



# Mountain Rescue Council

CHARITY No. 222 596



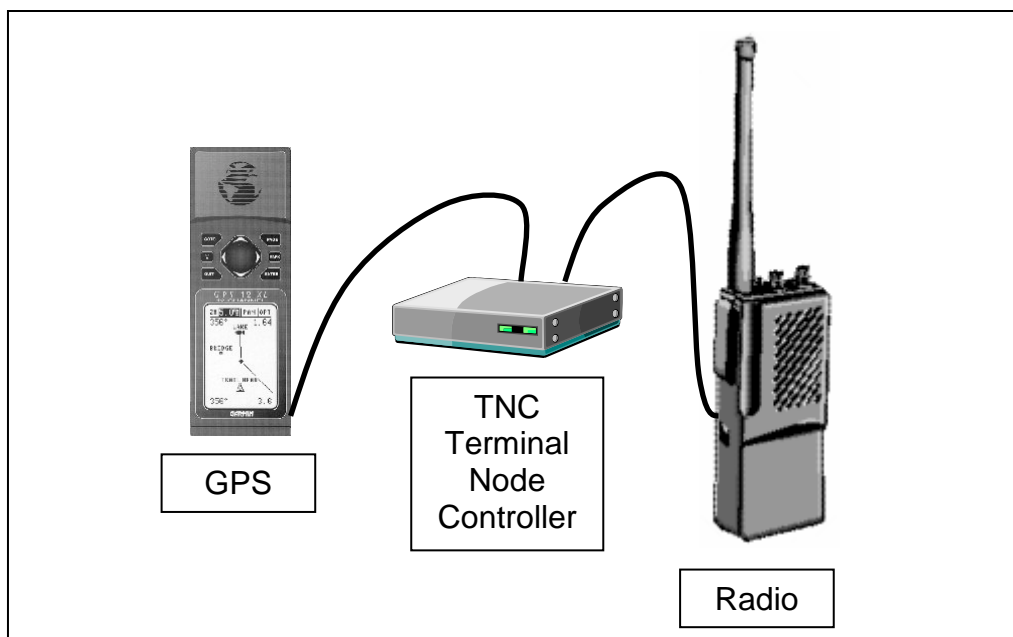
IKAR-CISA  
Terrestrial Rescue Commission  
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Sonthofen, Allgäu, Germany

## GLOBAL POSITIONING SYSTEM (GPS) and GEOGRAPHICAL INFORMATION SYSTEM (GIS)

Keswick Mountain Rescue Team, supported by the MRC (England & Wales), has been developing the possibilities of linking GPS data received by rescue team member in the mountains, to a computer-based mapping system (GIS) at the rescue control centre.

Although the linking of the individual components is still crude and bulky, the system has worked well in trials and has great potential for assisting search management and the location of casualties.

A handheld GPS unit with a data port is linked to a Terminal Node Controller (TNC) - which can be likened to a modem in a computer - and then to the microphone socket of the rescue radio. It could also be connected to a GSM mobile telephone. Any number of units can be used, as each TNC can easily be programmed with individual callsigns. The timing of data transmissions can also be varied according to preference – maybe every 15 minutes or with every voice transmission, for example.



At the control centre, the incoming signal can be decoded by another TNC, and then directed to a serial port on the computer. As each TNC can be programmed separately, each rescue team member can be individually tracked on the map on the computer screen. If required, the progress of each person can be recorded with a trace, or 'snail trail'. The map can be saved and printed as a record of the ground covered. Areas not searched are quickly identified using this technology.

In the UK it is possible to purchase a device, which can be linked into the system at the control centre, which can then make corrections to the differential variation errors in GPS data, and improve the degree of accuracy to around 10 metres. This device decodes the corrections which are broadcast as Radio Data System (RDS) overlays with one of the public radio entertainment channels.



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Our next step is to find a manufacturer who is prepared to develop this idea and to produce a unit which has all 3 components in 1 box instead of 3. The technology is ready and is already used particularly in planning and charting the movements of road vehicles, but it has not been developed for walkers who require compact and lightweight units.

We would welcome any comments and enquiries.

Next year, we would hope to be able to report on future developments of this system at the Arizona Conference.

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