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Open Source Analysis in Support to Nonproliferation Monitoring and Verification Activities: Using the New Media to Derive Unknown New Information

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This paper will describe evolving techniques that leverage freely available open source social media venues, sometimes referred to as the "New Media,"together with geospatial tools and commercial satellite imagery (with its ever improving spatial, spectral, and temporal resolutions), to expand the existing nuclear nonproliferation knowledge base by way of a review of some recent exemplar cases. The application of such techniques can enhance more general data mining, as those techniques can be more directly tailored to IAEA Safeguards monitoring and other nonproliferation verification activities to improve the possibility of the remote detection of undeclared nuclear related facilities and/or activities.

As part of what might be called the new "Societal Verification"regime, these techniques have enlisted either the passive or active involvement of interested parties (NGOs, academics, and even hobbyists) using open sources and collaboration networks together with previously highlighted geospatial visualization tools and techniques. This paper will show how new significant, and unprecedented, information discoveries have already been made (and published in open source) in the last four years, i.e., since the last IAEA Safeguards Symposium.

With respect to the possibility of soliciting active participation (e.g., "crowd-sourcing") via social media, one can envision scenarios (one example from open source will be provided) whereby a previously unknown nuclear related facility could be identified or located through the online posting of reports, line drawings, and/or ground photographs. Nonetheless, these techniques should not be viewed as a panacea, as examples of both deception and human error will also be provided.

This paper will highlight the use of these remote-means of discovery techniques, and how they have shed entirely new light on important nuclear nonproliferation relevant issues in limited access, and even denied access, areas.

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