

Monday 16 July 2007.

Title of session

Keynote address: Is the future geospatial? - Joining the dots.

Name of presenter/chair

Air Marshall Stuart Peach CBE, Chief of Defence Intelligence

Rapporteurs

Nicholas Hutchings, Defence Geographic Centre and Jenny Harding, Ordnance Survey

Until 1990 areas of operation and operational objectives were generally well defined and fairly predictable. Since the end of the Cold War the world has been changing in that demands for data, knowledge and service are increasingly global. Potential commitments worldwide, unpredictable deployment areas and other factors have led to all sorts of new challenges and working in ways that were not predicted. Multilateral organisations have been struggling to cope with the rate of change with respect to climate disasters, energy security and conflict, for example.

Operations need to be intelligence led. Throughout history it has been important to have knowledge of geography, and there are many examples of maps and imagery used to provide situational awareness and plan operations. A global mapping capability was kept alive throughout the Cold War, providing a global situational awareness enabling provision of support where and when needed.

Within defence intelligence, the aim is to draw together information from many different geospatial sources (e.g. maps, meteorological forecasts, charts etc) and other sources to make sense of a situation. Without this information, operations struggle. The university sector is important in providing the science behind drawing the information together.

In summary, the MOD defines geospatial intelligence as 'Intelligence derived from analysis and exploitation of geospatial information and imagery to describe, assess and visually depict physical features and geographically referenced activities of intelligence interest'. This intelligence requires the horizontal integration of information from many different sources. Understanding of common geospatial data standards is required, together with using technology in imaginative ways. Some types of imagery, for example some satellite imagery, is globally available to all (to both supporters and ill wishers).

Examples of meeting defence needs with geospatial intelligence include change detection to identify illegal border crossing points; determining variations in beach landing characteristics; predicting how sandstorms will develop in an area. In each case, data fusion is important. Geospatial Operational

support aim to 'create once, use many times', adding and subtracting layers of information to support the needs of the customer. There is also a need for people on the ground who are geospatially aware.

Generally data with greater resolution enables greater utility in providing situational awareness. There is a need to try to predict the unpredictable.

In summary, for response at short notice 'global situational awareness' is needed, without this the capability to respond is lost. Fusion of data from different sources (e.g. human, physical and political geography) is more powerful than dealing with them separately. The ability to interpret the product is essential - the need to understand the information in order to exploit it. There is increasing demand for accuracy from customers and more demand for output; a single, interoperable geospatial database is needed. Also, a commitment to education is needed to keep skills relevant in a changing world.

Questions	Answers
<p>Dr Fraser Taylor from Carleton University, Canada (Chair International Steering Committee for Global Mapping) acknowledged the problems of technical interoperability, but pointed out that these were being tackled by the Open GIS Consortium. He wondered if political and administrative interoperability between different organisations and agencies might not be a greater problem?</p>	<p>Chief of Defence Intelligence (CDI) response was that an increasingly pan-government approach between ministries and agencies is taking place in the UK. Staff are increasingly attending major conferences to share experiences, with the Cambridge Conference being an important forum for meeting with international partners. Conferences in NATO – which now includes several new nations – form an additional international forum for the advancement of standards. A multi-national response to national disasters has brought numerous agencies and governments together and lessons have been learnt from shared experiences – examples include the Tsunami of 2004 and the Pakistan earthquake and Hurricane Katrina of 2005. Visits are actively encouraged.</p>
<p>Wilber Ottichilo from the Regional Centre for Mapping of Resources for Development, Kenya commented that excessive state secrecy remains a difficulty in many countries where medium and large scale maps, even those which are several years old, are not made publicly available.</p>	<p>CDI answered that the recent experience of major natural disasters had made very clear the need for detailed, accurate and up-to-date geospatial information and that this had led to the release of increasing quantities of data. Moreover, the availability of high resolution imagery worldwide via the Internet over the last two or three years demonstrates the pointlessness of trying to keep geographic information secret.</p>
<p>Stephen Guptill of the United States Geological Survey asked if there was any resistance in the United Kingdom Ministry</p>	<p>CDI stated that the MOD does not seek new missions but acts in response to government directives. The first major example of this in recent years was the</p>

<p>of Defence to the increased use of the Armed Forces for disaster relief, when this is outside their usual remit.</p>	<p>domestic Foot and Mouth outbreak of 2001. A question remains over which ministries and agencies should cover the costs of disaster relief. The UK MOD and Armed Forces have gained a reputation for rapid response at times of disaster being able to plan and act quickly. This results in part from pre-positioned global situational awareness.</p>