Considerations on the concept of a regional commercial satellite imagery interpretation centre in support of African peace operations

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Introduction

The United States of America obtained the first operational reconnaissance satellite imagery over 47 years ago, on 18 August 1960. Less than seven years later, Lyndon Johnson, speaking in Nashville in March 1967, remarked: ‘We’ve spent thirty five or forty billion dollars on the space program, and if nothing else had come out of it except the knowledge we have gained from space photography, it would be worth ten times what the whole program has cost’ (Clark 1967:13).

The surveillance of the USSR from space had by then, amongst other achievements, proven the non-existence of a touted ‘missile gap’ in surface-to-surface systems thereby

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offering the USA significant defence savings as well as a powerful bargaining tool for establishing a treaty negotiation and verification dialogue, which eventually led to the Strategic Arms Limitation Talks (SALT I of which was signed in Moscow in May 1972 with SALT II following in June 1979) and later the Intermediate-Range Nuclear Forces (INF) treaty (signed December 1987). The latter lead in turn to the Strategic Arms Reduction Treaty, START 1 (1991), which effectively halved the number of long-range nuclear weapons, and START II of 1993, which saw the scrapping of a further 300–3 500 warheads. More recently, the Treaty of Moscow in 2002 reduced the number of nuclear weapons by a further 1 700 to 2 200.

Satellite surveillance was therefore proven to offer wide-area, time-sensitive coverage of regions inaccessible to conventional methodology. Since that time the construction and utilisation of various forms of space imaging systems has spread dramatically in international and national arenas. Since 1972 this process has been accelerated by the introduction of a growing number of commercial satellites of increasing capability, many now with a utility surpassing that of some quite recent defence-orientated systems.

The once clear separation between the application of commercial satellite imaging (CSI) for wide-area remote sensing of the environment versus the use of military reconnaissance imaging systems for more detailed analysis of defence and industrial infrastructure has, particularly over the last decade, evolved into a continuum of exploitation potential. This is a field in which the exploitation of CSI, for a range of technical and economic reasons, is gaining an increasing share.

Over the same period the perceived nature of conflict has also evolved, from being predominantly one of competing power blocks, usually readily identifiable from a formal politico-military construct and often based geographically, to being more fluid and based upon a wider, often inconsistent, range of factors motivating aggression.

The emergence of an assortment of ‘asymmetric’ threats has led to conflict evolving towards what has been termed ‘fourth generation’ warfare, characterised by an ongoing blurring of the lines between war and politics, soldier and civilian, peace and conflict, battlefield and safety, even criminal and legislator. Consequently, the mechanisms evolved in ordered society to contain violence are themselves subject to erosion, threatening a possible slide towards societal collapse, and ultimately to failed states. In addition, the bipolar Cold War construct has developed into a skewed but arguably evolving multipolar condition typically characterised by pressures that may be ideological, religious, ethnic, nationalist, tribal, despotic or separatist in origin. All of these are potential accelerators towards failed state syndrome.

Such issues typically originate intra state, but may well cross borders (that were often originally imposed by external powers). Conflict is often accompanied by large-scale
movement of refugees or displaced persons and exacerbated by wide-scale human rights violations including genocide, ethnic cleansing and war crimes. These conflicts usually occur in developing regions where infrastructure is poor, communication is difficult and where developing conflict situations are often masked in complexity to the international community.

It will be appreciated that the above factors frame many of the current and potential conflict situations within the African continent.

While it can be argued strongly that a purely national military response is inappropriate to such threats to established societies, the coordination and cohesion of a multinational, multidisciplined effort to combat complex and diffuse aggression presents enormous challenges. A coordinated response requires the representation and cooperation of a range of agencies within a state (or states) that traditionally have often been independent of each other at best, and aggressively competitive and opaque at worst.

Ideally, representative elements of the various arms of the military and the secret services, police, customs and excise, economic institutions and the academic community should work together within a common administrative framework to assess and report on issues pertinent to the peace process. This is currently difficult to achieve nationally and, at times, near impossible to visualise internationally. Furthermore, the coordination of this aspirant consensus with a plethora of non-governmental organisations (NGOs) with varying agendas presents an even more daunting prospect.

In the search for a pilot model for establishing a forum for achieving consensus, the generally non-aggressive nature of imagery collection, analysis and interpretation, combined with its generally high level of veracity in reporting, should be considered, especially if founded within a workable structure. The ability of CSI techniques to efficiently cover wide areas of terrain, particularly where ground infrastructure is diffuse and land operations are likely to be costly and of low efficacy, makes Africa a potentially viable theatre for a shared regional capability.

Current global environmental monitoring programmes and support entities, such as the EU’s Global Monitoring for Environment and Security (GMES)\(^1\) and Global Monitoring for Security and Stability (GMOSS),\(^2\) have different foundations and are not representative of the entire cross-section of potential taskers and operational users. For example GMOSS falls under the Sixth Framework Programme for Research and Technological Development (FP6), which is the EU’s main instrument for research funding in Europe. Each Framework Programme (FP) is proposed by the European Commission and adopted by Council and the European Parliament following a co-decision procedure. FPs cover a period of five years with the last year of one FP and the first year of the following FP overlapping.
Other programmes, such as UNOSAT,³ are fundamentally data providers. None currently addresses the prospect of physically creating one or more regional support centres for peace operations.

This paper compares and contrasts some aspects of CSI utilisation in providing support to various phases of the peace operation process. Considerations as to how these operations should be managed are addressed within the context of a mooted international centre for the African region. Finally, guidelines governing the establishment and governance of such a centre (possibly under the auspices of the AU) are postulated.

**Discussion**

CSI is accepted in international law as a legitimate means of gathering information on the earth’s surface without regard to national boundaries. Particularly since 1999, with the launch of the first commercial satellite giving imagery of a high spatial resolution (Ikonos with 1 m), the capabilities of such systems have improved to such an extent as to bring about the emergence of a de facto ‘open skies’ facility for organisations desiring to exploit it for whatever reason.

In examining characteristics of CSI the term ‘resolution’ is often used erroneously. Its misuse has caused confusion, often deliberately invoked, in considering the applicability of CSI to a range of problems. Resolution can be considered along four axes: spatial, spectral, radiometric and temporal. Initial reconnaissance satellites obtained imagery that was film based, with the film being returned to earth incrementally in a series of parachuted capsules. The US recovered its capsules (or ‘buckets’) in a mid-air grab over the sea while the USSR opted for direct parachuting onto land. While tremendous amounts of information were obtained in this way, by its very nature this method incurred a time delay, often of many days, between imaging from space and interpretation on ground. Although high spatial resolutions, probably down to less than 15 cm, were ultimately attained, these images were normally panchromatic (that is, black and white) and of low spectral resolution and, perhaps more importantly, because of the time delays involved in both downloading and repeat imaging, they were of a low temporal resolution.

The successful launch of the Earth Resources Technology Satellite (ERTS) in 1972 first provided the scientific community with directly transmittable digital CSI and heralded the subsequent Landsat family of vehicles. These yielded ongoing access to imagery from space with reasonable spectral and temporal characteristics, although of a low spatial resolution (initially 80 m, later 30 m and more recently 15 m) – a situation that persisted for many years.

Thus the civilian remote sensing community was constrained to examining large-scale features on the earth’s surface such as forestry, agriculture, hydrology and urbanisation.
Nevertheless, primarily by developing indices and algorithms, environmental classification and change detection could be achieved, albeit normally over somewhat extended timescales when compared to most military considerations at the time. In contrast, defence-associated imagery interpreters associated with the superpowers had access to a range of much higher spatial resolution (though often panchromatic) imaging systems. This enabled them to apply their detection, recognition and identification skills across a range of militarily relevant topics, ranging from industrial analysis to detailed order of battle assessment and monitoring. As all imagery analysis is a form of target intelligence, the initial enforced general separation of these two aspects of the discipline created institutional difficulties which, in retrospect, may have hindered the pace of the overall development of capability.

By 1986, with the launch of SPOT 1 from Europe, 10 m resolution imagery was available in the public domain and was also of some, initially fairly limited, defence interest. This was followed by the Indian IRS1 satellite in the mid-nineties that brought the spatial figure down to approximately 5 m, but with a lower radiometric resolution. Investigations in the USA as to the implications of releasing higher performing satellite technology to the commercial world led to President Bill Clinton’s 1994 Presidential Decision Directive
23. This gave industry permission to release metric and eventually sub-metric imagery into the public domain, albeit with restrictions. These included limited release of imagery of some locations and a requirement for sub-metric imagery to be downloaded via American-controlled sites, as well as a 24-hour delay on its release. Nevertheless, with these caveats applied, the Ikonos satellite brought metric imagery to the open community in 1999, followed by Quickbird at 60 cm in 2002 and Worldview at 40 cm in 2007. The path to 20 cm spatial resolution appears to be open. Due to the law of squares an increase in capability from, for example, 1 m to 50 cm in fact implies a quadrupling of information in the spatial domain. Thus from the mid-eighties to the late nineties CSI increased its spatial information content potential a hundredfold (10 m > 1 m) – with dramatic consequences.

In discussing the impact of increasing resolution it has to be considered that this rapidly increasing capability in the spatial domain of CSI is being paced by developments in the spectral arena. Landsat (initially with three visible colour bands and now with up to four more along the longer, non-optical wavelengths) enabled estimation of vegetation type and vigour by multi-spectral analysis, thus providing a basic tool for agricultural assessment. For example, normalised difference vegetation indices (NDVIs) use a few wavebands to plot change or disease in plants.

Band combination algorithms of increasing complexity have been developed to classify other materials by their spectral reflectance properties. With the evolving use of hyperspectral (tens of wavebands) and ultraspectral (hundreds of bands) sensors, chemical assessment of the earth’s land and ocean surfaces, smoke plumes and aerosols is becoming an increasingly viable prospect. Commercial radar imaging satellites are also about to cross into the metric spatial resolution arena with the recent arrival of Terrasat from Europe and Radarsat II from Canada. This capability is effectively day/night and...
weather independent. Thus the acquisition of radar imagery is practically guaranteed, a capability of tremendous utility for many uses requiring precise time-critical planning or reaction.

The past use of fairly low spatial resolution (10 m to 1 km or lower) wide-area coverage using multispectral satellites for remote sensing typified many projects from the academic and research arenas, most of which involved area classification and subsequent change analysis. There is an approximate link between spatial resolution and time criticality which has favoured such studies being of a low temporal resolution and perhaps therefore not of a response time that would justify the existence of a dedicated facility using this type of imagery and its derived intelligence for defence-associated purposes.

In 1992 the Western European Union (WEU) opened a multinational satellite centre near Madrid to evaluate predominantly CSI in support of European defence-associated tasking. Peace support and humanitarian operations were included under the St Petersburg missions and has continued to feature in the centre’s work profile (Third St Petersburg Declaration 1992). The concept of a multinational centre to evaluate CSI has been taken up to a degree elsewhere, for example within some NATO structures as well as in the International Atomic Energy Agency (IAEA) in Vienna, which established its own CSI interpretation facility manned by experts from several nations.

The interpretation of aerial imagery (especially archive material) in addition to CSI, provides a supplementary capability to a centre’s operations, particularly when considering events prior to 1972. The usage of imagery predating the commencement of commercial imaging satellite operations can also be further boosted by utilising appropriate declassified early US defence satellite imagery.
The current European Union Satellite Centre (EUSC) in Spain was established in 2002 and descended directly from the original WEU concept. While continually evolving, it remains operational and responsive to EU interests in evaluating a variety of situations, including a number relevant to ongoing peace operations in Africa (EUSC presentation to DGI conference London 25 Jan 2006), including:

- **EUPOL-KINSHASA**: support to the EU police mission in Kinshasa, Democratic Republic of Congo
- **ARTEMIS**: support to the EU military operation in the DRC to stabilise security in the region of Bunia
- **EUSEC RD CONGO**: support to a security-related training mission of the EU, the UN mission and the electoral process in the DRC
- **AMIS II**: support to the EU military and police support to the AU mission in Darfur, Sudan

For various reasons, many of which stem from perceived cultural and historical sensitivities, this Eurocentric model may not be totally applicable in a broader context. However, many of its fundamental operational concepts (stemming from the early nineties) remain valid and could be applied to a model more relevant to African requirements.

To analyse the concept of an African model in more detail, the UN peace operations model is combined with the perspective of the South African-based Institute for Security Studies (ISS) (UN 2000; ISS 2000). The ISS perspective is suitable for this purpose because firstly, it has been well reasoned by others, and secondly, it provides an unambiguous investigative path. Although the UN model is evolving in line with growing experience, the base concepts remain fairly unchanged and are adopted here for the sake of presenting a simple argument.

Four phases are typically identified in regard to peace (or peace support) operations, namely:

- **Conflict prevention** (or preventative diplomacy)
- **Peacekeeping**
- **Peace enforcement**
- **Peacebuilding** (or post-conflict resolution)

Peace support operations are usually multifunctional operations in which impartial military activities are designed to create a secure environment and facilitate the efforts of
the mission’s civilian elements to create self-sustaining peace. A peace support operation may include peacekeeping and peace enforcement, conflict prevention, peacemaking, peacebuilding and humanitarian operations.

Fundamentally peacekeeping implies the consent of the belligerent parties to the presence of the peacekeeping forces, whilst in peace enforcement consent is not absolute: peace enforcement forces may be used to compel or coerce. The term peacekeeping is often used erroneously to embrace all peace support operations, including peace enforcement. Peace support operations are neither in support of nor against any particular party, but are conducted impartially. Peace support force actions are based on judgments of the degree of compliance and/or non-compliance of the parties with the operation’s mandate and not on any bias or predetermined designation. The conduct of a peace support operation force should be analogous to that of a third-party referee and should remain that way even if only one party consistently fails to comply with the mandate and suffers the consequences. In peacekeeping mode, the level of consent is such that the referee requires relatively few resources. In peace enforcement, however, the referee requires enough resources to enforce compliance with the mandate, no matter how much the parties object.

When consent to and compliance with a peace support operation are high, peace enforcement and peacekeeping forces will adopt similar approaches. Both peacekeeping and peace enforcement are designed to achieve the same end state, namely a secure environment and self-sustaining peace. However, a peacekeeping force bases its operations on the parties’ consent and is not capable of exercising force beyond that required for self-defence. Only a peace enforcement force prepared for combat and capable of effective coercion should be deployed in a potentially hostile environment.

Support to peace enforcement in direct conflict is not discussed in detail here although it is a traditional role of imagery analysis. Multinational military imagery analysis centres currently support coalition peace enforcement operations authorised by the UN in NATO and other formations, using a combination of satellite and other imagery (predominately uninhabited air vehicles, UAVs) in a collateral context. An example of this is the multinational intelligence coordination cell (MICC), in the joint analysis centre (JAC) at RAF Molesworth in the United Kingdom, which since the early nineties has employed NATO personnel in support of operations in such regions as Bosnia, Iraq and Afghanistan. Although these activities could be collocated within an African regional centre in due course, the tactical exploitation of non-satellite imaging platforms in the combat support environment, whilst being of great significance, falls outside the scope of the current discussion.

Awareness of the integration of remote sensing (RS) environmental analyses as factors in the overall assessment of a potential or evolving conflict is gaining ever-increasing support in the military purview, as can be deduced from the recent words of Sir Jock Stirrup, UK Chief of Defence Staff:
Rising temperatures, changes in rainfall patterns and desertification will affect food and water supplies. Crop yields will fall and land once used for grazing and crop growing will disappear into the desert sands. Expanding populations around the world are already placing a strain on scarce resources. Climate change will make this competition more acute and history is replete with cases of resource competition that have rapidly descended into armed conflict. We see examples of this today in Darfur and other regions of (Stirrup 2007).

A peace support operation mandate will generally also refer to such issues as the restoration and maintenance of peace and security post conflict.

**Satellite imagery in support of peace operations**

Imagery interpretation and analysis support to the four phases of peace operations are summarised in table 1.

The skills involved in exploiting imagery in this environment are generally found across two source communities:

- The RS analysis arena, which tends to be civilian and scientific (typically post-graduates with a geoscience background)

- Imagery Intelligence (II) skills, usually found in individuals from military and defence communities specialising in imagery intelligence

Although these skills sets differ, there is an overlap in training background and methodology that can be built upon.

The concept of geospatial intelligence comes largely from a merging of these approaches, typically integrating the products into a geographical information system (GIS). This was done successfully in setting up the Western European Union Satellite Centre (now EUSC) some years ago, where operations benefited from team members recruited from both backgrounds.

Another factor to be considered in establishing criteria for the selection of imagery interpreters is that of cultural and regional familiarity. This factor is often overlooked in coalition operations where the deployment of imagery interpreters, often at short notice, into unfamiliar regional situations has been problematical. An amusing, if slightly worrying current illustration of incompetent interpretation can be seen daily on Google Earth where self-appointed interpreters ‘identify’ objects, often with bizarre conclusions. Cultural infrastructure in Africa is diverse and its interpretation requires a degree of local knowledge.
### Table 1: Satellite imagery in support of peace operations

<table>
<thead>
<tr>
<th>Phase of peace operation</th>
<th>Satellite imagery product</th>
<th>Remote sensing imagery analysis</th>
<th>Imagery interpretation</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict prevention (preventative diplomacy)</td>
<td>Crop yield prediction</td>
<td>Yes</td>
<td>No</td>
<td>Multispectral vegetative analysis can assess and predict potential shortfalls months before the event</td>
</tr>
<tr>
<td></td>
<td>Hydrological assessment</td>
<td>Yes</td>
<td>No</td>
<td>Estimation of potential water shortages and regional imbalances Identification of water volumes and drainage patterns</td>
</tr>
<tr>
<td></td>
<td>Infrastructure assessment</td>
<td>Yes</td>
<td>Yes</td>
<td>Quantification of road, rail, air, water, communications, electric power distribution, civil buildings and support facilities</td>
</tr>
<tr>
<td></td>
<td>Population demographic assessment</td>
<td>Yes</td>
<td>Yes</td>
<td>Estimation of population density and ethnology</td>
</tr>
<tr>
<td></td>
<td>Military capability assessment</td>
<td>No</td>
<td>Yes</td>
<td>Order of battle and proliferation monitoring over time to provide indicators and warning of potential aggression</td>
</tr>
<tr>
<td></td>
<td>Disaster monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td>Assessment and monitoring of initial extent, impact and recovery</td>
</tr>
<tr>
<td></td>
<td>Treaty verification</td>
<td>Yes</td>
<td>Yes</td>
<td>Monitoring and reporting of compliance</td>
</tr>
<tr>
<td>Peacekeeping</td>
<td>Map creation and updating</td>
<td>Yes</td>
<td>Yes</td>
<td>Provision or updating of scales from 1:500 000 to 1:10 000 and better</td>
</tr>
<tr>
<td></td>
<td>Terrain analysis</td>
<td>Yes</td>
<td>Yes</td>
<td>Creation of trafficability maps using digital elevation modelling, soil and vegetation assessment</td>
</tr>
<tr>
<td></td>
<td>Damage assessment</td>
<td>Yes</td>
<td>Yes</td>
<td>Change detection techniques illustrate damage to agriculture and specific infrastructure</td>
</tr>
<tr>
<td></td>
<td>Threat assessment</td>
<td>No</td>
<td>Yes</td>
<td>Monitoring ongoing ground situation for various evolving threats</td>
</tr>
<tr>
<td></td>
<td>Population monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td>Tracking of population movement, particularly of displaced persons, monitoring of its evolution</td>
</tr>
<tr>
<td>Peace enforcement</td>
<td>Overview monitoring reports</td>
<td>Yes</td>
<td>Yes</td>
<td>Regular summarised assessments, backed by imagery, help plot the overall ground situation</td>
</tr>
<tr>
<td></td>
<td>Location monitoring</td>
<td>Yes</td>
<td>Yes</td>
<td>Regular assessment for activity at specific locations of high interest, such as barracks, various forms of camp and population centres</td>
</tr>
<tr>
<td></td>
<td>Incident reporting</td>
<td>No</td>
<td>Yes</td>
<td>Assessment and reporting of specific incidents, such as outbreaks of violence or controversial ground developments</td>
</tr>
<tr>
<td></td>
<td>Locating particular groups and individuals</td>
<td>No</td>
<td>Yes</td>
<td>Monitoring of locations and often activities of local ‘personalities’</td>
</tr>
<tr>
<td></td>
<td>Treaty verification</td>
<td>Yes</td>
<td>Yes</td>
<td>Ongoing reporting builds up a comparative record of compliance over time and acts as a focus for resolving alleged violations</td>
</tr>
</tbody>
</table>
For example, rural village and track infrastructure patterns would defy full interpretation by those unfamiliar with the respective cultures; conversely, much detailed information can be derived by those familiar with the African environment (Petter-Bowyer 2005).

Thus, to be effective, the staff of any II facility in support of peace operations should represent a combination of experience in II and RS methodology as well as familiarity with African cultural infrastructure. At present, no such capability exists internationally or regionally.

With reference to figure 4, the mass of evaluation skill in most current CSI facilities lies towards the upper left of the diagram. This favours the production of more low-frequency, wide-area RS analysis reporting of a general nature. A more focused regional facility would be capable of more detailed and timely interpretation throughout the peace support operation.

**Guidelines for operation**

The running of II operations is based on a variety of independent, nationally adopted standards and procedures, with varying effectiveness and guarantees of quality. Interpretation product, by its very nature, can be biased if not subjected to effective quality control procedures. These have to be established, properly documented and verified, and linked to a GIS database. This type of system is rather like a very refined and disciplined Google Earth which itself sits over a growing archive of imagery relevant data. Any new centre being established would hopefully not have to cope with legacy data on magnetic tape.
The efficient and acceptable control and prioritisation of tasking require close management of both the nature of the task and the type of output in response to tasking. Unrealistic tasking expectations can and do arise if control and prioritisation are not successfully implemented.

The concept, scope and mandate of the centre’s operation must be defined during the initial phases of establishment and expressed in a concept paper. It should be a living document accommodating lessons learned from experience and from the evolving political landscape and should serve to introduce the envisaged missions of the centre, its role, terms of reference and lines of communication. These will now be discussed in more detail.

**Statement of missions**

The prioritisation and scope of missions have to be outlined. In addition to primary missions in direct support of peace operations, other tasks such as humanitarian, rescue and disaster management tasks can be included, as well as provisions in support of various outside agencies if required or requested. It is highly desirable for the centre to be mandated to provide specialist training for its own personnel. It should also be a regional
focus for expanding the skills base beyond its immediate requirements. As a guideline, approximately one third of the centre’s timetable would be expected to involve aspects of internal training. In addition, it is suggested that a sector of the centre’s activities be focussed on developing and advancing techniques and procedures in areas relevant to its operations.

**Statement of role**

The politico-military status and subordination of the centre have to be defined. Clear hierarchies of operational management and accountability to superior bodies have to be mandated. It is likely that one or more specialist supervisory and steering structures may have to be designed to provide executive links to the organisation governing the centre’s activities.

**Terms of reference**

Terms of reference have to be defined for the centre’s director and executive staff. The director’s responsibilities have to be identified. Some of these may then be delegated to the various section heads, such as operations, administration and engineering support.

**Lines of communication with users**

Channels by which organisations may task the centre have to be defined and the points of contact identified. Principles of task prioritisation have to be defined.

The concept paper can be used as the cornerstone in defining the centre’s operations and mission statement. Once this has been done, it will be possible to determine the centre’s correct size, staff component, equipment mix, operational support requirements and training obligations. The cost of setting up and running such a centre for Africa clearly depends on its size, location and anticipated output and should amount to less than €50 million. As an approximate comparison, following a start-up investment of approximately €40 million in 1992, the current annual budget of the EUSC (covering approximately 70 members of staff, equipment and support infrastructure) was recently pegged at around €10 million (EUSC Director 15 Jun 2005). On this budget, the EUSC aims to provide:

- An operational service, with security awareness
- Effective imagery analysis/geospatial expertise for defence, security and peacekeeping applications
- Advanced developments and products
Significant potential, resources permitting, to contribute to European, and wider, defence, security and peacekeeping requirements.

**Location and subordination**

A possible location for such a centre is within the AU Peace and Security Directorate (PSD) that has as its stated overall objective ‘the maintenance of peace, security and stability through the coordination and promotion of African and other initiatives on conflict prevention, management and resolution within the context of the UN’ (AU).

The directorate’s specific objectives include:

- Coordinating, harmonising and promoting peace and security programmes of the Regional Economic Communities (RECs) within the African Union
- Establishing an efficient early-warning system to support rapid response by the AU
- Developing a common African defence and security policy
-Engaging in mediation and resolution of conflicts
- Enhancing the capacity of the AU
- Contributing towards strengthening stakeholder capacity in conflict prevention, management and resolution

It is suggested that the objectives of the AU PSD could be well supported by the establishment and operation of a regional CIS in Africa. There is sufficient congruency with the WEU Council of Ministers 1992 Third Petersburg declaration supporting the precursor to the EUSC to indicate that EU cooperation in setting up such a centre would be beneficial, particularly in view of the EUSC’s established support to EU operations on the African continent.

**Summary**

The years since the collapse of the USSR have seen a change in the perceived nature of conflict as well as an appreciation of how it can be countered, particularly via peace operations. This evolution coincided with an enormous increase in the capability of commercial satellites, whose imagery can be exploited in numerous ways in support of peace operations. Africa presents a range of regional conflicts in which CSI could be exploited advantageously.
The fact that peace support operations require ready access to, and appropriate control over, a range of products utilising RS and II, as well as cultural familiarity, seems to indicate support for a regional centre. In Africa, such a centre could be established under the AU, possibly with cooperation of the EU and support from the EUSC.

**Notes**

1. For more information, see [http://europa.eu.int/comm/space/gmes/](http://europa.eu.int/comm/space/gmes/).
3. UN initiative that provides satellite images and digital satellite maps to users. See [http://www.unosat.org](http://www.unosat.org) [accessed 23 March 2007].

**References**


