

Topic	What to prepare and provide if seismic site selection is purchased?
Author	Amadej Trnkoczy (formerly Kinometrics SA); E-mail: amadej.trnkoczy@siol.net
Version	Sept. 1999; DOI: 10.2312/GFZ.NMSOP-2_IS_7.1

If seismic station site selection procedure is purchased as a part of services along with the seismic network equipment, the purchaser should prepare several logistic things to assure efficient work of the manufacturer's experts. Note that these services are usually paid by the time the experts work on site selection for a new seismic network and that site selection is a 'stretchable' process. The more time (read "money") one spends on it, or the more efficiently one works during a given time period, the better the station sites and, consequently, the network performances will result. Therefore, it is of direct benefit to the customer to consider carefully all the required issues and to get together all the necessary information and working material, as complete as possible under the given conditions in the particular country. The seismic network purchaser should prepare the following:

- a preliminary and approximate proposal of seismic network layout based on the goals of the network;
- a general-purpose "high school type" topographical map of the whole region of the future network with color representation of terrain altitude (basic topographical display of the region);
- regional (and local, if available) geological maps covering the region of the network;
- map of past seismic activity in and around the region where the network is planned, with instrumental (if any) and historic data be included;
- seismo-tectonic map of the region (if available);
- 1:50.000 or 1:25.000 scale topographic maps covering the entire network region for RF profiling purposes for telemetry seismic systems (1:50.000 scale maps are the best; 1:25.000 maps are better for fieldwork if there is no RF telemetry planned in the network). Get permission to export such maps if they are under export restriction, as these will be needed by the site selection provider for initial studies before fieldwork starts, particularly if the network is an RF telemetry system;
- a state-of-the-art roadmap of the country for finding easy access to potential sites during fieldwork. Try to find the latest edition of such map. Road infrastructure changes fast in many developing countries;
- 1:5.000 scale maps (or at least 1:25.000 if 1:5.000 are not available) of the area surrounding the sites in case shallow seismic profiling of potential seismic sites is planned;

- climatic data in the form of maps or tables published in annual or decade reports from the country's meteorological survey (data should include precipitation, wind, insolation - if seismic stations will be powered by solar panels -, and lightning threat information such as isokeraunic maps or number of storm days per year).
- knowledgeable staff members from the institution that will operate the network as well as well informed local people acquainted with local conditions at each potential station site. The member(s) of the responsible institution working in the field, together with manufacturer's experts, should have full competency to make 'on the spot' decisions regarding acceptability of access difficulties, land ownership issues, and other issues that may have financial consequences during network establishment and future network operation. This person should be full time and continuously with the manufacturer's experts until the site selection procedure is finished. If the region of the network is large, several local people may be needed. They can be members of local authorities (municipalities, land-use planning authorities, etc.) and should be familiar with local development conditions and present and future land use;
- one or two four-wheel-drive vehicles in technically perfect condition, one of which should be big enough to comfortably transport four people together with measuring equipment its original packing (two PC notebooks, seismometer, seismic recorder, cables and, in case of telemetry system, RF spectrum analyzer, provisory antenna mast, and Yagi antennae). Two or three customer's staff members (plus driver and enough cash, coupons or whatever documents are required to purchase gasoline) are the best size team to work with usually two manufacturer's experts;
- air-conditioned working room with three tables, main power, and safe storage place for measuring equipment. If the network is an RF telemetry system, one of the tables must be large enough, minimum 1.5 x 3 m (5 x 10 feet), to allow working with several topographical maps stuck together while taking topographical profiles; and
- permits to enter restricted areas (army camps and training land, private land, natural reserves, state border regions, etc.) for local staff and foreign experts.

The maps sent to the site selection provider and used in the field are working copies. They are normally not returned to the customer. The maps are used when preparing the final report. If color maps are code protected against copying, two copies are needed (one for fieldwork and one for the final report).

Expect from one to three days of work for each station site of the network. Any extra time needed will depend on the dimensions of the network, infrastructure in the country, and general site accessibility. An efficient day of fieldwork usually lasts from sunrise to sunset.

Hint: Print this form and put check marks in appropriate bullets while preparing on-site selection procedure.