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**EXPLORATION APPLICATIONS OF REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS**

# HIGH RESOLUTION VISUALIZATION: A FIELD EXLORATION TOOL FOR REMOTE AREAS AND HOSTILE ENVIRONMENTS

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## ABSTRACT

In remote areas and hostile environments, it is difficult, expensive, and sometimes impossible to obtain reliable field information for geologic assessment. High resolution three-dimensional models (created from satellite imagery or air photos) of selected areas, enable an explorationist to preview the field area and extract a considerable amount of quantitative and qualitative information. From the three-dimensional model one can measure: the attitude of bedding and planar features (strikes and dips); dimensions of rock bodies such as thickness of section; and elevation differences and distances (depth of streams, cliff heights, etc.). In addition, one can view the area from different perspectives (walk around, fly-through, etc.), and thoroughly preview the area before mounting a geologic field trip or seisline reconnaissance. In some instances one can acquire sufficient information to make the actual field visit to that location unnecessary.

The visualization products are created from high resolution satellite data or air photographs. The data can be viewed on a laptop computer in the field.

This is the most valuable in remote areas or hostile environments, but is also valuable in other locations. It conserves time and resources. An additional advantage of the approach is that it permits several investigators and supervisors to review and discuss an area at the same time without the expense of a large field excursion.