

Fighting RF interference is a team effort

PUNTA GORDA, FLORIDA –

In October last year, the satellite industry marked the 50-year milestone of the launch of Sputnik. Since that historic launch, satellite communications has gone from novel to mainstay, from an event that captured everyone's curiosity to an industry everyone relies on.

For satellite operators and users, the burden of ensuring uninterrupted service is immense. One obstacle, however, that few operators can easily sidestep, is radio frequency interference (RFI). There are numerous causes for interference including human error, deliberate interference, equipment malfunction, or any number of other culprits. The result, regardless of the cause, is a tremendous drain on company resources — manpower, available satellite capacity and, of course, budget.

The problem is getting worse. "Interference is coming in all shapes and sizes," Intelsat vice-president for Network Operations Khalid Chaudhry told participants at a recent meeting of the World Broadcasting Unions International Satellite Operations Group (WBU-ISOG). According to Chaudhry, the global demand for Internet, including services for ships and aircraft, is exacerbating the problem.

What is being done?

Fifteen years ago several operators began discussions about the effect of interference on their bottom line and what could be done about it. Out of those discussions grew the Satellite Users Interference Reduction Group (SUIRG). Since its incorporation in 2002, the organisation has grown from a generally investigative role to an association that

association update

is actively pursuing RFI mitigation and solutions, as well as affecting industry policies.

Over the years, SUIRG has worked hard to become the clearing house of information and best practices regarding radio interference. Owing to the participation and cooperation of its member companies, SUIRG has amassed an impressive database of interference incidents and industry-changing activities, including:

- Universal access procedures, which were adopted by the ITU as an industry recommendation.

- Training certification of courses for SNG/VSAT operations.

- Carrier Uplink Location Identification specifications, which are starting to appear in new equipment designs.

- Submitting comments to the US Federal Communications Commission (FCC) for proposed use of FSS Ku-band frequencies by Aeronautical Mobile Satellite Services.

- Leading the development and test plans and procedures as well as performing file-compatibility testing of shared C-band frequencies. The subsequent test report contributed to WRC protection of C-band frequencies in most countries.

- Developing a database of unique spectrum signatures of interference incidents along with reported causes and resolutions to assist investigation of ongoing interference incidents by operators.

- The recent submission of comments to the FCC pertaining to the Utility Telecom Council's proposal for shared use of the 14.0-14.5GHz band.

A team effort

A key initiative that SUIRG has been working on is developing a matrix database for cataloguing interference incidents. This database, collected anonymously from incident reports provided by satellite operators and users, provides valuable information that allows SUIRG to analyse the causes of interference and maximise efforts towards the majority cause. This database of incidents, while a crucial tool in analysing the number of incidents that have occurred, their location and potential impact, is only as good as the data it contains.

SUIRG has initiated a campaign to work with member organisations and the industry as a whole to raise awareness of the capabilities and benefits of the database.

The incident report form, which exists on the SUIRG website, is submitted anonymously. Organisations may contribute existing information in different formats, which SUIRG will then convert to a common format. By pooling incident information, the industry can better address and manage the serious issue of RFI and work as a unified entity in eliminating or at least vastly reducing the number of incidents that occur.

Another important SUIRG initiative is its involvement with the Carrier Identifier (ID) project. Carrier ID is the inclusion of carrier-identification capability, which would provide the much-needed



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ability to identify the source of interfering signals.

A test conducted at the 2006 WBU-ISOG conference proved the importance of such a standard and the response from the industry has been positive. Colem Engineering, along with Link Research, has implemented Carrier ID capabilities on all of its uplink equipment and is currently developing a strategy to establish the possibility of retrofitting equipment already operational in the field.

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"Link, Colem Engineering and Advent Communications have been terrific proponents of Carrier ID and I hope they will serve as a model for other equipment vendors in the industry to follow suit and implement Carrier ID within their own products. Being able to pinpoint the source of the interference in a matter of minutes and with an exact location, means a significant cost savings for operators and users," said Adam Edwards, SUIRG's treasurer and senior manager, Payload Operations for SES Engineering.

James Budden, SUIRG's chairman and president of Satellite Communications Operations Consulting, added: "Widespread adoption of standards such as Carrier ID and support of the interference matrix database are

two important ways the industry can help in the battle against interference. This is a problem that doesn't discriminate. Regardless of whether you have one satellite or 30, chances are you'll be facing interference incidents at one point or another. The drain on companies is immense. SUIRG is hoping that by bringing companies together in a non-competitive environment we can raise awareness and reduce incidents."

Be a part of the solution!

Membership in SUIRG provides companies with a say in eradicating satellite interference — from participation in SUIRG-organised tests and visibility through SUIRG publications and publicity, to an active role in affecting industry standards and policies. With four levels of membership, there is something for everyone. Log on to the SUIRG website at www.suirg.org to become part of the solution against satellite interference.

SUIRG is an international not-for-profit assembly of parties with representation from both the private and public sectors, organised to combat the increasing and costly problem of satellite RF interference. The group's membership comprises satellite operators, users, uplinkers, service providers, equipment vendors and other organisations with a stake in combating radio frequency interference. SUIRG also collects interference incident data from satellite operators on its website to clearly define the specific areas that need focus to reduce the number of incidents.

www.suirg.org.

The Satellite Users Interference Reduction Group (SUIRG) alternates with the Asia-Pacific Broadcasting Union (ABU) and the Japan Electronics and Information Technology Industries Association (JEITA) to appear in every other issue of APB, highlighting various association news to the industry.



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Mark your calendar: 2008 SUIRG Annual Conference

Every year, leading satellite industry executives from over 15 countries come together for three days of candid and informative problem-solving discussions on satellite interference. Organised by the Satellite Users Interference Reduction Group (SUIRG), the annual event is a working meeting where attendees openly discuss topics such as interference incidents review and resolution; implications of interference; and ongoing mitigation programmes.

The 2008 conference hosted by SUIRG member NileSat, will be held from October 7-9 at the Nile Hilton Hotel in Cairo, Egypt. Registration for the annual meeting, as well as hotel reservation information can be found on the SUIRG website. The agenda for the 2008 annual meeting will be posted on the website as it becomes available.

Attendance at the annual meeting is free for SUIRG members, with a nominal registration fee of US\$450 for non-members.