

Electronic Transfer of Geotechnical and Geoenvironmental Data – The Concept

THE PROBLEM

It is accepted that we generally have insufficient geotechnical data. In addition, the data that we do have is often difficult to access by all but the originator, either due to time constraints or the inability to read the data into an easily assimilated form.

All too often, geotechnical data for a project will come from multiple sources, possibly obtained over a wide period of time. Boreholes will be in different presentation formats, making them difficult to compare, laboratory test data will come in a mix of hard copy, computer spreadsheet and even computer text files, which renders collation impossible, except by manual transcription. This confusion of data presentation format is illustrated in Figure 1.

THE SOLUTION

It was established in the early 1990's that major benefits would accrue if geotechnical data were to be available in electronic form. The challenge to develop such a format was taken up by the AGS in the UK in 1991. In 1992 the first version of the AGS format was published and rapidly became the accepted standard for the presentation of geotechnical data in electronic form.

The immediate effect of the AGS Format has been to eliminate the chaotic structure inherent in Figure 1 and replace it with an ordered structure typified by Figure 2.

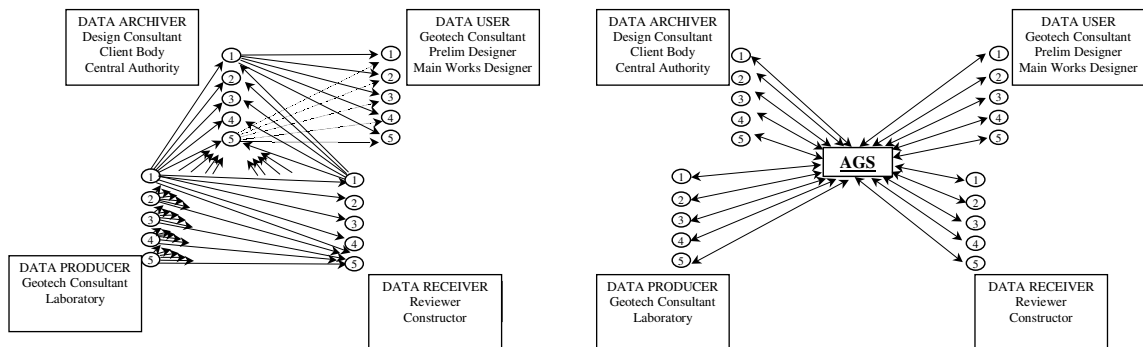


Figure 1. Before AGS

Figure 2. After AGS

In setting up the format, the AGS established a series of basic criteria to be met. These were that the format must:-

- be independent of any software package, proprietary or otherwise.
- be able to be incorporated into existing or future software either as an import filter or an export routine.
- be a file format protocol. It is NOT a database.
- be a simple ASCII text file.
- contain fundamental data only. Interpolated or derived data is excluded in order to avoid cluttering of data files.

By adhering to the above base criteria, universal access to the data by all is maintained.

ADVANTAGES TO DATA ACCESS IN ELECTRONIC FORM

The overriding advantage of the use of the AGS format is that data can be transferred efficiently and accurately between users with no transcription errors. It also ensures that data can be read and shared by the entire project team, therefore maximising its use. **There is an old adage that one should enter computer data once and once only and that it must be done as early in the process as possible, preferably by somebody else!**

Access to data in electronic form using appropriate software provides immediate access to the information. Data does not have to be manually collated, plotted or drawn. Data can also be drawn from multiple sources and combined into a single data set.

FLEXIBILITY AND ADAPTATION TO NEW ZEALAND NEEDS

The key to the widespread adoption of the Format has been its inherent simplicity and flexibility based on the use of the data dictionary concept. Within the international context, local requirements can be accommodated by the addition of new fields to existing groups and also the addition of new groups where required.

To adapt the format to New Zealand requirements, the NZGS established a working party tasked with identifying local requirements. This has resulted in the adaptation of the basic format developed by the UK AGS. The proposed New Zealand version of the format has been put out to consultation through a Peer Review Panel and the final draft is now available on the NZGS website.

SOFTWARE AVAILABILITY

As part of the consultation process, the leading suppliers of geotechnical database/data management software were involved. As a result, at least one of these suppliers is now able to provide NZ AGS compatible import/export routines.

WHAT CAN YOU DO WITH AGS DATA

Once the data is available in electronic form, it can be managed and output to a wide variety of applications:-

- Borehole logs
- Data plots
- Site plans and sections
- 3-D modelling
- Archiving

THE FUTURE

The current AGS data format is well established and has proven to be robust and reliable. However, it continues to develop. Work is underway on an XML based data transfer system, which will allow even greater benefits to be realised, although the practical application of this is still several years away.

AGS NEW ZEALAND

The current version of the Electronic Transfer of Geotechnical and GeoEnvironmental Data is currently available on the website. The working party welcomes any comments or feedback on the format as part of its continuing development.