1. Product Assessment

1.1 TECHNICAL ASSESSMENT:

1.1.1 Technical Description

The inFOREmer 2000 is a comprehensive data network having the ability to collect data from the global positioning satellites (GPS) and transfer data between a central computer and a variety of peripherals including base station, repeater, mobile handsets and charging cradles. The method of data communication is unique to the inFOREmer 2000 system and is achieved through a combination of wireless radio and infra red (IR) technologies, as well as hard wired phone and fiber optic cables all managed by internet protocols. Wireless radio is used to communicate with the handsets while in operation on the golf course; IR links fiber optic cabling and a dedicated internet connection is used to communicate with the handsets while being recharged on the charging cradles.

Transmission Control Protocol/Internet Protocol (TCP/IP) is the communication protocol used by the pace-of-play system to ensure reliability and maximum system availability. TCP/IP provides virtually unlimited expandability and unparalleled reliability and flexibility to meet future technological enhancements thereby offering a continually advanced, unique and competitive pace-of-play system. The TCP/IP protocol facilitates remote updating of Clubhouse Computer and handset software via the internet. Every inFOREmer 2000 system in operation will be updated with the latest software version in a transparent and trouble free manner for the golf course management and users.

Each golf course will have a custom version of the proprietary software with maps and information relating to that specific golf course. The maps are created from digitized, image enhanced aerial photographs.

The core technical features of the system are the ability to communicate with all the handsets in the field on a regular basis, and provide an accurate positioning reading at the handset that allows the golfer to read distances on the golf course to an accuracy of +/- 3 feet. This is done through the use of a GPS device within the handset, working in unison with a radio link that provides error correction information from the clubhouse computer. This technology is known as Differential GPS (“DGPS”).
The core technical features of the system are the ability to communicate with all the handsets in the field on a regular basis, and provide an accurate positioning reading at the handset that allows the golfer to gauge distances on the golf course to an accuracy of +/- 1m. This is done through the use of a GPS device within the handset, working in unison with a radio link that provides error correction information from the clubhouse. This is a technology known as Differential GPS (D-GPS).

The system is explained below.

1.1.2 System Components

- ***Club House Computer***

The Club House Computer is the central hub, and is responsible for managing the communications process for the network. It controls the routing information for which all the other units respond to or communicate with. It displays the User graphics at the clubhouse to allow the operator to monitor all aspects of the system, and more importantly, the golfers using the system.

- ***Base Station Interface***

  The Base Station Interface Unit is a router that provides the communication link for the GPS and the Radios within the handsets. It is typically stored on or near the roof of the clubhouse, in close proximity to the RF and GPS antennas that are connected to it.

- ***Handsets***

  The handsets are the mobiles units in the system that provide the individual golfers with the information they require. The handsets are composed of a CPU, viewscreen, GPS receiver, radio and batteries which allows for twelve (12) hours of operation without re-charging. The system is designed to handle up to 150 handsets on the golf course typically.

- ***Charging Station***

  The charging station provides the means by which the handsets are charged, and also are communicated to for status monitoring, and new s/w updates. This is done through an IRDA link while each handset sits in it's separate charging cradle.

- ***Repeater***

  The Repeater is used to provide Radio extension on the golf course where the main Base Station would otherwise not provide coverage. Not all courses will require a Repeater. The repeater is discussed in more detail in it's own separate Functional Specification.

- ***Network Monitoring Centre***

  The system has been designed such that each product within the system is IP addressable. This allows for a very flexible Network Monitoring Capability to be included that provides the means to ensure the system is operating without problems, and to quickly service any problems that may occur. The Network Monitoring Centre will be able to access any system in the world, and either manage, monitor, or provide updated software to the units remotely. This will be done either through the Internet, or through a dedicated dial up line.