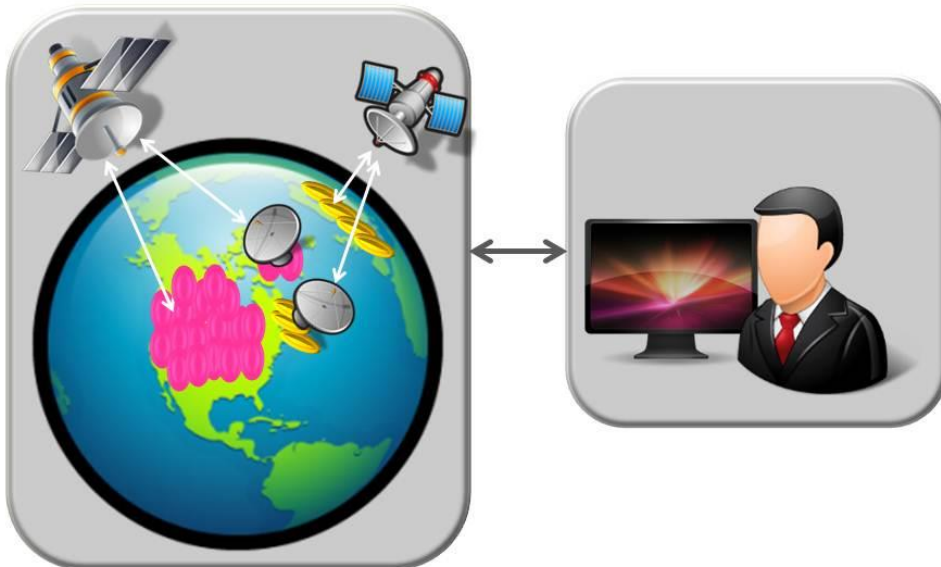


High Throughput Satellite Carrier Monitoring

Today HTS provides much more capacity than the traditional satellite technology; this is achieved by a high level frequency re-use and spot beam technology which enables frequency re-use across multiple narrowly focused, spot beams (usually in the order of 100s of kilometers). By contrast traditional satellite technology utilizes a broad single beam (usually in the order of 1000s of kilometers) to cover wide regions or even entire continents. In the ground station field, HTS brings many advantages however also brings complexity, therefore Integrasys has been working on the best systems for HTS ever built.

A fundamental difference to existing satellites is the fact that HTS are linked to ground infrastructure through a feeder link using a regional spot beam dictating the location of possible teleports. By contrast teleports for traditional satellites can be set up in a wider area as their spotbeams footprints cover entire continents and remote regions.

This issue brings a huge complexity designing gateways and expensive monitoring systems for each beam. Therefore Integrasys has upgraded Controlsat Carrier Monitoring System for High Throughput Satellite cost effective solution, after the ground station is planned by GeoBeam Link Budget calculation software, taking in to account the Satellite antenna patterns, Controlsat minimize the investment significantly by using the HTS cost effective solution.



GeoBeam with simple interface allows the operator to provide the best region for monitoring each beam remotely. It is the best tool for designing the HTS gateway projects with an extreme accuracy. After a location is determined, network, antenna size, C/N and more parameters could be calculated for return and forward links before the real network is deployed. This way we will ensure to design a reliable network which performs the measurements with the maximum accuracy and minimum resources.

HTS Satellite Carrier Monitoring Solution

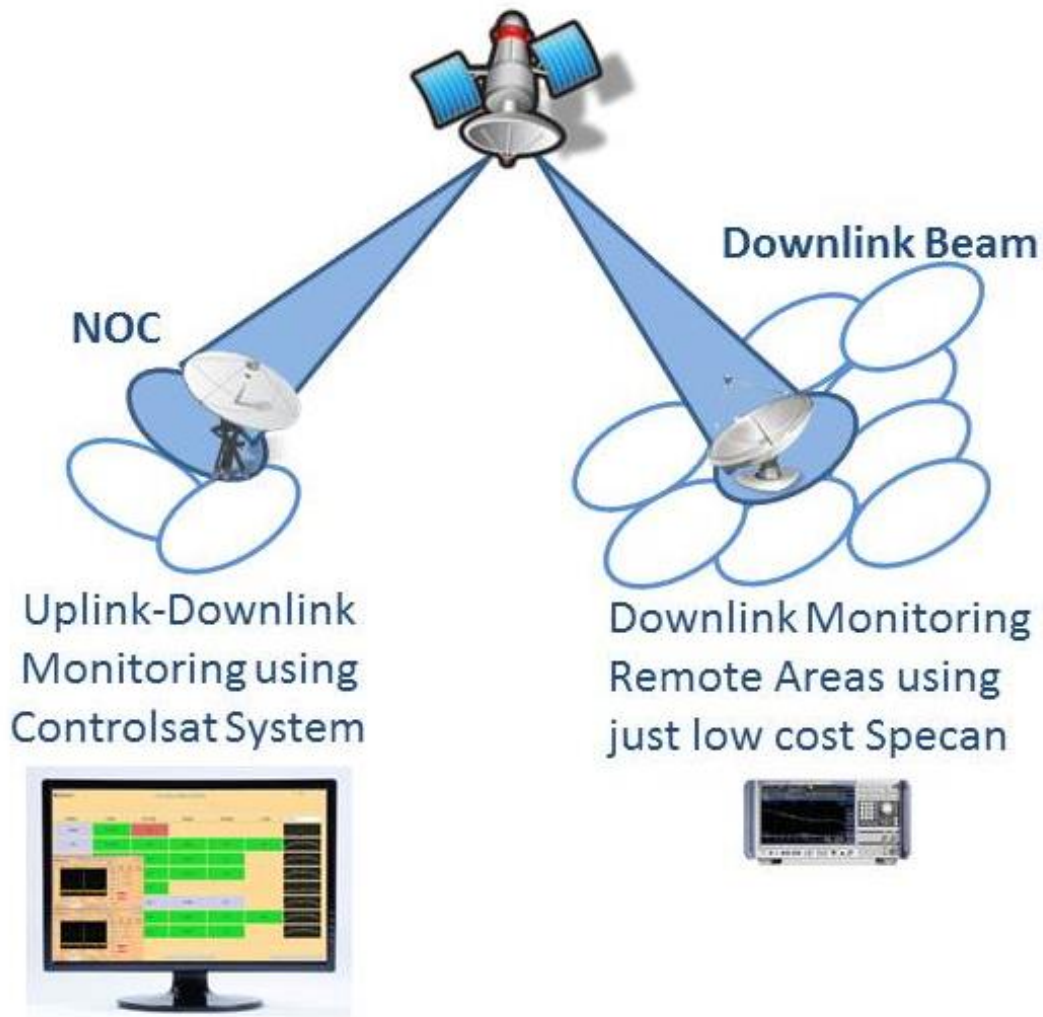


When the project is properly planned, Integrasys installs ControlSat, fastest Carrier Monitoring System on the market, customized specially for HTS. This solution is a client/server architecture, which controls all beams from the same location in Real Time. ControlSat is able to monitor transmission in Ka or Ku, while downlink spot beams are monitored remotely by down converting to L band for minimizing the investment. This allows the Satellite Operator to monitor all the downlink beams from the full satellite and all pols simultaneously, saving time and investment.



HTS Satellite Carrier Monitoring Solution

In order to provide an affordable solution, Integrasys has decided to monitor multiple low cost spectrum analyzers with good performances from the same location in real time using TCP/IP protocol. This capability minimizes the cost and installation effort, because many beams will have not any teleport located in that region; because the beam covers remote locations (footprint order of 100s of kilometers). Many times, the only way to monitor these beams will be a remote installation and satellite link; therefore the minimum equipment with maximum performance is required.



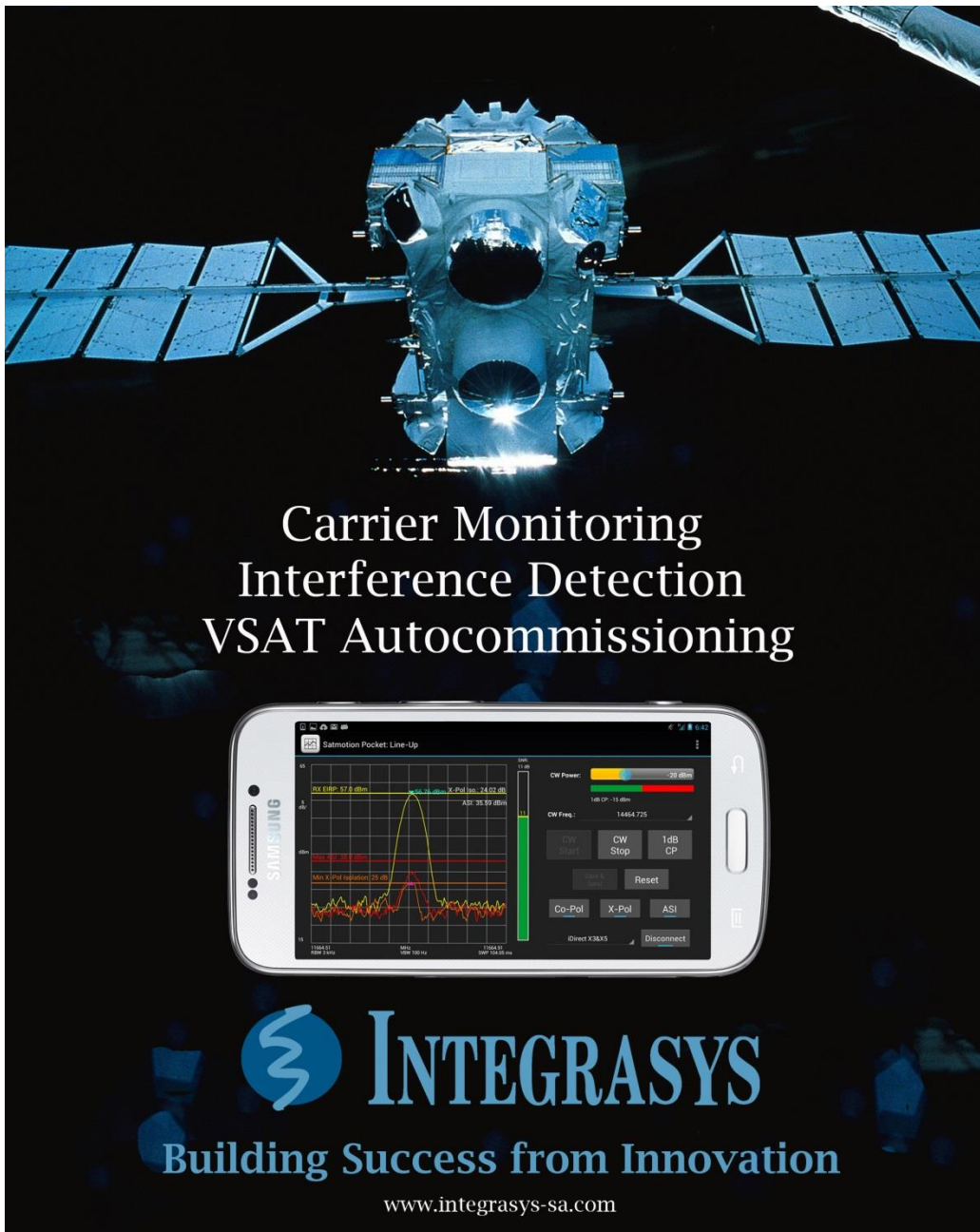
Controlsat installed at the NOC, reads the frequency plan from CMS database and adjusts the thresholds, alarms and warnings automatically and manually depending on the customer requirements. In case there is any interference or a service failure Controlsat automatically detects it and alarm, visually, sound and email reporting.

All interference or service failures could be recorded by the operator in the minimum size files and later reproducing and post-measuring by any customer or regulatory organization without the need of any CMS, just by using internet browser.

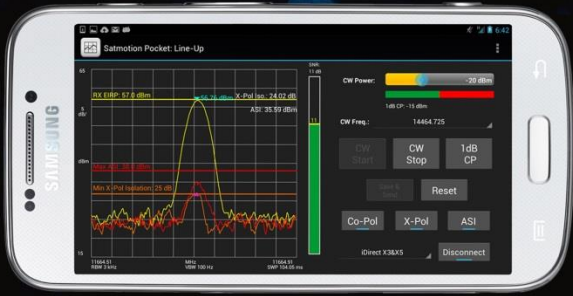
HTS Satellite Carrier Monitoring Solution


This way Integrasys has managed to implement the most cost efficient and fastest Carrier Monitoring Systems for HTS. And these Controlsat advance capabilities becomes Integrasys HTS solution essential for an accurate and cost effective High Throughput Satellites downlink and uplink real time Monitoring.

INTEGRASYS Building Success from Innovation



Carrier Monitoring
Interference Detection
VSAT Autocommissioning



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