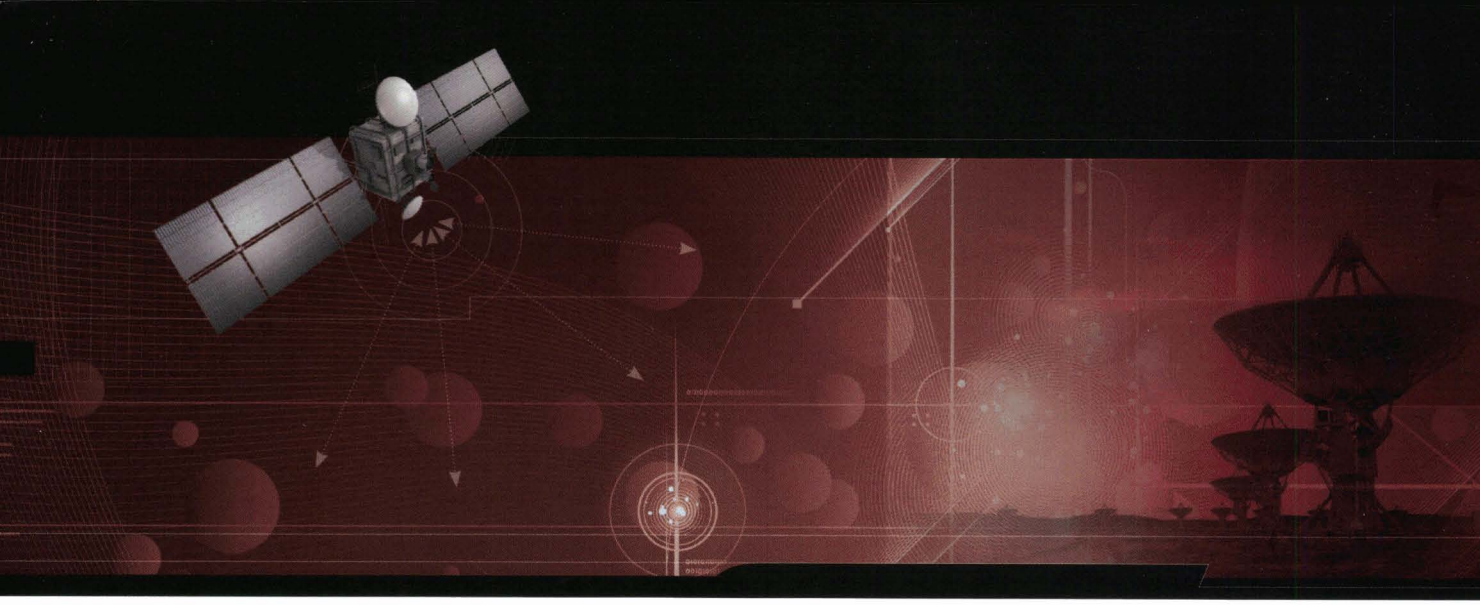
SATELLITE

Strategic Satellite
Monitoring

VASTech

Innovative And Proven
Communication
Intelligence Solutions



Monitoring Satellite Communications

Footprints of telecommunication satellites cover most of the globe, carrying hundreds of thousands of communication channels. For any country there is significant intelligence value in the communication contained in these channels, especially the communication which occurs outside its borders.

Satellite monitoring is often viewed as having a too high barrier of entry due to infrastructure costs and unmanageable complexity. VASTech overcomes this significant challenge with novel methods of access and very strong automated analysis.

Gathering intelligence from satellite networks requires detailed exploration of the satellite transmission spectrum to discover carriers with intelligence value. It also requires flexible monitoring equipment that is able to access the variety of content in these carriers.

VASTech develops very large scale solutions for passive monitoring and interception of communications in a wide variety of environments. These solutions include the VASTech Satellite Signal Analyser, Zebra and Badger systems. Satellite analysis and interception capabilities are designed into the product architecture from the ground up.

Powerful Analysis

The VASTech Satellite Signal Analyser (SSA) allows analysts to identify carriers of interest in the spectrum of satellite-borne transmissions and provides all parameters required to gain access to the content. The SSA enables rapid analysis of satellite polarisations by

- discovery of carriers
- computing the carrier parameters to allow demodulation,
- analysing the protocols contained in each carrier, and
- extracting the content

This enables analysts to judge the intelligence value of the communication contained in each carrier and classify the results. A database of these scanning results is progressively built up as new polarisations are scanned and known polarisations re-scanned, offering up-to-date information of all accessible satellite communications. The database contains all the parameters required to rapidly configure an interception system on chosen carriers when demanded by intelligence needs.

The SSA supports a large range of error correction codes, scramblers, modulation schemes and protocols. It also has the ability to classify and decompress DCME streams, analyse VSAT as well as DVB and DVB-S2 signals. The system is flexible, allowing the functionality and capacity to be incrementally expanded as required. Live playback of channels enables quick judgement of the intelligence value of a carrier.

The SSA offers different operating modes which provides flexibility in this complex environment. In the Automatic Scanning mode the system will scan an entire polarisation unattended, delivering all demodulator parameters and protocols of carriers that are discovered. This mode is augmented by the Tuning mode which allows analysts to fine-tune these demodulator parameters and protocol selection. This enables expert human input to be used for carriers with a low signal-to-noise ratio.

Powerful Monitoring

With all the parameters of carriers known, the remaining challenge is to intercept all content and other information related to the communication. The VASTech Zebra and VASTech Badger systems are well-positioned to perform this task due to their power and capacity to process and capture everything to which they are connected while retaining very large amounts of information.
These systems enable pro-active intelligence gathering over extended periods to allow the investigator to reconstruct communication scenarios after an incident, providing information on known targets, new targets and their collaborators. These systems are ideally suited to the demands of satellite monitoring due to their small footprint, remote deployment ability and integration features (which make the intercepted information available to other analysis applications).
In addition it enables a unified view when deployed with other Zebra and Badger systems, thus offering an overall intelligence picture over any geographical area.

Zebra is designed for use in telecommunication environments and has built-in DCME classification and decompression functionality, which greatly simplifies deployment for satellite monitoring.
All carriers, including DCME-compressed carriers, are connected directly to the Zebra E1, SDH or GigE gateways.

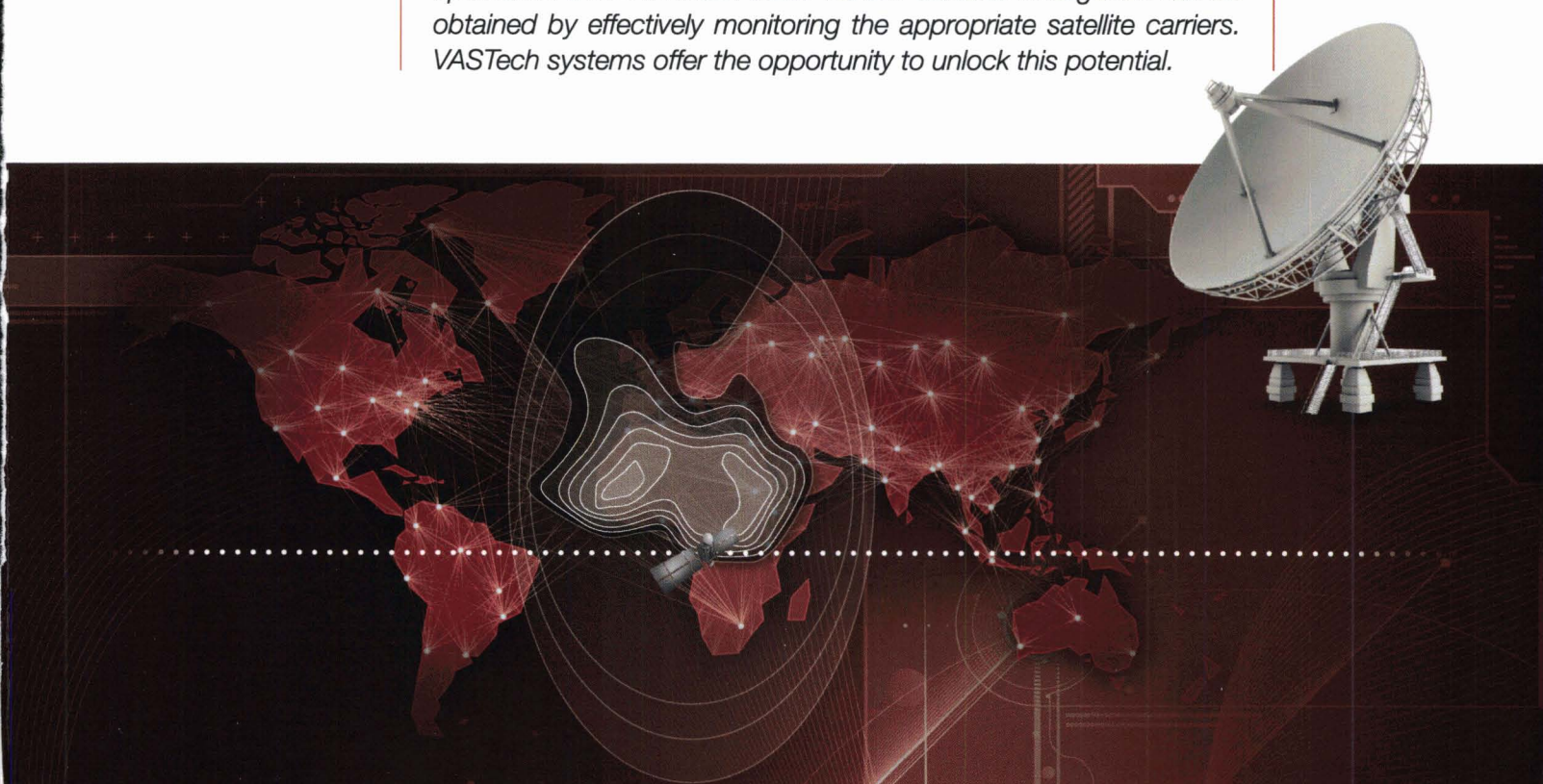
DCME terminal types are automatically detected and switched in under software control. This allows rapid reconfiguration and support for a wide range of DCME terminals in a very small footprint. Decompression is performed in software, transparent to the user. The Zebra CIC mapping function resolves the complex task of mapping SS7 signalling to bearer channels, providing A- and B-party numbers, point codes identifying the location of both ends of the channel and also bringing together the two sides of stereo conversations.

Badger is a highly scalable monitoring system designed for use in broadband networks, capable of capturing the traffic on multiples of 10 Gigabit Ethernet and STM64 inputs in a widely distributed and highly robust architecture. Badger is the architectural platform of choice for large capacity implementations of Internet monitoring, download analysis, webmail and social networks.

These VASTech monitoring systems work together to form a fully-featured solution. The software-centric design simplifies the addition of functionality and enables customisation to match unique customer needs. The combination of VASTech SSA, Zebra and Badger is flexible and powerful to address any communication satellite interception requirement.

Valuable Intelligence

Accurate intelligence helps governments make informed decisions to defend a country's sovereignty and protect public safety. Through use of intelligence derived from VASTech monitoring solutions, the correct resources can be efficiently deployed to pre-empt planned operations which threaten these values. Valuable intelligence can be obtained by effectively monitoring the appropriate satellite carriers. VASTech systems offer the opportunity to unlock this potential.



SATELLITE

Strategic Satellite Monitoring

Benefits

- Unified intelligence picture over terrestrial and satellite networks
- Sophisticated monitoring and analysis functionality
- Built-in features for satellite monitoring
- Rich information, including content
- Highly scalable and distributable with redundancy options
- Small footprint, upgrade incrementally as needs demand
- Ease of integration with analysis applications and other systems
- Software-based, using the latest commercially available hardware

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Satellite and Terrestrial Monitoring Solutions for National, Regional and Transnational Intelligence