Product White Paper

IMPI Blue Force Tracker

1   The IMPI Blue Force Tracking system is a GPS-enabled system that provides military commanders and forces with location information about their

military forces. The system provides a common picture of the location of friendly forces and therefore is referred to as the "Blue Force" tracker.

2   The IMPI Blue Force Tracking system consists of an IMPI software-enabled computer, used to display location information, a satellite terminal and satellite antenna used to transmit and receive location and other military data, a Global Positioning System receiver (to determine its position) and mapping software, in the form of a Geographic information system (GIS), that plots the BFT device on a map. The system displays the location of the deployed Blue Force Tracking units on the computer's terrain-map display in their respective locations.

3   The Blue Force Tracking unit continually transmits its location over the encrypted network. The IMPI software-enabled computer then monitors the location and progress of their forces and consolidate the data into a common operational picture, or COP.

4   The IMPI Blue Force Tracking system is an automatically updating system that shows the location of all friendly forces and removes any question over accuracy and is always current. Positional data can be automatically filtered and aggregated by sub-unit and unit, so that as the information moves up the command chain, it is shown at a level appropriate to the viewer, and can also be expanded if required. As the data is available to all, in the same time frame, everyone is working to the common operating picture (COP) and misunderstandings should be reduced.

5   **The IMPI Blue Force Tracking system is a capable system with small and highly capable Blue Force Tracking units with a great degree of flexibility and reliability. In this regard the Blue Force Tracking units can be utilized with the following communication links inherent in its design**:

5.1   HF

5.2   VHF / UHF

5.3   Iridium Satellite, and

5.4   GPRS.

6   The IMPI Blue Force Tracking system will through its Multi-Link Communication Server software continuously determine the available communications links and select the appropriate link automatically. The user can however influence the form, fit and function to remove some of the communication links inherent in the design.

7   The IMPI Blue Force Tracking system can be delivered with or without encryption.

8   Support is guaranteed due to the IP and data packs being readily available for use by the end-user. Technical support is also near instantaneous as GC²T is situated in Centurion.

9   The IMPI software provides for an "Operational Diary" that records all activities of the deployed Blue Force Tracking units. The software also provides a "replay" capability that can be utilized during after-action reviews or if an incident may occur. The recordings in the "Operational Diary" are date time-stamped and when entered into the "Operational Diary" it cannot be removed. The user can add notes and new entries into the "Operational Diary" but once captured it cannot be removed. Due to this capability, it can be utilized in a Court of Law.

10   The GIS capability encapsulated in the IMPI software enables the end-user to utilize GIS data already in existence in several repositories in the SANDF e.g. JARIC, SA Army Engineer Formation, Special Forces, etc. The GIS capability ensures that the end-user does not have to pay any additional monies for GIS data. This also contributes to the security of the system as the end-user is in total control of the GIS preparation.

11   The IMPI software also provides an ORBAT capability ensuring that the end-user will be able to design an Order of Battle or single entities according to its allocated tasks.

12   In setting up the Command network for the IMPI Blue Force Tracking system the end-user retain total control over the track numbers and call signs. The server and control software is installed in the facility as required which enables the end-user to retain independent control over the total system. The backup system if required can also be installed in the same facility.

13   The end-user is also in control of the air time and can thus budget accurately. GC2Thowever provides a service in this regard should the end-user require to outsource this aspect.

14   Users include the SA Army and the SA National Defense Force's Special Forces.

15   **The following capabilities are inherent in the form, fit and function of the Blue Force Tracking units provided by GC²T**:

15.1 Power for the Blue Force Tracking unit is sourced from outside of the core device. This allows for the usage of different power sources. The

Blue Force Tracking device can be connected to an external power source.

15.2 Connection to a computer is included (Ethernet, USB, etc...) as well as a split connector which would make it possible to connect simultaneously.

15.3 The unit water specification implies twenty (20) metres submersion for thirty (30) minutes.

15.4 The unit is capable of pinging connections to HF, VHF, GPRS or Iridium.

15.5 The unit antenna is Omni-directional.

15.6 The unit has settings for updating its position both in terms of time and distance. The device is capable of setting a real-time updating of position during target penetration operations.

15.7 The unit has a setting whereby the user is capable of turning the device power to off.

15.8 Controllers in the control room shall be able to ping/interrogate the unit.

15.9 The unit is capable of indicating height to an accuracy of twenty (20) metres.

15.10 The unit antenna is flexible to allow for placement anywhere.

15.11 The IMPI control software shall indicate when a Blue Force Tracking unit is not responding.

15.12 The unit shall operate in conditions ranging from -50°C to +50°C.

15.13 The unit shall not interfere with the avionics of an aeroplane. This will be qualified during the first quarters of 2011

15.14 The unit can be utilized at any speed and height. Iridium coverage is worldwide and extensive.

16 The IMPI Blue Force Tracking system provides for the operational requirement to maintain real-time Situational Awareness of own forces through multiple communications links to exchange information. Effective integration of these available assets is an important factor in providing a significant advantage in sharing situational awareness data with the tactical user.

17 The IMPI Blue Force Tracking system is also a portable and dismounted Blue Force Tracking and Situational awareness system employing standardized

symbology protocols that can easily interface with existing applications, creating a robust network beyond the initial application.