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The Kingdom of Morocco wishes to inform the Secretary-General that certain plans for extending the continental shelf submitted by neighbouring States with adjacent or opposite coasts (Spain, Portugal, Mauritania and Cabo Verde) include maritime and submarine areas situated in the Atlantic, in particular, the continental shelf, on which no maritime boundary delimitation agreements have as yet been drawn up between the Kingdom of Morocco and the aforementioned neighbouring States.

In this briefing paper and in studies it is currently carrying out, Morocco has noted that, in both the northern and southern sections of its Atlantic margin, areas attached to its extended continental shelf overlap with areas of the continental shelf claimed by one or more neighbouring States in submissions to the Secretary-General. Morocco has also noted that the areas mentioned in these

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The Permanent Mission of the Kingdom of Morocco to the United Nations takes this opportunity to convey to the Secretary-General the renewed assurances of its highest consideration.

New York, 29 July 2015

**Kingdom of Morocco**

**Briefing paper on the Atlantic continental shelf  
of the Kingdom of Morocco beyond 200 nautical miles (200 M)**

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This briefing paper provides a summary of the analyses and results of the work undertaken to date by the Kingdom of Morocco concerning the delimitation of the outer limit of its Atlantic continental shelf beyond 200 nautical miles (200M) from the baselines from which its territorial sea is

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To the north of the Moroccan Atlantic margin, a clear area at the base of the slope can be identified on the northern flank of the submarine elevations south of the Horseshoe abyssal plain (Ampère seamount). Within the base of the slope, the location of the foot of the slope can be identified precisely at the point of maximum change in the gradient at its base.

To the south, given the very narrow slope angle characterizing the Mauritanian northern continental margin, methods other than a determination based solely on

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North America and Africa began to separate in the Middle to Late Triassic, evolving into seafloor spreading at 180-170 Ma. Magnetic anomalies associated with the seafloor spreading phase and fracture zone traces were utilized to document the history of the opening of the central Atlantic Ocean. In addition, the seismic characteristics of the upper crust, the location of salt domes (or diapirs), and magnetic lineations were all used to map the transition from continental to oceanic crust along the Moroccan Atlantic margin.

To the north of the Moroccan Atlantic continental margin, the Horseshoe abyssal plain is situated at 35-37° N, immediately south of the Eurasian- African plate boundary. This plain is surrounded by a seamount chain: the Gorringer ridge and the Hirondele seamount to the north, the Madeira-Tore ridge and the Josephine seamount to the west, and the Ampère and Coral Patch seamounts to the south. Wide-angle seismic modelling and dredging results suggest that the Gorringer ridge is uplifted oceanic crust resulting from the convergence of the African and Eurasian plates along the boundary. Seismic reflection profiles and modelling of acoustic buoy data reveal a sedimentary series up to 2 km thick within the Horseshoe abyssal plain.

Geophysical and geological data compiled from various sources was utilized in the preparation of this briefing paper and in a provisional technical and legal analysis of the configuration of the continental margin/continental shelf. Data sources include the Geophysical Data System (GEODAS)<sup>1</sup> of the National Geophysical Data Center in Boulder, Colorado, as well as leading United States universities and European research centres. This data was uploaded and used in the Geocap<sup>2</sup> software. The information examined for the purposes of this preliminary document includes (single- and multi-beam) bathymetry, single- and multi-channel seismic lines, refraction seismic data (from seismographs and acoustic buoys), very high-resolution (pinger) seismic profiles as well as analyses and geological models extracted from published literature. Bathymetric data is taken from free-access databases as well as academic publications. Seismic data includes lines acquired in offshore oil and gas explorations of the Office National des Hydrocarbures et des Mines (ONHYM), as well as all the available academic data. Results and analyses contained in the 2014 ONHYM report on the continental shelf were also integrated into this preliminary document.

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<sup>1</sup> <http://www.ngdc.noaa.gov/mgg/mggd.html>

<sup>2</sup> <http://www.geocap.no>

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All the available seismic data was compiled and analysed. This data comes from three main



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deep-water margin vary with the continuous accumulations of turbidity currents and debris flows from seabed erosion on the shallow platform adjacent to the coast. These sedimentary processes are well documented in geological and geophysical studies and interpretations, including drilling, carried out in the region. The team in charge of the project mapped the distribution of these active and passive sedimentary processes (slides, gravitational collapse, channel and levee formation, channel erosion...) along the margin. These events were, in turn, interpreted to establish the limits of the area at the foot of the slope, where a number of feet of the slope were precisely identified using the general rule applied by the Commission. It was then possible to compare the results of applying each of the two formulas for establishing the outer edge of the continental margin in accordance with paragraph 4(a) of article 76. In general, the most optimal points are situated beyond the 350M constraint line defined in article 76, paragraph 5, and consequently, the fixed points which define the outer limit of Morocco's continentacc 0 Tw28.2