**ECONOMIC DEVELOPMENT AND INFRASTRUCTURE COMMITTEE**

**Inquiry into Improving Access to Victorian Public Sector Information and Data**

Melbourne — 27 October 2008

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Mr O. Hedberg, AM, Independent Chair, Victorian Spatial Council; and

Associate Professor A. Rajabifard, Director, Centre for Spatial Data Infrastructures and Land Administration, Department of Geomatics, University of Melbourne.

**The CHAIR** — I welcome you today to our all-party Parliamentary committee hearing, which is taking evidence in the Inquiry into Improving Access to Victorian Public Sector Information and Data. I welcome you both here today and highlight that we will be taking evidence that will provide you with parliamentary privilege. Anything you may say outside the room obviously will not be covered by parliamentary privilege.

Could you both state your name, whether you are appearing in a business capacity and, if you are representing an organisation, your position within that organisation.

**Mr HEDBERG** — My name is Olaf Hedberg. I am the Independent Chair of the Victorian Spatial Council. I should also add that I am the Independent Chair of PSMA Australia, which is the national body that collects and distributes information on behalf of all jurisdictions. I sit on the Land and Property Information Advisory Board in New South Wales, and I am a member of the Australian Spatial Consortium.

**The CHAIR** — And the address of the Victorian Spatial Council?

**Mr HEDBERG** — 570 Bourke Street.

**Assoc. Prof. RAJABIFARD** — My name is Abbas Rajabifard. I am an Associate Professor at the University of Melbourne, Director of the Centre for Spatial Data Infrastructure and Land Administration. I am also a member of the Victorian Spatial Council, and I am representing the Victorian Spatial Council today. Adding to that one, I am also President-Elect of the Global Spatial Data Infrastructure Association, which has more than 100 countries as members. I have also been a member of the UN Permanent Committee on GIS Infrastructure for Asia and the Pacific, which is serving part of the working group on spatially enabled government in Asia Pacific.

**The CHAIR** — We are very lucky to have you both.

**Mr THORNLEY** — Absolutely.

**The CHAIR** — It will save us travelling to all parts of the world with the evidence we will receive, no doubt. It is over to you.

**Mr HEDBERG** — Thank you; if I may start, Abbas. The Victorian Spatial Council was established under the Victorian Spatial Information Strategy in 2004. The Council provides a coordinated approach in the areas of policy and development and management of spatial information. It also facilitates opportunities for greater partnership building, collaboration, cooperation and education.

The members of the Council come from all sectors. State Government has three representatives on the Council; local government, two. The Australian Government is represented with a member. The private sector is represented with ASIBA. The Australian Spatial Information Business Association has a member as well as the Association of Consulting Surveyors. Victoria Emergency Services, through the CFA, have a member. SSI — the Spatial Sciences Institute — represents the professions. The utilities are represented by GITA, which is the Geospatial Information and Technology Association, which is worldwide. Academia is represented through the University of Melbourne.

I will maybe just touch on some headings in our submission, and the first is access. I have been sitting in the back listening to discussion of access. The overriding objective for spatial information in Victoria is that it be accessible and able to be used. Licensing is just one aspect of access. Others, as we have heard today, are knowing data exists, being able to discover it, appropriate management of the information, fitness for purpose, ability to share it and the multiple ways of accessing it.

I have to say I think Victoria has a very mature policy and management framework for spatial information and indeed leads the rest of the jurisdictions. It incorporates policies and principles for the types of information that are managed; the custodianship of information, which is the key to making it all come together; describing the information and publishing associated metadata, which we do; and pricing, licensing and access.

ICT developments have occurred in spatial information and DataSearch Victoria, and we have some examples here. It is a directory of spatial information right across government that enables users to access a list of datasets. At this point we have got 777 items on that data search. With that is the associated metadata, the custodian and the contact for that information. On the online delivery mechanisms we have got the Spatial Datamart, which is run out

of DSE. That is a web-based data storage, supply and delivery engine to all users. From that angle we seem to be fairly much to the front. We have a network of service providers which provide an additional mechanism for expanding the availability of spatial information. DSPs are private companies, and there are two categories: resellers who are licensed to onsell government information unchanged, and then there are the value-added resellers who develop specialist applications with that data.

The VSC has established and published the roles of both the private sectors and government, which I think is useful. That is in relation to the distribution of spatial information and the development of value-added products. I should say that through the Spatial Council, Government has a policy that says it is a wholesale distributor to the private sector. It will only undertake other types of distribution where the private sector is unable or unwilling. Basically we are a wholesaler of information.

I suppose what government needs to do is the issue for today. The Council has established a number of points. Government agencies operating as separate and sometimes competing entities, and the silo mentality is still there — at its best. There is a lack of or a limited culture of sharing information, a lack of coordination in technical developments and a lack of standard licensing approach, and we heard a little bit about Creative Commons out of Queensland. But there is a lack of a standard licensing approach to accessing it. We also believe that governments should manage the core datasets; the framework datasets. They are single authoritative sources of their respective data. They cover the whole state and have established levels of quality in terms of completeness, reliability, currency et cetera. Certainly all of those datasets must be accessible and available.

We believe the policies we have set up in the framework reduce duplication of fundamental datasets; improve access to spatial data leading to more efficient spending on data by all the sectors; provide higher quality datasets; and develop the partnerships, and of course there are a number of partnerships that we could draw on. The VSC supports an approach based on recovery of costs, whether full or partial. There are some areas where we relax that, such as the subsidy for community benefit or academic research. We credit full or partial relaxation of price for users contributing to the maintenance or development of the datasets and to industry development. It is interesting to note that we recover only 40 per cent of the cost of maintaining those datasets; the other 60 per cent is funded out of the consolidated account. The 40 per cent is retained for maintenance. I am sure there will be more questions on that a little later.

Obviously we have just developed a new strategy for 2008 to 2010. It is a very short time frame for the new strategy simply because changes are very quick, as we have seen with Google, Microsoft and others. In our submission we emphasise that fitness for purpose is an area that we touched on, as well as licensing technical solutions that allow accessibility, awareness raising, discovery and availability, just to name a few. I think that is probably enough from me.

**The CHAIR** — Would you like to say something?

**Mr RAJABIFARD** — Yes, thank you very much. In many respects digital geospatial data is like other digital data. First of all it is non-rival, and also its dissemination is definitely inexpensive. It is also difficult to exclude others from using it once it is disclosed. Its pricing is highly elastic. If it is double the price, people tend to do without it or replace it with other types of datasets. However, unlike many other datasets, the collection and maintenance of spatial data requires highly qualified human expertise and equipment to process, manage and use the information. The model that the Victorian Spatial Council has developed talks about spatial data infrastructure as an enabling platform to facilitate data sharing and data integration. Over 100 countries around the world claim they are developing this type of platform to facilitate their society to use the spatial information; to facilitate their spatial-enabled society and governments.

Based on the cost-benefit analysis, there is a $4 return for every $1 invested in data investment when that information is shared. Recently in Europe it was estimated that there is a 1 to 18 ratio of return on dollars invested in spatial data infrastructure, from sharing and integrating it. However, some of our research — we have people from different parts of the world working on it — over two years of monitoring the clearing-house system of many countries around the world, showed that many started initiatives but then very soon they failed to update their information online because of the costs associated with maintaining the clearing-house system which facilitates the provision of information about the data that exists, and then the accessing of the actual information. Very soon they lost the trust in those types of systems because of the associated costs.

In order to facilitate that, and also to enable the sharing of the costs among the participants, there is a need to share the costs associated with sharing information and also to protect the business of the individual parties around that. The cost recovery model, when presented by the Victorian Spatial Council with the different approaches, suggested some sort of relaxation depending on the group of people using it. It is in line with best practice around the world. Also, the Victorian model of the spatial data infrastructure is one of the models that has been adopted, and internationally people are monitoring the way the spatial information framework has been developed across Victoria.

**The CHAIR** — Interesting. Thank you. Could I go to Mr Hedberg first? In your presentation you listed a range of dot points which included the lack of a standard licensing approach, and a lack of this and a lack of that. You highlighted them as areas requiring attention. If you were writing our report, what would be your recommendations on how to address the lack of the things on your list? I think there were about six of them.

**Mr HEDBERG** — I think the key to it is the custodial agreements. We have concentrated very heavily on custodial agreements. Indeed, we have had a lot of success with departments signing up, which is then followed by some roles and responsibilities, and they have to accept those. Obviously we took a little while to get utilities over the line with their roles and responsibilities, but there are definite roles and there are some responsibilities. One of those responsibilities is making sure the metadata is up to date. That is certainly a key to where we are going. If we have custodians signed up and they know the roles and responsibilities, then we start to make headway.

I think I said that governments still act as separate, sometimes competing, entities. I think we have certainly overcome a lot of that in the spatial world. In fact, DPI data is on the DSE website, and we are certainly putting up other data there as well. There is a move to overcome that. There is a lack of a limited culture of sharing information.

**The CHAIR** — A lack of?

**Mr HEDBERG** — The culture to share, for a number of reasons. Sometimes it is because they are not sure of the quality of their data. Sometimes it is tucked away on a database which somebody believes they own rather than the state. There are a number of issues there. There is a lack of coordination in the technical developments. Some jurisdictions and some departments are well ahead of the game and others are not there.

**The CHAIR** — I appreciate when you say the lack of technical data in some compared with others, that would be a fairly obvious recommendation of how to address that. Would you like to articulate, if you were head of Premier and Cabinet or head of a particular department, what you would be doing to address the 'how'?

**Mr HEDBERG** — In the government scene there is a Victorian Government Spatial Committee which is supposedly made up of deputy secretaries and that has been a weak link in being able to bring this together because the responsibility in those departments has been passed down and passed down. It needs elevating, and we are able to demonstrate that; in fact I have written a letter which is going out to all secretaries saying, 'Please can we get better representation on the Victorian Government committee'.

They are willing enough, but the decision making is not there. If you are going to bring departments together, you need decision making. It can be a forum for the technical developments and, as I say, some agencies are well ahead of the game and others certainly are not. It needs that committee to work properly to get the best out of Government. Then there is a lack of a standard licensing approach. People need to accept the custodianship and get a single type of licensing agreement. I listened to Creative Commons, and it does not particularly suit spatial information very well.

**The CHAIR** — Say you were the chair of the Victorian Government Spatial Committee, in what direction would you be heading people?

**Mr DAVIS** — There would be a shake-up.

**Mr HEDBERG** — I would be embarrassing them about the representation; we need better representation on the Victorian Government committee.

**The CHAIR** — Right, but in terms of the licensing, what would you be suggesting?

**Mr HEDBERG** — The licensing would come very quickly through proper custodianship; that is where it all is. The core of distributing and access to data is custodianship, and with that comes the licensing arrangements. I think I had a nod that Creative Commons might not suit spatial information particularly well, but it is a model, and certainly the Australian New Zealand Land Information Council is looking at licensing on behalf of all states and territories.

**The CHAIR** — Thank you. Have you listed for each of your dot points what the lack is and what you would do and how you would address them in your answer?

**Mr HEDBERG** — Yes.

**The CHAIR** — Good. I just want to make sure we cover the lot.

**Mr CRISP** — I am curious about the Creative Commons and spatial data. I know you are talking about some data being better than others, but we may not need to explore that because Creative Commons appears to be a way to be attributing and managing data. If not Creative Commons, as you started to allude to, are there any other possibilities?

**Mr HEDBERG** — There are a number of licensing arrangements that one could have. The basis of Creative Commons is very good, but I made the point it does not always suit spatial information. I listened before to discussion about the ability for value-added people to add to that, which is fine and of course we see it in open source, but it needs to be refined, and we are not convinced yet in the spatial world that Creative Commons is the total answer.

**Ms THOMSON** — The hybrid model that you heard about from Deakin would be something that would fit better?

**Mr HEDBERG** — Absolutely.

**The CHAIR** — Do you want to explore that any further?

**Mr CRISP** — Yes. That verification of data that comes in, how good is it? Because if errors come in, how do you get rid of them? That is before they start multiplying through the system model. Creative Commons with attribution gives you a way back to the source and therefore some responsibility for that data. If we go in other directions, do you see that responsibility as being diminished?

**Mr HEDBERG** — One of the directions that spatial information is taking in Victoria is the notification and edit system, which is a Wikipedia type. It was trialled with CFA. Obviously government wants authentic data, and we have got to authenticate it. For instance, now when people notify us that an address or a street is wrong, we then go back to local government and say 'Is this right?' because of information from a purported custodian of the street and address.

We do validate it, as Wikipedia does not, I suppose, or Google does not; they just take what people say. But if we want authentic datasets, then we have got to go back to the custodian. The notification and edit is a wonderful system and will be used right across government agencies and local government.

**Ms THOMSON** — My issue goes a little bit to the datasets and the updating of the datasets, because this is only as good as the updating that continues with it. In what area is that occurring well and is more easily done than in other areas? What would you see as being difficult areas to have consistently updated, and what are the sorts of levels of time factors that you would see as being necessary and in what areas — even just in government use of the data, not even outside of government use?

**Mr HEDBERG** — The framework datasets are maintained to the highest possible level, so that is pretty much on a 10-day cycle. For instance, street names and addresses are updated on a 10-day cycle. The core datasets are certainly maintained. We have little control over some of the other datasets that may be in other government agencies, hence the metadata is so important; that is fit for purpose. If you read the metadata and it does not suit your direction of course, you know immediately.

Datasearch — we have got some copies here — is the tool we are using, and as I said there are 770 items there at the moment, all with metadata, and that is one of the custodial responsibilities. Before we take on a new custodian we need a signed SLA that they will maintain that metadata.

**Mr RAJABIFARD** — I add to that point: with regard to metadata we have just received funding from the Australian Research Council with partners from different government agencies with regard to spatial information to develop an automatic processing system to update metadata information. Particularly when we open any maps or information, the system takes care of the part of the information which is required for tracing back the history of information.

This is actually based on the new OGC and ISO/TC211 standards, which have 400 elements involved in that. Parts of these elements are required for any users to be aware that the data is ready for their use in regard to their availability, accessibility and applicability of information, which is really important. Again, the Victorian Spatial Council supported a system to facilitate the updating mechanism and to perhaps reduce the cost of the updating of metadata.

**Mr CRISP** — In pricing or pricing policies, yours is a 60–40 split; have you got any views between Australia versus United States of America about when the data is provided free, whether there is any particular difference in how your custodians feel about that and how your customers feel about that?

**Mr HEDBERG** — We could also look in Australia. Geoscience Australia's topographic data is free, but indeed, like America, it is very basic data. What we are working with in Victoria is very high-quality data that takes money to maintain and money to distribute, so it is horses for courses, if I may say so. I think if you want cheap data, then it generally is not maintained.

**Mr DAVIS** — I have a whole raft of questions from your very interesting presentation. I might start with the cost recovery model, as you describe it.

**Ms THOMSON** — Partial cost recovery.

**Mr DAVIS** — The partial cost recovery model, but it is a cost recovery model. Who do you think should pay for that increased economic activity that is likely to come from the release of government data? If you follow the theory that we have heard a good deal of as we have moved around with this inquiry, there will be very likely increased economic activity and likely greater tax receipts and related matters?

**Mr HEDBERG** — Certainly we are finding that. The maintenance now is getting fairly horrendous, because the users want more and more. A good example of that, I suppose, is in location-based services such as in-car navigation. If it is not what they need, we are all going to suffer. Generally speaking, they pay for it because it is transaction based and royalty based. I think we recover a fair return.

**Mr DAVIS** — My point is a little different. Do you think that government collects increased revenue from increased economic activity from the release of data?

**Mr HEDBERG** — Certainly not in the spatial world. The 40 per cent that I alluded to that comes in in royalties and licence fees does not go back into consolidated revenue.

**Mr DAVIS** — Do you think businesses use that data in a broader way than perhaps immediately in your industry? I am talking out further.

**Mr HEDBERG** — They are licensed of course. There are fairly heavy constraints on licensing what they can use it for.

**Mr DAVIS** — Do you think there may be data that does not get out there because of that licensing arrangement?

**Mr HEDBERG** — I would suggest no, but I would suggest — —

**Mr DAVIS** — There is no data?

**Mr HEDBERG** — The licensing is not an inhibitor, but indeed the access to some of the data is an inhibitor.

**Mr DAVIS** — What about the discoverability of data? How do you think people know about all of the data that is there?

**Mr HEDBERG** — Certainly they do not know all about it, but I point you to this.

**The CHAIR** — Would you like to identify what 'this' is for the benefit of Hansard?

**Mr HEDBERG** — There is a DataSearch Victoria and also the distributed spatial data through the Datamart. I mentioned earlier that we have 777 items in DataSearch. We know that that this is just a small amount of information.

**Mr DAVIS** — This is my point. There is data there that perhaps is not in the model that you are alluding to that might have economic value.

**Mr HEDBERG** — Absolutely, but our drive is to get more custodians signed up and to put their data into DataSearch. It will only happen through the custodianship.

**Mr DAVIS** — Why?

**Mr HEDBERG** — It is the only mechanism we have seen so far that others feel comfortable about, that they know their roles, they know their responsibilities and indeed sign up to them. We had DHS recently sign up to a custodial agreement, which was a step forward.

**The CHAIR** — You might like to expand on that later.

**Mr DAVIS** — I am just trying to get an understanding of this. My point is that this custodian model and this licensing arrangement may actually inhibit the release of data — useful data, for which you may not be aware of uses and even parts of your industry may not be aware of uses. It might be in the community interest to release data — perhaps imperfect data. There may even be an economic advantage in doing so?

**The CHAIR** — Could you give us an example?

**Mr HEDBERG** — I would not disagree.

**Ms THOMSON** — What they are saying is in those instances they would be given access on an arrangement where the licence may be provided with no cost attached. Or, as you were talking about before in relation to where they are value-adding back into the system, special arrangements can be made so, if you are value-adding to the way in which the spatial data can be used and you feed that back in, you get entry into the system for no cost or minimum cost.

**Mr DAVIS** — I have no problem with some licensing arrangements, but my point is that there might be data that may be inhibited. I think you have indicated that that may be the case in some situations.

**The CHAIR** — Could you give us an example?

**Mr DAVIS** — My point is that the use of some data is actually unknown. That is the point.

**Mr HEDBERG** — Absolutely. But when you do discover it, to protect the IP you need some sort of licence.

**Mr DAVIS** — But do you? Government data could go out — —

**Mr HEDBERG** — Even for the academic fraternity, or indeed when we release it for community benefit, it still has a licence with it. That may be no cost for the licence, but it does have a licence.

**Mr DAVIS** — Is that licence necessary?

**Mr HEDBERG** — I think it is.

**Mr DAVIS** — Could it just come with a caveat?

**Mr HEDBERG** — It could, but I think the licence is a pretty satisfactory way of protecting IP. For instance, the map books — and I think I heard somebody talk about or I read about in one of your transcripts, the map books — that is government data going to the private sector.

**Mr DAVIS** — But coming back to be used by government.

**Mr HEDBERG** — Absolutely, but it is under a licence agreement. Indeed the IP still resides with government. The map book IP, how they put it together, is Spatial Vision's IP, but the data still remains government data.

**The CHAIR** — Have you finished that line of inquiry?

**Mr DAVIS** — I have finished that line. I have another couple in play.

**The CHAIR** — All right; we can go to that in a minute. By way of answering those questions from Mr Davis you mentioned DHS. Could you fill us in a little on what is being done there that is different?

**Mr HEDBERG** — In the spatial world we are coming to the realisation that everything is location-based. DHS are now able to geocode all their hospitals et cetera. It now has a better picture. Rather than a spreadsheet it can put it into its true location. It is very interested in geocodes. This is part and parcel of an awareness that spatial information can help their business.

**The CHAIR** — Could you expand on how?

**Mr HEDBERG** — Merely that with geocoding all the hospitals and nursing homes et cetera — and education are doing it with schools — it gives it a picture of where its resources are.

**Ms THOMSON** — Mapping services, mapping where chronic illnesses are greater in one area over another, so service delivery might change?

**Mr HEDBERG** — I use an example in this with the insurance industry, where they did not want to know about spatial information. But when we analysed one company's pay-out, we found that most of the robberies were one street back from a highway. That would not have happened with spatial acknowledgement that they could plot those robberies. Location-based information is becoming so important.

**The CHAIR** — Thank you.

**Mr CRISP** — I have a very quick question, if I may, Chair. Google — client or competitor?

**Mr DAVIS** — Or both.

**Mr HEDBERG** — Yes, I can answer it fairly succinctly, I think. First of all, the data it uses for Victorian Google is Victorian data. It is supplied by government through PSMA Australia, which I mentioned before, and Google has a licence to use it.

I would also add of course that it is very tardy in keeping to licence agreements, so it is a very difficult company to deal with. I would say it probably has done in the awareness side a lot for spatial information and what data can be used for. I think we have to forgive some of it, but yes, it is a very difficult company to deal with.

**The CHAIR** — Would you like us to send a 'with compliments' of that section of the transcript?

**Mr HEDBERG** — I think they know very well how I feel.

**The CHAIR** — That is what I meant: they might pay up. Mr Davis had some more follow-up questions, but I want to make sure that before our time is expired that Mr Thornley, if you have any questions, you have your chance before we go back to Mr Davis.

**Mr THORNLEY** — I got called away for a moment so I am probably going to have to catch the thread a bit. What I will say to Mr Crisp's question is that in my time in Silicon Valley we talked about the virtues of co-ompetition between entities, and I think people are masters at that. But let me pick up the thread.

**The CHAIR** — Co — —?

**Mr THORNLEY** — Co-ompetition — cooperation and competition.

**Ms THOMSON** — And competition. That is right — where it suits.

**The CHAIR** — That will add to the transcript!

**Mr THORNLEY** — Keep your friends close and your enemies closer.

**Mr DAVIS** — You mentioned the Victorian Government's Spatial Committee. Do we know who chairs that?

**Mr HEDBERG** — I would have to refer to Elizabeth, who is sitting in the back, but it was chaired by the CIO Jane Treadwell when she was CIO, but I think it rotates now. Elizabeth, who is the chair of the Victorian Government's Spatial Committee? It is the Director of Spatial Information.

**Mr DAVIS** — Who is?

**Mr HEDBERG** — Bruce Thompson.

**Mr DAVIS** — The various deputy secretaries are on that committee, as I understand it?

**Mr HEDBERG** — They are supposed to be on it.

**Mr DAVIS** — Or their nominees?

**Mr HEDBERG** — That is the problem.

**Mr DAVIS** — I am trying to understand this. So there is a rotating arrangement?

**Mr HEDBERG** — Yes. I think it needs stabilising and it needs to be at a decision-making level. For instance, the new Victorian spatial strategy would have gone out to each of the sectors to tell us how they are going to implement it. It is more difficult in government. The industry and the private sector have come back, saying, 'This is what we are going to do'. But I think that committee probably is not, dare I say, making enough decisions.

**Mr DAVIS** — How often does it meet? Are you a member of it?

**Mr HEDBERG** — No. We have a joint VGSC-VSC meeting once a year but the Victorian Spatial Council meets monthly.

**Mr DAVIS** — Thank you.

**The CHAIR** — I became absorbed in what you were saying; it was very interesting. Thank you very much. Within about a fortnight you will be provided with copies of the Hansard transcript which you can examine for typographical corrections. Should our secretariat require any points of clarification, would it be okay if they followed up with you at a later date?

**Mr HEDBERG** — Yes.

**The CHAIR** — Thank you very much.

**Committee adjourned.**