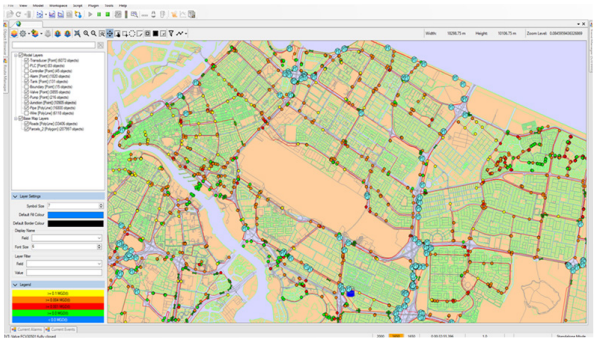
Pressure Transient Support

The high volumes of data currently being gathered on water pipelines and networks via existing loggers can provide valuable insights into the cause of operational issues and poor system performance. Of particular relevance is the transient pressure data that is now being gathered through either permanent high frequency pressure loggers (e.g. Syrinix, Inflowmatix and Viscenti) or GPRS transient burst loggers (e.g. Technolog, GCRTech and HWM).

The next challenge faced by Water Companies is how to best utilise this data to identify trouble spots in networks with the aim to eliminate, or minimise, pressure transients and attain a 'calm' system. There are many different solutions offered to support this work, including basic dashboards to view the data, passing the data through algorithms and AI based solutions or using digital twins.

By far the most effective and proven solution is to combine expert transient hydraulic experience with transient modelling software to maximise the data usage, filter the data, accurately analyse the pipeline / network performance, validate the data and calm the system. As the world leader in surge analysis, Hydraulic Analysis Limited have extensive experience in modelling pipeline systems and understanding the cause of pressure transients (surge pressures). We are experts at analysing transient data and support Water Companies with understanding the performance of their pipeline assets and calming pipeline networks.



As the Hydraulic Analysis Group also license the VariSim™ transient pipeline simulator which is a highly accurate tool for running offline and real-time simulation using data acquired from site, we are uniquely placed to support clients in this area. There are many different approaches that can be taken which range from supplying VariSim™ software licenses so Water Companies can analyse the data themselves (with support available), to sending the data to us for detailed analysis to improve the design and performance of the system. For example, we have supported Thames Water by providing specialist hydraulic training courses to their engineers, helped them analyse transient pressure data and developed a transient hydraulic simulator of a water network to track the source and cause of pressure transients. The simulator uses data from multiple sources before being filtered and manipulated into a useable format. This includes using 'dark data' which would not normally be utilised meaningfully or analysed in hydraulic simulators, and we can advise on the most suitable locations to install any additional pressure loggers if required.

Only by combining specialist engineering support with a proven transient hydraulic simulator can the true value of transient pressure data be realised. Once undertaken, this approach can provide further benefit by converting the simulator into real time through a permanent connection to the measured data. This creates a digital twin that provides up to date information on the status of the pipeline or network which can be hosted remotely or locally. The data collecting infrastructure, expertise and software available can be combined to move from operating in a reactionary manner to system performance to Water companies truly taking control of their assets.

For more information and support with analysing and understanding pressure transient data, please contact:

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