

DEMONSTRATION 2

An X11 Industry Standard Implementation of the Telemetry Confidence Limit Analysis

Department of Computing,
The Nottingham Trent University,
Burton Street,
Nottingham NG1 4BU, U.K.

The Telemetry Confidence Limit Analysis (TCLAS) is an interactive programme developed at The Nottingham Trent University enabling the evaluation of the accuracies of computer simulations of water distribution systems. The TCLAS software quantifies the effect of inaccuracies of input data (in particular the inaccuracies associated with consumption estimates) on the calculated flows and pressures in the network. These Confidence Limits are independent of the simulation software that is actually used. The current version of the TCLAS system has been implemented using industry standard X11 graphics software and is available as a stand-alone utility on UNIX workstations or it can be ported as a network-accessible utility running alongside the third party simulation software.

TCLAS offers two major facilities:

- **Meter Placement Support;** by evaluating the improvements in simulation accuracies which are due to additional measurements in the distribution networks, TCLAS offers an interactive tool for optimal design of the telemetry system.
- **On-line Decision Support;** with the telemetry system in place providing data to the simulation software, the operator faces often difficult task of interpretation of the simulation results which are fluctuating as a result of random fluctuations of consumer demands. In on-line mode, TCLAS offers a facility of thresholding for significant (requiring operator's attention) and insignificant (caused by natural causes) fluctuations of network operating conditions.