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Spatially Enabling The Master Linkage Map – Getting Straight To The Point

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Background with rationale

In recent years, rapid advancements in Geographic Information Systems (GIS) software has provided a range of users with an array of options to visually represent multiple digital data assets and for a range of purposes. The research community is increasingly able to represent complex data assets spatially to identify patterns in the population specific to burden of disease or for other reasons.

Main aim

To develop a methodology and software solution to effectively attribute spatial coordinates at a unit record level to data held in the Tasmanian Data Linkage Units (TDLU) Master Linkage Map (MLM). A further requirement was to support an integrated process of clerical review to enable incorrect or missing address information to be corrected.

Methods/Approach

The Australian government makes available a geocoded address database for end users including Australian businesses, education and government. Known as the G-NAF (Geocoded National Address File), the database contains in excess of 30 tables for over 13 million principal Australian addresses. The TDLU developed software that extracts data held in its MLM and processes using the

G-NAF to derive and store multiple spatial data elements.

Results

The TDLU has achieved in excess of 92% automated geocoding to address level for all records held in its MLM. Extensive metadata is produced, analysed and stored and used for many reasons including quality assurance. The release of spatial information, together with linkage keys, is strictly managed in accordance with Human Research Ethic Committee and custodian approvals.

Conclusion

The TDLU's custom designed spatial information system has proven effective in both automatically allocating spatial coordinates for records held in its MLM, and for supporting review of missing or incorrect address information. Generating and storing spatial data at a unit record level enables the effective allocation of a range of geographic elements, population data and indices including measures of socio-economic disadvantage.

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