

# GEO Branch

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The Geo Branch is part of the ENG Division within HQ NRDC-IT. The section is led by the Chief Geographic Officer who is responsible for briefing COMNRDC-IT on effects of the terrain in the AI/AO during the "Mission Analysis" phase of the Military Decision Making Process (MDMP). This is done using the three sections within the branch, these are, Terrain Analysis, DATA Collection and Map Supply. Its overall Aim is to provide Geographic support to all branches within HQ NRDC-IT.

## Terrain Analysis.

Terrain Analysis (TERA) is the most important function for the GEO section. It is a dynamic process of collecting, analysing and evaluating geographic information on the natural and man made features of the terrain, together with its interpretation, to provide predictive information and advice about the effect of the terrain on military operations.

## Capabilities.

To support this analysis the Geo section can provide the following products:

1. Cross Country Movement (CCM). The terrain is assessed and classified as one of the following;
  - a. "Go"- Areas of good off-road movement.
  - b. "Slow Go/Restricted"-Areas of which could possibly reduce the speed of vehicle movement off-road.
  - c. "No Go/Severely Restricted"-Areas of which there is very little if any possible off-road movement.

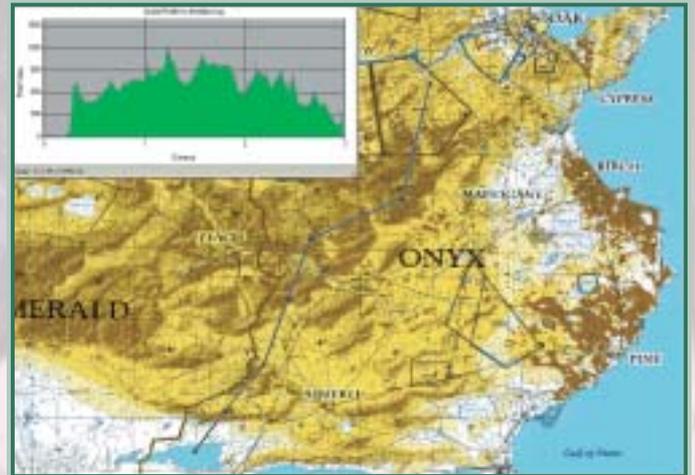
It must be noted that the above classifications refer to armoured formations and not to singular vehicles.

## **CROSS COUNTRY MOVEMENT (CCM).**



2. Obstacles. A Database of all known obstacles either manmade or natural such as, rivers, canals, built-up areas, embankments and minefields (both enemy & friendly) etc, is to be maintained. This can then be plotted every 24 hours or as required in the form of an overlay and distributed as necessary.
3. Battlefield Damage Assessment. A Database of all known Air strikes and Artillery strikes (both enemy & friendly) is to be maintained. This again can then be plotted every 24 hours or as required in the form of an overlay and distributed as necessary.
4. Task Specific. Site assessments such as concealment for harbour areas, river crossing sites, beach landing sites, airdrop zones, helicopter landing zones, together with visible area determinations such as masked area plots, line of sight analysis, perspective and oblique views and virtual fly throughs.

## **SPATIAL PROFILE.**



## **PERSPECTIVE/OBLIQUE VIEW.**





*Geo Branch field equipment.*

## **Data Collection.**

To enable the production and upkeep of all the above the Geo section must collect data to create and update a Geo Database from various sources which may include raster images (maps, satellite and aerial photography), vector data (VMAP) and matrix data (DTED/DTM). This database will include all or some of the following information:

- Vegetation-type: assessment on coverage, density, thickness, height, etc.
- Surface configuration-soil type, gradient, effects due to weather, etc.
- Communications-road & rail network.
- Manmade features-urban areas, dams, bridges, airports, etc.
- Hydrography-rivers, canals, width, depth, flow rate, flood prediction, etc.

## **Map Supply.**

The Geo Section is also responsible for coordinating map supply to the HQ and to its subordinate formations. To aid the supply to the HQ a map store is being built up, initially it will hold stocks of any area the HQ is

tasked to monitor, at the following scales; 1:1 000,000, 1:500,000 and 1:250,000. There is no intention to hold smaller scales however these can be obtained in order to support specific mission related products where the level of detail is critical.

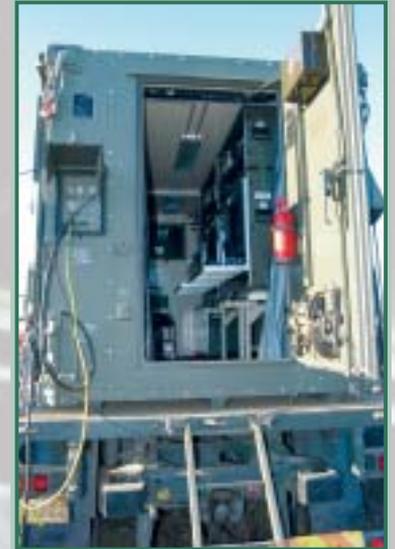
## **Equipment.**

Within the barracks the Geo sections equipment consists of three standalone workstations with ARCVIEW GIS 3.3 and ERDAS IMAGINE 8.6 software together with an A0 scanner, two A0 plotters and one GPS receiver hand-held.

The field deployable Geo system is known as "GEO TAC PRINT", consisting of two flatbed vehicles with NBC protected box bodies mounted on the back together with a tow able generator. One contains two workstations together with two A0 plotters (UNIX based); the other contains one workstation, A0 scanner, A3 and A4 plotters (Windows based). All the workstations contain the same software as the office bound equipment and are linked by fibre optic cables.

## **Summary.**

Above is only the main tasks that the GEO section does, it is capable of a lot more, products can be tailor made for almost any requirement or scenario. If you have any questions no matter how trivial or major they may be please contact the GEO section who will be only to glad to answer them. \_\_\_\_\_



*Geo Shelter*



*An inside view of the working positions on the GeoTac Print Shelters.*