TOWARDS A GENETIC MODEL FOR THE QUATERNARY EVOLUTION OF THE BELGIAN CONTINENTAL SHELF (SOUTHERN NORTH SEA): INTEGRATION AND RE-INTERPRETATION OF EXISTING DATASETS

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Since the '80's the Belgian Continental Shelf (BCS) has been intensively investigated in the framework of several international projects. This resulted in one of the most dense regional seismic networks of the world. More than 16,000km of high-resolution seismic profiles are available in the data files of the Renard Centre of Marine Geology (RCMG). In addition, an extended series of cores are stored in the repository of the Belgian Geological Survey (BGS). Notwithstanding the amount of information available, apart from some punctual detail studies these data were never brought together, processed or interpreted in an integrated coherent way.

The goal of this study is to archive, integrate and to (re-)interpret the existing data sets in order to develop a genetic model for the Quaternary geological evolution of the BCS. The different steps will be: (1) Inventorisation and digitisation of the seismic data sets. The seismic data are of variable quality and most of it is only available in analogue paper format. All of the data will be listed and given a quality label. Thanks to the EC project Seiscanex, the paper rolls will be scanned and the obtained image files will be converted to a 'segy' format, which can then be incorporated in every interpretation workstation. (2) Seismo-stratigraphic interpretation of the seismic data. After implementing tidal corrections to the obtained segy-files, the seismic profiles will be imported into the Kingdom Suite interpretation workstation. Horizons will be picked and a seismo-stratigraphic interpretation will be performed. (3) Compilation, analyses and (re-)interpretation of the available cores and core descriptions. The existing cores have been described and analysed to a varying extent and with variable reliability. These data will be re-interpreted, if necessary, and made uniform in terms of description and interpretation of sedimentary facies and of depositional environment. (4) Integration and visualisation of seismic and core data. The seismic data will then be calibrated with the core data to obtain a sedimentological ground-truthing for every identified seismic unit. A 3D visualisation of all the integrated data is possible using software packages as Kingdom Suite and Fledermaus. And finally (5) Development of an evolutionary model. The different facies divisions and sediment units will be fit in a chronological and chronostratigraphic context, with the aim to develop a genetic evolutionary model for the BCS during the Late-Quaternary.

As the BCS appears more often in the news nowadays, regarding issues as the construction of offshore windmill parks, requests for extending sand and gravel extractions etc., reliable knowledge of the nature and composition of the shallow subsurface of the BCS, which is closely related to its evolution, is indispensable.