

Grids & Datums

REPUBLIC OF MALI

by Clifford J. Mugnier, C.P., C.M.S.

“Mali is the cultural heir to the succession of ancient African empires—Ghana, Malinké, and Songhai—that occupied the West African savannah. These empires controlled Saharan trade and were in touch with Mediterranean and Middle Eastern centers of civilization. The Ghana Empire, dominated by the Soninke or Saracolé people and centered in the area along the Malian-Mauritanian frontier, was a powerful trading state from about A.D. 700 to 1075. The Malinke Kingdom of Mali had its origins on the upper Niger River in the 11th century. Expanding rapidly in the 13th century under the leadership of Soundiata Keita, it reached its height about 1325, when it conquered Timbuktu and Gao. Thereafter, the kingdom began to decline, and by the 15th century, it controlled only a small fraction of its former domain. The Songhai Empire expanded its power from its center in Gao during the period 1465-1530. At its peak under Askia Mohammad I, it encompassed the Hausa states as far as Kano (in present-day Nigeria) and much of the territory that had belonged to the Mali Empire in the west. It was destroyed by a Moroccan invasion in 1591. Timbuktu

1960. The federation collapsed on August 20, 1960, when Senegal seceded. On September 22, *Soudan* proclaimed itself the Republic of Mali and withdrew from the French Community” (*Background Note: Mali, U.S. Department of State, 2010*).

Slightly less than twice the size of Texas, Mali is bordered by Algeria (1,376 km) (*PE&RS, October 2001*), Burkina Faso (1,000 km) (*PE&RS, January 2005*), Guinea (858 km), Côte d’Ivoire (532 km) (*PE&RS, February 2006*), Mauritania (2,237 km) (*PE&RS, June 2009*), Niger (821 km), and Senegal (419 km) (*PE&RS, May 2010*). The terrain is mostly flat to rolling northern plains covered by sand; savanna in the south, and rugged hills in the northeast. The lowest point is the Senegal River (23 m), and the highest point is Hombori Tondo (1,155 m) (*The World Factbook, 2010*).

There are no known geodetic triangulation arcs in the entire country of Mali. Mapping has been accomplished of local cities such as Bamako and Timbuktu (*Tombouctou*) by the local *L’Institut Géographique National du Mali*, but the majority of topographic mapping is based on

“There is no known geodetic datum other than some recent references to WGS 84. The Mali IGN does picture one Wild Heerbrugg GPS receiver in its inventory.”

was a center of commerce and of the Islamic faith throughout this period, and priceless manuscripts from this epoch are still preserved in Timbuktu. The United States and other donors are making efforts to help preserve these priceless manuscripts as part of Mali’s cultural heritage. French military penetration of the *Soudan* (the French name for the area) began around 1880. Ten years later, the French made a concerted effort to occupy the interior. The timing and resident military governors determined methods of their advances. A French civilian governor of *Soudan* was appointed in 1893, but resistance to French control did not end until 1898, when the Malinké warrior Samory Touré was defeated after 7 years of war. The French attempted to rule indirectly, but in many areas they disregarded traditional authorities and governed through appointed chiefs. As the colony of French Soudan, Mali was administered with other French colonial territories as the Federation of French West Africa. In 1956, with the passing of France’s Fundamental Law (*Loi Cadre*), the Territorial Assembly obtained extensive powers over internal affairs and was permitted to form a cabinet with executive authority over matters within the Assembly’s competence. After the 1958 French constitutional referendum, the *Republique Soudanaise* became a member of the French Community and enjoyed complete internal autonomy. In January 1959, *Soudan* joined Senegal to form the Mali Federation, which became fully independent within the French Community on June 20,

local astronomic control (Astro points) used to orient photomosaics and to produce form line topography such as the *Fond topographique ou planimétrique*. Currently published maps of Mali are referenced to the Clark 1880 ellipsoid where $a = 6,378,249.145$ meters, and $1/f = 293.465$ and the grid shown is the UTM. There is no known geodetic datum other than some recent references to WGS 84. The Mali IGN does picture one Wild Heerbrugg GPS receiver in its inventory. Other grid systems that may have covered portions of Mali are the South Sahara Lambert Zone and the Fuseau Côte d’Ivoire TM Belt. The parameters of the South Sahara Lambert Zone are: Central Meridian (λ_o) = 5° 00’ W, Latitude at Origin (ϕ_o) = 20° 00’ N, Scale Factor at Origin (m_o) = 0.999071, False Easting = 1,600 km, False Northing = 600 km. The Fuseau Côte d’Ivoire TM Belt parameters are: Central Meridian (λ_o) = 6° 30’ W, Latitude at Origin (ϕ_o) = 0° 00’ N, Scale Factor at Origin (m_o) = 0.999, False Easting = False Northing = 1,000 km. The Mali IGN does not seem to be an active participant in the AFREF geodetic program for the African continent.



The contents of this column reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the American Society for Photogrammetry and Remote Sensing and/or the Louisiana State University Center for GeoInformatics (C²G).