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- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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[Continued on nextpage]

(54) **Title:** PROGRAMMING SECONDARY COMMUNICATION GROUPS TO DEVICES ARRANGED IN A HIERARCHY OF GROUPS

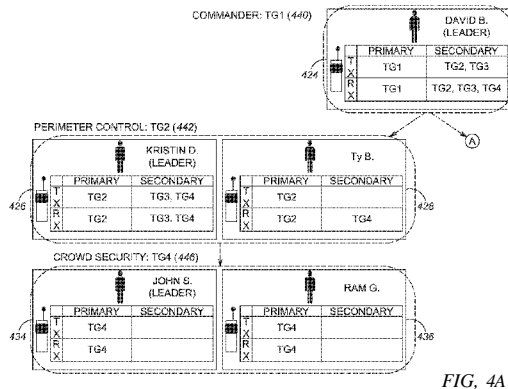


FIG. 4A

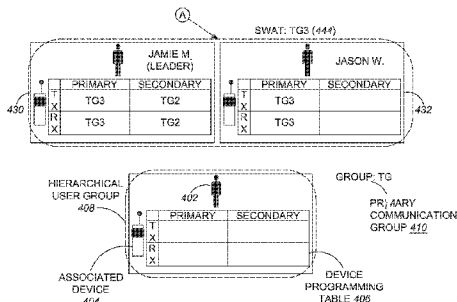


FIG. 4B

(57) **Abstract:** Primary and/or secondary communication groups can be assigned to users with communication devices arranged in a hierarchy (FIG. 4). A set of humans are assigned to a role in a role-based hierarchy. A communication device (404) is assigned to the set of humans for communication over a network. One or more secondary communication groups are determined for the communication device (120). The one or more determined secondary communication groups are primary communication groups of other devices used by one or more other humans assigned roles in the role-based hierarchy. Secondary communication group settings are programmed for the communication device (124), where the group settings are consistent with the determined secondary communication groups.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

International application No PCT/US2013/071940

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04W4/08 H04W4/22
 ADD ..
 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)
 H04W

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 practicable, 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	US 2008/057992 A1 (GRIFFIN JEFFREY JASON [US]) 6 March 2008 (2008-03-06) abstract paragraphs [0002], [0006], [0014] - [0016], [0020], [0024] - [0029]; figures 1,5 -----	1-10
X	US 2011/151917 A1 (MAO WEI [US] ET AL) 23 June 2011 (2011-06-23) abstract paragraphs [0001], [0007] - [0016]; figure 1 -----	1-10

Further documents are listed in the continuation of Box C. 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 application or patent 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
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Date of the actual completion of the international search 30 April 2014	Date of mailing of the international search report 23/07/2014
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Hackl , Alexander
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2013/071940

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008057992 A1	06-03-2008	EP 2070350 A1	17-06-2009
		JP 2010503277 A	28-01-2010
		US 2008057992 A1	06-03-2008
		WO 2008027617 A1	06-03-2008

US 2011151917 A1	23-06-2011	US 2011151917 A1	23-06-2011
		WO 2011078946 A1	30-06-2011

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US20 13/07 1940

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

see additional sheet

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 fees, this Authority did not invite payment of additional fees.

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.:

1- 10

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10

A method for programming communication devices associated with groups of users arranged into a hierarchy comprising: determining a user group for a user enrolled in a hierarchy; determining a communication device assigned to the user in the user group, said one or more communication devices associated with the user for communication using a network; determining one or more secondary communication groups for the communication device based on arrangements of user groups in the hierarchy, wherein the one or more secondary communication groups are a primary communication group of at least one other user group in the hierarchy, wherein the one or more other user groups are superior, peer, or subordinate to the user group as indicated by the hierarchy; and programming the communication device with the determined secondary communication groups.

2. claims: 11-18

A method of programming primary and secondary communication groups to communication devices arranged in a hierarchy, wherein the method comprises: at least one of one or more command devices, determining a communication device is associated with a responder newly engaged in an incident, wherein the communication device is a wireless communication device connected to a radio access network; at least one of the one or more command devices assigning the new responder to a role in a role-based hierarchy; determining a primary communication group for the communication device which comprises peers of the new responder having a related role in the hierarchy; determining one or more secondary communication groups for the communication device for other responders having related roles in the hierarchy to the responder, wherein the related roles are subordinate, peer, or superior; programming the primary communication group setting of the communication device with the primary communication group; and programming the secondary communication group setting of the communication device with the plurality of secondary communication groups.

3. claims: 19, 20

A system for programming primary and secondary communication groups to users arranged in a hierarchy, wherein the system comprises: one or more processors; one or more memories storing program instructions able to be executed by at least one of the one or more processors; a programming function, comprising at least a portion of the program instructions, configured to enable programming primary and secondary

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

communication groups to communication devices in accordance with the subordinate, peer, and superior structure of user groups in a hierarchy, wherein the communication devices are communication devices accessible via a network; and data store able to persist at least one of devices, users, resources, secondary communication group selection criteria, or device programming tables associated with the programming of communication devices.
