

Sequence Stratigraphy and Chronostratigraphy in the Middle East – Potential Global Consequences

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Regional research across the Arabian Plate over the past eight years has continued to refine the sequence stratigraphic framework for the Middle East. The authors have published details of 65 maximum flooding surfaces (MFS) identifiable across the Arabian Plate (Sharland et al 2001, 2004) and have identified some 40 extra MFS in proprietary work. In addition, we routinely pick the associated sequence boundaries (SB) and maximum regression surfaces (MRS) within each depositional or genetic stratigraphic sequence. Comparison of these surfaces to other global regions confirms that many equivalent surfaces on other continental plates demonstrably occur in the same biozone, thereby suggesting that global eustatic changes are proven and hence that a global sequence stratigraphic model can be proposed.

While this improved and robust sequence stratigraphic framework has obvious implications for hydrocarbon exploration and exploitation, it has other more academic applications. The purpose of this poster is to show that the framework has the potential to test the relationships between standard stratigraphic surfaces (MFS, SB, MRS) and the boundaries to Global boundary Stratotype Sections and Points (GSSP's).

Examples from platformal and basinal settings on the Arabian Plate are presented. These examples compare the detailed stratigraphic surfaces that we routinely map to the global chronostratigraphic timescale. On the basis of these, we suggest that with further work, it will be possible to tie industrial subsurface sequence stratigraphic schemes more closely to the global chronostratigraphic timescale.