

# The Unmanned System: A New Menace to the Hydrographic Surveyor Profession?



The evolution of hydrographic surveying technology has been moving at a very fast pace over the last decade. The introduction of unmanned systems such as autonomous underwater vehicles (AUVs), unmanned surface vehicles (USVs), remotely operated underwater vehicles (ROVs), maritime autonomous systems (MAS) and marine drones has tremendously changed the landscape of the bathymetry surveying industry. Recently, most of these systems have been accepted and widely used in hydrographic fields. Apparently, the tendency of industry players to choose an unmanned system as an acquisition tool is not only driven by the capability of the unmanned system to achieve high standards of precision and accuracy, but also by the fact that such systems offer high-resolution data at a much lower operational cost, writes Mohd Razali Mahmud.

Whether we like it or not, technological advances cannot be prevented. However, this new system can also become a significant threat to the hydrographic surveying profession. Recently, the popular discussion topic over coffee and in office corridors is whether a career as a hydrographic surveyor is still relevant after almost all levels of data collection being taken over by the unmanned systems. The death of a profession is not a new thing. In the field of surveying itself, some professions have been taken over by technology. During the old days, we had survey recorders and calligraphers. Where are these professions now? Their job is no longer relevant in modern surveys. Thus, the advancement of electronic and robotic technology is likely to take away some of the fieldworkers' tasks. So it is possible that in a decade or two, a profession such as that of a hydrographic surveyor will slowly become irrelevant and maybe even extinct.

Nevertheless, it is important for hydrographic surveyors to keep abreast of the principle theory of these systems especially when applying them to specific hydrographic survey projects. It is now common for a hydrographic survey team to be comprised of relevant personnel from different fields, such as geomatics and geospatial experts, geophysicists, civil and computer engineers, in order to complement the different tools onboard a hydrographic survey vessel including the various unmanned systems available to execute the task in hand. The execution of unmanned systems in hydrographic survey projects depends on understanding the principle of the systems and therefore requires experts with a relevant background. The existence of unmanned systems supplements existing systems that the hydrographic surveyors are very familiar with and provides a choice to the hydrographic surveyors depending on the requirement of the projects.

As an academician, I believe that the profession of hydrographic surveyors is still relevant and has a great potential to keep growing. Nevertheless, the skills and expertise in the field of surveying needs to be more diverse. With the current trend of unmanned systems, hydrographic surveyors need to develop their knowledge in other areas, mainly electronic and computer programming. The knowledge in electronic and computer programming will be critical in the new era of surveying technology. Academic institutions must also embrace efforts to update their course modules following the surveying technology evolution, particularly the unmanned system technology.