

never be accessed. Applicability ranges can be determined for information sources with known characteristics, facilitating comparison of different sources and different schemes for combining sources.

- When the costs of delay in acting against a violation are most important, additional information tends to be most useful when the likelihood of a violation is low, but not zero. It is important to update beliefs as soon as possible, so that there will be an immediate response should the data indicate that a violation is likely.
- Synergy across different information sources, or across independent information from the same source, seems to be possible over a wide range of circumstances. However, different data-handling schemes need to be constructed to capitalize on synergy in different circumstances. For instance, information from a low-cost source, even if too inaccurate to be used alone, can be extremely valuable if used sequentially and contingently with information from other sources. Schemes involving follow-ups on prior data from low-cost sources may be especially useful for adversarial or coercive verification, when there is a likelihood of a violation somewhere, but when precise data can come only from on-site inspections that are costly, difficult and/or subject to quotas.

The following are some potential policy implications of these findings, which should aid in achieving synergy across information sources.

#### Value of Independent Information

Independent information, even if incomplete or difficult to interpret, should never be discounted entirely. It may be possible to combine synergistically a source of cheap, but "noisy," information with other sources possessing different characteristics. For instance, in the Satellite/On-Site example presented above, the Satellite information was never useful by itself but, in various circumstances, appropriate combination procedures were optimal.

#### Design of Information-Acquisition Procedures

If several sources of information are available, combination acquisition procedures — which source to access first, which source to access next or whether to act immediately, etc. — should be designed carefully. Note that the procedure may be designed so that the information obtained can affect subsequent choices. For example, in the Delay Model, the decision is always to Alarm immediately if 'Observe 2' is obtained in the first pass, but to Await Satellite following 'Observe 0.' The Satellite/On-Site example shows that different combination of information-acquisition procedures can be optimal, synergistically achieving the greatest effectiveness and cost-effectiveness, in different circumstances.

#### Readiness

It is not a good idea to commit to a long sequence of information-gathering steps. It is much better to maintain readiness to act as soon as the evidence is sufficiently clear, continuing to seek information only so long as the situation remains uncertain. Thus, in the Delay Model, the response to 'Observe 1,' is to Alarm immediately, without awaiting any further information, whenever this finding makes the updated probability of a violation high enough.

