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SEMINAR OF REGISTRARS OF TITLE

SYDNEY, 27 APRIL 1983

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Chairman of the Australian Law Reform Commission

URPIS REVISITED

In December 1982, addressing the URPIS conference I called attention to the need for a new national initiative on computerised land use data.<sup>1</sup> I referred to the urgency of the problem and drew an analogy between the uncontrolled development of railways in the 19th Century with different gauges: a problem that still remains to haunt us as we approach the 21st Century in Australia. It is my conviction that unless there is a national resolve to prevent the same thing happening, it will recur as local government authorities and State instrumentalities move towards their own systems of land use data. New South Wales has its own committee of interdepartmental officials. In Queensland, there is the Land Data Bank Committee also made up of officials and about to report. Preliminary steps have already been taken in the Northern Territory, South Australia and Western Australia, each adopting approaches without special attention to the need for compatibility throughout the country.

There are at least two forms of compatibility in this area. The first is the use of precisely compatible equipment, compatible computer programs and even the creation of compatible records. This kind of compatibility is probably unobtainable, at least in the short run. It may even be unnecessary and indeed, if achieved, might have little practical worth. But compatibility of the method of making the record, in order to promote or facilitate the proper interchange of information between systems, is what we should be aiming at. It is becoming generally accepted that this form of compatibility is essential for land use systems in Australia. It could be achieved by one of at least two means. The first would be the creation of the original record in a form that is compatible with records created of a similar nature in other places. In this way, the data could be exchanged, transmitted, merged or compared electronically (ie over telephone lines). The second means would

involve disregarding the method of creating the record and providing sophisticated electronic means for translating the records from one place to another. Obviously, the first means is to be preferred. A considerable amount of work for standardisation within the States is going on. But to have a proliferation of State standards will not alleviate the problem on a national basis.

I understand that the Queensland report will propose the provision of a centralised data base in Queensland limited to administrative data, i.e. not providing special data, though this may come later. In this regard, the Queensland intention reflects precisely what is happening in the other States. Surveyors in high positions in the States are doing what they can to keep attention on the need for special relationships. But finance determines that this aim will normally have a second priority only. Local authorities having their own land data are already moving towards computerisation. Naturally, they want the economies of a computerised land data system which ties in with their particular administrative systems. But these are often special and idiosyncratic.

At this stage, before the advance of specialised and local computerisation in land data in Australia goes too far, what we need is the design of an integrated administrative land data system which can take into account the aggregate needs of national, State and local authorities. There are some who would doubt that a national 'design' could be obtained in Australia. Certainly a great deal of preliminary work would need to be done. How is this to be approached if the Commonwealth does not lead, co-ordinate, conciliate and encourage a national design? It seems to me that we need to go beyond the mere collection of administrative data and to ensure that a system is set in place in a way that can receive data on the whole range of services presently supplied to land. I fully realise that busy administrators, under the most acute financial pressures, are faced with a dilemma. The most conscientious among them will undoubtedly ask themselves whether they should wait until a perfect system is designed, against the prospect that that may never be achieved, or whether they should proceed immediately to instal an imperfect system with direct advantages to their specific organisation. Faced with such dilemmas, and in default of appropriate national leadership, administrators will normally pursue their own institution's immediate interests.

My particular concern is that what is now happening, by a process of unplanned natural evolution, without due national planning, is the introduction of specialised computer systems that are not or are not readily compatible. Steps have been taken by the National Mapping Council to secure certain common measurements and like features, but that Council has not interested itself in land use data itself. Its interests have lain

elsewhere, particularly in mapping of resources. The National Mapping Council showed, in its sphere, what can be done. It motivated the creation of an Australia-wide standard in a small but important aspect of the whole system.

A proposal has been developed by a private organisation for a computerised land administration and information mapping system for Australia. The purpose of this proposal is to develop programs which local authorities could tap into and which could provide a proper measure of uniformity throughout the nation especially in relevant computer software. In the States, survey co-ordination legislation has been enacted, generally in the 1950s, with the objective of co-ordinating the orderly control of paper maps and plans. In most cases these statutes are insufficient or inappropriately constructed to deal with digital information on computers. Nonetheless, such Acts, with or without amendment, would be available to permit State authorities to impose a common system on local government authorities. However, State Governments, themselves short of funds, are not inclined to enforce such provisions, particularly in default of a national agreed approach.

#### NEED FOR A NATIONAL APPROACH

Whether the private proposal is or is not successful, the need for a national approach is plain. What we need is a study with appropriate attention to costs and benefits and one specific to Australia's special needs. Unless we have this, overseas systems will be imported. The most successful systems introduced into Australia to date are two commercial proprietary systems. The first has been developed by International Computer Limited (ICL) of the United Kingdom. The other was developed by Computer Vision of the United States. The ICL system is the system installed by the Sydney City Council. Within the next year it is likely that this system will be installed in half a dozen significant city councils throughout Australia. Yet these systems have generally been designed for the very different historical, geographical and size factors of England and are not necessarily appropriate to Australia. Millions of dollars are presently being spent by local government authorities. Brisbane City Council alone is setting up a computerised land data system costing \$750,000 to instal. Once these investments are made, it is difficult to change computerised systems because of the costs involved. Unless we can get uniformity, compatibility or at least interchangeability now, the cause of nationally compatible computerised land use information systems will probably be set back for decades.

State Governments do not appear ready or able to give the lead here. It may be hoped that the Commonwealth, which has legitimate national interests in seeing that there is an efficient use of our resources will give a lead. The Landsat program or the National Mapping Council may provide possible vehicles for a heightened Commonwealth

co-ordinating role. I realise that many administrators and surveyors would consider that control and co-ordination of a national approach to land use data would not be appropriately reposed either in the Landsat Program or the National Mapping Council. They might regard such ideas as offering the prospect of the tail wagging the dog.

Nonetheless in default of something more appropriate, the Lansat Program could provide an administrative vehicle to achieve co-ordination. Alternatively, a new national co-ordinating body could be established, which would review draft standards as they were prepared by the States and Territories. These standards could be circulated for expert and public comment in order to lead to the adoption of national standards. If such a co-ordinating role were undertaken by a new Commonwealth agency, the work carried out by State Governments would be available to all municipal councils across Australia to assist in the planning and creation of their land information systems. Clearly, the Australian Standards Association would have an important part to play in the development of practical uniformity of this kind.

These suggestions of mine do not propose interference by the Commonwealth in the traditional State concerns of land use. The overwhelming involvement of State and local government in land use data is not in question. It is simply a matter of co-ordinating what would otherwise be unco-ordinated as every local government authority in Australia moves separately and independently towards computerisation of its land use data.

Railway incompatibility stand before us in Australia as a warning. It is unhappily typical of the unsatisfactory state of the law that the prospectus for the private project I have mentioned was initially refused financial support by the Australian Industrial Research and Development Incentives Board because it was claimed a computer software program is outside the ambit of a 'product', which may be supported by the Board. I would certainly not wish to diminish the enthusiasm of this private venture. However, I have some doubt as to whether the typical public administrator in Australia would select and implement a proprietary, commercial scheme. Notwithstanding the existence of computer facilities at attractive prices, the Australian public administrator often uses his existing systems in order to create his own computerised system at a higher cost rather than implementing something new. The adoption by public administrators in Australia of an Australian-developed commercial system would certainly be novel. I suspect that Australian systems may already be two to five years behind international systems and that the competitive edge of international software will considerably handicap the development of local projects, public or private, unless supported at the highest national level.

OPPORTUNITIES LOST - & TO BE GAINED?

As in any other area, information on land use can be related at high or low precision. Spatial relationships of a high order of precision are normally referred to in the community (and by the surveying profession) as large scale mapping, plans and diagrams. The cadastral system we use in Australia is based on high precision relationships. The order of precision is high in the community sense, although not specially high in terms of what could be achieved by the surveying profession. Low precision relationships are broadly referred to as mapping and small scale mapping. For example, a map of the world is normally in an extremely small scale. A plan of a house is in an extremely large scale.

We in Australia have the opportunity of creating the spatial relationship based on existing maps. Surveyors would consider this to be a small scale or low precision relationship. This information would be obtained by converting existing maps to digital format. That work is already being investigated and in some cases implemented in the Australian States.

We also have the opportunity of relating the information at high precision levels. This could be obtained by converting plans to digital format, although the cost would be so high as to be virtually unthinkable. Alternatively it could be done by laying down a surveying framework commonly referred to as an 'integrated survey system' or developing the high precision relationship over a given interval of time. It is this, high precision, approach that has been implemented in New Zealand, in some Provinces of Canada, a number of European countries, in Malaysia, Singapore and Hong Kong.

In New South Wales efforts were made ten years ago to implement such a high precision system. Had it been implemented the State would now be in a most advantageous position for the implementation of a spatially related land information system. However, the proposal was rejected on the advice of a number of critics within the surveying profession. It was rebuffed by the then government. Details can be found in the report of the Inquiry into the Proposal to Establish a System of Survey Integration in New South Wales.<sup>2</sup> Sir John Overall concluded that the implementation of a system which comprised spatial relationships at the highest precision was not simply a reflection of the surveyor's fanaticism about precision but could also be justified on good economic grounds.

Our laws and attitudes predate the computer age. It is vital that both our laws and our attitudes should be updated. In some ways, changing the laws (hard as that is) may be easier than changing attitudes because of the professional jealousies and narrowmindedness that sometime prevent efficient co-operation for the benefit of the whole

country. Let us hope that laws and attitudes will submit to rational modernisation and reform as we proceed with the inevitable computerisation of land use data in Australia.

FOOTNOTES

- \* Views expressed are personal views only.
- 1. See M.D. Kirby, 'Computers: Who Is Concerned?', URPIS 10 Conference, 1 December 1982, mimeo.
- 2. J W Overall, Report of the Inquiry on the Proposal to Establish a System of Survey Integration in New South Wales, August 1974, mimeo. See also University of New South Wales, School of Survey, Proceedings on Land Information Systems for State and Local Government Seminar, Sydney, November 1982, mimeo.