



Figure 1: The Infinite GridSM and a Spatial Resume

Infinite GridSM Raster based Geographical Information System

TMI-19 provides a spatial framework for DRC. The Infinite GridSM is a raster based Geographical Information System (GIS) which is simple to use and inexpensive. Conventional mapping uses coordinates from a reference datum with a direction and a magnitude. These maps are vector based, where map features are referenced as points. This keeps file size small, and makes screen drawing time long. The horizontal direction of longitude is a sphere divided into 360°. The vertical direction of latitude is a hemisphere divided into 180°. The Infinite GridSM divides longitude and latitude into tiles of area. All features and information are referenced by area, not by vector. The difference is subtle, and yet very far reaching.

The Infinite GridSM highest level (IG0) encompasses the entire globe in one tile. This tile is divided into 8 X 8 tiles, each covering 45° longitude and 22.5° latitude for IG1. Each IG1 tile is in turn divided into 9 X 9 smaller tiles, each covering 5° longitude and 2.5° latitude, as illustrated in the left side of Figure 1. Subdivided tiles get smaller and smaller. At IG8 and Houston latitudes, each tile is approximately 11.8 feet X 6.9 feet. Each tile is referenced by a Cartesian coordinate system tile number. For instance, Houston has an IG2 of 26 (two tiles across from the bottom left and six tiles up) and an IG3 of 83, so the IG2 tile number would be 26.83.

Since longitude and latitude already describe map axes, a separate reference scheme is needed to describe areas. With the Infinite GridSM only a single number is needed to indicate each referenced tile. This arrangement allows XML (extended hypertext markup language) referencing of all data with an IG tag. This means a common access format solves all problems of combining mapping and spatial data together. It also puts the power in the hands of the average user to relate data from disparate sources directly on the desktop with tools as simple as an Excel spreadsheet with an IG map as a background image. The right side of Figure 1 shows a spatial resume of Roice Nelson. This spatial resume highlights each place around the globe Roice has worked on an exploration project. Imaging 100 or 1,000 employees with this information up to date, and a new project comes in on the Niger Delta. Within seconds the manager knows who has experience working in this area, and, if back-up information is connected to the IG, the manager has details of what projects have been done by whom.

The Infinite GridSM is the new Excel; a windows style application. It provides a vanilla map of the world with standard sets of templates. It is useful for mapping topography, drill plan maps, outcrop maps, palaeontology maps, sample analysis, drilling reports, lithography, wireline, and allows combining and data overlay, drilling down, 3-D views, looking for gaps, evaluating spatial relationships, and extrapolating strata and geology. XML allows content to be directly located by search engines. It can become an interchange format. It is easy to visualize and be self-consistent with Infinite GridSM maps. It is dynamically drillable. It is area based rather than point based. It is inherently graphical.

DRC proposes a \$500,000 investment to have the IG implemented for an appropriate project identified by Investors and their specified oil companies. Roice Nelson, Tony Traweek, Marc Roulston, and Les Denham are the technical team leaders on TMI-19.