CGPS Reference Station at l'Estartit for Monitoring Sea Level

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L'Estartit tide gauge is a classical floating tide gauge set up in this small town of NE Spain since 1990. Data are taken in graphics registers from which each two hours the mean value is recorded in an electronic support. In the framework of a Spanish Space Project, the instrumentation of sea level measurements has been improved by providing this site with a radar tide gauge and with a continuous GPS station nearby. This will have a significant incidence in the satellite altimeter calibration activities. Both the classic gauge and the radar sensor are working in parallel way and have been controlled each week. Also a quality control has been done to ensure the self-consistency of the records collected from both methodologies. The tide gauge heights are geo-referenced to a benchmark in the adjacent jetty identified as number 314 094 002 in the Cartographic Institute of Catalonia (ICC) classification (UTM coordinates X=517199.76m, Y=4655985.52m and Z=+1.72m from the zero reference height of the old tide gauge). The coordinates of this geodetic mark have been calculated in 1999 by a precise leveling survey in order to connect the benchmark to the local EU-REF sub-network that includes the permanent GPS IGS-ITRF station at Cap de Creus. The radar tide gauge is a Datamar 3000C device working at 26 GHz and a Thales Navigation Internet-Enabled GPS Continuous Geodetic Reference Station (iCGRS) with a choke ring antenna. It is intended that the overall system will constitute a CGPS Station of the ESEAS (European Sea Level) and TIGA (GPS Tide Gauge Benchmark Monitoring) networks.