

**SATELLITE IMAGERY AND THE DEPARTMENT OF SAFEGUARDS**

K. CHITUMBO, J. BUNNEY, G. LEVÉ, S. ROBB  
International Atomic Energy Agency, Vienna, Austria



The presentation examines some of the challenges the Satellite Imagery and Analysis Laboratory (SIAL) is facing in supporting Strengthened Safeguards. It focuses on the analytical process, starting with specifying initial tasking and continuing through to end products that are a direct result of in-house analysis. In addition it also evaluates the advantages and disadvantages of SIAL's mission and introduces external forces that the agency must consider, but cannot itself, predict or control.

Although SIAL's contribution to tasks relating to Article 2a(iii) of the Additional Protocol are known and are presently of great benefit to operations areas, this is only one aspect of its work. SIAL's ability to identify and analyze historical satellite imagery data has the advantage of permitting operations to take a more in depth view of a particular area of interest's (AOI) development, and thus may permit operations to confirm or refute specific assertions relating to the AOI's function or abilities. These assertions may originate in-house or may be open source reports the agency feels it is obligated to explore.

SIAL's mission is unique in the world of imagery analysis. Its aim is to support all operations areas equally and in doing so it must maintain global focus. The task is tremendous, but the resultant coverage and concentration of unique expertise will allow SIAL to develop and provide operations with datasets that can be exploited in standalone mode or be incorporated into new cutting edge tools to be developed in SGIT.

At present SIAL relies on two remote sensors, IKONOS-2 and EROS-A1, for *present* high-resolution imagery data and is using numerous sources for historical, pre 1999, data. A multiplicity of sources for high-resolution data is very important to SIAL, but is something that it cannot influence. It is hoped that the planned launch of two new sensors by Summer 2002 will be successful and will offer greater flexibility for image collection. Because satellite imagery is purchased from commercial vendors the need for confidentiality is paramount. Present ordering is handled via encrypted electronic communication, however SIAL is already investigating more secure possibilities including acquiring an agency ground station for direct downloading of imagery data and "buying time" on a remote sensor that would allow the agency to directly task satellite operation via secure communications links.

The presentation is expected to illustrate the value of commercial satellite imagery to Strengthened Safeguards and the importance of a clearly defined analytical process that will as a consequence manifest itself in a series of unique products and tools that will make for a more robust and efficient inspectorate.