Mikkola
6,330,454	B1		12/2001	Verdonk
6,333,919	B2		12/2001	Gaffney
6,360,093	B1		3/2002	Ross
6,360,102	B1		3/2002	Havinis et al.
6,363,254	B1		3/2002	Jones
6,367,019	B1		4/2002	Ansell
6,370,389	B1		4/2002	Isomursu
6,377,209	B1		4/2002	Krasner
6,397,074	B1		5/2002	Pihl et al.
6,400,314	B1		6/2002	Krasner
6,400,958	B1		6/2002	Isomursu
6,411,254	B1		6/2002	Moeglein
6,421,002	B2		7/2002	Krasner
6,427,001	B1		7/2002	Contractor et al.
6,429,808	B1		8/2002	King et al.
6,433,734	B1		8/2002	Krasner
6,434,381	B1		8/2002	Moore
6,442,391	B1		8/2002	Johansson
6,449,473	B1		9/2002	Raivisto
6,449,476	B1		9/2002	Hutchinson
6,456,852	B2		9/2002	Bar
6,463,272	B1		10/2002	Wallace
6,477,150	B1		11/2002	Maggenti
6,504,491	B1		1/2003	Christians
6,505,049	B1		1/2003	Dorenbosch
6,510,387	B2		1/2003	Fuchs
6,512,922	B1		1/2003	Burg
6,512,930	B2		1/2003	Sandegren
6,515,623	B2		2/2003	Johnson
6,519,466	B2		2/2003	Pande
6,522,682	B1		2/2003	Kohli
6,526,026	B1		2/2003	Menon
6,529,500	B1		3/2003	Pandharipande
6,529,829	B2		3/2003	Turetzky
6,531,982	B1		3/2003	White
6,538,757	B1		3/2003	Sansone
6,539,200	B1		3/2003	Schiff
6,539,232	B2		3/2003	Hendrey et al.
6,539,304	B1		3/2003	Chansarkar
6,542,464	B1		4/2003	Takeda
6,542,734	B1		4/2003	Abrol
6,542,743	B1		4/2003	Soliman
6,549,776	B1		4/2003	Joong
6,549,844	B1		4/2003	Egberts
6,553,236	B1		4/2003	Dunko et al.
6,556,832	B1		4/2003	Soliman
6,560,456	B1		5/2003	Lohtia et al.
6,560,461	B1		5/2003	Fomukong
6,560,534	B2		5/2003	Abraham
6,564,261	B1		5/2003	Gudjonsson
6,570,530	B2		5/2003	Gaal
6,571,095	B1		5/2003	Koodli
6,574,558	B2		6/2003	Kohli
6,580,390	B1		6/2003	Hay
6,584,552	B1		6/2003	Kuno
6,587,691	B1		7/2003	Granstam et al.
6,594,500	B2		7/2003	Bender
6,597,311	B2		7/2003	Sheynblat
6,600,927	B2		7/2003	Hamilton et al.
6,603,973	B1		8/2003	Foladare
6,606,495	B1		8/2003	Korpi
6,606,554	B2		8/2003	Edge
6,609,004	B1		8/2003	Morse

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,611,757	B2	8/2003	Brodie
6,618,593	B1	9/2003	Drutman et al.
6,618,670	B1	9/2003	Chansarkar
6,621,452	B2	9/2003	Knockeart
6,621,810	B1	9/2003	Leung
6,628,233	B2	9/2003	Knockeart
6,633,255	B2	10/2003	Krasner
6,640,184	B1	10/2003	Rabe
6,650,288	B1	11/2003	Pitt
6,661,372	B1	12/2003	Girerd
6,665,539	B2	12/2003	Sih
6,665,541	B1	12/2003	Krasner
6,671,620	B1	12/2003	Garin
6,675,017	B1	1/2004	Enzmann et al.
6,677,894	B2	1/2004	Sheynblat
6,680,694	B1	1/2004	Knockeart
6,680,695	B2	1/2004	Turetzky et al.
6,687,504	B1	2/2004	Raith
6,690,940	B1	2/2004	Brown
6,691,019	B2	2/2004	Seeley
6,694,258	B2	2/2004	Johnson
6,694,351	B1	2/2004	Shaffer
6,697,629	B1	2/2004	Grilli
6,698,195	B1	3/2004	Hellinger
6,701,144	B2	3/2004	Kirbas
6,703,971	B2	3/2004	Pande
6,703,972	B2	3/2004	Van Diggelen
6,704,651	B2	3/2004	Van Diggelen
6,707,421	B1	3/2004	Drury
6,714,793	B1	3/2004	Carey
6,718,174	B2	4/2004	Vayanos
6,720,915	B2	4/2004	Sheynblat
6,721,396	B2	4/2004	Chin et al.
6,721,578	B2	4/2004	Minear
6,721,871	B2	4/2004	Piispanen
6,724,342	B2	4/2004	Bloebaum
6,725,159	B2	4/2004	Krasner
6,728,701	B1	4/2004	Stoica
6,731,940	B1	5/2004	Nagendran
6,734,821	B2	5/2004	Van Diggelen
6,738,013	B2	5/2004	Orler
6,738,800	B1	5/2004	Aquilon
6,741,842	B2	5/2004	Goldberg
6,744,856	B2	6/2004	Karnik
6,744,858	B1	6/2004	Ryan et al.
6,745,038	B2	6/2004	Callaway, Jr.
6,747,596	B2	6/2004	Orler
6,748,195	B1	6/2004	Phillips
6,751,464	B1	6/2004	Burg et al.
6,756,938	B2	6/2004	Zhao et al.
6,757,544	B2	6/2004	Rangarajan et al.
6,757,545	B2	6/2004	Nowak et al.
6,771,742	B2	8/2004	Mathis et al.
6,771,971	B2	8/2004	Smith
6,772,340	B1	8/2004	Peinado et al.
6,775,255	B1	8/2004	Roy
6,775,267	B1	8/2004	Kung et al.
6,775,534	B2	8/2004	Lindgren et al.
6,775,655	B1	8/2004	Peinado et al.
6,775,802	B2	8/2004	Gaal
6,778,136	B2	8/2004	Gronemeyer
6,778,885	B2	8/2004	Agashe et al.
6,781,963	B2	8/2004	Crockett et al.
6,788,249	B1	9/2004	Farmer et al.
6,795,444	B1	9/2004	Vo
6,795,699	B1	9/2004	McCraw et al.
6,799,049	B1	9/2004	Zellner et al.
6,799,050	B1	9/2004	Krasner
6,801,159	B2	10/2004	Swope et al.
6,804,524	B1	10/2004	Vandermeijden
6,807,534	B1	10/2004	Erickson
6,810,323	B1	10/2004	Bullock et al.
6,813,264	B2	11/2004	Vassilovski
6,813,499	B2	11/2004	McDonnell et al.
6,813,560	B2	11/2004	Van Diggelen et al.
6,816,111	B2	11/2004	Krasner
6,816,580	B2	11/2004	Timmins
6,816,710	B2	11/2004	Krasner
6,816,719	B1	11/2004	Kronström et al.
6,816,734	B2	11/2004	Wong et al.
6,820,269	B2	11/2004	Baucke et al.
6,829,475	B1	12/2004	Lee et al.
6,832,373	B2	12/2004	O'Neill
6,839,020	B2	1/2005	Geier et al.
6,839,021	B2	1/2005	Sheynblat et al.
6,839,417	B2	1/2005	Weisman et al.
6,842,715	B1	1/2005	Gaal
6,847,618	B2	1/2005	Laursen et al.
6,847,822	B1	1/2005	Dennison et al.
6,853,916	B2	2/2005	Fuchs et al.
6,856,282	B2	2/2005	Mauro et al.
6,861,980	B1	3/2005	Rowitch et al.
6,865,171	B1	3/2005	Nilsson
6,865,395	B2	3/2005	Riley
6,867,733	B2	3/2005	Sandhu et al.
6,867,734	B2	3/2005	Voor et al.
6,873,854	B2	3/2005	Crockett et al.
6,876,734	B1	4/2005	Summers et al.
6,882,850	B2	4/2005	McConnell et al.
6,885,874	B2	4/2005	Grube et al.
6,885,940	B2	4/2005	Brodie et al.
6,888,497	B2	5/2005	King et al.
6,888,932	B2	5/2005	Snip et al.
6,895,238	B2	5/2005	Newell et al.
6,895,249	B2	5/2005	Gaal
6,900,758	B1	5/2005	Mann et al.
6,903,684	B1	6/2005	Simic et al.
6,904,029	B2	6/2005	Fors et al.
6,907,224	B2	6/2005	Younis
6,907,238	B2	6/2005	Leung
6,912,230	B1	6/2005	Salkini et al.
6,912,395	B2	6/2005	Benes et al.
6,912,545	B1	6/2005	Lundy et al.
6,915,208	B2	7/2005	Garin et al.
6,917,331	B2	7/2005	Gronemeyer
6,930,634	B2	8/2005	Peng et al.
6,937,187	B2	8/2005	Van Diggelen et al.
6,937,872	B2	8/2005	Krasner
6,940,826	B1	9/2005	Simard et al.
6,940,950	B2	9/2005	Dickinson et al.
6,941,144	B2	9/2005	Stein
6,944,540	B2	9/2005	King et al.
6,947,772	B2	9/2005	Minear et al.
6,950,058	B1	9/2005	Davis et al.
6,957,073	B2	10/2005	Bye
6,961,562	B2	11/2005	Ross
6,963,557	B2	11/2005	Knox
6,965,754	B2	11/2005	King
6,965,767	B2	11/2005	Maggenti et al.
6,968,044	B2	11/2005	Beason et al.
6,970,917	B1	11/2005	Kushwaha et al.
6,973,320	B2	12/2005	Brown et al.
6,975,266	B2	12/2005	Abraham et al.
6,978,453	B2	12/2005	Rao et al.
6,980,816	B2	12/2005	Rohles et al.
6,985,747	B2	1/2006	Chithambaram
6,993,355	B1	1/2006	Pershan
6,996,720	B1	2/2006	DeMello et al.
6,999,782	B2	2/2006	Shaughnessy et al.
7,024,321	B1	4/2006	Deninger et al.
7,024,393	B1	4/2006	Peinado et al.
7,047,411	B1	5/2006	DeMello et al.
7,065,351	B2	6/2006	Carter et al.
7,065,507	B2	6/2006	Mohammed et al.
7,072,667	B2	7/2006	Olrik et al.
7,079,857	B2	7/2006	Maggenti et al.
7,103,018	B1	9/2006	Hansen et al.
7,103,574	B1	9/2006	Peinado et al.
7,106,717	B2	9/2006	Rousseau et al.
7,110,773	B1	9/2006	Wallace et al.
7,123,874	B1	10/2006	Brennan
7,136,466	B1	11/2006	Gao
7,136,838	B1	11/2006	Peinado et al.
7,145,900	B2	12/2006	Nix et al.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,151,946	B2	12/2006	Maggenti et al.	
7,174,153	B2	2/2007	Ehlers	
7,177,397	B2	2/2007	McCalmont et al.	
7,177,398	B2	2/2007	Meer et al.	
7,177,399	B2	2/2007	Dawson et al.	
7,185,161	B2 *	2/2007	Kang	711/164
7,200,380	B2	4/2007	Havlark	
7,209,758	B1	4/2007	Moll et al.	
7,209,969	B2	4/2007	Lahti et al.	
7,218,940	B2	5/2007	Niemenmaa et al.	
7,221,959	B2	5/2007	Lindqvist et al.	
7,245,900	B1	7/2007	Lamb et al.	
7,246,187	B1	7/2007	Ezra et al.	
7,260,186	B2	8/2007	Zhu et al.	
7,260,384	B2	8/2007	Bales et al.	
7,277,938	B2	10/2007	Duimovich et al.	
7,302,582	B2	11/2007	Snapp et al.	
7,321,773	B2	1/2008	Hines et al.	
7,330,899	B2	2/2008	Wong	
7,333,480	B1	2/2008	Clarke et al.	
7,369,508	B2	5/2008	Parantainen	
7,369,530	B2	5/2008	Keagy	
7,382,773	B2	6/2008	Schoeneberger et al.	
7,392,240	B2	6/2008	Scriffignano et al.	
7,394,896	B2	7/2008	Norton	
7,428,571	B2	9/2008	Ichimura	
7,436,785	B1	10/2008	McMullen et al.	
7,440,442	B2	10/2008	Grabelsky et al.	
7,444,342	B1	10/2008	Hall	
7,450,951	B2	11/2008	Vimpari	
7,471,236	B1	12/2008	Pitt et al.	
7,522,182	B2	4/2009	Bang	
7,573,982	B2	8/2009	Breen et al.	
7,602,886	B1	10/2009	Beech et al.	
7,623,447	B1	11/2009	Faccin et al.	
7,711,094	B1	5/2010	Olshansky et al.	
7,764,961	B2	7/2010	Zhu et al.	
7,783,297	B2	8/2010	Ishii	
7,787,611	B1	8/2010	Kotelly et al.	
7,822,391	B1	10/2010	Delker et al.	
7,822,871	B2	10/2010	Stolorz et al.	
7,825,780	B2	11/2010	Pitt	
7,881,233	B2	2/2011	Bieselin	
7,890,122	B2	2/2011	Walsh	
7,937,067	B2	5/2011	Maier et al.	
7,957,751	B2	6/2011	Cone	
8,165,603	B2	4/2012	Cone	
8,200,291	B2	6/2012	Steinmetz	
8,428,619	B2	4/2013	Cone	
8,688,087	B2	4/2014	Pitt et al.	
2001/0011247	A1	8/2001	O'Flaherty et al.	
2001/0040886	A1	11/2001	Jimenez	
2001/0049274	A1	12/2001	Degraeve	
2002/0002036	A1	1/2002	Uehara et al.	
2002/0037735	A1	3/2002	Maggenti et al.	
2002/0052214	A1	5/2002	Maggenti et al.	
2002/0061760	A1	5/2002	Maggenti et al.	
2002/0069079	A1	6/2002	Vega	
2002/0069529	A1	6/2002	Wieres	
2002/0077083	A1	6/2002	Zellner et al.	
2002/0077084	A1	6/2002	Zellner et al.	
2002/0077118	A1	6/2002	Zellner et al.	
2002/0077897	A1	6/2002	Zellner et al.	
2002/0085538	A1	7/2002	Leung	
2002/0086676	A1	7/2002	Hendrey et al.	
2002/0098832	A1	7/2002	Fleischer et al.	
2002/0102996	A1	8/2002	Jenkins	
2002/0102999	A1	8/2002	Maggenti et al.	
2002/0111172	A1	8/2002	DeWolf et al.	
2002/0112047	A1	8/2002	Kushwaha et al.	
2002/0118650	A1	8/2002	Jagadeesan et al.	
2002/0123327	A1	9/2002	Vataja	
2002/0126656	A1	9/2002	Park	
2002/0138650	A1	9/2002	Yamamoto et al.	
2002/0147023	A1	10/2002	Sawada et al.	
2002/0156732	A1	10/2002	Odijk et al.	
2002/0158777	A1	10/2002	Flick	
2002/0164998	A1	11/2002	Younis	
2002/0173317	A1	11/2002	Nykanen et al.	
2002/0174073	A1	11/2002	Nordman et al.	
2002/0191595	A1	12/2002	Mar et al.	
2003/0009277	A1	1/2003	Fan et al.	
2003/0009602	A1	1/2003	Jacobs et al.	
2003/0012148	A1	1/2003	Peters	
2003/0013449	A1	1/2003	Hose et al.	
2003/0016804	A1	1/2003	Sheha et al.	
2003/0026245	A1	2/2003	Ejzak	
2003/0037163	A1	2/2003	Kitada et al.	
2003/0040272	A1	2/2003	Lelievre et al.	
2003/0044654	A1	3/2003	Holt	
2003/0063730	A1	4/2003	Woodring	
2003/0065788	A1	4/2003	Salomaki	
2003/0072318	A1	4/2003	Lam et al.	
2003/0078064	A1	4/2003	Chan	
2003/0081557	A1	5/2003	Mettala et al.	
2003/0086422	A1	5/2003	Klinker et al.	
2003/0086539	A1	5/2003	McCalmont et al.	
2003/0100320	A1	5/2003	Ranjan	
2003/0101329	A1	5/2003	Lahti et al.	
2003/0101341	A1	5/2003	Kettler, III et al.	
2003/0103484	A1	6/2003	Oommen et al.	
2003/0108176	A1	6/2003	Kung et al.	
2003/0109245	A1	6/2003	McCalmont et al.	
2003/0114157	A1	6/2003	Spitz et al.	
2003/0118160	A1	6/2003	Holt	
2003/0119521	A1	6/2003	Tipnis et al.	
2003/0119528	A1	6/2003	Pew et al.	
2003/0125042	A1	7/2003	Olrik. et al.	
2003/0137961	A1	7/2003	Tsirtsis et al.	
2003/0153340	A1	8/2003	Crockett et al.	
2003/0153341	A1	8/2003	Crockett et al.	
2003/0153342	A1	8/2003	Crockett et al.	
2003/0153343	A1	8/2003	Crockett et al.	
2003/0161298	A1	8/2003	Bergman et al.	
2003/0163483	A1	8/2003	Zingher et al.	
2003/0169881	A1	9/2003	Niedermeyer	
2003/0186709	A1	10/2003	Rhodes et al.	
2003/0187803	A1	10/2003	Pitt	
2003/0196105	A1	10/2003	Fineberg	
2003/0204640	A1	10/2003	Sahinoja et al.	
2003/0223381	A1	12/2003	Schroderus	
2004/0002326	A1	1/2004	Maher	
2004/0004761	A1	1/2004	Travis	
2004/0032485	A1	2/2004	Stephens, Jr.	
2004/0043775	A1	3/2004	Kennedy et al.	
2004/0044623	A1	3/2004	Wake et al.	
2004/0047461	A1	3/2004	Weisman et al.	
2004/0068724	A1	4/2004	Gardner, III et al.	
2004/0070515	A1	4/2004	Burkley et al.	
2004/0077359	A1	4/2004	Bernas	
2004/0078694	A1	4/2004	Lester et al.	
2004/0092250	A1	5/2004	Valloppillil	
2004/0098497	A1	5/2004	Banet et al.	
2004/0107143	A1	6/2004	Niemi	
2004/0132465	A1	7/2004	Mattila et al.	
2004/0150518	A1	8/2004	Phillips et al.	
2004/0152493	A1	8/2004	Phillips et al.	
2004/0181689	A1	9/2004	Kiyoto et al.	
2004/0184584	A1	9/2004	McCalmont et al.	
2004/0185875	A1	9/2004	Diacakis et al.	
2004/0190497	A1	9/2004	Knox	
2004/0198332	A1	10/2004	Lundsgaard	
2004/0198386	A1	10/2004	Dupray	
2004/0203876	A1	10/2004	Drawert et al.	
2004/0203922	A1	10/2004	Hines et al.	
2004/0205151	A1	10/2004	Sprigg et al.	
2004/0209594	A1	10/2004	Naboulsi	
2004/0229632	A1	11/2004	Flynn et al.	
2004/0235493	A1	11/2004	Ekerborn	
2004/0242238	A1	12/2004	Wang et al.	
2004/0267445	A1	12/2004	De Luca	
2005/0003797	A1	1/2005	Baldwin	
2005/0028034	A1	2/2005	Gantman et al.	
2005/0030977	A1	2/2005	Casey et al.	

(56) **References Cited**

U.S. PATENT DOCUMENTS

2005/0039178	A1	2/2005	Marolia et al.
2005/0041578	A1	2/2005	Huotari et al.
2005/0043037	A1	2/2005	Ioppe et al.
2005/0053209	A1	3/2005	D'Evelyn et al.
2005/0071251	A1	3/2005	Linden
2005/0071671	A1	3/2005	Karaoguz
2005/0074107	A1	4/2005	Renner
2005/0083911	A1	4/2005	Grabelsky et al.
2005/0086467	A1	4/2005	Asokan et al.
2005/0090236	A1	4/2005	Schwinke et al.
2005/0107673	A1	5/2005	Ball
2005/0112030	A1	5/2005	Gaus
2005/0119012	A1	6/2005	Merheb et al.
2005/0125376	A1	6/2005	Curtis et al.
2005/0134504	A1	6/2005	Harwood et al.
2005/0135569	A1	6/2005	Dickinson et al.
2005/0136885	A1	6/2005	Kaltsukis
2005/0148346	A1	7/2005	Maloney et al.
2005/0149430	A1	7/2005	Williams
2005/0169248	A1	8/2005	Truesdale et al.
2005/0174991	A1	8/2005	Keagy
2005/0186937	A1	8/2005	Graham
2005/0190892	A1	9/2005	Dawson et al.
2005/0192822	A1	9/2005	Hartenstein
2005/0201358	A1	9/2005	Nelson
2005/0201529	A1	9/2005	Nelson et al.
2005/0209995	A1	9/2005	Aksu et al.
2005/0213716	A1	9/2005	Zhu et al.
2005/0215233	A1	9/2005	Perera et al.
2005/0216300	A1	9/2005	Appelman
2005/0232252	A1	10/2005	Hoover
2005/0238156	A1	10/2005	Turner
2005/0250516	A1	11/2005	Shim
2005/0259675	A1	11/2005	Tuohino et al.
2005/0265318	A1	12/2005	Khartabil et al.
2005/0271029	A1	12/2005	Iffland
2005/0282518	A1	12/2005	D'Evelyn et al.
2005/0287979	A1	12/2005	Rollender
2005/0289097	A1	12/2005	Trossen et al.
2006/0008065	A1	1/2006	Longman et al.
2006/0010200	A1	1/2006	Mousseau
2006/0020424	A1	1/2006	Quindel
2006/0023747	A1	2/2006	Koren et al.
2006/0026288	A1	2/2006	Acharya et al.
2006/0036680	A1	2/2006	Shim
2006/0053225	A1	3/2006	Poikselka et al.
2006/0058042	A1	3/2006	Shim
2006/0058045	A1	3/2006	Nilsen
2006/0058102	A1	3/2006	Nguyen et al.
2006/0068753	A1	3/2006	Karpen et al.
2006/0079249	A1	4/2006	Shim
2006/0104306	A1	5/2006	Adamczyk et al.
2006/0106774	A1	5/2006	Cohen
2006/0120517	A1	6/2006	Moon et al.
2006/0128395	A1	6/2006	Muhonen
2006/0135177	A1	6/2006	Winterbottom et al.
2006/0188083	A1	8/2006	Breen et al.
2006/0193447	A1	8/2006	Schwartz
2006/0206610	A1	9/2006	Ling
2006/0212558	A1	9/2006	Sahinoja et al.
2006/0212562	A1	9/2006	Kushwaha et al.
2006/0225090	A1	10/2006	Shim et al.
2006/0234639	A1	10/2006	Kushwaha et al.
2006/0234698	A1	10/2006	Fok et al.
2006/0239205	A1	10/2006	Warren et al.
2006/0258380	A1	11/2006	Liebowitz et al.
2006/0293024	A1	12/2006	Benco et al.
2006/0293066	A1	12/2006	Edge et al.
2007/0003024	A1	1/2007	Olivier et al.
2007/0019614	A1	1/2007	Hoffmann
2007/0022011	A1	1/2007	Altberg et al.
2007/0026854	A1	2/2007	Nath et al.
2007/0026871	A1	2/2007	Wager
2007/0027997	A1	2/2007	Polk
2007/0030539	A1	2/2007	Nath et al.
2007/0036139	A1	2/2007	Patel et al.
2007/0037585	A1	2/2007	Shim
2007/0041513	A1	2/2007	Gende
2007/0049288	A1	3/2007	Lamprecht et al.
2007/0060097	A1	3/2007	Edge et al.
2007/0072624	A1	3/2007	Niemenmaa et al.
2007/0081635	A1	4/2007	Croak et al.
2007/0082681	A1	4/2007	Kim et al.
2007/0082682	A1	4/2007	Kim et al.
2007/0115941	A1	5/2007	Patel et al.
2007/0121601	A1	5/2007	Kikinis et al.
2007/0149213	A1	6/2007	Lamba et al.
2007/0160036	A1	7/2007	Smith
2007/0162228	A1	7/2007	Mitchell
2007/0167177	A1	7/2007	Kraufvelin
2007/0182547	A1	8/2007	Wachter et al.
2007/0182631	A1	8/2007	Berlinsky et al.
2007/0201623	A1	8/2007	Hines
2007/0206568	A1	9/2007	Silver
2007/0206613	A1	9/2007	Silver
2007/0242660	A1	10/2007	Xu
2007/0243885	A1	10/2007	Shim
2007/0263610	A1	11/2007	Mitchell
2007/0263611	A1	11/2007	Mitchell
2007/0270164	A1	11/2007	Maier
2008/0032703	A1	2/2008	Krumm et al.
2008/0037715	A1	2/2008	Prozeniuk et al.
2008/0063153	A1	3/2008	Krivorot et al.
2008/0065775	A1	3/2008	Polk
2008/0109650	A1	5/2008	Shim et al.
2008/0117859	A1	5/2008	Shahidi
2008/0160953	A1	7/2008	Mia et al.
2008/0186164	A1	8/2008	Emigh et al.
2008/0192731	A1	8/2008	Dickinson
2008/0208671	A1	8/2008	Ehrlich et al.
2008/0214202	A1	9/2008	Toomey
2008/0268769	A1	10/2008	Brown
2009/0029675	A1	1/2009	Steinmetz
2009/0198733	A1	8/2009	Gounares et al.
2009/0204600	A1	8/2009	Kalik et al.
2009/0237210	A1	9/2009	Ciesla et al.
2010/0010860	A1	1/2010	Bose et al.
2010/0021013	A1	1/2010	Gale et al.
2010/0138400	A1	6/2010	Curtis et al.
2010/0161662	A1	6/2010	Jonas et al.
2010/0167691	A1	7/2010	Howarter
2010/0198933	A1	8/2010	Smith et al.
2010/0233991	A1	9/2010	Crawford et al.
2010/0241507	A1	9/2010	Quinn et al.
2010/0262668	A1	10/2010	Piett et al.
2009/0020447	A1	5/2011	Hirschfeld
2011/0109468	A1	5/2011	Hirschfeld
2011/0113060	A1	5/2011	Martini et al.
2011/0137549	A1	6/2011	Gupta et al.
2011/0151837	A1	6/2011	Winbush, Iii
2011/0207429	A1	8/2011	Maier et al.
2012/0079600	A1	3/2012	Kellerman
2012/0157136	A1	6/2012	Pitt et al.
2013/0079152	A1	3/2013	Hall

FOREIGN PATENT DOCUMENTS

WO	WO00/40038	7/2000
WO	WO01/45342	6/2001
WO	WO02/057869	7/2002
WO	WO2004/025941	3/2004
WO	WO2005/051033	6/2005
WO	WO2007/025227	3/2007
WO	WO2007/027166	3/2007
WO	WO2009/105603	8/2009

OTHER PUBLICATIONS

International Search Report in PCT/US2007/23243 dated Apr. 2, 2008.

PCT International Search Report (PCTUS2007/23714) and Written Opinion of International Searching Authority, Apr. 18, 2008.

Le-Pond Chin, Jyh-Hong Wen, Ting-Way Liu, The Study of the Interconnection of GSM Mobile Communication System Over IP

(56) **References Cited**

OTHER PUBLICATIONS

based Network, May 6, 2001, IEEE, Vehicular Technology Conference, vol. 3, pp. 2219-2223.
Location Based Services V2 Roaming Support (non proprietary), 80-V8470-2NP A, dated Jan. 27, 2005, pp. 1-56.
Yilin Zhao, Efficient and reliable date transmission for cellular and GPS based mayday systems, Nov. 1997, IEEE, IEEE Conference on Intelligent Transportation System, 1997, ITSC 97, 555-559.
Qualcomm CDMA Technologies, LBS Control Plane/User Plane Overview—80-VD378-1NP B, 2006, pp. 1-36.
Bhalla et al, TELUS, Technology Strategy—LBS Roaming Summit, Sep. 19, 2006.
Alfredo Aguirre, Ilusacell, First and Only Carrier in Mexico with a 3G CDMA Network, 2007.
Mike McMullen, Sprint, LBS Roaming Summit, Sep. 19, 2006.
Andrew Yeow, BCE, LBS Roaming Summit, Sep. 19, 2006, pp. 1-8.
Nars Haran, U.S. Cellular, Packet Data—Roaming and LBS Overview, Nov. 2, 2007, pp. 1-15.
Qualcomm CDMA Technologies, LBS Control Plane Roaming—80-VD377-1NP A, 2006, pp. 1-10.
Qualcomm CDMA Technologies, MS Resident User Plane LBS Roaming—80-VC718-1 E 2006, pp. 1-37.
Intrado MSAG Prep for E911 Program and Documentation Intrado Inc., Longmont, CO Sep. 14, 2006. Accessed: Nov. 8, 2011. Idaho PSAP Standards Committee. Idaho Emergency Communications Commission,http://idahodispatch.com/index.php?option=com_document&task=doc_download&gid=3&ltemid=7.
International Search Report received in PCT/US2012/00266 dated Aug. 3, 3012.
International Search Report received in PCT/US2011/001990 dated Apr. 24, 2012.
International Search Report received in PCT/US2012/066313 dated Feb. 4, 2013.
International Search Report received in PCT/US2012/067857 dated Feb. 20, 2013.
International Search Report received in PCT/US2012/67689 dated Feb. 22, 2013.

* cited by examiner

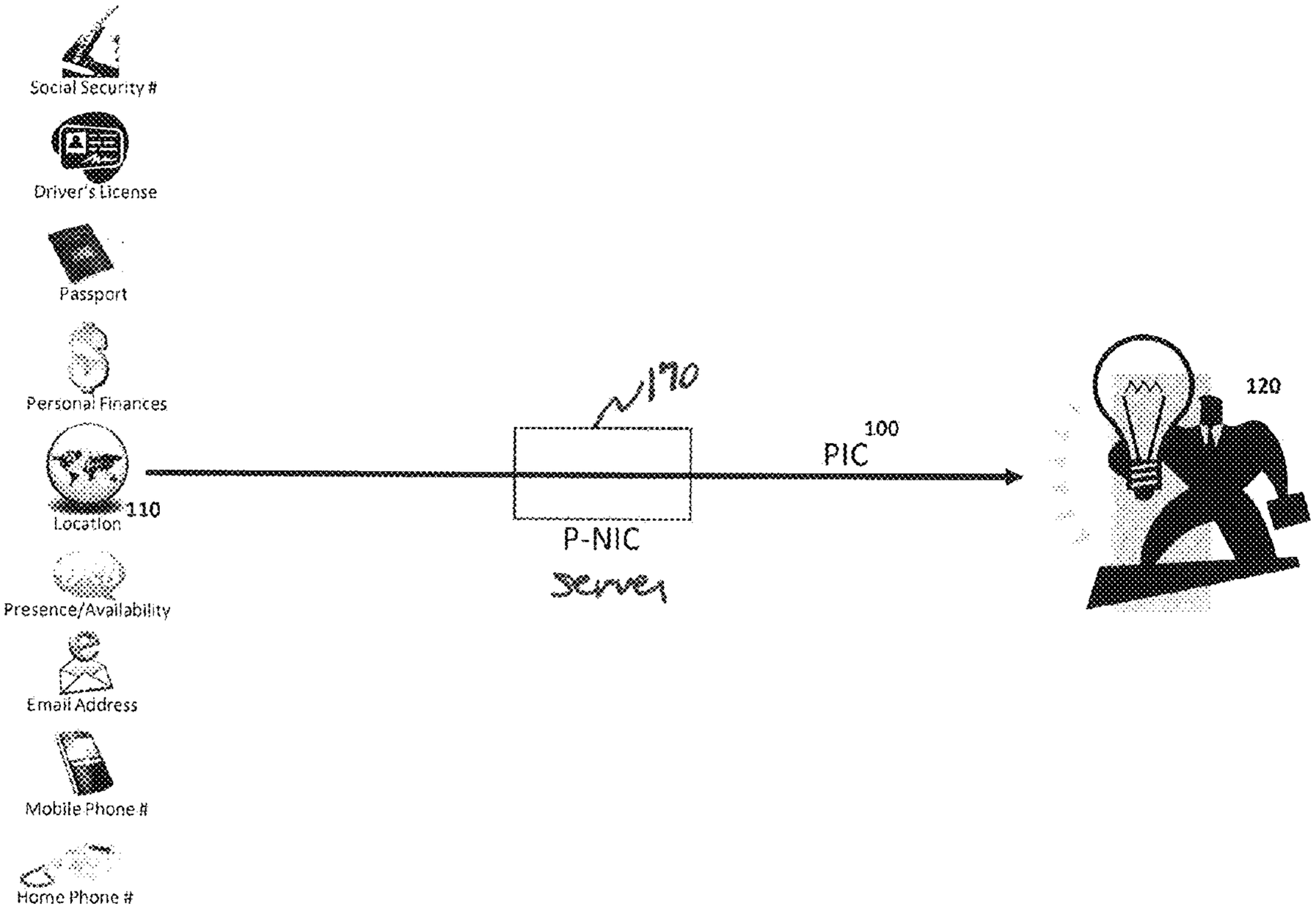

Social Security #
Driver's License
Passport
Personal Finances
Location
110
Presence/Availability
Email Address
Mobile Phone #
Home Phone #
170
P-NIC
Server
100
PIC
120

Figure 1

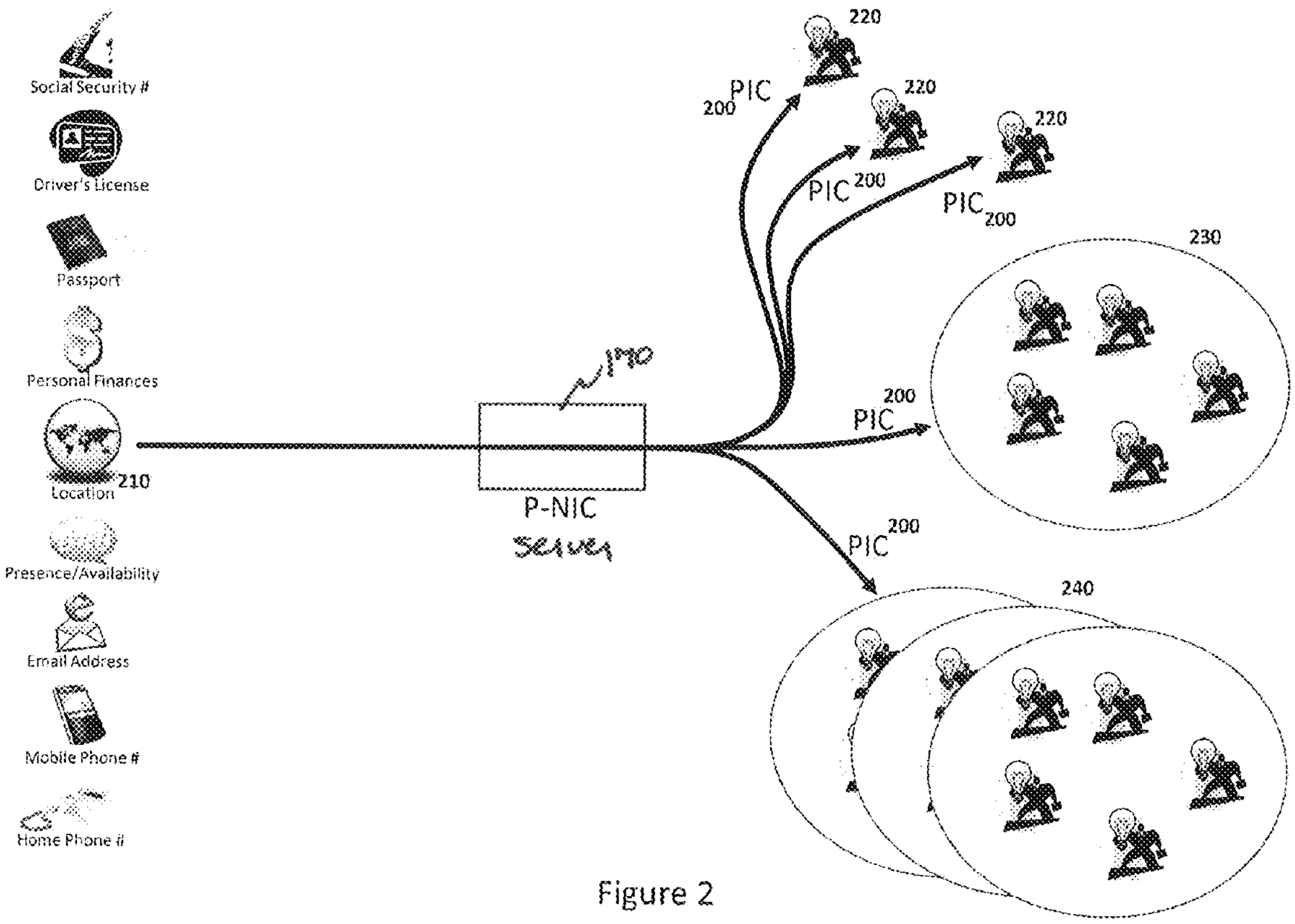

Social Security #
Driver's License
Passport
Personal Finances
Location
210
Presence/Availability
Email Address
Mobile Phone #
Home Phone #
P-NIC
Server
190
PIC 200
220
230
240

Figure 2

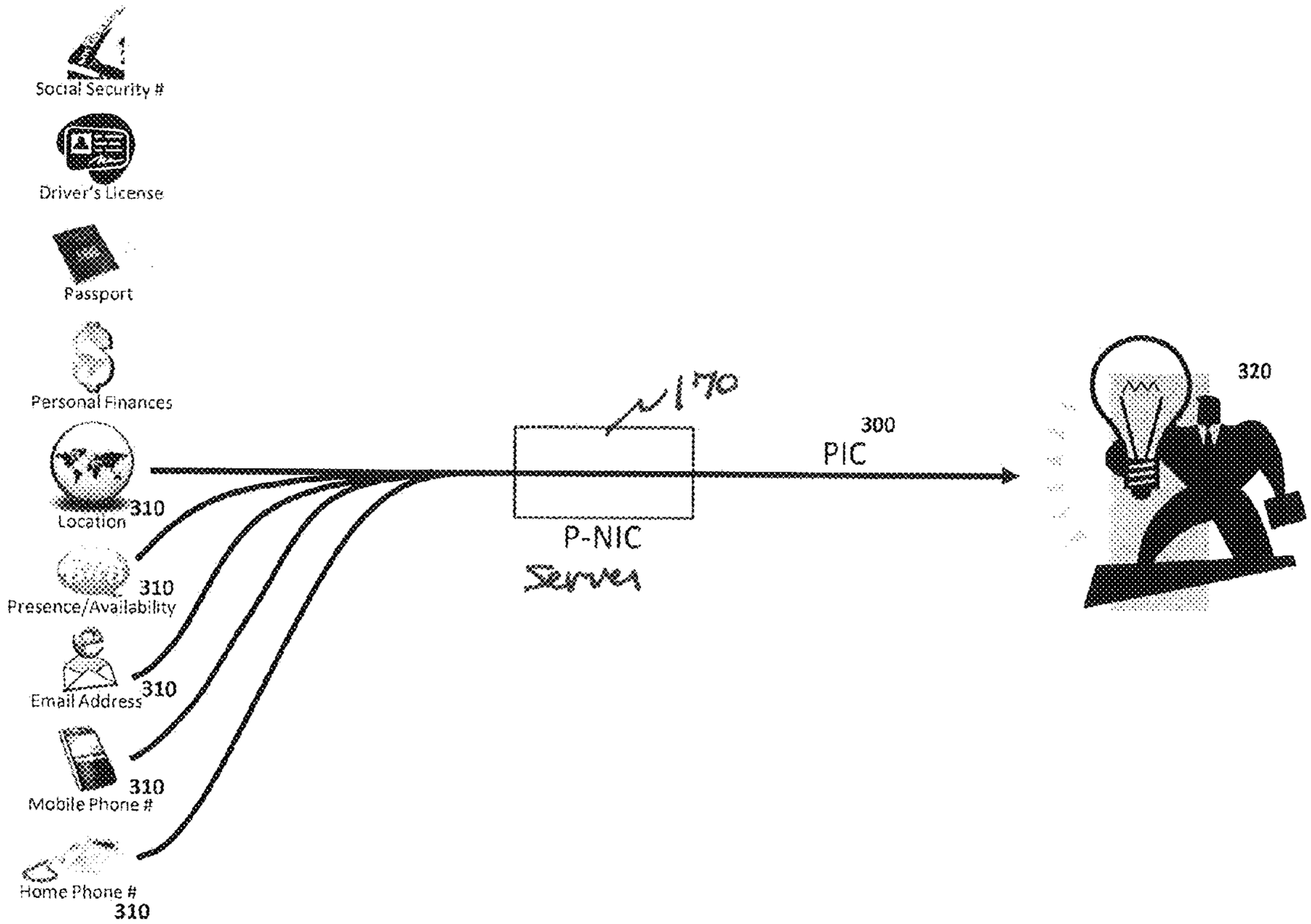

Social Security #
Driver's License
Passport
Personal Finances
Location
310
Presence/Availability
310
Email Address
310
Mobile Phone #
310
Home Phone #
310
170
P-NIC
Server
300
PIC
320

Figure 3

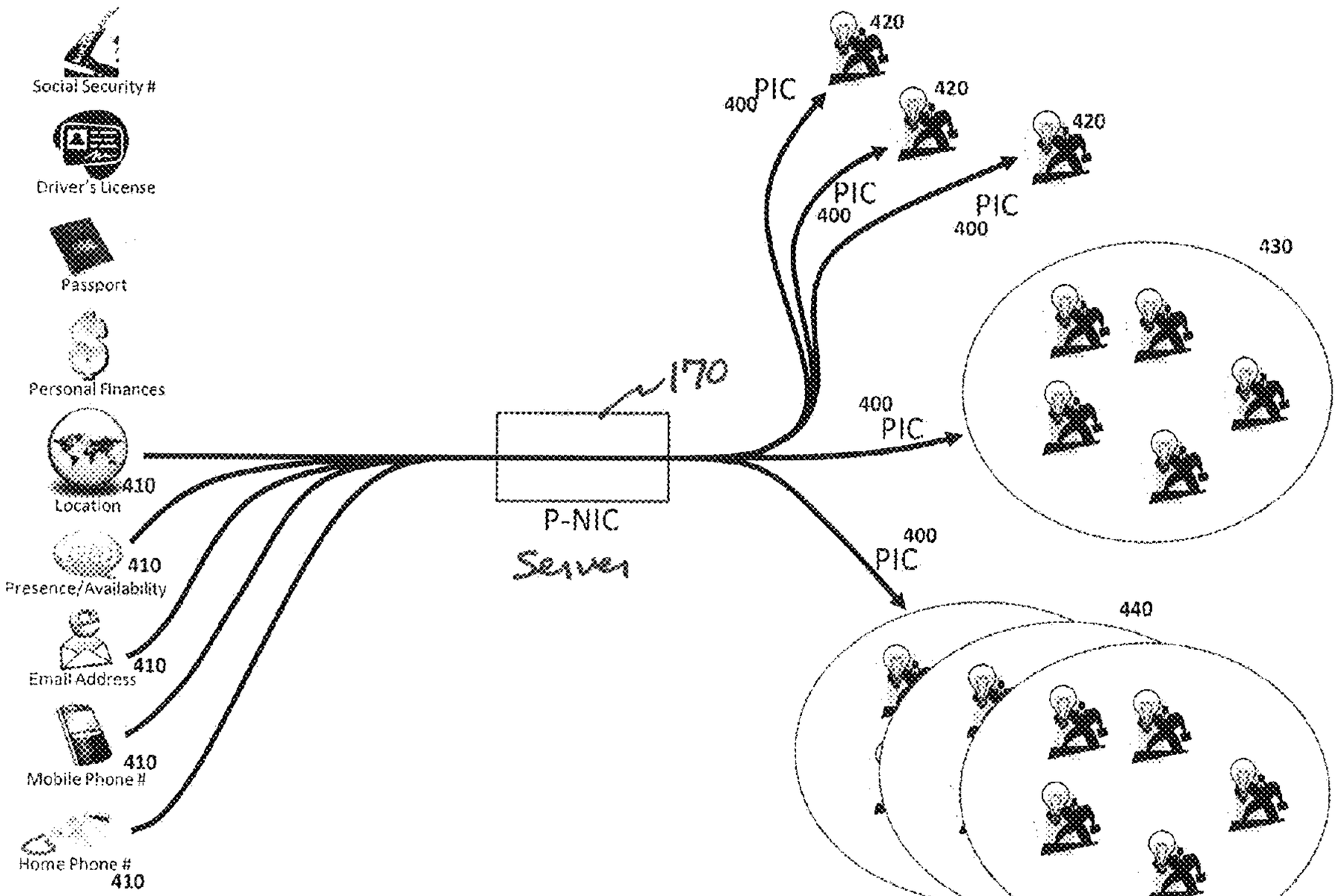

Social Security #
Driver's License
Passport
Personal Finances
Location
410
Presence/Availability
410
Email Address
410
Mobile Phone #
410
Home Phone #
410
170
P-NIC
Server
400 PIC
420
430
440

Figure 4

PERSONA-NOTITIA INTELLECTION CODIFIER

The present application claims priority from U.S. Provisional No. 61/696,982, entitled "High Fidelity SMS Coverage Using Peer-to-Peer Text Relay", filed Sep. 5, 2012; from "U.S. Provisional No. 61/696,986, entitled "Hybrid Cell-Site-Sector Broadcast with Point-to-Point SMS CMAS Within Edge Polygons", filed Sep. 5, 2012; from U.S. Provisional No. 61/696,993, entitled "Ubiquitous Point-to-Point SMS CMAS Using Passive Location Determination", filed Sep. 5, 2012; and from U.S. Provisional No. 61/868,311, filed Aug. 21, 2013 entitled "Persona-Notitia Intellection Codifier, the entirety of all of which are expressly incorporated herein by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to any form of information exchange. The invention is specifically intended to allow persons to easily and strictly control how information pertaining to themselves is disseminated—and to whom information pertaining to themselves is disseminated. If the dissemination of information can be limited to only those individuals or groups that have been expressly authorized to receive that information then the potential for uncontrolled and unwanted dissemination is reduced.

2. Background of Related Art

Personal Location Codes are known, e.g., co-owned U.S. Pat. No. 7,957,751; U.S. Pat. No. 8,428,619; and U.S. Pat. No. 8,165,603 describe and a personal location code (PLC) that authenticates provision of the location of a requested device. U.S. Pat. Nos. 7,957,751; 8,428,619; and 8,165,603 are expressly incorporated herein by reference.

Such known methods to codify location information dissemination control provides a 'mapping' layer between devices allowed access to the device location information, and the location information itself.

SUMMARY OF THE INVENTION

In accordance with the principles of the present invention, a method of isolating a nature of personal user information from unauthorized devices comprises receiving a PIC code uniquely associated with a given user for which personal user information is requested, the PIC code not including any indication as to a nature of what personal user information is associated therewith. The PIC code is decrypted into association with particular personal user information requested for the given user. The particular personal user information is provided to a requesting device from which the PIC code is received.

In accordance with another aspect of the present invention, a method of isolating the nature of personal user information from unauthorized devices comprises obtaining personal user information relating to a given user. A PIC code is encrypted into a mapped association with the obtained personal user information relating to the given user, the PIC code not including any indication as to a nature of what personal user information is associated therewith. The personal user information is provided only to a requesting device that provides the encrypted PIC code.

BRIEF DESCRIPTION OF THE DRAWINGS

Features and advantages of the present invention will become apparent to those skilled in the art from the following description with reference to the drawings, in which:

FIG. **1** shows an embodiment of a persona-notitia intellection codifier (P-NIC) server **170** wherein one PIC **100** associated with only one element of the user's personal user information **110** may be given to one and only one designee device **120**.

FIG. **2** shows another feature or embodiment of a persona-notitia intellection codifier (P-NIC) server **170** in accordance with the principles of the present invention wherein one PIC **200** associated with only one element of the user's personal user information **210** can be given to a multiplicity of designee devices **220**, or to a group of devices that represent a multiplicity of designee devices **230**, or to a multiplicity of groups each of which represents a multiplicity of designee devices **240**.

FIG. **3** shows yet another feature or embodiment of a persona-notitia intellection codifier (P-NIC) server **170** in accordance with the present invention wherein one PIC **300** associated with a multiplicity of elements of the user's personal user information **310** can be given to one and only one designee device **320**.

FIG. **4** shows still another feature or embodiment of a persona-notitia intellection codifier (P-NIC) server **170** in accordance with the principles of the present invention wherein one PIC **400** associated with a multiplicity of elements of the user's personal user information **410** can be given to a multiplicity of designee devices **420**, or to a group that represents a multiplicity of designee devices **430**, or to a multiplicity of groups each of which represents a multiplicity of designee devices **440**.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

The present invention provides additional protection of sensitive personal user information obtained from, and provided by, personal devices such as a smartphone, laptop, etc., particularly as our technological society advances and hackers start to steal user's personal user information. Conventional user devices protected user information with the now-common practice of changing passwords regularly to avert hackers able to break through password protected barriers. But this still left the identification of personal user information vulnerable to a hacker able to get past the password input.

The present invention provides user information dissemination control by inserting an ability to mask or obscure the identity of personal user information. The mask itself intentionally provides no information relating to what information it is obscuring. Thus, for instance, the location of a user's child might be identified with a seemingly random character string, e.g., "22529". In this way it becomes much more difficult for a non-authorized person to determine what personal user information is indicated by "22529", rather than a more conventional identification of the personal user information as "My son's location."

The mask in accordance with the principles of the present invention is referred to herein as a "persona-notitia intellection codifier".

Persona Notitia . . . (pĕn•sō̄n•ă nō̄•tē̄•sē̄•ă) latin phrase meaning "Personal user information".

Intellection . . . act of applying intelligence

Codifier . . . method or mechanism for systematizing via reduction to a code.

The invention provides a persona-notitia intellection codifier (P-NIC) server to intelligently codify and disburse a multiplicity of elements of personal user information from a user device (such as a smartphone, laptop, etc.) to a multiplicity of

designee devices (e.g., other smartphones, laptops, a network server, a tablet computer, etc.)

The present inventors have appreciated that in a world increasingly dominated by digital media and personal device "connectivity" options, there is a growing need for users of connected devices such as smartphones, laptops, tablets, etc., to be able to manage not just what kind of personal user information said individual is sharing via their user device (e.g., smartphone, laptop, tablet, etc.) but with what other devices that personal user information is shared, what limitations on the personal user information must be enacted before the personal user information is shared with other user devices or servers, and ultimately how the other person's user device accessing the personal user information is using the personal user information.

This invention describes a method and mechanism to create and manage masking Persona-Notitia Intellection Codes (a.k.a. PICs), each of which can be stipulated to provide control(s) and parametric limitation(s) for a variety of personal user information. Exemplary personal user information codified by a P-NIC server includes, but is not limited to:

USER IDENTITY (including but not limited to full name, birth date, birth place, social security number, driver's license number, passport, etc.);

USER's PERSONAL FINANCE (including but not limited to bank account number(s), credit card number(s), etc.);

A LEVEL OF ACCURACY OF DEVICE LOCATION;

DEVICE PRESENCE (i.e., availability);

DEVICE(s) ID;

USER DEVICE's PHONE NUMBER(s);

USER DEVICE's EMAIL ADDRESSES;

USER DEVICE's INSTANT MESSENGER ADDRESS(ES);

USER SOCIAL NETWORKING IDENTITIES (including but not limited to FaceBook™, MySpace™, Twitter™, etc.);

USER VEHICLES;

USER MAILING ADDRESS(es);

USER's RELATIVES;

USER's FRIENDS.

One embodiment of the present invention provides a Persona-Notitia Intellection Codifier (P-NIC) server that rapidly produces a mask comprising a multiple bit "key" value (i.e., a persona-notitia intellection code (PIC)) that is uniquely distinguishable from every other PIC that's ever been generated for a given user. In one aspect the value of this persona-notitia intellection code (PIC) is actually many bytes in length, and associates attributes to a unique key value that describes a desired subset of all the user's available personal user information to be unlocked by the key value (i.e., by the PIC).

FIG. **1** shows an embodiment of a persona-notitia intellection codifier (P-NIC) server **170** wherein one PIC **100** associated with only one element of the user's personal user information **110** may be given to one and only one designee device **120**.

FIG. **2** shows another feature or embodiment of a persona-notitia intellection codifier (P-NIC) server **170** in accordance with the principles of the present invention wherein one PIC **200** associated with only one element of the user's personal user information **210** can be given to a multiplicity of designee devices **220**, or to a group of devices that represent a multiplicity of designee devices **230**, or to a multiplicity of groups each of which represents a multiplicity of designee devices **240**.

FIG. **3** shows yet another feature or embodiment of a persona-notitia intellection codifier (P-NIC) server **170** in accordance with the present invention wherein one PIC **300** associated with a multiplicity of elements of the user's personal user information **310** can be given to one and only one designee device **320**.

FIG. **4** shows still another feature or embodiment of a persona-notitia intellection codifier (P-NIC) server **170** in accordance with the principles of the present invention wherein one PIC **400** associated with a multiplicity of elements of the user's personal user information **410** can be given to a multiplicity of designee devices **420**, or to a group that represents a multiplicity of designee devices **430**, or to a multiplicity of groups each of which represents a multiplicity of designee devices **440**.

The creation and maintenance of a Persona-Notitia Intellection Code (PIC) **100**, **200**, **300**, **400** in all disclosed embodiments follows a similar paradigm, regardless of how many elements of the user's personal user information are associated with a given PIC, or how many designee user devices to which the PIC is given for authorized access to the associated personal user information.

A Persona-Notitia Intellection Code (PIC) **100**, **200**, **300**, **400** may encompass an indication of attribution within the PIC **100**, **200**, **300**, **400** itself, but is not required to do so. Any attribute representing an element of personal user information that is identified or selected prior to the creation of the PIC **100**, **200**, **300**, **400** may be incorporated into the PIC **100**, **200**, **300**, **400** itself. The terms "attribute" or "attribution" are used herein to describe sub-components of an exemplary PIC **100**, **200**, **300**, **400** that represents a predefined given element of personal user information.

The identification of an attribute may either enable access to an element of personal user information, or may disable access to an element of personal user information. This aids the ability to determine accessibility of elements of personal user information without the need to communicate with a central Persona-Notitia Intellection Codifier (P-NIC) server **170**.

Each PIC **100**, **200**, **300**, **400** is preferably coded and encrypted differently than other PICs to prevent the act of hacking one particular PIC **100**, **200**, **300**, **400** (i.e., breaking encryption protecting the PIC **100**, **200**, **300**, **400** to access the attributes contained within the PIC **100**, **200**, **300**, **400**) from allowing the hacker to then read all other PICs. A PIC **100**, **200**, **300**, **400** in which no attributes are encoded need not be encrypted at all. For the purposes of this invention attribute-free PICs may either be encrypted or not encrypted. A PIC **100**, **200**, **300**, **400** in which one or more attributes are encoded is preferably always encrypted.

The first several bytes of the PIC **100**, **200**, **300**, **400** are preferably used to provide a map of the attributes within the PIC **100**, **200**, **300**, **400**. The multi-byte attribute map is preferably encrypted. Each attribute encoded within a PIC **100**, **200**, **300**, **400** is preferably encoded using a key value different than all other attributes also encoded within that PIC **100**, **200**, **300**, **400**.

A PIC **100**, **200**, **300**, **400** with a multiplicity of attributes encoded within it tends to be many bytes long. To prevent the length of a PIC **100**, **200**, **300**, **400** from unintentionally revealing too much information, the P-NIC server **170** preferably may also use many bytes to create a PIC **100**, **200**, **300**, **400** that contains few (or no) attributes encoded within it.

The ordering of attributes encoded within a PIC **100**, **200**, **300**, **400** is preferably randomly generated.

After randomly ordering attributes within a PIC **100**, **200**, **300**, **400** and then encrypting each differently, the entirety of the PIC **100**, **200**, **300**, **400** is preferably encrypted using a key different than was used for any attribute contained within the

PIC **100**, **200**, **300**, **400**. All this processing may be time consuming and result in a PIC **100**, **200**, **300**, **400** that is rather lengthy.

For a PIC **100**, **200**, **300**, **400** meant to be evaluated in client software (i.e., software running on a personal computer or mobile device), evaluation of the attributes of a PIC **100**, **200**, **300**, **400** is enabled within the client without having to communicate in near real-time with the P-NIC server **170**. In many applications the client software is in regular communication with the P-NIC server **170** for the purpose of receiving/updating the decryption keys it needs.

The central P-NIC server **170** may alter the current setting for the character value of any specific PIC **100**, **200**, **300**, **400** for a given user after the character value of a given PIC **100**, **200**, **300**, **400** is created but before the PIC **100**, **200**, **300**, **400** reaches its expiration date. Resolution of any potential discrepancy of the PIC **100**, **200**, **300**, **400** between its encoding, and a current P-NIC settings in the P-NIC server **170** (which may have been altered thereafter) are resolved with a simple boolean "AND" operation. For instance, if a PIC **100**, **200**, **300**, **400** is encoded to prevent access to an element of personal user information, then no setting at the P-NIC server **170** can override that (e.g., PIC[NO] .AND. P-NIC [YES]=="NO"). However, if a PIC **100**, **200**, **300**, **400** is encoded to allow access to an element of personal user information, then the setting at the P-NIC server **170** can override the PIC **100**, **200**, **300**, **400** and prevent access to an element of personal user information (e.g., PIC[YES] .AND. P-NIC [NO]=="NO").

If the PIC encoding does not represent an element of personal user information in any way, then the setting at the P-NIC server **170** for that user may be used exclusively to allow or prevent access to that element of personal user information. If the PIC **100**, **200**, **300**, **400** does not represent authorization for access to a particular element of personal user information for a given user, then access to that element of personal user information is prevented. Additionally an Error_Condition or similar may be logged by the P-NIC server **170** to indicate that an undocumented element of personal user information was queried, and the specific parameters used during the query may also be saved.

The user device or group of user devices to which the PIC **100**, **200**, **300**, **400** is given have the opportunity to return an acknowledge message indicating receipt of the PIC **100**, **200**, **300**, **400** after a PIC **100**, **200**, **300**, **400** is created and given to a designee device (or to a multiplicity of designee devices, or to a group representing a multiplicity of designee devices, or to a multiplicity of groups each of which represents a multiplicity of designee devices.) An acknowledgement message (e.g., a "PIC-ACK") passed back to the P-NIC server **170** may include, but is not required to include, a short sequence of bytes representing digits or characters that constitute the PIC recipient device's "personal handshake" with the P-NIC server **170**.

When provided as part of the PIC-ACK, the P-NIC server **170** preferably checks every query using that value of PIC for the personal handshake bytes. If the PIC **100**, **200**, **300**, **400** has been sent to a multiplicity of recipient devices and a multiplicity of PIC-ACKs have been returned with personal handshake bytes, then the P-NIC server **170** preferably saves all of the personal handshake byte sequences it receives, along with whatever identification values are available, to test the veracity of incoming requests for personal user information.

Should the P-NIC server **170** receive a request for personal user information that does not have any personal handshake bytes from devices that passed personal handshake bytes back in a PIC-ACK message, then the P-NIC server **170** preferably logs a "SPOOFED QUERY" alarm message and notifies system administrators of the possible illicit use of that PIC **100**, **200**, **300**, **400**.

Should the P-NIC server **170** receive a request for personal user information that contains personal handshake bytes that are different than the personal handshake bytes saved from the PIC-ACK message, then the P-NIC server **170** preferably logs a "SPOOFED QUERY" or similar alarm message and notifies system administrators of the possible illicit use of that PIC **100**, **200**, **300**, **400**.

Should the P-NIC server **170** receive a request for personal user information that contains personal handshake bytes that match one of the current (i.e., not expired) saved handshakes, but the query and the handshake bytes are received from a device different than the one that sent the PIC-ACK message, then that fact is preferably saved and included in a report (e.g., a monthly report Emailed to an user device of the owner of the relevant personal user information.)

In yet a further embodiment of the present invention, the Persona-Notitia Intellection Codifier (P-NIC) server **170** may enable users more advanced control over the dissemination of their personal user information. For instance, relevant parametric limitations may preferably be completely controlled within the P-NIC server **170**, preferably with no portion of these controls embedded within the Persona-Notitia Intellection Codes (PICs) **100**, **200**, **300**, **400**.

Exemplary parametric limitations provided by the P-NIC server may include, but are not limited to:

PIC expiration date-time (i.e. the date & time after which the PIC will no longer be accepted)
location fidelity (i.e. the accuracy that the person will for location reporting)
time parameters (i.e. parameters of HOUR, DAY, MONTH, YEAR, and DURATION)
StartTime & StopTime
StartTime & Duration
zone parameters, shapes near stationary point or points including but not limited to
Circle (point & radius)
Ellipse (point & rotationAngle & majorAxis & minorAxis)
Ellipse (FocusPointA & FocusPointB & sumOfDistanceFromFoci)
Arc (point & radius & startAngle & stopAngle)
Ring (point & innerRadius & outerRadius)
ArcBand (point & innerRadius & outerRadius & startAngle & stopAngle)
Quadrilateral (pointA & pointB & pointC & pointD)
Polygon (collection of N points defining the boundary of an area)
proximity parameters, shapes near non-stationary target (typically a mobile device hereafter referred to as Cynosure) including but not limited to
Circle (Cynosure & radius)
Ellipse (Cynosure & rotationAngle & majorAxis & minorAxis)
Arc (Cynosure & radius & startAngle & stopAngle)
Ring (Cynosure & innerRadius & outerRadius)
ArcBand (Cynosure & innerRadius & outerRadius & startAngle & stopAngle)

In a further exemplary embodiment of the present invention, parametric limitations may be combined to form more sophisticated limitations definitions for a setting in the P-NIC server **170** for a given user. For instance, a time parameter may be combined with a location fidelity parameter to establish a multi-faceted definition for a PIC **100**, **200**, **300**, **400** representing and authorizing when a user device may be

located with precision—or conversely when a user device's location should be reported when requested at a lesser fidelity (less accurate, e.g., only to a city level), or not reported at all.

A zone or proximity parameter can be combined with a time parameter to establish a sophisticated definition for a PIC **100**, **200**, **300**, **400** representing where a user device's presence/availability or even personal financial information can be accessed. For instance, a time parameter(s) and a proximity parameter(s) can be combined to establish limitations on when and how close to the user's device another device must be to access any personal user information.

Alternatively, or additionally, proximity and location fidelity parameters can be combined to establish limitations that allow another device to precisely locate the relevant user device only when the other device is physically within a short distance of the relevant user device's location. Conversely, the combination can be used to establish limitations that another device to precisely locate the user device only when the other user device is far away (e.g., greater than a predetermined linear distance) from the relevant user device.

Since each limitation or combination of limitations can be associated with anywhere from one (1) to a multiplicity of Persona-Notitia Intellection Codes (PICs) **100 200**, **300**, **400**, it will be readily apparent that with the present invention users can achieve complete and detailed control over access to their personal user information.

As a further embodiment of the present invention, the P-NIC server **170** preferably supports remote management of both the setting for the creation of the value of PIC codes **100**, **200**, **300**, **400**, and limitation settings, so that users can manifest nearly instantaneous control over access to their personal user information via their user device or other device (e.g., a laptop computer, a smartphone, or other type of mobile device, etc.)

As yet another embodiment of the present invention, the Persona-Notitia Intellection Codifier (P-NIC) server **170** preferably keeps a record of every Persona-Notitia Intellection Code (PIC) **100**, **200**, **300**, **400** assigned to a given user, to a given group of users, or to a given collection of groups of users, along with information pertaining to the given user, group, or collection of groups who received each character value of those PICs **100**, **200**, **300**, **400**. This information assists the owner user device in controlling access to specific subsets of the user's personal user information. It also provides the user with a means to control the fidelity (i.e., accuracy) of the information reported.

While the invention has been described with reference to the exemplary embodiments thereof, those skilled in the art will be able to make various modifications to the described embodiments of the invention without departing from the true spirit and scope of the invention.

What is claimed is:

1. A method of isolating a nature of personal user information from unauthorized devices, comprising:

receiving a PIC code uniquely associated with a given user for which personal user information is requested, said PIC code not including any indication as to a nature of what personal user information is associated therewith;

decrypting said PIC code into association with particular personal user information including a requested social networking identity for said given user; and

providing said social networking identity for said given user to a requesting device from which said PIC code is received.

2. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein:

said code is numerous bytes in length.

3. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

an identity of said given user.

4. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

a personal finance account number of said given user.

5. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

a presence of a given user device.

6. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

a phone number of a given user device.

7. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

an email address of a given user device.

8. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

an instant messenger address of a given user.

9. The method of isolating a nature of personal user information from unauthorized devices according to claim **1**, wherein said isolated personal user information comprises:

a mailing address of a given user.

10. A method of isolating a nature of personal user information from unauthorized devices, comprising:

receiving a PIC code uniquely associated with a given user for which personal user information is requested, said PIC code not including any indication as to a nature of what personal user information is associated therewith;

decrypting said PIC code into association with isolated personal user information including a level of accuracy of device location to be reported for said given user; and

providing said particular personal user information to a requesting device from which said PIC code is received.

11. A method of isolating a nature of personal user information from unauthorized devices, comprising:

receiving a PIC code uniquely associated with a given user for which personal user information is requested, said PIC code not including any indication as to a nature of what personal user information is associated therewith;

decrypting said PIC code into association with isolated personal user information including an identity of a vehicle relating to a given user; and

providing said particular personal user information to a requesting device from which said PIC code is received.

12. A method of isolating a nature of personal user information from unauthorized devices, comprising:

receiving a PIC code uniquely associated with a given user for which personal user information is requested, said PIC code not including any indication as to a nature of what personal user information is associated therewith;

decrypting said PIC code into association with isolated personal user information including an identity of a relative of a given user; and

providing said particular personal user information to a requesting device from which said PIC code is received.

13. A method of isolating a nature of personal user information from unauthorized devices, comprising:

receiving a PIC code uniquely associated with a given user for which personal user information is requested, said

PIC code not including any indication as to a nature of what personal user information is associated therewith;

decrypting said PIC code into association with isolated personal user information including an identity of a friend of a given user; and

providing said particular personal user information to a requesting device from which said PIC code is received.

14. A method of isolating a nature of personal user information from unauthorized devices, comprising:

obtaining personal user information including a level of accuracy of device location to be reported for relating to a given user;

encrypting a PIC code into a mapped association with said obtained personal user information relating to said given user, said PIC code not including any indication as to a nature of what personal user information is associated therewith; and

providing said personal user information only to a requesting device that provides said encrypted PIC code.

15. A method of isolating the use of personal user information from unauthorized devices, comprising:

receiving a PIC code uniquely associated with a given user for which personal user information is requested, said PIC code not including any indication as to a nature of what personal user information is associated therewith;

utilizing said PIC code to identify requested particular personal user information including comparing time of request to time said information is allowed to be accessed as identified by said given user; and

providing said particular personal user information to a requesting device from which said PIC code is received.

* * * * *