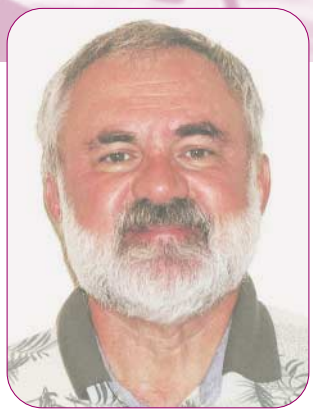


Giovanni Verlini, Editor of Satellite Evolution Asia (SEA), talked to Robert W. Ames Jr, President of the Satellite Users Interference Reduction Group (SUIRG).

Dedicated body

tackles RFI problem

Perhaps unknown to the many, Radio Interference (RFI) is a serious problem affecting the daily running of virtually all satellite operators. A problem that is now being tackled by a dedicated industry body: the Satellite Users Interference Reduction Group (SUIRG).

FCC orders new measures to deal with orbital debris

The US Federal Communications Commission (FCC) is moving to deal with the dangers of orbital debris by ordering tough new measures governing how satellites are disposed of by their owners.

Over the objections of several of the world's largest commercial satellite-fleet operators, the FCC ruled that all US-licensed satellites launched after 18 March 2002, will have to be placed into so-called graveyard orbits between 200 and 300 kilometers above the geostationary arc, where most commercial satellites operate.

Under the new FCC rules, operators of geostationary satellites will have to commit to raising their satellites to between 200 and 300 kilometers above geostationary orbit as a condition of receiving a license to provide services in the US. ■

Question: How would you introduce the SUIRG to the readers of Satellite Evolution Asia (SEA)? When was SUIRG set up and why?

Robert W Ames: SUIRG was formed over eleven years ago as an informal group of satellite engineers and others committed to fighting satellite RFI with particular reference to satellites operating in Geostationary Orbit (GEO).

The Group was incorporated in September 2003 as a means to obtain financial funding to allow SUIRG to take a more formal, proactive stance on the issue. Regional groups such as the Cable & Satellite Broadcasting Association of Asia (CASBAA) and the World Broadcasting Union (WBU) were strong proponents of a centralised organisation devoted to fighting RFI.

As a legal entity SUIRG can now accept membership fees to support its international RFI-fighting strategies. SUIRG currently has 22 member corporations from 11 countries representing 14 major satellite operators plus several users and equipment vendors.

Q: How would you define RFI? How big a problem is it for the satellite community?

RWA: At its simplest, RFI refers to any unwanted signal. Its causes are many, but primarily can be attributed to inadequate training, failure to follow procedures, less robust equipment and fewer on-site earth station operators, and closer satellite spacing, ie, two degree spacing.

The financial cost to satellite operators for unwanted signal interference ranges from several hun-

As a legal entity SUIRG can now accept membership fees to support its international RFI-fighting strategies.

dred thousand to millions of dollars a year, depending on their fleet size. For example, a recent SUIRG analysis of a representative satellite company with a fleet of three geostationary satellites operating in the Atlantic Ocean Region (AOR), Pacific Ocean Region (POR) and Indian Ocean Region (IOR) indicated an operator can incur over US$600,000 per year in lost revenue due to RFI.

These costs are attributed to additional manpower requirements for identifying and resolving RFI incidents, equipment upgrades, loss of usable bandwidth, and the overall negative perception problems RFI cause the satellite industry.

Q: In one of SUIRG's press releases RFI is referred to as "... a problem that exacts an increasing financial toll on satellite operators." However, there seems to be little awareness of the problem in the marketplace at large. Why?

RWA: Other than the informal efforts of SUIRG and some regional satellite organisations, there had been no concerted industry campaign to promote the problem and advocate solutions. Since its incorporation last year and the growing support it is receiving from satellite and terrestrial operators and equipment makers, SUIRG has embarked on a programme of public awareness and industry coordination to bring greater attention and awareness to its efforts.

To document the international extent of the interference problem, SUIRG developed an Interference Data Collection (IDC) application to gather information relating to satellite interference events that occur in the geostationary arc. The IDC analyses the collected data and produces statistical results based on the associated RFI category and ocean region.

SUIRG also has a number of internal working groups whose objectives are to tackle the key issues and raise public awareness concerning interference.

Q: What are the factors contributing to satellite interference?

RWA: Radio frequency interference can have many causes, chief among them are:

- Human error;
- Adjacent satellite transmissions;
- Cross-pollination;
- Faulty or malfunctioning equipment;
- Deliberate interference; and
- Terrestrial services.

Q: What types of satellite services are most associated with signal interference and why?

Voice of the industry

The Satellite Users Interference Reduction Group (SUIRG) is a global industry organisation dedicated to combating the increasing and costly problem of satellite Radiofrequency Interference (RFI). Comprised of representatives from both private industry and the public sector, SUIRG shares and disseminates RFI information and remedies, works with industry to define equipment standards and proficiency training, and actively pursues programmes to reduce or mitigate satellite interference.

Incorporated as a non-profit corporation in September 2003, SUIRG combines the collective strength and technical capability of its members to achieve what no single company can do alone. SUIRG was incorporated as a 501(c) (6) trade association in September 2003, although it has a ten-year history of working to reduce radio interference. Its Founding Members are Intelsat, PanAmSat, Inmarsat, New Skies Satellites, QinetiQ, and Glowlink.

SUIRG's extensive and qualified industry experience is put to best advantage influencing suppliers, improving the quality of satellite communications equipment and services, and identifying and providing technical resources to its members. ■

RWA: Satellite Newsgathering (SNG) trucks, Very Small Aperture Terminal (VSAT) networks, satellite Internet services, general faulty equipment from all sorts of ground stations, plus increasing deliberate interference, are most associated with RFI.

Other contributing factors are the increasing

number of satellite uplinks, two degree spacing for satellites, less robust equipment design and minimally trained operators. For example, the only license required of an SNG operator is that to drive the vehicle. While most SNG and VSAT uplinkers are responsible, trained technicians, there is a growing problem with these operators not having sufficient training or experience to operate their increasingly complex uplink and transmission equipment.

Q: What can be done to prevent RFI? What is SUIRG doing about it and what should the satellite community do?

RWA: SUIRG is leading the industry's voluntary efforts to combat and manage radio frequency interference by acting as a clearinghouse of information and best practices regarding ground station operations, collating interference data and coordinating industry-wide efforts to address and rectify RFI sources.

We support satellite operators and users through a variety of initiatives:

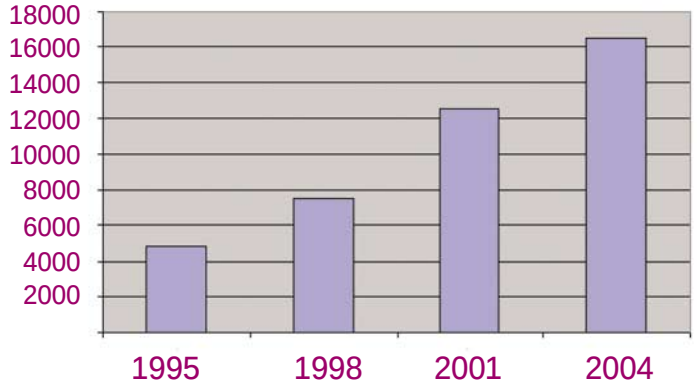
- Identifying and prioritising the causes of radio frequency interference;
- Acting as a central repository of RFI information and resources;
- Co-ordinating industry-wide interference management efforts between operators, users and manufacturers;
- Providing a neutral and broad interface for manufacturers and vendors; and
- Serving as a single co-ordinating point on interference reduction issues.

For example, we are leading the effort to develop licensing and training requirements for uplinkers, co-ordinating with the manufacturers of satellite transmission equipment to incorporate signal identification, and, in conjunction with user groups, developing Universal Carrier Uplink Procedures (UCUP), which are now before the International Telecommunication Union (ITU) for standardisation.

Anyone within the satellite community concerned with interference is encouraged to join SUIRG to support its efforts to stop interference before it starts. The level of effort SUIRG can support is directly related to its membership base and funding. ■

For more information, visit the SUIRG web site at www.suirg.org.

Phenomenal Growth of Major USA Transmit Antennas (excludes VSATs). Source SUIRG



Satellite interference becoming a global problem

Radiofrequency interference (RFI) is a global problem that exacts an increasing financial toll on satellite operators warned Robert W. Ames, Jr., President of the Satellite Users Interference Reduction Group (SUIRG).

Ames, addressing an industry audience at the ISCe 2004 conference in Long Beach, CA, alerted attendees that RFI is a quality of service issue that relates directly to the satisfaction of satellite service customers.

Ames noted that thin route services are one of the fastest growing segments of satellite communications. "Thin routes utilise the principal advantage of satellites over cable, which is direct point of service," he said. "However, the number of thin routes is increasing significantly, which correlates directly with a dramatic increase in satellite interference."

Ames cited SNG trucks, DBS Internet services and VSAT networks as the types of thin route services most associated with signal interference. Other RFI contributory factors he noted are the increasing number of uplinks, 2 degree satellite spacing, minimally trained operators, and less robust equipment design.

SUIRG's statistics show that a majority of interference incidents occurred in the Atlantic Ocean Region (AOR), perhaps owing to the fact that this region traditionally carries the majority of global traffic. However, the other ocean regions, POR and IOR, have their share of interference incidents, supporting the global nature of interference problems cited by SUIRG.

According to Ames, interference costs each major satellite operator millions of dollars a year. SUIRG's objective is to stop interference before it starts, utilising a number of remedies, among them: signal Identification, which involves working with uplink equipment vendors to modify their equipment to provide a unique ID for cross-reference in a database when interference occurs; uplink training, procedures and certification; improved detection and identification tools, and continuous sharing of information and solutions among the SUIRG membership. ■