About the SOUL Convergent Network

SOUL is a “new age” telecommunications company capable of delivering both voice and data via an IP network to offer our customers an alternative to the existing providers. SOUL owns and operates Australia’s largest Voice Over Internet Protocol (VoIP) network. We have the capability to deliver seamless voice services irrespective of whether delivery is via the PSTN or IP. From a voice perspective, our key capabilities that are currently implemented in the network are:

- Fully Converged PSTN/IP Network: The SOUL Network has been designed from the ground up (as opposed to a retro-fit situation) to provide carrier grade for both TDM and IP based voice services and supports the PSTN interconnect standard.
- National Coverage: SOUL has the ability to collect and terminate traffic nationally in all 66 Call Collection Areas. This means more of our customers can be directly connected onto our network, giving them a competitive price and improved quality of service.
- Carrier Regulatory Compliance: The network is currently compliant and therefore new VOIP based services such as eCall are also compliant.
- National Geographic Number Allocation: The SOUL network supports the allocation of numbers in standard national zone units (SZU). This means that SOUL is able to provide local numbers for all locations in Australia.
- Local Number Portability: The SOUL network supports porting of local numbers.

What is eCall?

eCall is an inbound and outbound voice trunking service which is delivered over SOUL's network.

eCall makes use of leading convergence technologies in order to deliver Voice over IP allowing for both voice and data services to share a single access technology which results in greater customer cost savings and efficiencies. Both voice and data are delivered over the same access infrastructure whilst maintaining data security and integrity.

Unlike the traditional voice services, which are circuit switched requiring dedicated access technologies in order to deliver Analogue and ISDN voice, SOUL’s eCall allows sharing of voice and data services over a single access technology. This means SOUL can deliver eCall service configured to suit a variety of network applications and traffic types including Private Network and Internet services.

SOUL’s eCall is suitable for customers with PABX or Key system that support either the Primary Rate Interface (PRI) or Basic Rate Interface (BRI), or Ethernet interfaces by means of the Internet Protocol (IP) for IP PABX. This means you can benefit from a VoIP convergent solution without having to upgrade or change your PABX and Key Systems.

An Edge with SOUL (EWS) device will be supplied with every eCall service and configured to suit a variety of network applications, traffic types and number of voice channels.

eCall Standard

The EWS Device connects to Customer’s PABX based on TDM voice interfaces such as Basic Rate (BRI) or Primary Rate (PRI). This is referred to as “eCall Standard” as shown in Diagram 2 below.

Diagram 1: eCall Product with several Voice interfaces Handoff options to customer’s PABX

Diagram 2: eCall Standard with TDM Voice interface Handoff option to legacy PABX
eCall Direct

The EWS Device connects to Customer’s PABX based Ethernet interfaces by means of the Internet Protocol (IP). This is referred to as “eCall Direct” as shown in Diagram 3.

Diagram 3: eCall Direct with Ethernet interfaces by means of the Internet Protocol (IP) Handoff option to P PABX

SOUL eCall provides you with a solution that is flexible to meet your existing business requirements and scalable to cater for future growth to your business communications needs.

Product Features - eCall

Business Grade Quality

SOUL has a heritage in Broadcast technology and today SOUL operates a nationwide network which carries a combination of mission critical Video, Voice and Data on a single MPLS based network. Through the use of Quality of Service (QoS) technology SOUL is able to mark and prioritise customer traffic throughout the network providing predictably for time-sensitive and mission-critical applications. SOUL operates a specific low latency queue on all network routers to ensure that eCall traffic is prioritised across the network over all other traffic types.

Businesses can retain their existing telephone numbers

SOUL’s eCall service allows customers to maintain existing business telephone numbers. SOUL is only able to port Business Telephone Numbers which are out of contract to the numbers giving customers the option to port telephone numbers either during business hours or after hours.

Number Allocation

In addition to the support of number portability, SOUL is also able to offer customers new telephone numbers on the SOUL Network. SOUL’s geographic telephone number ranges cover all Australian Standard Zone Units, allowing customers to make local calls in their relevant geographic areas. SOUL provides blocks of telephone numbers with each eCall service. Customers who purchase the eCall service will be allocated with a block of 100 contiguous numbers from the SOUL geographic number ranges. The DID numbers will be assigned from the service delivery address nominated in the order form. Customers may wish to obtain additional DID numbers at an ad hoc charge. Additional number blocks are sold in blocks of 10, 50 and 100.

Standard Telephone Service

eCall is a Standard Telephone Services which provides both inbound and outbound calls. SOUL has a responsibility as a Carrier to ensure that all the numbers provided with the eCall service (both ported and SOUL numbers) are entered into the Australian Industry’s Public Number Database (IPND). Main pilot numbers used with your eCall service are entered into the Whitepages for directory service listings.

Outbound Call Types

With each eCall service, business customers are able to make Local Untimed Calls, National Long Distance (NLD) calls as well as International Calls (ILD). SOUL provides customers with access to 1300/ 1800 call destinations including directory services. Calls to Premium Rate Services (19) are not supported.

Customers are able to dial the ‘000’ Emergency Number. SOUL will populate the IPND Database for each eCall service. Emergency Service Operators reference information in the IPND database to obtain a geographical location for a telephony service such as eCall.

Inbound Call Types

The product provides inbound calls to the provided number ranges. The product supports Local Number Portability of Telstra and Optus numbers only. SOUL will project manage the porting of your existing telephone numbers to the SOUL network, enabling the use of your existing numbers with your new eCall service.
ON Net Call Types

Customers with multiple sites can save on call charges when making inter-site calls. SOUL has created a specific call type known as "On-net" calls. These are calls made between customer sites provided that the sites are both on the SOUL network.

Call Barring

Customers may wish to restrict certain call types namely: Local Calls, National Calls, International Calls, Mobile Calls (GSM and CDMA), 13 and 18 FLR Numbers, Operator/ Directory Call Types. SOUL's eCall product offering addresses these change requests through Moves Add and Changes (MACD) format.

Calling Line Identity Presentation (CLIP)

The service supports CLIP, which allows the called customer to obtain and display the calling party's Line Identity (telephone number) before answering the call.

Calling Line Identity Restriction (CLIR)

The service supports CLIR, where customers can request that their line identities (telephone numbers) are not released to customers that they are calling.

Codec and Signalling

eCall service uses Voice Over IP (VOIP) technology to carry voice traffic based on the G729 as its default Codec for the eCall. Further SOUL makes use of SIP as the standard signalling type.

Choice of connection to a customer's PABX or Key System

With every eCall service SOUL will supply an appropriate Edge with SOUL Device (EWS). The EWS is managed and operated by SOUL through SOUL's Comprehensive Management service. The EWS connects to customers PABX or Key System by means of standard voice interfaces such as Basic Rate (BRI) or Primary Rate (PRI) Interfaces or with eCall Direct which will connect to SIP and H323 based IP PABX models.

Support multiple branch sites with eCall Direct

For customers who have their Private Network service from SOUL and these Branch sites are part of that Private Network, eCall Direct allows customer’s branch sites in their Private Network to be able to make and receive Off Net calls via a single handoff point. In this scenario the customer purchases eCall Direct service in their Head Office where they have a service delivery address and an IP PABX.

The EWS provides for access termination at a customer site as well as routing functionality for SOUL Data services such as Private Network or Internet. In order to ensure that QoS is provided end to end, SOUL will configure each EWS to control and service a variety of network applications and traffic types which include eCall and Private Network services should these services be purchased.

Each time the branch sites make an Off Net call the IP PABX will present the call and the calling party CLI to the SOUL's network for termination to the PSTN. The calling party CLI will be presented to the PSTN network provided these numbers are:

- SOUL geographic numbers, and / or
- ported numbers to SOUL

Conversely, any incoming calls will be routed by SOUL's network to the main head office site and it is the responsibility of the IP PABX to route the calls to the correct called party branch extensions.
Flexible Configurations

Unlike traditional ISDN voice services, eCall is delivered and sold for a variety of denominations to suite customer requirements. In order to support the required eCall channels an appropriate EWS device and Access Tail will need to be provided by SOUL. SOUL’s Solution engineers will ensure that enough bandwidth is available together with sufficient hardware capabilities.

SOUL has extensive experience when it comes to combining different traffic types such as voice and data over a single access tail. SOUL provides a Service Level agreement with all eCall services to ensure customer satisfaction. As a guideline the amount of bandwidth required (including data traffic) is shown below. SOUL has designed eCall to occupy no more than 30% of the overall bandwidth on any access tail where Private Network and / or internet are also included. Based on this 30% dimensioning the following table illustrate the amount of voice channels available in relation to bandwidth.

The Table above represents number of eCall voice channels up to 2Mbps bandwidth. However, SOUL can provide bandwidth greater than 2Mbps and will be able to assist customers in dimensioning the amount of voice channels available for bandwidth greater than 2Mbps.

Flexible installation time

SOUL will provide specialised onsite skills for the installation and setup of an eCall service. Each eCall service is deployed with a supplied EWS device at customer premises. SOUL’s eCall service allows for customers to select between business hours or after hours for the most suitable installation times for your business.

Support wide range of Access Tail Technologies

The Service supports a wide range of dedicated access tail products from SOUL providing our customers with greater footprint and accessibility. Examples of Access Tails supported are:

- Platinum SHDSL
- Digital IP on Ethernet (DDE)
- Digital IP on Fast Ethernet (DDF)
- Access Clear
- Ethernet
- IP Connect (SOUL Telehousing service)

Comprehensive Management Service (CMS)

Each EWS device is managed under SOUL’s Comprehensive Management Service to ensure that each device is regularly polled for availability and reach ability. SOUL locks down each device ensuring that only qualified SOUL engineers are able to make changes to such hardware. Further SOUL makes daily backups of each EWS devices configuration files.

In the event of hardware failure, all EWS devices are covered with Cisco’s Smartnet™ packages which provides for timely replacement of any hardware parts relating to each EWS device.

Supports other SOUL Data Services

eCall is a voice service that leverages convergence and the benefits of eCall are best realised when other SOUL Data Services such as Private Network and Internet are purchased together with eCall. SOUL is able to deliver a single Access Tail to a customer where eCall, Private Network and Internet traffic are able to leverage and share the bandwidth.

Network Security

SOUL has strategically placed Session Border Controllers (SBC’s) in various locations within the SOUL Network. These devices cater for Private Network breakout, allowing the EWS devices to send and receive eCall traffic. SOUL is able to add the SBC’s into customers’ Private Networks whilst at the same time they ensure that customer security is not compromised. Customers do not have to change their network address ranges in order for eCall to work. SOUL’s MPLS network is able to maintain independent, private routing tables.

<table>
<thead>
<tr>
<th>Link</th>
<th>SHDSL</th>
<th>DDE, DDF, DDX and Ethernet</th>
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</thead>
<tbody>
<tr>
<td>Codec (Kbps)</td>
<td>G.729 Concurrent calls</td>
<td>G.729 Concurrent calls</td>
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<tr>
<td>256</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>512</td>
<td>-</td>
<td>5</td>
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</tr>
<tr>
<td>2048</td>
<td>13</td>
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</tr>
</tbody>
</table>
Other Considerations

Billing

Billing for Recurring and Usage charges for the eCall service includes a Paper based Detailed Invoice with itemised call history records for all outbound call types as well as a summary for all call types. Based on a request, SOUL’s billing team is able to supply a soft format of Call Details (CDR’s) which were used for billing purposes.

Support

The eCall service is delivered in accordance to industry leading Service Level Agreements. SOUL’s Network Operations and Customer support will monitor the service 24 hours a day, 7 days a week.

Order Entry

Before SOUL can process a customer order, the eCall order form needs to be signed together with the Service terms and conditions. Once a completed Order Form is received the SOUL Finance department will perform a credit check before the order is forwarded to the SOUL Service Delivery Department.

Service Coverage

The coverage of service may vary depending on geographic and technical capability of SOUL’s network, at the time at which a request for service is made or the service is delivered.

Provisioning Times

Upon Order Form acceptance, SOUL will require 40 business days in order to set up and provision the applicable eCall Service. Should SOUL not have the sufficient network equipment in order to deliver the service, SOUL will be required to purchase and implement the necessary equipment before an eCall service can be delivered.

For more information on a Soul solution
CALL 1300 13 34 64
or email sales@soulaustralia.com.au