

# **Web-Based Integrated Precise Positioning System Design and Testing for Moving Platforms in Offshore Surveying**

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## **SUMMARY**

Positions of points which are decided to drill exploration wells are defined after some feasibility studies in petroleum exploration activities carried out in offshore sea areas. For the wells that are planned to drill in the offshore sea areas, petroleum platforms (in shallow sea: jack-up platforms, in deep sea: semi-submersible, and in very deep sea: drillship) must be transported from another well location that was drilled before or from a port to new well location whose coordinates are predefined. Carrying this platform (called Rig Moving) to this location by its own engine or by trailer vehicles and locating the axis direction of the drilling rig of the platform to predefined well place inside of limits precisely are very important parts of whole study. Moreover, this platform must be oriented according to a predefined bearing. Equipments used in exploration activities which are carried out in offshore sea areas are very expensive. Cost of a well drilled in offshore is generally a number of hundred million dollars. Thus, even a small deviation from the planned route of the platform may delay whole study and cause extra costs. Also, because of the movements of semi-submersible platform that is conveyed to planned well location, if the axis of the drilling rig pass over the security circle limits (caused by environmental conditions, such as, waves, weather or other conditions, such as, excessive thrusters force of the power engine, erroneous real time positioning data etc.) the equipments may be injured and this situation may prevent whole study proceed. Correct real-time/DGNSS positioning (dynamic positioning) data is necessary in order to limit these movements in defined limits. In the scope of this study, it is targeted to develop a tool, equipment and a web-based software system that provides integration of positioning systems and prevents production of erroneous or inadequate real-time/DGNSS positioning data in order to navigate a petroleum platform while it transports between two locations and to track it dynamically where they are precisely positioned. Moreover with the support of web-based implementation of the system designed will provide online remotely monitoring availability for the moving platform activities in offshore. Therefore, in this paper system design and testing will be explained, experience gained will be shared and results achieved will be discussed in detail for such purposes.

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