

Defence Science and Technology Laboratory



Licensing opportunity

A protective garment comprising an antenna

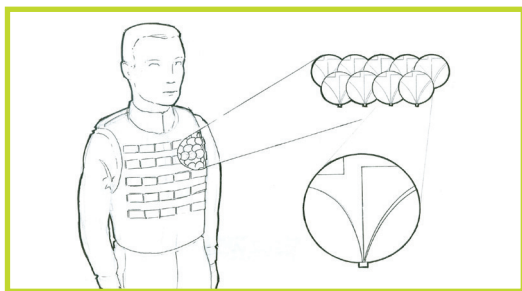
Overview

The technology is a protective garment (eg body armour vest) which comprises an antenna in its design. The antenna is comprised of a multitude of antenna elements which are incorporated into armour elements; the armour elements, arranged in an array, form the protective garment.

Dstl has undertaken research programmes on flexible rifle protection plates. These plates are effective at defeating high velocity small arms rounds and consist of a mosaic of ceramic composite tiles in an array. This invention modifies the function of the tiles so that each tile is an antenna.

Key benefits

This invention combines the protection afforded with the tiles with an array of antennas. This reduces the overall burden on the soldier as the array of the antennas/tiles is less than the combined weight of an antenna and the protection system. The provision of an array of antennas can also offer other advantages.



Applications

The array of antennas offers a number of advantages over a conventional antenna:

- A number of antennas can be activated at the same time to form a correspondingly larger antenna to suit the transmission frequency in an optimal manner
- A large antenna formed from a group of antennas can have its polarisation switched depending on if the soldier is standing or prone improving the robustness of communications

- The antennas can form an Active Electrically Steerable Array (AESA) like aircraft radar for search applications such as Improvised Explosive Device detection
- The array beam can deliver a line of sight communications link giving a low probability of intercept
- It is damage tolerant

IP status

Patent title – A protective garment comprising an antenna

Patent abstract – There is provided a protective garment comprising an antenna, the antenna comprising a plurality of antenna elements, wherein the protective garment comprises a plurality of armour elements arranged in an array for protecting against explosively driven projectiles, and wherein each armour element comprises one of the antenna elements.

Country	Status	Application No.	Filing Date
GB	Priority	1317428.9	02-Oct-13
GB	Published	1417156.5	29-Sep-14
WO	Published	GB2014/000384	30-Sep-14

Commercial opportunity

This technology could be incorporated into future military personal armour/soldier communications systems for MOD procurement which could increase the mobility of soldiers whilst providing them with more reliable communications.

Whilst this technology shows several potentially beneficial improvements over current armour/soldier communication systems, it is purely conceptual at this point in time.

For more information contact
dstleasyip@dstl.gov.uk