GEOInformatics
Magazine for Geo-IT Professionals

The Natural Area Coding System uses its highly efficient representations of locations and areas to unify and connect the information obtained from all the location related products and services such as yellow pages, maps, GPS, GIS, postal services, etc, and makes all these friendly to both professional and consumers. For example, even printed street maps with their locally defined map grids are not directly connected to topographic maps with UTM grids, not to mention GPS receivers.

GeoInformatics questions
Dr. Xinhang Shen, President of NAC Geographic Products Inc.

GeoInformatics: What is Universal Address System? How does it work?

Dr. Xinhang Shen: The Universal Address System is derived from the Natural Area Coding System that generates highly efficient universal area codes called Natural Area Codes (NAC) which can represent both a point location (a relative small area) and an area. A two-character NAC represents an area about 1000 km in length and width like a province; a four-character NAC represents an area about 30 km in size like a city; a six-character NAC represents an area about one square kilometer like a street block; an eight-character NAC represents an area about 30 meters in size like building; a ten-character NAC can uniquely specify every square meter on the earth. An eight- or ten-character NAC is also called a Universal Address because it can uniquely specify every address in the world. Natural Area Codes can be used as area codes, addresses, geographic coordinates, map grids, property identifiers and postal codes for the entire world. They are unified and highly efficient representations of all these codes. They can also be directly pinpointed on all kinds of maps with Universal Map Grids and navigated with GPS receivers.

GeoInformatics: How is it being implemented?
Dr. Xinhang Shen: Since the system is defined by a set of mathematical algorithm on the datum of WGS-84, they can be easily converted to and from other geographic coordinates such as longitude/latitude. Anywhere geographic coordinates are used, they can be implemented and make the systems more user-friendly and efficient.

GeoInformatics: Who is interested in this concept and using it around the world? examples?
Dr. Xinhang Shen: There are already quite a few implementations in the world such as Somaliland which has used NAC as national standard for addresses/postalcodes/property identifers, SafeAngel of UK uses the system to power its location based service middleware, GeoDiving of Canada uses the system to represent the locations of all the points of interest of geo-diving, Lupine Logic of US uses the system to provide an easy user interface that allows users to specify locations and areas with NAC, etc.

GeoInformatics: What sort of geospatial applications do you see benefiting from Universal Address System?
Dr. Xinhang Shen: Almost all geographic related products and services can benefit from the system because the system make all the representations of locations and areas human friendly, efficient and easy to remember/communicate, unlike longitude/latitude coordinates that only computers can digest their meaning. For eample, using a NAC (usually four characters) instead of four decimal longitude/latitude coordinates to represent an area can significantly ease human brains in remembering the representation and simplify the communication of accurate location/area information between human brains and computers.

GeoInformatics: What types of software does it work with? GIS? Mobility products?
Dr. Xinhang Shen: All GIS, GPS, navigation systems, cellphones, cameras, printed maps, yellow pages, courier/postal sorting systems, fleet/taxi management systems, and management systems of utilities and public works can be enhanced by the system. For example, the street light management system can use Universal Addresses to represent individual street lights so that repair persons can orally communicate the location of each street light and use GPS to find it.

For more information about NAC: http://www.nacgeo.com/nacsite/