





The NetMap on the cover shows all of the relationships that were mapped together in this study designed to uncover insurance fraud. Relationships are shown between people, claims, addresses, phone numbers, bank accounts and suburbs. This data was taken from 12 months worth of claims history. Hidden in this data are patterns of behaviour that represent fraudulent activity. Unfortunately it is almost impossible to find those patterns using traditional methods because of the vast quantity of data and the inventive ways that people committing fraud use to conceal what they are doing.

NetMap however is able to quickly make sense of all this information. Using NetMap's emergent algorithm, unique to the NetMap product, groups are formed from the data. These groups represent the items that most likely belong together because the data says they are tightly connected. No parameters, no group criteria are specified, this is the data talking directly and revealing its secrets. Around the outside of the circle in the NetMap above are many hundreds of small groups (only a small amount of the full data that was mapped is shown here). Most of the groups look like those enlarged to the left, with one person, one address and one claim linked together. However some groups are abnormal like the group enlarged at the right which shows one person linked to three claims and three addresses. In this simple example it would have been easy to guess what was normal and abnormal behavior, however in more complex situations with many variables it is almost impossible to tell without NetMap. No matter how much data or how complex the relationships, the emergent algorithm will quickly show you normal and abnormal patterns.

Once an abnormality has been found it can be explored in detail. The top picture shown below (the long stringy picture) shows a step link of one abnormal group. Starting from a single person at the left, it then shows the items that are connected to that person and then in turn those items that are connected to the first items and so on as far as the data will allow. Even without zooming in to see the details, NetMap's visualisation quickly shows an unusual pattern, namely 6 steps of connectivity from the original person with another 10 people linked into the chain (shown by the red boxes). Since there are no third parties such as doctors, lawyers, repairers or tow truck drivers, this level of

To understand this chain better the emergent group algorithm is used again but just on this single chain. The bottom picture shown below (the circular one) shows the natural groups that form out of the chain above. The original suspect is Mr J Simons shown in a red box at approximately the 4 o'clock position. The various groups of people involved are shown grouped with those they have been involved with. The most interesting group though is at the 10 o'clock position. It shows Mr A Verman a claim and a single address. The little satellite right next to Mr Verman shows that he forms one of those little triangle groups of three that we saw at the beginning. This means he looks like the normal or common pattern in the data. He would escape all normal exception reporting or red flag processes. However NetMap reveals that he is linked into this activity through 1 single link to a common address, 26 Monash Rd Gladesville. This ties him into the suspicious activity already discovered.

