Cloud hosted group communications over public networks
With application to IoT, Biometric Monitoring, PTT over Cellular, Emergency Alerts &
Teleconferencing

Red Button Technologies Pty Ltd
SALE OF THE BUSINESS AND/OR ASSETS

AUG 2016

Revision 9 – 29 Aug 2016
This document has been prepared for the purposes of selling the business described herein and or the assets of the business.

This information has been prepared as a guide only and we strongly recommend verification of any data or commentary provided.

We advise that intending purchasers should undertake their own due diligence prior to proceeding with any final purchase.

In particular, we ADVISE CAUTION when reading our understanding of the patents.

What is described in this document is our interpretation of what the patents cover and is not expert.

Patents are open to wide interpretation. Before making any decision regarding the value of the patents you must obtain independent expert opinion.

The business owners will assist with answering any reasonable request pursuant to verifying data.

Having said that, we are keen to facilitate a purchase.
Red Button Technologies (a company registered and operating in Australia) owns two patents (US & Australia) that provide the opportunity to develop unique cloud communication systems (over public telecommunications networks) covering a diverse range of scenarios.

**Australian and US Patents**

Along the journey, Red Button has secured both a US patent and Australian Patent that protects the core features of the system. The patents have potential application beyond protecting the Personal Alert System and there may well be existing infringement in a number of areas both in Australia and the US.

**Potential infringement**

Facebook, for example this year launched its Messenger Group Call app that is a close fit to our patents. E-Harmony, which provides the ability to create a voice call between two people who have been matched by the system is another example of a potential infringement.

**First embodiment/application**

Our first application (now in full production) is an innovative Personal Emergency Alert system. Developed as a cloud system it recognises a telephone number from a calling device (any type of phone) and rapidly connects a user to their first available friend or relative.

If required, emergency services can be quickly brought into the conversation to create a conference call allowing the friend or relative to coordinate a response.

The system provides an effective Personal Emergency Alert system in to a market that in 2009 was estimated to be worth $120 million (Australia).

With the rising trend toward mobile phone usage, cancellation of landlines, and the ageing baby boomer population – the system has increasing appeal and application.

The system is currently fully operational and is servicing a small customer base.

**Further applications**

The core system also has potential application beyond the immediate purpose and an alternative product has been launched, a virtual PBX allowing the instant provisioning of telephone numbers diverted to mobile phones that has application for project groups, and micro-businesses.

**Sale of the company and/or assets**

Having achieved full operational status and completed the protracted process of securing the Australian and US patents (granted August 2014), completed a demonstration implementation and full production version, gathered and supported some customers and conducted some test marketing and sales along the way – the directors are now ready to offer Red Button to interested parties.

Over a million dollars of time and hard cash have been invested in the venture to date.
The first application applying our patented core technology. Has been live since July 2010.
PATENTS

Priority date 14 September 2007
Introduction – what does our patent cover?

**PRIVATE NETWORK**

Example – Trunked Two-Way Radio

When a member of the talk group wants to initiate a call, they simply “press to talk”. The CMS recognises their ID and patches them through to other members of the call group. In this way, multiple talk groups can be set-up on the one network. This is the principal of trunked two way radio.

**Communications Management system**

**Unique Identifier**

**Talk Group**

An important distinction

The destination addresses are already pre-configured in the CMS, rather than the CALLER specifying them at the time of calling i.e. the group is already set-up.

NOT COVERED BY OUR PATENT (private networks not covered)
The Red Button patent covers the same principal of establishing an instant talk group **HOWEVER** over **PUBLIC** communications networks (mobile phone, fixed line, and VOIP calls)

**IS COVERED BY OUR PATENT**

US patent has additional elements (narrower)
The patent IS NOT LIMITED to VOICE. It is broadened to any type of communications link.

Similarly, the destination addresses are already pre-configured in the CMS, rather than the CALLER specifying them at the time of calling i.e. the group is already set-up.

**IS COVERED BY OUR PATENT**
AUSTRALIAN patent only
A communications management system for handling communications between a user and a plurality of recipients associated with the user.

Public telecommunications network (e.g. Internet and/or mobile/PSTN)

Based on the unique identifier the CMS contacts a list of pre-defined recipients. A communications link is established between The User and at least one of the recipients.

Australian patent = any type of communication
US patent = voice communication only
5

Note: once the communications link is established, subsequent communications do NOT have to be via the server. For example, they could be peer-to-peer.
Cars are now being manufactured (or after-market retrofitted) with remote monitoring of vehicle systems. These systems report on vehicle performance, maintenance requirements, security (car theft) and fleet monitoring. Multiple vehicles are connected to a variety of end points (recipients) depending on geographic location. A CMS is required to route the communication signals to specified recipients.
Example 2

**PTT over Cellular**

Press To Talk – 2 way radio emulation (half or full duplex) over cellular network

*Mobile phones participating in Talk Group*

Public telecommunications network (e.g. Internet and/or mobile/PSTN)

US or Australian Patents => PTT over Cellular (US Patent is narrower)

John’s phone

**Cloud PTT Server & Presence**

Unique identifier

Talk Group Participants configured on server via web portal or data supplied via app
The plethora of bio-metric monitoring devices being developed will require a means of having their signals, data and alerts routed to healthcare professionals and/or family members to support remote monitoring. A cloud based service that manages connectivity is an inevitable outcome. The Red Button Australian patent has application to this type of system.
Example 4

Emergency alert

Communications device
E.G. mobile phone
Or dedicated receiver with internet connectivity

Communications Management system

Unique identifier

Public network

People assigned to be advised of an alert event

Examples:
Necklace or wrist alert button
Fixed alert button attached to wall

Wireless link

Public telecommunications network (e.g. Internet and/or mobile/PSTN)

Australian patent => Application to personal alert system
Example 5

Social Media Voice Calls

Establishing voice calls between people linked via a social media platform

Mobile Phone
User initiates 1:1 or group teleconference via social media or dating site

Login details to access social media platform

Unique identifier

Social Media Platform

Public network

Contact telephone numbers already stored in social media platform

Recipient Mobile Phones (friends or followers)

Public telecommunications network (e.g. Internet and/or mobile/PSTN)

US or Australian Patents => teleconferencing to social media & personal introduction platforms
Normal instant teleconferencing services require multiple steps to set-up a group call. Usually, participants dial-in and join the conference by providing an access code. In this example, any team member can initiate a conference by simply dialling in to the system. The Cloud Service then calls the team members who then are added to the conference when they answer their phone. Optionally, a recording of the conference is emailed to all participants at the conclusion.
Example 7

Superior teleconferencing service

1. Go to website. Enter participants’ telephone numbers. Participants are advised by SMS and/or email to expect a call.

2. Mobile Phone
   Any participant calls the conference system number. System recognises their phone number and creates the conference.

3. Participants’ phones all ring at the same time. As they answer they join the conference.

4. All participants are advised by message who initiated the conference and who DID/DID NOT participate.

US or Australian Patents => Instant Group Teleconferencing

Recipients

Contact telephone numbers already stored in database.
**Inventive steps**
Recognising that the conventional paradigm for establishing communication via a public network is the user provides the identity of the destination party (or parties) that the user wishes to contact when initiating the call.

The obvious example is the making of a telephone call where the user dials the destination phone number and this number is fed to the telephone exchange which then completes the connection.

Our patent covers an alternative scenario where the identity/contact details of the destination parties are already stored in the system and the link is established without the user inputting the destination information.

This concept is common in private voice communications (e.g. two-way radio & PBX) but only until recently (post our priority date) has the concept of instant group communications over public networks (PSTN & Internet) been

**Broader than just emergency alert devices**
Importantly, the patent claim set is NOT restrictive to a Personal Emergency Alert system. Although this is the main embodiment described in the patent, patents are judged based on the claims.

**Topics broadly covered by the patent claim set**

**Australian and US patent**
- Cloud application (CMS)
- Public networks (i.e. excludes private networks such as PBX & Trunked Radio)
- Communication with 1 to N recipients begins with the user sending a unique identifier into the cloud service
- Recipient contact addresses (or identifiers) have already been pre-configured
- CMS establishes communications link between USER & recipients

**US Patent is more specific**
- Must be voice
- Other elements also narrow the claim
Red Button Technologies owns two patents...

**Australian Patent no. 2007905048**
Priority date 14 September 2007

**US Patent no. US 8,811,934 B2**
Priority date 14 September 2007

**Abstract:**
A system for communicating an alert message from a user to a recipient is disclosed. In one embodiment the system includes a communications network, a communication device, and a communications management system. The communications device is activatable by the user to transmit into the communications network a signal communicating identification information associated with the user. The communication management receives and processes the signal to establish a communications channel between the communications device and a communications service associated with a recipient. The communications service is selected according to the identification information. Method and devices for communicating an alert signal are also disclosed.

While the abstracts of the two patents are identical, the US patent is narrower than the Australian patent as described in the claim set. The essential difference is that the US patent is confined to voice communication whereas the Australian patent is broadened to ANY form of communication and/or signaling.

Both patents are restricted to public communication networks (PSTN and Internet) and exclude private networks (e.g. LAN, Two Way Trunked Radio or PBX).

**Electronic copies of both patents are available...**


The patents have broad coverage of group communications over public networks.
CORE TECHNOLOGY
Open Source components are used by the Red Button implementation. Asterisk-Java is a Java interface to Asterisk. The TEP uses this to control the actions of Asterisk in performing the Red Button functionality. Xstream is used for inter-component messaging, logging and some database functions.
The Red Button™ system has been engineered by Optimation Software Engineering, a Melbourne (Australia) based company that specializes in bespoke mission-critical systems. Optimation undertakes work for major companies for whom robustness, performance and security are high priorities (including National Australia Bank and the New Zealand Tax Office).

The core system resides at the Primus telephony and enterprise data facilities in Melbourne’s CBD housed in a high security environment with redundant air-conditioning, power, internet and telecommunications facilities. The Red Button system itself has built-in redundancy with automatic cut-over systems and is designed to provide very low industry-standard failure rates.

The system is continuously monitored and receives routine preventative maintenance and updates.

As subscriber numbers and call volumes increase the core system is designed for substantial vertical and horizontal scalability with large telephony and internet capacity waiting to be provisioned as required.

Internet security includes robust hardware and firewall security appliances and software to current IT industry standards for mission critical systems.

**Payment Gateway security**

Red Button utilises the E-Way payment gateway [http://www.eway.com.au](http://www.eway.com.au) and merchant fees are processed via NAB.

Red Button does not retain any customer credit card details.

**Website hosting arrangements**

As a further security measure, the marketing website [www.redbutton.com.au](http://www.redbutton.com.au) is physically and logically separate from the transaction cloud servers at [https://assureconnect.redbutton.com.au](https://assureconnect.redbutton.com.au). This arrangement is seamless to customers.

The account owner manages an account through the web-browser based interface.

When a Caller makes a call the Red Button Telephony Event Processor (TEP) uses the Calling Line Identifier (CLI) of the Caller to determine who they are, looks at the account details and calls all the Call Group Members according to the accounts calling plan set up by the account owner using the Customer User Interface.

Both voice calls and follow-up SMS texts are made to the Call Group Members which can be relatives, friends or possibly some commercial and/or medical assistance organisation, or even emergency 000 (911 USA).

A “Call Event” is the sequence of the Caller calling the TEP, the TEP calling the Call Group Members, any subsequent calls to other Call Group Members that are introduced into multi-way conferencing, and all SMS and email correspondence arising from that originating Caller call.
The call event is handled entirely by the TEP, which logs the event details for subsequent purposes such as billing and customer feedback. When the account owner makes changes to their account, these changes are routed by the System Event Processor (SEP) to the TEP and to the database.

The Red Button service also supports smart-phone app integration and capacity for social-media and other communications channels in the future.

The billing system collects the call event logs and the account information from the database, tracks the charges, generates and posts invoices, updates the database and interfaces to the external payment gateway for effecting the charges.

Note that the diagram on the previous slide depicts only ONE instance of the cloud services, as multiple duplicate instances can be configured for redundancy, workload and geographical and/or application separation as desired.

**Portability**

The core technology requires normal server grade PC hardware and rack space in any suitably secure data centre.

All software is based on open source technologies (Linux, LAMP, Astrix, CISCO etc.)

Telephony interfaces include both PSTN & VOIP.
FIRST APPLICATION

Personal Emergency Alert System

Live at RedButton.com.au
Online since July 2010
Our main product, the Red Button – Personal Emergency Alert system operates simply by recognizing a telephone number.

1. The user presses a button or uses a speed dial app to start the call.
2. A voice call is made to our server
3. The server recognises the number
4. The call group numbers are retrieved from the database and SIMULTANEOUS calls are placed to everyone in the group (“friendlies”).
5. The first person to answer is connected
6. If required, the person who answered can initiate a call to Triple Zero (911 US)
7. This creates a three-way conversation enabling the friend or relative to provide assistance to guide emergency services to the User.

The system provides two key points of difference to other systems...

**Calls are truly simultaneous:** Other systems claim simultaneous calls, but in reality can’t make all phones ring at the same due to the availability of only one phone line.

**Instant conference call with triple-zero:** no other system offers this functionality. The person answering only has to press one button on their phone to activate the conference and no party is placed on hold.
Offering a highly competitive monthly fee of $9.90 per month (incl. GST), Red Button provides an attractive alternative to competing personal alert systems.

The system operates by allowing users to rapidly contact friends and relatives in an emergency using any telephone on any network.

Calls to the system are identified by their telephone number (CLI – Calling Line Identification), and upon receiving the call the system immediately places calls to up to 9 other phones; the first to answer is connected to the original caller (the “user”). Thus the system provides the following advantages...

1. **Ease of use:** The user does not need to think which person to call first or remember the phone number. The list of appropriate people to contact is pre-configured into the system.

2. **Faster contact:** Dialing multiple people at the same time (simultaneous calling) reduces the time needed to contact a person who is available to answer quickly (others may be engaged, have phone switched off, not near their phone etc.) – this feature is covered by our patents.

3. **Conference call with Emergency Services:** Once connected, a conference call with emergency services (000 or 911) can be initiated with a single button press (Press Zero). Thus, the friend or relative can provide assistance. This feature is also covered by our patent.

4. **Encourages “soft calls” in uncertain situations:** The Red Button system encourages users to act earlier leading-up to emergency events. The traditional emergency alert system only provides a “GO – NO GO” option (so called “hard calls”); not every emergency situation is clear cut and many people will consult a friend or relative first before pushing the button. That’s not to say that clear cut emergencies don’t occur – but Red Button is appropriate in both situations.

Mobile Personal Alarm

Available on any phone, on any network

Call 1300 968 841
Marketing tools - flyer

Red Button keeps you close
1300 958 841

In an emergency, call Red Button

Many emergencies are not clear cut. Red Button encourages people to act quickly and alert a friend or relative who can then help decide if emergency services should be called. After you have set up your account, a Red Button call centre is available by calling 1300 323 453 (free speed dial) or our free smartphone app, or the emergency switch on the Telecare EasyCall 2.

Simultaneously calls your friends & relatives
Red Button notifies the phone numbers associated with your account and all others at the same time. This is the only system that calls friends and relatives simultaneously. All other systems use sequential dialing.

Quick, easy and immediate setup
Connects you to the first person to answer your call

Assisted call with emergency services
Red Button connects you with the friend or relative who answers the call. All other people are sent a message telling them that you called and who answered. Red Button keeps everyone informed of what actions are taken.

One touch emergency switch

Automated messaging

Purchase Red Button in two easy steps

1. Organise a phone
Buy a Telecare EasyCall 2 from a Telecare Shop and ask them to set up the emergency switch to call 1300 323 453, or use your existing phone to call the same number.

2. Setup your account
Setup a Red Button account by visiting redbutton.com.au, or call customer service on 1300 958 841 and sign up over the phone. There is no waiting. Your account works immediately.

Red Button Technologies Pty Ltd
ABN 50 158 702 441
www.redbutton.com.au
enquiries@redbutton.com.au

Red Button

Telecare EasyCall 2

Mobile Personal Alarm
Available on any phone, on any network

Simultaneous calling from any phone
Red Button calls your list of friends and relatives simultaneously. This connects you to the first available person without needing to think who to call.

Assisted call with emergency services
Your friend or relative can add emergency services to the conversation by simply pressing Zero once on their phone.

Quick, easy and immediate setup
You can sign up and try the service free. No credit card required. See our purchasing plans online at redbutton.com.au

Red Button is the number you call when you need emergency assistance from friends or family
One Button works on any phone, but the Telecare EasyCall 2 is ideal for use with the Red Button system - small, light, and comes with a lanyard so it can be worn around the neck.
Marketing tools – social media

Twitter

Facebook

Facebook advertising
There are several potential target markets for the Red Button Personal Alert system...

<table>
<thead>
<tr>
<th></th>
<th>Market segments</th>
<th>Estimated market size (Australia)</th>
</tr>
</thead>
</table>
| 1 | Substitute for the traditional pendant market                                  | **Aged 80+**
|   | There are many personal alarm pendants on the market. These mostly work only in the home and are suited to the “frail aged” (people who rarely leave their home). | **450,000** |
| 2 | Independent seniors                                                            | **Aged 65+**
|   | A larger group, and rapidly growing in size fed by the ageing baby boomer population. Still living independently but increasingly managing episodic illness 50% being affected by heart disease. This market is becoming increasingly attractive due to high mobile phone take-up | **3 million**
|   | **Growing rapidly**                                                            |                                                                             |
| 3 | Elderly from non-English speaking backgrounds                                 | **Overseas born linguistically diverse 65+**
|   | A sub-segment of the above groups. Due to its conference call capability, Red Button provides a solution to families allowing younger members of the family group to interpret during an emergency. | **687,000** |
| 4 | People living with disability                                                  | **Profound limitation**
|   | Red Button potentially provides an emergency call system suitable for people living with disability. | **635,601** |
| 5 | Retirement villages                                                            | **living in villages**
|   | 79% of retirement villages provide an emergency call button system. With modest further development, Red Button could be re-purposed to provide a “campus alert system” requiring far less infrastructure than current systems. | **184,000**
|   | **By 2025**                                                                  | **382,000** |
| 6 | Industrial safety, remote worker and lone workers                              | **> 1 million**                                                              |
|   | Tapping into the duty of care responsibilities, Red Button provides a low cost method of provisioning an emergency alert system for lone-workers. The system also operates with satellite phones. The growing care industry is a large segment. |                                                                             |
| 7 | Existing personal alert system providers                                       | **Between 30 and 100**                                                      |
|   | Current emergency alert systems could use Red Button as a bureau service to improve their existing offering. | **Aged 10 to 14**
|   | **1.35 million**                                                              |                                                                             |
| 8 | Children                                                                      |                                                                               |
|   | A further product called 1800Tingle (utilising the core system) has been envisaged to allow children to call the family group from a phone without credit. | **Aged 10 to 14**

US population breakdown is similar to Australia. Multiply by 13.8 for rough US estimate.
The rapidly aging population driven by the baby boomer bubble is the key market driver

Other important trends...
1. Increasing use of mobile phones in the 65+ aged group.
2. The decline in landline usage in favour of mobile phones in the 65+ aged group.
3. The unsuitability of the NBN (National Broadband Network) to older alarm pendant devices (forcing existing products to change their technology, but in the meantime reports of these devices not working with the NBN is causing negative publicity).
4. The recent changes to Australian Telco cooperation making it standard practice for emergency services to be able to locate mobiles using cell tower triangulation (already operating in the US).

Australia. Similar trends in the US.
SECOND APPLICATION

Cloud based instant PBX

Live at MyFoneGroup.com.au
Online since circa 2013
The architecture of the core system is such that it can be readily reconfigured/programed to provision other applications.

For example, the size of the call group (currently set to a maximum of 9 people) is simply a system setting; in practice there is no limit to the number of external parties that can be simultaneously called via the call group.

The core system has already been adapted to support the MyFoneGroup application (currently online at www.MyFoneGroup.com.au), and further products have been contemplated as listed previously in this document.

The broad provisions of the Australian (broader) and US patents (confined to voice applications) may also be used to provide IP protection for other applications of the core system.

**MyFoneGroup**

Allows the grouping of independent phone devices (any network and any handset) to form an imitation PBX arrangement.

A new phone number is instantly provisioned by the system. Calls to the new number ring on any or all phones and can be transferred between devices.

Call recording and conference calls are also provided.

Setting-up takes minutes.
THIRD APPLICATION

Emergency contact system for Children

Concept only
1800Tingle is a product concept that utilises the core technology (cloud based server) to provide an alternative product. The product would be a more effective competitor to 1800MUMDAD.

1800Tingle would operate as follows...

- Recently, the ACMA made policy changes mandating that calls to 1800 numbers are FREE to mobile phone uses and networks have made changes that enable pre-paid phones without credit to call 1800 numbers.
- 1800Tingle would allow parents to set-up an account and provision a call-group of family members.
- A child could call 1800Tingle and be immediately connected to a family member (using the same simultaneous calling system as used in Red Button).
- Similarly, Triple Zero (911 US) can be added to the call if required.

1800Tingle would work faster than the more clunky existing product 1800MUMDAD which requires far more steps to work.

We have registered the domain [www.1800Tingle.com.au](http://www.1800Tingle.com.au) & the number 1800 Tingle.

This product is covered by our Australian and US patents.
OTHER APPLICATIONS

Concepts only
<table>
<thead>
<tr>
<th>Application</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aged Care Village alert system</strong> <em>(campus alert system)</em></td>
<td>As described previously in this document, The Red Button alert system could be modified at the server level to provision an alert system that serviced hundreds of phones that are answered by one call group. An enterprise web portal could be provided to configure and monitor.</td>
</tr>
<tr>
<td><strong>Virtual alarm monitoring</strong></td>
<td>Standard protocol in most alarm monitoring bureaus (manned control room) is for the operator to call a list of numbers when an alarm event is detected. The core system could be modified to do this automatically.</td>
</tr>
<tr>
<td><strong>M-Health monitoring system</strong></td>
<td>The new breed of biometric devices requires a monitoring network to channel data to end points for monitoring. This requires a Communications Management System. This scenario is specifically mentioned in our patent claim set (Australian patent)</td>
</tr>
<tr>
<td><strong>No-credit calling e.g 1800Tingle</strong></td>
<td>As described earlier</td>
</tr>
<tr>
<td><strong>Social media telephone plug-in</strong></td>
<td>Platforms such as LinkedIn, Facebook, and Dating Sites envisage facilitating voice calls between “friends” or “contacts”. Our core system could be used to provision this functionality. Facebook has already launched this and arguably could be infringing our patents.</td>
</tr>
<tr>
<td><strong>Tribe Call: An instant voice message broadcast system</strong></td>
<td>A user wishes to send a short voice message to a group of friends. One call (via speed dial) to our system immediately contacts the group and replays the message while and/or after it is being recorded.</td>
</tr>
<tr>
<td><strong>Instant conferencing</strong></td>
<td>A single phone call to our system sets-up a conference call with a group. Far less cumbersome than with current systems.</td>
</tr>
<tr>
<td><strong>Rapid prototyping</strong></td>
<td>The nature of our core system allows the setting-up of new applications requiring the integration of web, payment gateways, voice and SMS services and databases.</td>
</tr>
<tr>
<td><strong>The internet of things</strong></td>
<td>The Australian patent claim set is not confined to people. The concept of a Communications Management System linking devices through the internet may infringe.</td>
</tr>
</tbody>
</table>
POTENTIAL FACEBOOK INFRINGEMENT
Facebook has launched a VOIP telephony service.

On Wednesday 20 April 2016 Facebook head of messaging products David Marcus announced that the Messenger app will now support group calls for every user.

The Messenger Group Call app allows a user to initiate a group VOIP call (conference call) with members of a group previously set-up in their account.

**As described in Forbes online**


The concept of “a communications management system for handling communications between a user and a plurality of recipients associated with the user” is the central concept to both our US & Australian patent.

Potentially there is the possibility that the Facebook app infringes our patents.

With a priority date of September 2007 (the same year the iPhone was launched) our patents probably pre-date the Facebook concept.
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We welcome any enquiries. Please contact us for further information.