PLOCAN, AN OFF-SHORE ENVIRONMENTALLY SUSTAINABLE INFRASTRUCTURE TO ACCELERATE OCEAN RESEARCH, DEVELOPMENT AND INNOVATION AT INCREASING DEPTHS.

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Abstract – The Canary Islands Oceanic Platform (PLOCAN) is a public infrastructure for research, development and innovation in the fields of ocean science and technology at increasing depths. Located East of Gran Canaria Island (Canary Islands, Spain), PLOCAN will provide rapid access to great depths at short distance from the shore, accelerating research and the generation of water column and deep-ocean knowledge. Specifically, PLOCAN will host a permanent deep-sea observatory, be a test-bed for innovative technologies, form specialists and provide training in the field and be a national base of manned and unmanned submersibles. PLOCAN's vision is focused on generation and exchange of science and innovations between the academic and the socio-economic spheres. PLOCAN will be a fully instrumented gate to the deep ocean, an efficient and cost-effective solution to test products and processes , and cluster private and public partnerships to face undersea challenges. Two years ahead of the planned official opening and start of operations, the academic world, entrepreneurs and corporations have already started to submit proposals to be included in the science and technology agenda. Activities will be essentially multidisciplinary, ranging from renewable energies, aquaculture, ocean observing fixed systems and submersibles, to biosciences and emerging technologies such as new materials and nanotechnologies. PLOCAN's vision is to be a true accelerator for marine and deep-sea research and development, with optimal conditions and full environmental guarantees.

Keywords – deep-sea, platform, environmental sustainability, science and technology, test-bed

OBJECTIVES

The main objective is to build and operate a fully autonomous oceanic platform dedicated to science and technology that contains a set of facilities and experimental laboratories. It will be placed at 50-100 m depth on the edge of the continental shelf, serving as a permanent access to the deep ocean using all kinds of vehicles, underwater machinery or instruments (autonomous, via cable or remotely operated) to observe, produce, take advantage of resources or install services at depth, with environmental guarantees. PLOCAN will open new opportunities for a great range of institutions in challenging areas that up to now only the oil industry could face.

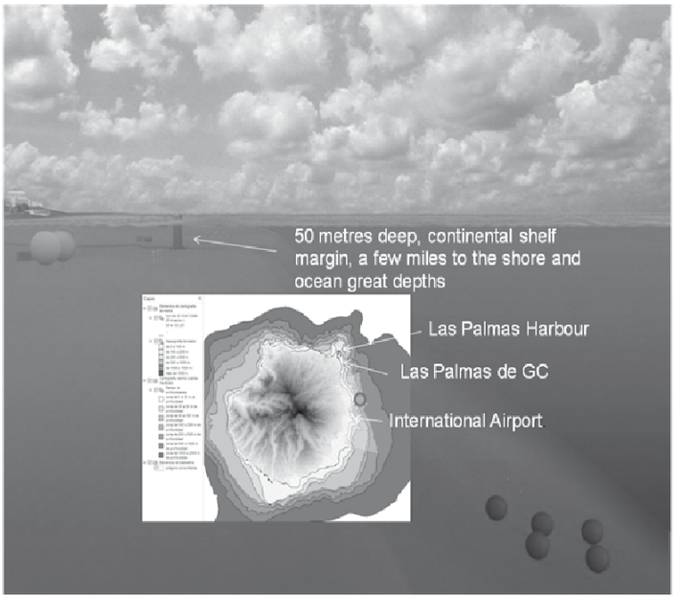

Fig. 2. Location of the platform

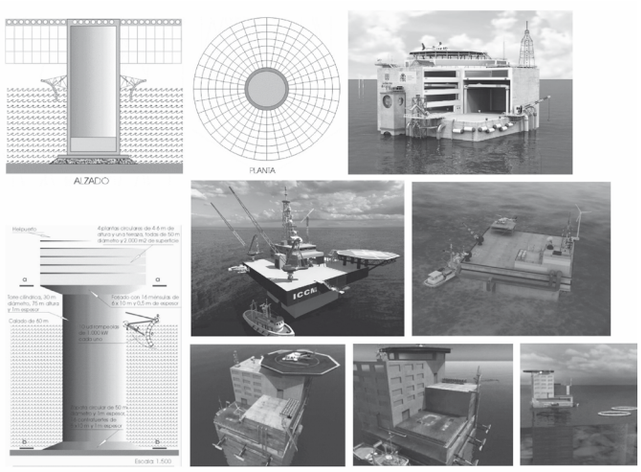

Fig. 1. Possible aspects of the future platform PLOCAN

Here is an overview of the objectives:

1. To provide a scientific and technological platform with the most effective means and conditions to perform and/or test observations and experiments at increasing depths.

2. To provide businesses with the best and in many cases the only test-bed for innovative activities in the deep ocean with adequate environmental guarantees.

3. To create the national base of vehicles and working tools for deep sea, operational and available on a permanent basis.

4. To provide a unique meeting space of excellence for the public and private scientific-technical community to accelerate research and innovation, to explore and contribute to the sustainable management of the deep ocean.

5. To provide training programs, from technicians to scientists, including specific formation and training to use the facilities and working devices, and access the deep ocean.

6. To test a public scientific-technical organization that can effectively manage highly skilled teams, complex and expensive instrumental devices and their relationship with innovative companies and socio-economic public and private institutions.

Finally, a practical feature is the capacity to respond to accommodation needs on-site. The platform will offer accommodation for about 30 persons with air-conditioned single and double cabin-type bedrooms and all expected amenities for long duration experiments - meeting rooms, restaurant, fitness center etc. The platform will be autonomous in terms of energy and water supply, and the strictest environmental standards shall be applied for inner and outer needs and activities. Operations are planned to start end of 2011.