Enhanced mobile location information for the Emergency Call Service

Consultation Paper

Submission by:

Australian Mobile Telecommunications Association and
Communications Alliance

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1. Introduction and Summary

Introduction

1.1   The Australian Mobile Telecommunications Association (AMTA) is the peak industry body representing Australia's mobile telecommunications industry. AMTA's mission is to promote an environmentally, socially and economically responsible and successful mobile telecommunications industry in Australia. AMTA members include mobile Carriage Service Providers (CSPs), handset manufacturers, retail outlets, network equipment suppliers and other suppliers to the industry. For more details about AMTA, see http://www.amta.org.au.

1.2   Communications Alliance is the peak telecommunications industry body in Australia. Its membership is drawn from a wide cross-section of the communications industry, including service providers, carriers, vendors, consultants and suppliers as well as business and consumer groups. Its vision is to provide a unified voice for the telecommunications industry and to lead it into the next generation of converging networks, technologies and services. The prime mission of Communications Alliance is to promote the growth of the Australian communications industry and the protection of consumer interests by fostering the highest standards of business ethics and behaviour through industry self-governance. For more details about Communications Alliance, see http://www.commsalliance.com.au.

1.3   AMTA and Communications Alliance (the Associations) welcome the opportunity to respond to the Australian Communications and Media Authority's (the ACMA) *Enhanced mobile location information for the Emergency Call Service* consultation paper, May 2010 (Consultation Paper).

Summary

1.4   In responding to the key consultation issues and questions outlined in the ACMA Consultation Paper the Associations have given weight to the following:

- The use of location information by Emergency Service Organisations (ESOs), including recent advice received by industry that information may be used by ESOs in a wider set of circumstances than identified in the ACMA 2009 study. ESOs have indicated they will use location information as part of their decision making process to decide if:
  - o   a call is considered to be genuine; and
  - o   a response will be made to the request for emergency assistance;
- How the planned use of location information by ESOs will impact the projected demand levels (estimated in the Consultation Paper to be less than 1% of mobile calls connected to ESOs) and how this affects the viability of the proposed 'pull' model;

- The broader policy implications associated with:
  o the use of customer location based information as part of ESO decision making on whether or not a call is genuine;
  o the appropriate legislative changes and enhancements to enable carriers to supply LBS to ESOs and potential use of location information by ESOs including use in emergency vehicle despatch systems; and
  o the regulatory qualifications that need to be attached to the accuracy, reliability and use of such information;
- Whether technology changes required to deliver enhancements to other emergency services capabilities will provide added scope for industry to provide a 'push' model capability i.e. a common set of location information to the Emergency Call Person (ECP)/ESOs on all Triple Zero calls;
- The type of location based information now able to be accessed by ESOs and what scope exists to extend these processes to ESOs in the immediate future; and
- The investments required to deliver any new location information capability, and how these should be funded such that organisations that gain benefits from such enhancements in technology and the improved productivity and reduced operational costs this technology will provide also contribute to the delivery of that capability.

1.5   As well as providing commentary on each of the key issues listed above this submission provides industry views on questions covering other topics listed in the ACMA discussion paper, including the costs, timeframes, a possible pilot and privacy.

2.   Key consultation issues

2.1   This section of the submission expands on the points listed in the summary and addresses many of the key consultation issues related to Question 1 in the ACMA Consultation Paper.

ESO use of location information in a wider set of circumstances

2.2   In recent discussions with association members ESO representatives have advised that there is now an increased desire and intention to use location based information in a broader set of scenarios compared to findings in the ACMA 2009 study. These additional scenarios are likely to include location as a key factor in decision making on whether a call is considered to be genuine and whether there is a need for the ESO to despatch a service to the person requesting the Triple Zero service. It is also possible that location information may also be used in ESO vehicle despatch systems to determine what routes should be taken to access call locations. Association members are concerned that this planned use of location information has not been factored into the ACMA study findings and will now have implications in deciding what is the preferred solution for meeting ESO location information requirements.

Increased usage will impact request volumes and viability of the proposed 'pull' model' model

2.3   If ESOs are to use location information in a broader set of circumstances than those identified in the ACMA 2009 study, then this is likely to have the following impacts:

- The estimated 1% of mobile calls connected to ESOs on which ESOs will require location information is likely to be exceeded;
- The proposed 'pull' model may no longer be viable acknowledging this option has a limited capacity (and scalability) to handle location requests;
- Exceeding 'pull' model thresholds will have the effect of delaying data delivery to Emergency Services; and
- Any new policy settings will need to include qualifications on the accuracy and reliability of network derived location information and ensure mobile network carriers are not held liable in the use of this information by ESOs.

The policy implications associated with use of location information in ESO decision making

2.4   The use of location information in ESO decision making beyond the scope identified in the discussion paper, namely 'to improve outcomes for consumers who are unable to communicate their location when calling Triple Zero from a mobile device' and upon which the estimated usage of less than 1% of mobile calls connected to ESOs was based, needs to be factored into any proposed changes to policy settings. This is particularly the case where an ESO might use such information as part of its process to determine whether a call is genuine and whether the ESO will respond by way of despatch of a vehicle to the caller's location. The Associations also note the Consultation Paper, in referring to the ACMA 2010 *Mobile Location Information – Location Assisted Response Alternatives* report, made the observation "that enhanced location information would not be a suitable tool for validating emergency calls".

2.5   The key policy consideration relates to the overall reliability of the underlying location information and the range of factors that may affect its accuracy. Section 3 of the ACMA paper *Mobile location information - Location assisted response alternatives* identifies a number of these factors including that "the degree of accuracy obtainable is a function of the location of the handset (metropolitan, regional, rural and remote) and the capability of the relevant mobile network carrier network, the device making the call, and the system capability of the ESO providing the emergency response".

2.6   Other factors that will affect the accuracy of the underlying location information include:

- the nature of the wireless technology itself and the transient propagation characteristics that affect the base station handling the call and thus the accuracy of base station readings, depending on the number of base stations servicing a particular area e.g. where the caller is located in mountainous terrain or on a large expanse of water the capability of the technology to accurately identify the nearest base station (on which location information is based) may be affected;
- caller behaviour - for example the call for assistance to Triple Zero may not be made from the location in which the emergency event has occurred and in which assistance is actually required. This situation might arise where a passing motorist might undertake to place a call to Triple Zero and does so when they have moved beyond the reach of the base station servicing the affected area, or where the caller is making a call on behalf of a third party in another location; and
- the use of other network elements such as passive repeaters to provide coverage of "black spots".

2.7   For these reasons any policy settings must be framed in a way that makes it clear to ESOs and other users of location information that there are factors that may affect its accuracy, and that what is being provided represents 'best efforts' information and should not be relied upon alone in determining caller location or decision making on whether a call is genuine and whether or not a response is required. These same qualifications apply to mobile network carrier commercial Location Based Service (LBS) offerings as LBS is a by product of a wireless network and no guarantees are given on its accuracy.

2.8   Understanding the potential for litigation on emergency services response arrangements association members would be seeking that any proposed changes to legislation must include as a condition of supply indemnity for mobile network carriers against any legal liability for the way that information might be used by other parties.

Scope for industry to provide a common set of location information to the ECP/ESOs on all Triple Zero calls

2.9   Industry understands there is an increasing demand by ESOs for location based information and the Associations are committed to finding a solution that best meets that need. This level of commitment has been demonstrated by the level of interaction of our members on these same issues with the ACMA and ESOs over the last twelve months and that work is continuing.

2.10   Acknowledging these increasing ESO demand levels and the inherent limitations of the proposed 'pull' model, the Associations have commenced work exploring what added scope there is to achieve a 'push' model as described in the ACMA discussion paper i.e. a model that provides for a common set of cell based location

information that can be provided to ESOs for all Triple Zero calls made from mobile devices. In doing so the Associations' members are considering what scope there is to leverage technology changes that will be required to deliver similar enhancements to other emergency services capabilities administered by federal and state jurisdictions. This will include consideration of whether these developments may also provide a source from which mobile network carriers may also be able to extract and attach cell based longitude and latitude information to each Triple Zero call made to the ECP and then passed to an ESO. This work will also include what scope there is to make use of Triple Zero network and IT architecture arrangements applying in the existing end to end solution.

2.11   Like the commercially available LBS information described under the ACMA proposed 'pull' model, cell based information in a 'push' model will vary between mobile network carriers depending on the extent of:

- its network coverage;
- the number of base stations in a particular area; and
- national roaming arrangements it may have.

This information will be less disaggregated where single base stations provide extended coverage in more remote areas of Australia. However a 'push' model will provide the same elements of location information for the closest base station namely longitude and latitude parameters that can be plotted by ESOs using already established mapping capability that might now apply and would be provided with all Triple Zero calls referred to ESOs.

2.12   A push model would have the added benefit of providing location on calls made by national and international roamers and IMSI-less devices. The proposed push model is also considered to provide a sound base on which to deliver further enhancements in location capability.

2.13   While investigations by association members into the push model can best be described as preliminary at this stage, there is a strong commitment by all mobile network carriers to fully scope this potential and in doing so undertake a detailed analysis of network and related IT system and hardware requirements. This work will need to include extensive technical and commercial discussions with equipment and software vendors. Some preliminary discussions have already commenced.

2.14   Early indications are that the broad range of issues to be addressed in identifying whether a 'push' model is achievable will not be dissimilar to those to be addressed under the proposed 'pull' model scenario. On this basis, and subject to the detailed analysis of the 'push' model being completed by all carriers, early indications are that similar lead times for implementation of both solutions are likely to apply. The further activities that will need to be undertaken include the following:

- Discussions with vendors on proposed and potential architectural solutions;
- Outlining high level network, system and associated IT specifications;

- Examination of existing interface, software, hardware and interface capability to determine what additional capability would need to be delivered;
- Assessment of likely demand/usage levels and how this would impact capacity requirements;
- What data storage and retrieval requirements will apply;
- What audit trail and transaction time stamping requirements will need to be met;
- What costs will apply to individual solution components;
- What resources and lead times will be required to develop and implement the solution; and
- What risks would need to be managed in integrating these changes into the existing emergency services systems and processes.

2.15   The Associations are recommending that members be given the opportunity to complete this 'push' model analysis before any final decisions are taken by the Authority on changes to existing regulation.   The analysis work would be undertaken by all mobile network carriers on a collaborative basis and on the undertaking findings are to be presented to the ACMA once that work is completed. In doing so association members would also be seeking that the ACMA facilitate some discussions with ESOs on a range of operational and technical matters that will need to be explored in more detail to ensure end to end requirements are being considered. Association members would also be happy to provide interim reports to the ACMA.

2.16   Optus, Telstra and Vodafone Hutchison Australia have commenced investigation of the high level requirements to determine whether a base level push model network architecture and capabilities can be delivered.   The Associations expect that first step in the analysis will be concluded in the next three weeks.   Once that step is completed Association members would then provide a more definitive timeframe to the ACMA on when the overall analysis will be able to be finalised.

Location based information now able to be accessed by ESOs

2.17   The current levels of ESO access to location based information using existing network derived data will be an important consideration when assessing what capability is needed to address current and future ESO requirements.

2.18   Network derived location based information is now made available to law enforcement agencies and these arrangements can now be extended to include Fire and Ambulance Services (utilising Section 286 of the Telecommunications Act). Current access arrangements vary between mobile network carriers, with requests managed using manually based or more automated processing arrangements. These processes have been designed to deal with a finite number of requests and the Associations expect the processes would be capable of dealing with situations where the primary level of ECP furnished address information is not adequate in locating a caller in need of ESO services. These same access arrangements also vary in terms of turnaround times for meeting requests depending on the type of

processes in place and the number of requests that are being received by mobile network carriers.

2.19   Understanding ESOs may have a need to obtain such information pending the establishment of more comprehensive and integrated arrangements our members are able to avail ESOs of this level of LBS information in such exceptional cases. These are matters that will need to be explored with ESOs with the objective of ensuring ESOs understand and can obtain access to such information under agreed arrangements with mobile network carriers.

2.20   The following is a high level analysis of existing location information access arrangements and capabilities.

High Level description	Characteristics	Other issues to be considered
ESO REQUESTS LOCATION DIRECTLY FROM MOBILE NETWORK CARRIER LBS	An LBS relationship is one-to-one between an ESO and a mobile network carrier to the exclusion of the ECP i.e. not integrated to the current end-to-end system. There would be no audit trail for location information within the ECP. This would place responsibility for a location information audit trail with ESOs. Depending on current mobile network carrier capability and related processes for accessing information processes, some education and process changes may be necessary to extend to cater for ESO enquiries. Information available will vary between mobile network carriers and may be equivalent to commercially available LBS/Cell based information. The type of process and demand levels will affect timeliness in the processing of requests. This solution would not work for handsets that are SIMless and/or Domestic / International Carrier Roaming.	It provides an immediate and potentially low cost solution but would need to be used on an exceptional basis to avoid excessive delays There is some limited scope for current access arrangements to be fine tuned to improve volume and timeliness issues.

Investments required to deliver any new location information capability should be provided by the beneficiaries of such technology

2.21   The investments required to deliver any new location information capability and how these should be funded will be key issues to be addressed in the making of any associated policy changes. The Associations hold strongly the view that the beneficiaries of such enhancements in technology by way of improved productivity and reduced operational costs should fund these changes. These beneficiaries will include federal and state government services organisations charged with administering and improving public safety and community health standards.

2.22   For these reasons the Associations are recommending that any policy decisions mandating location information for Triple Zero calls must be looked at in a broader policy context and at a whole of Government level. This approach is consistent with the existing Council of Australian Governments (COAG) emergency services program of work applying between federal and state jurisdictions for the National Emergency Alert capability. Consultation with the Attorney General's Department staff and inclusion of this matter under the already established COAG emergency services umbrella will ensure there is both synergy and consistency in the way these very similar issues are being managed by the same sets of stakeholders.

Analysis of 'pull' and 'push' solutions

Analysis of a 'pull' solution

2.23   The Associations have undertaken further analysis on the 'pull' model with the understanding that ESO demand levels are likely to exceed the ACMA 2009 study findings. The following table is a summary of that analysis.

High Level description	Advantages	Disadvantages	Other issues to be considered
ESO REQUESTS LOCATION FROM MOBILE NETWORK CARRIER VIA ECS (PULL-PULL MODEL) (The ACMA's proposed model.)	It reuses mobile network carrier LBS information and delivers "best effort" location accuracy. The solution is an integrated one with the ECP central to the option. Caller location information is stored at the ECP for auditing purposes.	"Best effort" location will vary between mobile network carriers depending on the network-based location technology deployed by each mobile network carrier. It is an ESO request based system solution and has limited capability to process requests. Demand levels beyond that level would negatively impact normal ECS / Triple Zero call handling, Grade of Service handling and hand-offs to ESOs ECP will need to deploy a Location Application Server (LAS). Due to the functionality required, the LAS will be a bespoke build. It is not easily scalable: LAS will need to have the ability to format requests to support differing mobile network carrier LBS Application Program Interfaces (APIs). Additional LBS instances may require new interfaces to be built. The system architecture is complex requiring new interfaces and new databases. It requires real time lookup of a Mobile Number Portability (MNP) database* to direct network based location capability requests to the appropriate mobile network carrier. *(Note: there is no central MNP database and a change	Likely lead time to implement will be subject to existing mobile network carrier LBS capability. For mobile network carriers with LBS capability implementation unlikely before 2012 given lead times for network design, architectural and related IT changes. ESO changes would need to be factored in as well. ECP timeframes will be impacted by already planned network/IT platform changes Exemptions would need to apply for non LBS capable mobile network carriers beyond this date.

		to the MNP Industry Code (C570) will be required to make this an allowable use of MNP data).	
		The time taken from an initial location request by an ESO to receiving a response could take up to 30 seconds, depending on the mobile network carrier LBS technology deployed.	
		This option would not work for handsets that are SIMless and/or Domestic / International Carrier Roaming.	
		It requires an upgrade to the capacity of data links between the ECP and ESOs to support a location delivery protocol.	
		Require significant changes to ESO terminal specifications required in comparison with push model options. ESOs will need to include support for a location delivery protocol.	

Analysis of a 'push' solution

2.24   The Associations have undertaken a high level analysis of a 'push' model solution in the understanding further work will be required to scope such capability. The following table is a summary of that analysis.

High Level description	Advantages	Disadvantages	Other issues to be considered
MOBILE NETWORK CARRIER TRIGGERED LOCATION TO ECP to ESO (PUSH MODEL) PROVIDING LOCATION INFORMATION WITH ALL MOBILE CALLS TO TRIPLE ZERO	Scalable and could be extended to include other carriers and/or carrier LBS platforms. ECP is central to option: Caller location information stored at ECP for auditing purposes. Cell_ID-based location is pushed to ESOs with every mobile call. Compatible with current ECLIPS and ECP-ESO CLI specifications. Could support SIMless and roaming handset positioning by mapping together default CLIs and IMEI using timestamp information. Minimal changes to ESO terminal specifications required relative to other options. Enables the locating of callers that may subsequently lose connectivity when a call drops out.	Location push functionality may need development on some mobile networks. Location push information needs to arrive at the ECP in a timely* manner to enable it to be included with the CLI data sent to ESO. Location accuracy applies at Cell ID based positioning; that is, the latitude / longitude of the cell tower and the coverage area of that tower. As with LBS accuracy this will vary depending on the number of base stations providing coverage and will be less disaggregated in more remote areas. Not easily extendable to the ESO location query / response model (i.e. pull model) to obtain higher accuracy location information.	Further work required to scope solution. Frame Relay links between ECP and ESOs do not need to be upgraded to increase capacity.

Timeframes

2.25 Expectations and requirements for the proposed 'pull' solution are somewhat unclear at this stage which makes it difficult to define solutions, estimate costs or advise on expected timeframes for delivery of solutions. This uncertainty is added to by virtue of the fact that ESOs will also need to make modifications to their systems and the extent of these changes is yet to be assessed.

2.26 However, based on what the Associations do know about both the 'pull' and 'push' models initial indications are that the issues to be addressed in identifying whether a push' model is achievable will not be dissimilar to those under the proposed 'pull model scenario. On this it is likely that similar lead times for implementation of both solutions would apply.

2.27 Mobile network carriers with some existing network location capability have indicated they would not be able to implement any form of integrated model within the next two years. This timeframe would be required to complete an initial analysis, finalise preferred models, set specifications, undertake detailed cost estimates, obtain the necessary funding and then do the work necessary to implement such changes around already scheduled network changes. These other changes will include enhanced capability required as part of further developments to the proposed national Emergency Alert (EA) system. This will require that association members prioritise these EA activities using the same resources over the work that will also need to be done to deliver a location information solution on Triple Zero calls. The ECP has indicated that the earliest it might be able implement a mobile location solution would be mid 2012 given the above mentioned activities and already planned Triple Zero system changes being scheduled in this same timeframe.

2.28 The Associations are not in a position to comment on the minimum timeframe that emergency service organisations could put the proposed 'pull' or 'push' models into operation. As outlined above we are recommending ESOs will need to be engaged in the analysis of a potential push model solution to ensure all end to end requirements are being considered as part of that solution.

2.29 Understanding these likely lead times, Association members are now able to provide a form of LBS/cell based information to ESOs in response to requests for such information in a limited number of circumstances using existing capability. This capability varies between carriers as detailed in earlier sections of this response.

Pilot /Soft Launch

2.30   Understanding that a pilot project would normally leave open the business decision to proceed, the Associations believe a 'soft launch' of any preferred model prior to nation-wide implementation would have some advantages.

2.31   Given national network coverage and related support arrangements mobile network carriers would need to consider what the implications would be in turning this capability on in one area only.

2.32   If achievable the Associations expect this would be done on a small scale with defined and fully informed audiences within preselected geographic areas and a decision on the number of mobile network carriers and the regions to be covered.

2.33   A soft launch would allow comparison with or benchmarking against the existing approach to the use of location information in handling of emergency calls and allow mobile network carriers and ESOs to test the functionality before it goes into national production.

2.34   Clearly the objectives, parameters, etc, of any soft launch would need to be agreed in detail, but the Associations suggest that ESOs serving the selected geographic area might be provided with access to location information.

2.35   Notwithstanding the merits of conducting a soft launch there would need to be extensive testing of all systems and processes undertaken prior to launch and turning on the production environment.

3.   Operational issues

3.1   These are matters to be discussed with other stakeholders (e.g. mobile network carriers with ESOs etc.) as part of the broader federal and state discussions the Associations are proposing above.   Appropriate end-to-end solutions require comprehensive solutions to avoid gaps and eliminate overlap.

3.2   This section of the submission addresses Question 2 in the ACMA's Consultation Paper.

Question 2

Access arrangements
What arrangements would be appropriate to help manage access and use of the enhanced mobile location provided under the proposed model?

Privacy
What arrangements would be appropriate to protect individual privacy under the proposed model?

Access arrangements

3.3   As the ACMA paper notes, it is imperative that operational issues are addressed for both the 'upstream' and downstream' parts of the process. Some of the privacy and system technical protocols and capacity issues are noted in the ACMA paper. The Associations are suggesting the following matters may need to be added to the issues identified by the ACMA:

- Details on who is authorised to access the system and under what circumstances access is permissible;
- Obligations on all parties to report, review, update and consider changes to the system;
- A need for clear and comprehensive audit trails on access and use of the system;
- Clarification on policy applying to data retention periods and storage of records/data;
- ESO processes that provide for enquiries, dispute resolution and investigation of spurious call patterns;
- Reporting capability that measures performance against agreed parameters;
- Systems and processes to be scalable and provide some scope for enhancement i.e. an architecture that enables new capability to be added rather than have to update or replace foundation elements; and
- Whether the systems architecture needs to be integrated with existing ECS arrangements and whether location is directly linked to Triple Zero calls. Although not in the ACMA's regulatory remit, it is critical the framework for any system is such that it guarantees an ongoing national approach to any location-based Triple Zero system moving forward. It would clearly be undesirable and unworkable if ongoing issues, reviews, etc, were not dealt with in a constructive, nationally consistent and open manner.

3.4   The Associations suggest that an industry guideline might be an appropriate mechanism to deal with technical issues (type of information, format of data etc). The proposed guideline to be associated with the current revision of the Emergency Call Service Requirements Industry Code (C536) could provide such a vehicle.

Privacy

3.5   The issue of individual privacy protection in relation to location information provided as part of a Triple Zero will become a bigger issue for ESOs as higher levels of data flow to these organisations.   Once mobile network carriers have provided the information (permitted both under the Telecommunications Act, 'reasonable assistance' clause and under the Privacy Act), ESOs will have added responsibility to appropriately manage the access and use of customer location information. Clearly the risk of inappropriate use is reduced if ESOs were to be provided with information in a small number of situations. Acknowledging ESOs are likely to require location information in an increased number of circumstances, fully automated solutions with inbuilt safeguards including audit trails will be needed to effectively manage the risk of misuse and privacy invasion.

4. Temporary exemption from requirement to provide enhanced mobile location information

4.1   This section of the submission addresses Question 3 in the ACMA's Consultation Paper.

Question 3

Are there any factors that submitters consider would be relevant in establishing a process for a temporary exemption scheme?

Given the importance of the ECS to community safety, should certain conditions be placed on the granting of an exemption period? For example, should a carrier have to inform its customers of the exemption and the effect of the exemption?

4.2   As already noted, expectations and requirements for the proposed system are somewhat unclear at this stage which makes it difficult to define solutions, estimate costs or to be exact on preferred solution delivery timeframes. These factors, including expected lead times to implement make it difficult to comment on the need for any temporary exemption criteria at this stage.

4.3   Key to any decision making on this matter is recognition of the stated objective of the ACMA to make available to ESOs location based information that is available from mobile network carriers today with the longer term aim that such information becomes more standardised in terms of general availability, content and presentation. With this focus in mind it may be prudent to consider the matter of exemptions when further work has been completed on assessing the options outlined above including what capability mobile network carriers may have to on-forward cell based location information under a push model and if so when that capability might be able to be made available.

5.   Managing unrealistic public expectations

5.1   This section of the submission addresses Question 4 in the ACMA's Consultation Paper.

Question 4

What steps should be taken to assist in managing unrealistic expectations in relation to the capabilities of mobile location technology.

5.2   The Associations note the ACMA's observation in its Discussion Paper about the Australian public vastly overestimating the ability of mobile network carriers/authorities to locate mobile devices.

5.3   It is unclear if the ACMA proposes to undertake a public awareness campaign to clarify the current misunderstanding about the accuracy of location information. These matters will need to be resolved before there can be consideration of the worth and practicality of individual mobile network carrier obligations to inform their customers of any exemptions.

5.4   The Associations note that a similar problem has been observed in other areas, with the term "CSI effect" now a recognised phenomenon. The CSI effect describes the effect that popular television shows such as the *CSI: Crime Scene Investigation* and other law enforcement television shows have had on various segments of the viewing audience. It has been shown to raise crime victims' and jury members', even criminals', real-world expectations of forensic science, especially crime scene investigation and DNA testing.

5.5   It would appear that such shows have similarly influenced perceptions about mobile technologies, with mobile devices on such programmes often shown to be located and tracked accurately and in real time.

5.6   Industry believes the "CSI effect" could be a major factor in public perceptions. The ACMA is right to be concerned about the risk that such misinformed views, combined with knowledge about new obligations on mobile network carriers to provide information to the emergency call services, could foster complacency about personal safety.

5.7   The general public does not currently have a good understanding about what is or is not possible in relation to location services. It would therefore be extremely difficult to explain exemptions and their possible impact without causing increased levels of anxiety.

5.8   Australian networks should not be compared with mobile networks and related location information applying in other countries. In Australia mobile networks operate on a national basis servicing large numbers of customers in a relatively small number of distributed and high density residential and business centres and sparsely populated and very large rural and remote areas.

5.9   Consumer confusion would likely be exacerbated by the fact that consumers are often unaware of who their underlying network provider is. For example, Virgin customers may not know that Virgin uses the Optus network; Crazy John customers may be unaware that their services are provided over the Vodafone network (which is in the process of being merged with the *3* network), etc.

5.10   It is important to understand that it is not just the mobile users that do not have an accurate understanding of location based capability and have unrealistic expectations about capabilities, limitations and how they can be used and relied upon. ESO decision making based on mobile location information depends critically upon staff understanding the basis and limitations of the information supplied. Therefore it is essential that ESO staff fully understand the information sources, accuracy levels and the potential for disruptions to accuracy to occur and to utilise location information as only one input to their decision making processes. Also important is that policy makers understand the longer term possibilities of mobile location in their planning such that ESO developments reflect realistically achievable industry capabilities.

5.11   The ACMA, working through the already established COAG processes on emergency services, would need to shape realistic expectations through a national, co-ordinated education campaign. This might include, for example:

- Identifying all organisations/individuals involved in the provision of emergency services (from emergency call takers to emergency service responders i.e. the police, ambulance or fire officer)
- Identifying how the relevant organisations can be best educated about the available location based capabilities. This might include:
    - integration of LBS education into the relevant organisation's training regime;
    - workshops run by the ACMA;
    - integration of messaging on location matters between the ACMA and the federal Attorney General's Department and ESOs that deal with the wider emergency services use of such information and its limitations;
    - plain-English fact sheets available in appropriate formats to explain the technology, its limitations, etc.; and
    - information posted on the www.triplezero.gov.au website explaining the technology and its limitations.

5.12   Basic information about technical capability and reliance on location information should also be included in relevant operating manuals, as noted in Section 3 above.

5.13 The Associations suggest that the ACMA should also consider a public awareness campaign to set realistic expectations in relation to the capabilities of mobile location technology and its shortcomings. It may be useful to research approaches taken to addressing the "CSI effect" in other areas.

6.   Other

> **Other**
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> **"While this paper seeks information and comment on certain matters, it is not intended to limit comment on other issues individuals consider relevant to the paper."**

6.1   There is a potential impact on timing and organisational responsibilities arising from Government announcements related to National Broadband Network and Universal Service Obligation matters. At this time it is unclear how and the extent to which these might impact on the organisational structure of the emergency service Triple Zero ECP and its role in associated location based requirements in the future.

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