

# US Private Sector VRS

Private sector Virtual Reference Station RTK GPS Networks (VRS) that encompass large regions are spreading rapidly in the US. Participating firms are often both user and a partner participating in the purchase, deployment and maintenance of selected base stations. I assist senior management in the planning, deployment, training and workflow-analysis associated with implementing VRS in nine offices in the Richmond, Washington D.C. - Baltimore metropolitan corridor. A VRS network offers an opportunity to move from compartmentalised, local-office focus to a uniform, corporate-wide systems approach. Achieving this requires examination of the operations of all offices, identification of best practices and then analysis and rethinking of survey protocols and workflow procedures.

A key consideration in establishing uniform regional workflow is the legal and litigation environment within which US private-sector land surveyors operate. Each office has a surveyor in charge who must consider repeatability, accountability (data trail), liability for damages due to error affecting both client and third parties, and profitability in workflow change. Acceptance of the VRS network seems to hinge on the accountability factor. A VRS-derived coordinate does not directly provide supporting observations, and for some surveyors this is unsatisfactory.

The use of a regional VRS network for daily surveying operations requires dependence on a complex interplay of real-time stand-alone network systems maintained by others. Base stations, network computers, cellular communications datalinks and the internet must each operate correctly and be synchronised. Failure in any part can bring VRS-based surveying to a halt or potentially introduce large errors in the work. Initial experience is that the VRS system is reliable and seems to offer repeatable, accurate positions and increased profitability through rapid position acquisition, reduced field-crew costs (one man, one rover) and reduced data-processing overheads in both preparation and post-processing.

Until recently survey operations decisions were the responsibility of the director of surveying for each office. Recognising the need for a broader perspective, our firm established a VRS RTK Survey Focus group that meets monthly to consider these issues from a corporate perspective. Further communication is carried out through email and a Team Share web area on the intranet. Systems approaches to creating uniform workflow across offices cannot depend on internal office communications alone for the training of staff and information dissemination. The firm has a fifty-year history of providing extensive support for education and training of staff. It already has in place considerable distance-education capability, using live video and internet technologies for the connection of offices nationally. These capabilities are being leveraged to assist surveyors in establishing a regional learning organisation with accelerated interoffice processes for training and dissemination of knowledge acquired through experience with VRS.

Learning to effectively and rapidly use and incorporate new technology into corporate workflow is critical if the benefits of large capital expenditure deployment are to be gained rapidly enough. That is, in terms of initial competitive advantage to support the next cycle of purchases, increase profitability through improved productivity and support development of new opportunities and markets for services.