

How extensive is the network/system?

The ideal distribution is pegged at a range interval of five kilometers from each geodetic control point or an average of three GCPs per *barangay*. With about 42,000 *barangays* in the whole country, the total requirement sums up to approximately 126,000. All adjusted old maps and surveys are also integrated into the new network.

What are the legal basis for the implementation of PRS92?

PRS92 was first implemented through EO 45 under the Ramos Administration. Subsequently, it was amended by EO 280 extending its full implementation by 2005. In order to complete the adoption and integration of old surveys into the system until year 2010, EO 321 was issued by President Gloria Macapagal-Arroyo.

Who are tasked to implement EO 321?

The DENR, *through the PRS92 Program Steering Committee*, oversees the overall implementation of EO 321, allocates the necessary funds, and issues implementing guidelines. The NAMRIA, Lands Management Bureau and *the DENR Regional Operations Committees* are the primary agencies responsible in executing the Order.

How is PRS92 implemented?

The NAMRIA establishes and maintains the primary (first and second-order) control points, which are then densified by the DENR Regional Composite Survey Teams by establishing third, fourth and other lower-order control points. Using a transformation formula, these and previously established control points are integrated into the PRS92 network. All existing surveys and maps of

the DENR are also being integrated into the system. The ultimate objective of the program is for all surveys and maps in the country to be compliant with the PRS92 standards.

DENR Administrative Order No. 2005-13 provides the overall guidelines in the implementation of the PRS92 program.

What are the future plans of the PRS92 program?

To provide better user access to geodetic network information, the DENR plans to upgrade the current geodetic control database into a web-based Geodetic Network Information System (GNIS) that will have both central and regional operations. The establishment of continuously operating reference stations, generally known as Active Geodetic Stations (AGS), is also being envisioned to expedite the densification work and provide real-time positioning services to user communities. Research and development activities shall continue to gather inputs towards the establishment of an accurate Philippine geoid model and/or transition to a geocentric datum.

What will happen if PRS92 would not be implemented ?

The absence of spatially-oriented geographic information can result to inefficiency/inaptitude in implementing and managing the business of government and private organizations and may cause catastrophic outcomes.

A Primer on Philippine Reference System of 1992



FOR INQUIRIES



DENR PRS92 Program Steering Committee

Office of the Undersecretary for Lands
DENR, Visayas Avenue, Diliman, 1100 Quezon City
Tel. No. (63-2) 929-6626 E-mail : web@denr.gov.ph
URL: www.denr.gov.ph

The PRS92 National Secretariat

Development Studies and Standards Office
National Mapping and Resource Information Authority
Lawton Avenue, Fort Bonifacio, Taguig City
Tel. No. (63-2) 810-5470 E-mail : dsso@namria.gov.ph URL: www.namria.gov.ph

PRS'92

Background

Surveying is the art and science of accurately determining the position of points and the distances between them. It has been an essential element in the development of human environment since the beginning of recorded history, and is a requirement in the planning and execution of every form of construction. Its most familiar modern uses are in the fields of transport, building and construction, communications, mapping, and the definition of legal boundaries for ownership.

Geodetic surveying is the branch of surveying in which the size and shape of the earth is considered. Primarily, geodetic surveying aims to establish a basic geodetic control network that serves as the framework of all kinds of surveying and mapping.

A national geodetic control network provides a basis for accurate surveying and mapping of natural resources and of administrative and cadastral boundaries. These surveys and maps are prerequisites for better planning and judicious utilization of land and natural resources, and for more efficient land administration policies.

Before 1992, the national geodetic control network was known as the Philippine Geodetic Network (PGN). It was comprised by narrow chains of coastal triangulation and quadrilaterals. The network was established by the United States Coast and Geodetic Survey during the period 1901-1946 primarily for the provision of control for hydrographic surveying and charting and later on extended inland. From 1950 onwards, establishments of geodetic control points (GCPs) were performed by the former Philippine Coast and Geodetic Survey (now the Coast and Geodetic Survey Department of the National Mapping and Resource Information Authority).

However, the ideal function and role of PGN was vaguely portrayed. Limitations of surveying

instruments resulted in difficulties in expansion. Local networks were unconnected or were unreliably connected to the national network. These situations contributed to ambiguous boundaries where overlays and gaps inevitably occurred.

The growing need for a suitable spatial framework to support integrated surveying and mapping activities necessitated the improvement of the existing network. Supporting this vision was the geodetic survey component of the Natural Resources Management and Development Project, an Australian-assisted project of the Department of Environment and Natural Resources (DENR) that started in 1988. With this component, a new network was installed.

The Philippine Reference System of 1992 (PRS92) was then adopted in 1992 under Executive Order (EO) No. 45 of the Ramos Administration. This new national geodetic network is an upgraded version of the PGN. It has a higher precision standard of a homogeneous geodetic network which uses Global Positioning System (GPS) technology in acquiring and representing facts about land data and information.

What is PRS92?

PRS92 is a homogeneous national network of geodetic control points (GCPs), marked by survey monuments or *mojons*, that have been established using GPS technology. GPS is an all-weather, high precision, global satellite positioning system that revolutionized navigation and surveying operations.

By virtue of EO 45, PRS92 became the standard reference system for all surveying and mapping activities in the Philippines. The order also mandated that all new surveys and maps shall be referred to the new network and all old surveys shall be integrated into it.

How significant is PRS92 to national development?

PRS92 serves as the fundamental component of the country's spatial data infrastructure. It derives its significance from being an aid to ensure a unified, consistent and reliable geographic information database used in many planning and policy/decision-making activities of both government and private organizations. These activities include land reform and administration, infrastructure and energy development, social and environmental initiatives, marine and ocean affairs, disaster and risk mitigation, scientific and engineering studies, and other related policy agenda geared towards good governance, poverty alleviation, sustainable development, social justice, public order and safety, and economic growth, among others.

Who are the stakeholders and beneficiaries of PRS92?

The primary stakeholders of PRS92 are all government agencies engaged in surveying and mapping like the DENR, the Department of Agriculture, the Department of National Defense, the Department of Public Works and Highways, the Department of Transportation and Communications, the Department of Agrarian Reform, the National Commission on Indigenous Peoples, and other agencies having interest in mapping.

Private surveyors, foresters, and academic institutions are also major users. Private and public landowners and fisherfolks are the major beneficiaries while the general public that is benefiting from the programs of the mentioned government agencies is the indirect beneficiary.

PHILIPPINE REFERENCE SYSTEM OF 1992