*Title:
Thoughts on “Application Manual of Geophysical Methods for Engineering and Environmental Problems” - Sharing Japanese experience with Asian countries –

*Abstract:
SEGJ has published two editions of the “Application Manual”: in 2000 and 2008. At the end of the 20th century, some poor geophysical survey results were found in several areas in Japan, and we were concerned that geophysical survey technology might lose credibility. The “Application Manual” was created and published to standardize geophysical methods and usage. Ironically, we found some of these poor results were caused by the remarkable development of electronics technology. The widespread use of inexpensive PCs and software has made it possible to “automatically” derive answers without the need of knowledge on the principles and right procedures. For example, in the refraction method, poor results are often caused by the automatic reading of first-breaks, automatic correction of the travel-times and automated inversion analysis.

Eight years later, I thought we needed a guidebook to convey our experience to young engineers, as well as the standards. Accordingly, the “Application Manual” was revised to hand down the technology. I think experience is the history of failure. Therefore, I thought that it would be possible to train engineers and their clients with what we learned from our mistakes through a manual. Not all the technology is transferred by describing the standard, such as the survey planning, the wave generating method, and precautions during measurement when conducting PS logging. Japan’s geology is complex and very similar to the East Asian regions such as the Indochina Peninsula and Indonesia. Near surface geophysics for civil engineering developed in Japan is indispensable for developing high-quality infrastructure on this complex ground. We hope you to use the knowledge we have compiled in the East Asian countries where the geology is similar.

The next fully-revised edition of the 'Application Manual' is being prepared for publication in 2025. The parts on refraction seismic exploration and PS logging have already been revised. In this revision, we plan to further enhance the know-how gained from experience in applying geophysical surveys, such as engineer’s empirical judgment skills.