



Customer location information and numbering data

Submission by the Australian Communications Consumer Action Network
to the Australian Communications and Media Authority.



March 2011



About ACCAN

The Australian Communications Consumer Action Network (ACCAN) is the peak body that represents all consumers on communications issues including telecommunications, broadband and emerging new services. ACCAN provides a strong unified voice to industry and government as consumers work towards availability, accessibility and affordability of communications services for all Australians.

Consumers need ACCAN to promote better consumer protection outcomes ensuring speedy responses to complaints and issues. ACCAN aims to empower consumers so that they are well informed and can make good choices about products and services. As a peak body, ACCAN will activate its broad and diverse membership base to campaign to get a better deal for all communications consumers.

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Introduction

ACCAN welcomes the opportunity to provide comments to the Australian Communications and Media Authority (ACMA) in relation to the consultation paper examining customer location information and numbering data. We have only included answers to questions that we feel well placed to comment on as the peak body representing Australian telecommunications consumers.

ACCAN would like to acknowledge Martin Dawson of Andrew Corporation, for providing invaluable assistance on a number of technical matters.

This submission includes the following recommendations to improve the administration of numbering data and emergency location information:

- **The Integrated Public Number Database (IPND) Manager should notify consumers when a record is altered in order to confirm that this information is correct, with consumers re-confirming these changes in their details to minimise errors.**
- **The ACMA and the IPND Manager should promote the importance of consumers notifying Carriage Service Providers (CSPs) if their personal details have changed, focusing on the significance this has on access to emergency services.**
- **The ACMA should view any system which places the responsibility on VoIP customers to provide location information as an interim measure only.**
- **The ACMA should regulate VoIP providers robustly, to ensure that, during the interim period, up-to-date information about fixed VoIP service addresses is added to the IPND and flagged accordingly.**
- **As an interim method only, the ACMA should require providers of VoIP services which can be used on a mobile/portable/roaming basis to require that customers update their location information with every change of location.**
- **The ACMA should work with VoIP providers, CSPs, Emergency Call Persons (ECPs) and Emergency Service Organisations (ESOs) to find practical methods of providing automated location information, based on both devices and networks, to ESOs, from fixed or roaming/portable/mobile VoIP services, in line with other developed countries.**
- **The ACMA should work with VoIP providers, CSPs, ECPs, ESOs and consumer groups to outline location information requirements in terms of both level of accuracy and time required to respond to an ESO request for location information.**

Response to Consultation Paper Questions

Question 1

Do current arrangements for access to directory data

- **protect or promote competition**
- **protect or promote the privacy of individuals**
- **support innovations?**

To what extent are there any deficiencies in any of the overall arrangements for access to directory data – whether that data is sourced from the IPND or elsewhere – including deficiencies in equivalence of access? If such deficiencies exist, how should they be addressed?

Consumer information in the IPND is still prone to inaccuracies which place consumers who require emergency services at risk. ACCAN is concerned that the current arrangements for access to directory data create unnecessary confusion and needless difficulties for consumers who need to correct inaccuracies in their data.

ACCAN is aware that the Community and National Interest division of the ACMA commissions a sub-contractor to conduct an audit of the IPND annually and this includes investigating data accuracy. The latest figures have shown an improvement in accuracy from 89% accuracy in 2006 to 96% in 2009-10.¹ This leaves nearly 4% of numbers with inaccuracies that could prove life-threatening in an emergency situation. An example of such a situation is highlighted in the case study below.

Case study: Consumer detriment and IPND inaccuracies

ACCAN was contacted by a consumer, Mr A., who expressed concerns about the accuracy of his IPND data, due to a billing error and an ambulance being unable to locate his correct address. Mr. A discovered that his fixed phone line number appeared to have been removed from a Directory Listing without his knowledge. The removal was unwarranted and likely to have been an error. Mr. A took up the issue with Telstra. He received an apology from Telstra but no explanation as to why his listing was removed without his knowledge. Mr. A's father, who lives at the same address as Mr A, called for an ambulance after suffering an aneurism. The ambulance, which tracks callers through their listings in the IPND, went to an address at the wrong end of the street and as a result, was delayed in reaching the patient. Mr. A's contact details were then amended and since then, there has been no problem with emergency service organisations being able to locate Mr. A's house.

ACCAN is concerned that the current process for correcting inaccurate data is needlessly complex and requires consumers to follow up with several agencies. To expand, it is a Public Number Directory publisher's responsibility under the IPND scheme to correct data inaccuracies. If a consumer advises the publisher that their listing is incorrect, this must be amended as soon as possible. The publisher must also refer the caller back to their CSP to

¹ Australian Communications and Media Authority (2010), *Industry-wide results: 2009-2010 IPND Audit*, http://www.acma.gov.au/WEB/STANDARD/1001/pc=PC_312218 Last accessed 28 March 2011.



ensure details are correct. It is up to the consumer to request that their information is changed with their CSP.

It is very difficult for a consumer to determine what details are held in the IPND, as they are required to retrieve information through their CSP rather than directly from the IPND Manager. A consumer has no way to contact the IPND Manager directly to inform them of data inaccuracies. Instead, a consumer must rely on CSP customer service teams who may or may not follow up the issue. The CSP must inform the IPND of their customer's change in details but in practice this does not always occur, or may not occur in a timely fashion. For example, the CSP may provide an update to Sensis but the information might not be directed to the IPND Manager as well. Sensis and the IPND systems do not share information and this has the potential to lead to inaccuracies as details are updated in one system and not the other.

The approach to managing the accuracy of information in the IPND should be improved. A system should be implemented that ensures all relevant stakeholders, including consumers who need to inform their CSP of any change to their details, are clear about their responsibilities in the IPND data chain. ACCAN notes that the ACMA has already produced information for consumers about the importance of providing current address details to a CSP². This could be promoted more widely.

Recommendation one:

- **The Integrated Public Number Database (IPND) Manager should notify consumers when a record is altered in order to confirm that this information is correct, with consumers re-confirming these changes in their details to minimise errors.**

Recommendation two:

- **The ACMA and the IPND Manager should promote the importance of consumers notifying Carriage Service Providers (CSPs) if their personal details have changed, focusing on the significance this has on access to emergency services.**

ACCAN recommends that consumer data is consolidated to one location. To this end, ACCAN supports The Number's recommendation outlined in the consultation paper that would require Telstra to obtain its directory data exclusively from the IPND³. Currently there is an unnecessary number of groups that need to be contacted in order for a consumer to update essential details for emergency service matters. A merging of Sensis and IPND data would simplify the system and reduce the likelihood of errors.

Question 2

ACCAN believes that industry is best placed to respond to this question.

Question 3

How important is the current ability to obtain information about the location of a caller or a called party? Will that change in the future?

Location information is used by consumers to determine the cost of calling certain numbers. The information is becoming less relevant for some consumers, particularly those who purchase bundled or plan services which provide a number of minutes' worth of calls over a

² Available at http://www.acma.gov.au/WEB/STANDARD/pc=PC_312369 Last accessed 28 March 2011.

³ ACMA (2011) *Numbering: Customer location information and numbering data, Consultation paper 2*, pg 33.

month within a plan rather than applying rates to different types of calls. A significant number of consumers, however, are not on these plans and rely on the geographic information conveyed in numbers to determine call cost. There is a correlation between age and reluctance to adopt new technology and products⁴. Younger Australians are increasingly relying on mobile and VoIP services while older Australians are more likely to rely on a landline phone and services that use geographic numbering to determine call cost. ACCAN acknowledges that the ability to obtain location information of a called party will decline over time, especially as the NBN is rolled out across Australia and the nation makes the gradual switch from copper lines to fiber. However, geographic numbering, especially as it relates to call cost, will remain important to key segments of the Australian population for many years to come.

ACCAN has discussed the importance of geographic numbering in the April 2010 submission to the ACMA discussion paper on the geographic numbering amendments⁵.

Question 4

To what extent has the approach of placing responsibility on VoIP customers to record their current location been implemented outside Australia? What lessons do any such implementations have for Australia?

ACCAN is aware that the USA⁶ mandates that VoIP providers must allow end-users to update their location information for emergency call purposes; Canada, like Australia, requires that the equivalent of the ECP must ask all VoIP users for their current location address⁷.

However, both countries' regulators appear to view these solutions as interim only, rather than a form of 'empowerment' for consumers, and ACCAN supports this view. As more consumers use VoIP; as more VoIP services are used on a portable, roaming or mobile basis; and as fewer user identities are based on a telephone number, emergency call location systems which rely on end-users to provide location information become less reliable – and therefore more dangerous for consumers and emergency service organisations.

Recommendation three:

- **The ACMA should view any system which places the responsibility on VoIP customers to provide location information as an interim measure only.**

Question 5

What approaches would be required to empower end-users to provide customer location information? What would be the practical issues involved in such an approach?

Essentially, ACCAN's position is that industry and the ACMA should be working towards practical solutions for automated location information, so that end-users are not required to

⁴ ACMA (2010), *2009-10 Communications report series, Report 2 – Take-up and use of voice services by Australian consumers*, pg 22.

⁵ Available at

http://www.accan.org.au/policy_submissions.php?PHPSESSID=1c0fea98bad6a78f39a3d93e33ccf008

⁶ ACMA (2011) *Numbering: Consultation paper 2*, pg 44.

⁷ Canadian Radio-television and Telecommunications Commission (2008), *Telecom Circular CRTC 2008-2*, <http://www.crtc.gc.ca/eng/archive/2008/ct2008-2.htm> Last accessed 29 March 2011.



provide location information. Relying on end-users to provide up-to-date, precise location information is simply unreliable, as well as opening up the possibility of false location information being provided.

The UK's regulator, Ofcom, has explored the possibility of using IP addressing and location software, and/or GPS equipment in VoIP handsets or other equipment, to provide automated location information⁸. At the time (2007) this wasn't considered viable; however, the UK's NICC's 2010 paper, *VOIP - Location for Emergency Calls (Architecture)*⁹, outlines standards for how the location of VoIP callers can be obtained and provided to Emergency Service Operators (ESOs) without having to resort to the end-user providing location information. Similarly, the US's FCC intends to adopt a solution under which the end-user would not have the responsibility to provide location information¹⁰.

The ACMA recently amended the *Telecommunications (Emergency Call Service) Determination 2009*¹¹ to require carriers to provide location information to ESOs. Given this advance, and the advances being made internationally around VoIP location information, ACCAN believes that the ACMA should be again amending the *Telecommunications (Emergency Call Service) Determination 2009*, this time to include VoIP location information, and that this should occur sooner rather than later.

Until such time as end-users are no longer required to provide location information themselves, however, ACCAN sees a number of possible interim solutions.

Where a consumer uses a VoIP product at a fixed location only – and where there are technical barriers to ensure that it cannot be used in other locations – then it would seem to be sufficient for the end-user to be required to provide a location address before the VoIP service commences. If the VoIP provider is notified of a change in billing or other address, it would become the VoIP provider's responsibility to confirm that this new address is the new point of location of the VoIP service, and to update the IPND accordingly (and, of course, continuing to flag the number as being a VoIP one, to ensure that the back-up procedure, of the ECP verifying the caller's address, continues to be implemented).

The VoIP provider should be required to check address information regularly – such as on a six-monthly basis – and customers should be required to respond. A simple way would be for consumers to be asked to provide information when paying a bill online, and/or at the point that a (non-emergency) call is commenced.

The picture is significantly more complicated for VoIP services which can be used on a mobile, roaming or portable basis. Until such time as end-users are no longer forced to take responsibility for providing their location information, the only dependable way to guarantee up-to-date location information would seem to be that users are required to provide location

⁸Ofcom (2007), *Regulation of VOIP services: Access to the Emergency Services*, <http://stakeholders.ofcom.org.uk/binaries/consultations/voip/statement/voipstatement.pdf> Last accessed 29 March 2011.

⁹ Available at: <http://www.niccstandards.org.uk/files/current/ND1638%20V1.1.2.pdf?type=pdf> Last accessed 29 March 2011.

¹⁰ FCC, (2010) *Further notice of proposed rulemaking and notice of inquiry, in the Matter of wireless E911 location accuracy requirements and E911 requirements for IP-enabled service providers*, <http://www.federalregister.gov/articles/2010/11/02/2010-27579/wireless-e911-location-accuracy-requirements-e911-requirements-for-ip-enabled-service-providers#h-10> Last accessed 29 March 2011

¹¹ Available at: <http://www.comlaw.gov.au/Details/F2011L00157> Last accessed 29 March 2011.

information with each call. When a new VoIP service commences, end-users would be asked to nominate a primary address for the purpose of emergency call location.

At the commencement of *each call* thereafter, callers could be asked (by an Interactive Voice Response) if they are calling from [the address nominated as the main address]. The caller could (for example), press 1 if the current call is from that address, and press 2 if the current call is from a different address. If the caller presses 2, then they should be able to input a new address, either verbally or via text. Should the call not be an emergency call (as will be the case in the majority of cases), the caller could be provided with a third option – that is, that the call is from a different address but that this information is not required for the purposes of the call. We recognise that these options place difficult requirements on consumers and CSPs, they rely on education of consumers as to the reason these questions are being asked (the funds for which would, ACCAN believes, be better spent on finding a permanent solution to this issue). As Australia moves towards a broadband future, this information could form part of the NBN public education campaign – although, again, ACCAN hopes that this will not be necessary, and that instead industry will be accepting the responsibility of providing location information, as is or will be the case in the US, Canada and Europe.

Recommendation four:

- **The ACMA should regulate VoIP providers robustly, to ensure that, during the interim period, up-to-date information about fixed VoIP service addresses is added to the IPND and flagged accordingly.**

Recommendation five:

- **As an interim method only, the ACMA should require providers of VoIP services which can be used on a mobile/portable/roaming basis to require that customers update their location information with every change of location.**

Question 6

What is a transition path to an IP-based services approach for each of the three strategies to acquire location information from:

- ***End-users***
- ***End-users' devices***
- ***Access networks***
- ***Information updates?***

What are the implications under each of these strategies for numbering administrative arrangements?

As Consultation Paper 2 notes, “all (fixed and mobile telephone networks and services) will be IP-based in the medium term” and “international standards already define the next stage in their evolution as being fully IP-based”¹². And with the advent of the NBN, Australia will also be moving towards IP-based emergency calls from ‘fixed’ services – many of which will not in fact be fixed-line services.

¹² ACMA, (2011) *Numbering, Consultation 2*, p. 43.



The transition paths are discussed below. ACCAN believes that industry is best placed to respond to the second part of the question regarding implications for numbering administrative arrangements; however, we note that VoIP telephone numbers do not, unlike fixed phone numbers, represent real or network addresses, and that VoIP providers are in some ways more like – for example - app providers than they are like carriage service providers. ACCAN recommends a VoIP location solution which recognises these realities.

Acquiring location information from end-users

As noted previously, this is far from an ideal solution, even as an interim measure. It relies on consumers being willing and able to note their location information, neither of which is reliable in an emergency situation.

Furthermore, unless end-users are required to enter their location information *every time* they change locations (see question 5 above), this method of acquiring location information is useless except for fixed VoIP. And with the advent of the NBN, and changing consumer expectations, fixed VoIP is unlikely to be the standard VoIP service of the future.

Acquiring location information from end-users' devices

This is an important and probably necessary part of an overall solution, and is likely to become even more reliable in the future, as the number of smartphones and other GPS-capable handsets increase, and as GPS technology continues to improve. Given that most VoIP providers must provide access to 000, new VoIP handsets which are to be used in a mobile or portable fashion should also be fitted with GPS capability.

As the ACMA has previously noted¹³, many consumers mistakenly believe that their location can be pinpointed accurately in an emergency. Should a GPS-based solution to location information be implemented, the public should be made aware of any limitations to such information; further, consumers who are purchasing or hiring mobile phones or VoIP handsets must be informed by vendors whether or not their handsets are GPS-compatible, and the implications of this in an emergency.

Finally, it is essential that any device-based location information solution be combined with a network-based solution (see below).

Acquiring location information from end-users' access networks

ACCAN believes that automated (that is, not based on manual or verbal input from end-users) location information must become available sooner rather than later¹⁴. We note that automated location information is already becoming a reality in Europe¹⁵, the USA¹⁶ and

¹³ ACMA (2010) *Proposal to enhance the mobile location information available to the emergency call service*, http://www.acma.gov.au/WEB/STANDARD/pc=PC_312094 Last accessed 29 March 2011.

¹⁴ See ACCAN's submissions to the ACMA's *Proposal to enhance the mobile location information available to the emergency call service*:

http://www.acma.gov.au/webwr/assets/main/lib311840/accan_ifc12-2010.pdf and http://www.acma.gov.au/webwr/assets/main/lib311976/ifc37-2010_accan.pdf

¹⁵ EENA NG112 Technical Committee, *A roadmap for Europe*, <http://www.eena.org/view/en/Committees/NG112.html> Last accessed 29 March 2011.

¹⁶ Federal Communications Commission (2010), *FCC 10-200*, http://fjallfoss.fcc.gov/edocs_public/attachmatch/FCC-10-200A1.pdf Last accessed 29 March 2011.



Canada¹⁷. NG911 – or Next Generation 911 – is particularly accessible to people with disability across a range of text- and video-based methods. ACCAN has recently argued¹⁸ that automated location information must be available for all callers to 000 and 106, whether they are calling from landlines, fixed or mobile VoIP, mobile phones, TTYs, SMS (which is likely to be introduced soon in Australia) or via relay services using TTY, internet, speech or video. This can only be achieved by acquiring location information from end-users' access networks, in conjunction with information from end-users' devices, where available.

ACCAN urges the ACMA to bring Australia into line with other developed nations, for the benefit of all Australian consumers, particularly those with disability. Migration to IP-based connectivity by ECPs (and this includes both Telstra and the 106 ECP) must be in accordance with standards (such as ECRIT and i3) already being used in international jurisdictions. This will allow the determination of location information using a combination of device-based and network-based information, as well as continuing to support location information from wired and mobile networks (although ACCAN understands that mobile network capability may need improvement in order to work alongside VoIP capability at the ECP end).

ACCAN notes that the ACMA's previous calls for submissions around the issue of emergency location information have resulted in responses from a number of technical experts¹⁹ and we urge the ACMA to seek advice from those individuals and organisations who are familiar with Next Generation emergency call services, in working towards improved emergency call services for all Australians - a Next Generation 000 which would include automated location information, regardless of the method used to call.

Recommendation six:

- **The ACMA should work with VoIP providers, CSPs, Emergency Call Persons (ECPs) and Emergency Service Organisations (ESOs) to find practical methods of providing automated location information, based on both devices and networks, to ESOs, from fixed or roaming/portable/mobile VoIP services, in line with other developed countries.**

Recommendation seven:

- **The ACMA should work with VoIP providers, CSPs, ECPs, ESOs and consumer groups to outline location information requirements in terms of both level of accuracy and time required to respond to an ESO request for location information.**

Questions 7 and 8

ACCAN believes that industry is best placed to respond to these questions.

¹⁷ Canadian Radio-television and Telecommunications Commission (2009), *CRTC announces enhancements to wireless 911 services*,

<http://www.crtc.gc.ca/eng/com100/2009/r090202.htm> Last accessed 29 March 2011.

¹⁸ http://www.acma.gov.au/webwr/assets/main/lib311976/ifc37-2010_accan.pdf

¹⁹ See the submissions from Andrew Corporation, True Position, Martin Dawson, and National Emergency Communications Working Group in response to *Proposal to enhance the mobile location information available to the emergency call service*, all available at http://www.acma.gov.au/WEB/STANDARD/pc=pc_312094 Last accessed 29 March 2011.