

## **Working with Satellites – by Peter Milne**

I started work in the space industry in 1975, and have remained working in that industry, or in a closely associated industry, ever since. I first worked on scientific satellites – International Ultraviolet Explorer (IUE) and Ariel 6 – before moving on to telecommunications satellites, and I have been involved in satellite communications since that time. I have had involvement in the design, manufacture, integration, test and launch of satellites. Currently, I spend most of my time as a customer for telecommunications satellites, monitoring the design, manufacture, integration and test of satellites by a prime contractor and then performing in-orbit testing to confirm the satellite's performance after launch, before the satellite is handed over to the operations team.

The space industry is collaborative, in that the customer has involvement in the design of satellites, procurement of equipments, and the integration and testing of the satellite. This is a result of the harsh operational environment and the need for telecommunications satellites to operate without maintenance for (typically) 15 years. In other words, satellites must be high quality and high reliability systems. This customer involvement ensures that there is confidence in the ability of the satellite to continue to provide the required performance over that lifetime. As a result, I have involvement at all stages, and levels, of the design, procurement, integration and test of the satellite.

In addition to working on satellites themselves, I have installed and commissioned earth stations to support the telephone calls, internet and/or TV signals that will pass through the satellites. Those earth stations have ranged from VSATs, similar to satellite TV dishes, to 30m diameter antenna systems. I have also implemented satellite control systems, including the computer system, the ground station antennas, and the communications network linking them together, to monitor the health and configuration of in-orbit satellites and to send the necessary telecommands to maintain that configuration and to ensure that they remain at the correct in-orbit location.

I am Principal Consultant at Aetheric Engineering Ltd, a consultancy company working in the area of Satellite Communications. My responsibilities draw on my previous experience on satellites and on ground systems, all of which are covered by the company's portfolio of services.

My work has taken me to many countries, including Angola, Bosnia, Cameroon, Canada, China, Croatia, Egypt, France, Germany, Ghana, India, Italy, Ivory Coast, Japan, Macedonia, Malaysia, Mauritania, Nigeria, Singapore, Somalia, South Africa, South Korea, Thailand, USA and Vietnam – some more basic than the others! But, my business travel has enabled me to visit and experience countries in ways that tourists often do not.