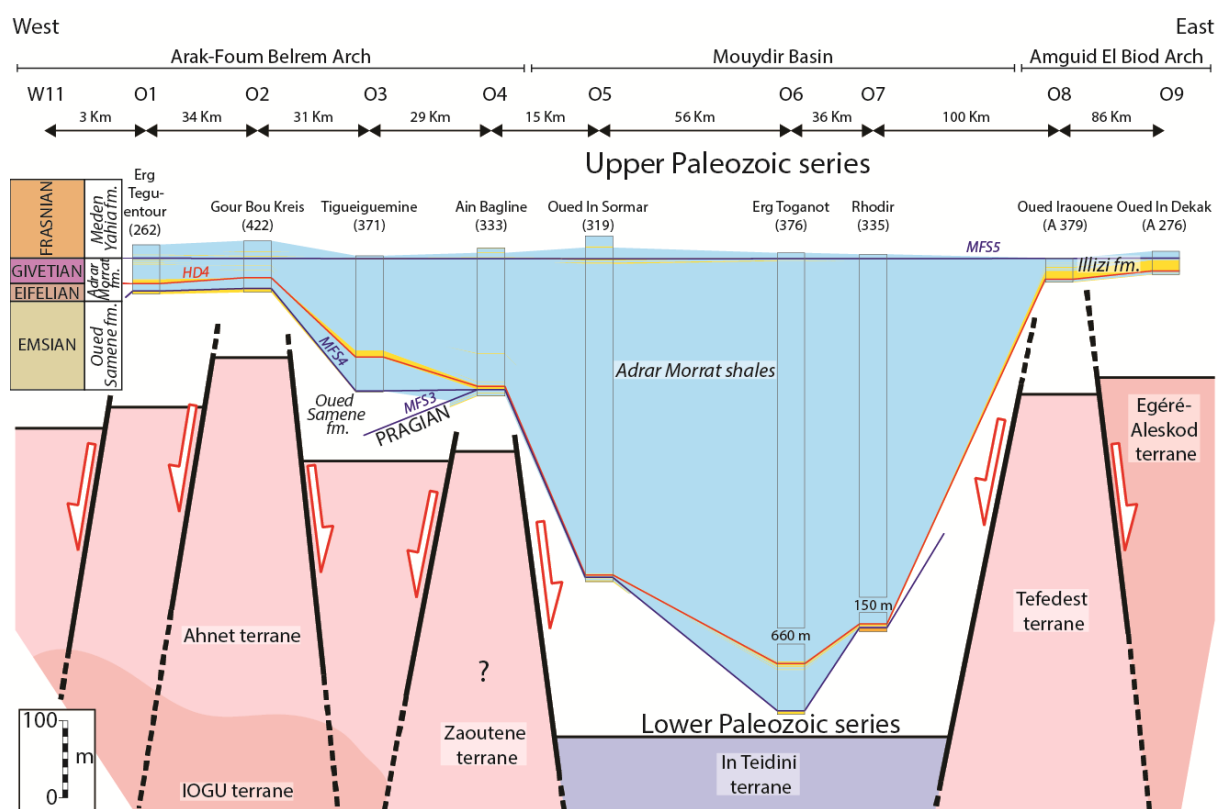
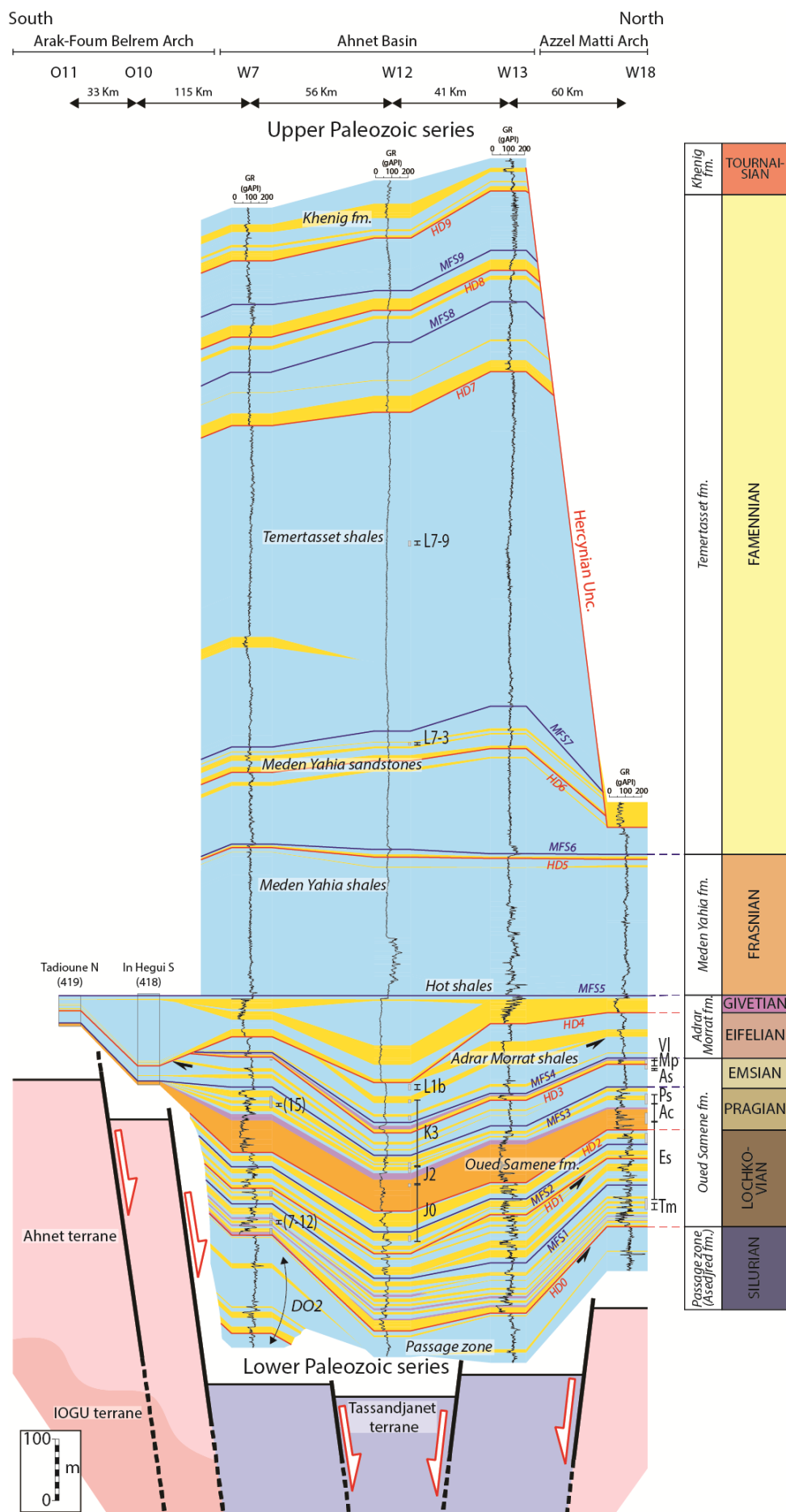


Supplementary data 1: Schematic synthesis of the integrated method of basin analysis.



Supplementary data 2: SE–W cross-section between the Arak-Foum Belrem arch, the Mouydir basin and the Amguid El Biod arch. Outcrop cross-section correlations and biostratigraphic calibrations are based on the compilation of published papers (Wendt et al., 2006, 2009a). Interpretation of the basement is based on Figs. 1, 3 and supplementary data 4. Outcrop location is in Fig. 3.



Supplementary data 3: N–S cross-section in the Ahnet basin between Azzel Matti arch and Arak-Foum Belrem arch; Well W7 biozone calibration from Azzoune's (1999) internal report based on Boumendjel's (1987) classification: biozones 7–12 (Lochkovian, Lower Devonian), biozone 15 (Emsian, Lower Devonian). Well W18 biozone calibration is based on Kermadji et al., (2009): biozone (Tm) *tidikeltense microbaculatus* (Lochkovian, Lower Devonian), biozone (Es) *emsiensis spinaeformis* (Lochkovian-Pragian, Lower Devonian), biozone (Ac) *arenorugosa caperatus* (Pragian, Lower Devonian), biozone (Ps) *poligonalis subgranifer* (Pragian-Emsian, Lower Devonian), biozone (As) *annulatus svalbardiae* (Emsian, Lower Devonian), biozone (Mp) *microancyreus protea* (Emsian-Eifelian, Lower to Middle Devonian), biozone (Vl) *velatus langii* (Eifelian, Middle Devonian). Well W12 biozone calibration from Abdesselam-Roughi's (1977) internal report is based on Boumendjel's (1987) classification: biozone J (Pragian, Lower Devonian), biozone K (Emsian, Lower Devonian), biozone L1 (Eifelian, Middle Devonian), biozone L7-3, L7-9 (Frasnian-Famennian, Upper Devonian). Interpretation of the basement is based on Figs. 1, 3 and supplementary data 4. Well location is in Fig. 3.

Supplementary data 4: Georeferenced geochronological dating data compilation of the study area.