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Drilling operation assistance system for geological and geophysical investigations, be means of process parameteres monitoring and drilling gases chromatographical analysis -SIMFOR-

Monitoring services for drilling and gas-logging operations, project realized by **IPA CIFATT Craiova** in collaboration with **ATLAS - GIP SA PLOIESTI**

In order to obtain information during the drilling process, the oil derricks have been equipped with monitoring devices, constituted by simple measure devices or by complex systems for parameters monitoring and recording.

The monitoring and recording of drilling parameters by means of such system has in view two main targets:

- The enhancement of drilling technological process by maintaining the installation at the optimal parameters;
- The creation of some necessary databases that will be used during the drilling process, during the subsequent analysis concerning the existence of hydrocarbons in the penetrated layers of the drilling hole and also as post-failure analysis after unwanted events.

The system and the auxiliary equipments are placed in a mobile cabin that is sectioned inside into two chambers: one for operation purposes and one as resting room.

The cabin can be transported to the oil-derrick with a common trailer used for container transport.

Once at the oil-derrick, the mobile cabin is installed near it, outside the hazardous area. All the transducers are installed on the oil derrick. Also the cables are connected between the transducers and the connection box placed on the cabin.

In the operation cabin section lies the system computer, the chromatograph for the analysis of the gases from the drilling mud and also a small laboratory for the analysis of the probes in ultraviolet rays.

The system is monitoring 40 parameters during the drilling process and generates two databases:

- one organized in respect to the depth of the drilling;
- one organized in respect to the elapsed time.

Based on these recordings can be made geological, geophysical or lithology interpretations and also post-failure analysis.

After some further processing and correlation with data acquired by other geophysical equipments, arise complex data about the subsoil of large areas that can be stored on CD and organized in libraries.