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SmartLab – a new concept of global geological laboratory service

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Globally there is a critical need for fast, reliable and affordable laboratory services for clients in mining, oil & gas industry, exploration and pollution decontamination. In most cases, the process of delivering the results to the customer needs several months. Moreover, the entire core sample storage and handling process „requires careful planning, archiving, high-level security and precise environmental and economic considerations.” [1] Sometimes the transportation of samples is forbidden and analysis can be accomplished only in a given country that can be more expensive and sometimes less reliable.

SMARTLAB is the GEOCHEM Ltd’s project for providing global geological laboratory service, where laboratory measurements and data interpretation are handled as two separable processes. Laboratory measurements can be automated to a great extent [2], and it is possible to involve specialists, living anywhere in the world in the interpretation process. The separation of the two processes means the significant reduction of costs and time, because the samples require no transportation and the measurements can be done by technician personnel, at the same time specialists are interpreting the results in their own offices. The realization of the project involves several segments, requires significant development work. It is necessary to build an energetically stable, generally automated environment (laboratory), to provide the safe transmission of large data volumes from any location (communication), a well organized research network (professionals) and an integrated relational database for their service, as well as a platform-independent surface for communication and interpretation.

The idea is that SmartLab can guarantee time–saving, cost effective business for clients by combining on-the-spot measurements and fast quality analysis made by local technicians in a portable, fully equipped, high-tech container or moving lab at the place of drilling site or anywhere. According to the client’s need it can be installed anywhere, because it is transportable by rail, ship or even airplane. The principle of working is the following: terminal computers in the on-the-spot lab serving only for raw data transport and control of equipments, they are online connected to the central secure server – practically in this case to GEOCHEM laboratory – via secure internet. Detailed interpretation and precise elaboration of status report for clients made by professionals everywhere in the world is organized by the company. The results are summarized in a report and are uploaded to an online platform. Full access is only granted if the payment of the pre-determined fee was completed through an online payment system (see in Fig. 1). With this solution the time to get the results on hand can be shortened from months to only a week and only data is transferred between the two locations by internet. This way the clients are in a position to shorten the time for making final and strategic decisions regarding the future of the field under exploration for a much more favourable price.

References:

[1] Chirag Rathi: Outsource Drill Core Storage To Increase Oil & Gas Operational and Financial Efficiency, Frost & Sullivan White Paper, 2015 www.frost.com

[2] NAGY, A., FEDOR, F., FEURER, V.: Purpose and limits of automation in laboratory practice, 5th HR-HU and 16th HU geomathematical congress "Geomathematics as Geoscience", 30 May-01 June, 2013, Mórahalom

