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#### **Spatially Enabling an Asset Management Database**

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Tube Lines is a privately owned company that has signed a 30 year contract to maintain and improve the infrastructure on three of the Underground railway lines in London, England.

The contract rewards improvement to the infrastructure and penalises defects that cause delay to trains. Tube Lines are implementing an asset management system based on Maximo to replace numerous existing systems and give a 'single source of truth'.

Track assets have been loaded into the asset management system which now holds asset details, condition etc, and the work orders issued for routine and corrective maintenance.

Track being a linear asset was a particular challenge, a special module has been developed in Maximo for linear assets and Geomedia Transportation is being used taking data directly from the asset management system.

The Location Coding System has been made for all railway track based on old record drawings, surveys and commercially available mapping. Producing this showed that knowledge of the track assets and their geographical location was not clear in places requiring more survey work. Also the implementation and use of a Location Coding System that could be used in a common computer based system across the company has presented challenges with several different systems and variations in format being used.

GIS has already demonstrated its capabilities in cleansing data in the asset management system and visualising how the location coding will work. The desktop GIS has demonstrated to planners and engineers that railway track assets can be visualised with their type and age etc in a way that would have involved considerable effort in collating, updating and publishing the data.

User requirements are currently being captured for the web GIS. Also other civil assets: bridges, drainage, tunnels, earthworks etc. are shortly to be loaded into the asset management system and the GIS.

Being able to view the position of work orders on map will allow managers to geographically group them together and assign them to improve the efficiency of working on the railway in the limited times available. Also for long term planning being able to view the condition of all the assets in a location will allow more efficient long term renewals to be planned, e.g. it may be beneficial to replace the track drainage at the same time as the track itself. Another benefit is in displaying where long term track replacements are programmed will help co-ordinate this with day to day maintenance.