primarily by project planners. The program is also suitable for use by marketing staff who can use the program for project bidding and costing purposes.

MISSION supports three general classes of sensors: down-looking or nadir mode, single-side looking, and dual side-looking. Examples of nadir mode sensors include: air photo, infrared linescanner, and most geophysical sensors. A schematic of a typical nadir mode sensor is shown in figure 1. Single-side and dual-sided sensors are usually side-looking radars such as SARs or SLARs. Figure 2 illustrates a typical single-sided sensor. Dual-sided sensors are identical to single sided sensors except that they look out both sides of the sensor platform at once. In addition to their class, sensors are defined by their operational altitude limits, and other parameters which affect the size and position of the ground swath. MISSION has sufficient flexibility to allow definition of nearly any sensor. Data bases of sensors can be created so that all defined sensors are available for easy access and use.

After a sensor has been selected, the project specific sensor geometry parameters are entered. These data consist of altitude in above ground level (AGL) terms and the values for sensor varying parameters, if any. When the geometry is set, the sensor can be used for laying out data acquisition.

Because MISSION is designed for planning many different types of projects, it offers considerable flexibility in specification of data acquisition lines. Lines can be described in terms of the end coordinates of the image line, or, by the coordinate of the target (the middle of the image line) in conjunction with the line length and the line heading, or, by the start and end coordinates of the aircraft flight track.

Coordinate data can be typed in, or entered graphically on a map display using a cross-hair cursor driven by a mouse or the keypad cursor keys. Line shifting capabilities are available so that the image line or target can be placed at specific incidence angles or at offsets from the centre of the ground swath. With these facilities, the user can enter lines in terms of the near or far edge of the ground swath coverage for side-looking sensors or at arbitrary incidence angles as required for satellite simulation.

Any number of lines can be entered for a single project, each of which can be specified using any of the three methods. Furthermore, the sensor type and geometry can be changed from line to line if required. MISSION has facilities for the automatic generation of lines at a predetermined spacing and heading, such as is required for mapping projects. After lines have been entered, they can be interactively edited using the map graphics facilities. Figures 3 and 4 show example mission plan outputs generated by MP. Figure 3 is an example of a mapping mission planned for the Intera STAR-1 radar in wide swath mode. The lines were generated to provide 20% overlap and the endpoints edited interactively to cover the land mass of the island of Newfoundland. Figure 4 shows a hybrid ice surveillance/coastal patrol mission planned using the Intera STAR-2 SAR. Lines L-1 and L-3 are planned in dual sided wide swath mode, while line L-2 is planned for single-sided narrow swath mode.