3-D Imaging System

Researchers at the University of South Florida have developed a new 3-D imaging system to map underwater surfaces effectively and efficiently.

Interest in the profile of underwater surfaces has grown significantly in the past several decades. Indeed, the ability to map and detect features in the underwater environment has become of interest in the areas of science, resource exploration, and national defense, to name a few. This has led to the development of various types of instrumentation for imaging underwater areas of interest.
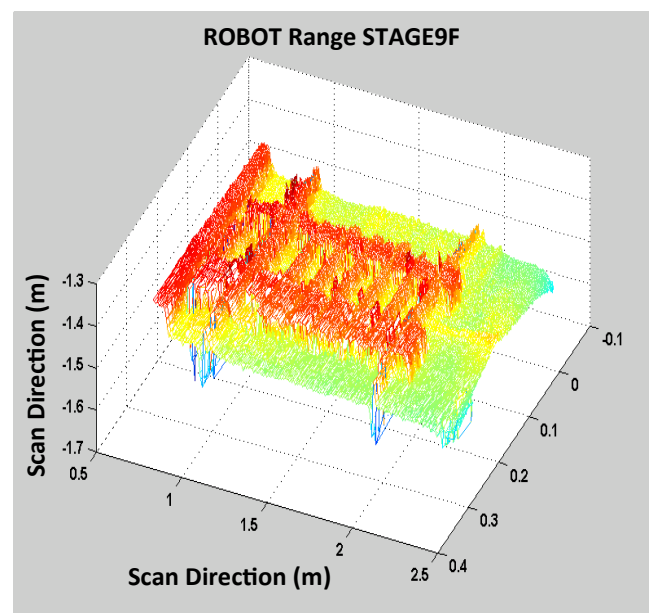
Many advancements, over the centuries, have enabled the evolution of underwater imaging. These include direct methods for observation such as scuba, underwater housing technology and vessels. Technology such as the electronic camera, photography, video recording and light sources, as well as invention of the laser and fluorometric analysis, have all improved underwater imaging. Additionally, more recent advancements in the fields of information processing, artificial intelligence and computer vision now allow for extraction or interpretation of useful information from raw imagery or data.

University of South Florida scientists have developed a new 3-D imaging system for mapping underwater areas of interest. It possesses a high resolution camera module with embedded image processor and functions by detecting the change in wavelength associated with light received from the object being scanned. It can analyze and scan a variety of objects, including the sea floor, objects resting on the sea floor, tethered objects, ship's hulls, seawalls, and floating objects. This system can also be scaled for use on land.

ADVANTAGES:

- **Dimensionally accurate**
- **Uses reflectance of fluorescence**
- **Tolerant to turbid water**
- **Profile camouflaged objects**

Novel Imaging System to Map Underwater Surfaces

ROBOT Range STAGE9F

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