

**The “printer map kiosk” of the Spanish CNIG project:
CARTOEXPEND.**

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ABSTRACT

The Spanish CNIG is boarding in and 24x7 system mapping utility to satisfy the cartographic map demand in no-digital support, of course in paper print-copy.

Not is a secret that the commerce of the classic support topographic maps has a constant demand although not increasing but yes very important. All NMA's in the world have the responsibility to satisfy this demand but the ways of reached to end-user are multiples and different in each case or position in the market. Nowadays the e-commerce is the most popular way to acquire all kinds of products, but there is one with the availability is very selective: the maps. The people want the topographic map immediately that is in the city, county, country, estate, etc., but the shopping is closed or not existing in these geographic point where exists the demand or potential demand of the end-user: tourist, business people, possible gift?,... The “point” had that to be very closed to potential buyer and it should is ever open also as possible. The “points” is clear which are: train stations, bus stations, airports, commercial hall, travel agencies, National Park's, beach, governmental offices, public libraries, and one long etcetera.

One way to solve the situation to acquired and buy one copy of the map is the creation one device autonomous (no-attendance unit device) how local service of printer maps. This idea is the “printer map kiosk” of the CNIG project: CARTOEXPEND.

Using de National Topographic Mapping 1/25.000 (MTN25) in digital raster format of the National Geographic Institute (IGN), the IGN is the NMA of SPAIN, the CNIG have created one device with the functionality of to printer one copy map on-demand using a device who not is more that one expeditor of maps.

The “CARTOEXPEND” project is the Spanish acronym of the project and the full system consist of and power PC, one high quality and speed printer device with and screen touch, one printer to ticket and a reader device of credit card, all it connect to network of CNIG and all it in one metallic and ergonomic and very attractive structure. The research and develop operations (R+D) had occupied six month: Data Base structure and the DBMS. All project had finish in 12 months and the prototype is already operational. The CNIG has planning to scatter 40 units in the Spanish national geography in the 2007 year.

The commercial operations have two possibility: the buyer can pay by VISA card way or by Movipay. The commercial transaction is a secure operation and the

CARTOEXPEND system have one secure phone unless wire connexion with a local Internet Provider Service (IPS) in each region where the device can be installed. The operation of maintenance (paper and ink-toner reposition and load new release of digital data) is made to people of the Regional Office of the IGN. Each unit of CARTOEXPEND is integrated in the Virtual Private Network (VPN) of the CNIG, this permit the full control of the system: real state, functionality, state of repositories, re-load, control of traffic and digital connexion quality, control of digital bank transactions, management of system and application, control of Data Base, etc.

The system has been made in open source software an UNIX operative system. The Graphic User Interface (GUI) is made in Java and it is multilingual in all step of navigation and can work in the different languages used inside Spain and the English. The the DBMS is MySQL. The functionality of the GUI is friendly and very easy to use. The user can select the sheet of your selection way touch in the screen where is offered to search the city inside one autonomous region on Spain or in a province of these. The process use the gazetteers of IGN to made this operation and show in the screen the localization of the sheet in the mesh of the distribution of the MTN25 basic series of IGN. The system show in the screen nine images in a 3x3 matrix, the interest one sheet is in the centre. The user can select-it which of the nine one showing. The next steps way the user just the final process of the commercial operation o cancel in every time the same y proceeded with another search or abandon the system. The system return by itself to the main screen is not is in use in three minutes waiting the next operation o next client. The system noted to client the process of printer and the ending of the operation and offers to resume to searching or buying another print copy.

This CARTOEXPEND system is extremely utile in its 24x7 availability, it permit the access to cartography of immediately way without waiting and is a autonomous device with independence of attendance of any people. It can work isolated and alone giving services a la society in site where is lot off cost and expensive to made it.

The system is open to a wider types of cartography: thematic, street, city maps, etc. The next generation of CARTOEXPEND project will include the CARTOCIUDAD data project (another project of IGN with street data), orthoimages 1/10.000 with source in the PNOA (National Project of Aerial Orthofotography) project of IGN, this is a bi-annual project to produce digital data to 1/10.000 scale of detail. This evolution of CARTOEXPEND project will be management vector digital data with a Geographic Information System (GIS) open source.