

# Fitting the pieces together: satellites, systems and operations

## 7.1 Introduction

Having looked at the regulatory and administrative environment in which satellite newsgathering exists, we can now move on to examine some of the principal global and regional satellite systems, focusing on those that allow access for SNG, and how these can be accessed by SNG uplinks. It is not intended to detail every satellite that is in orbit, for the information changes quite often. It is best to consult the satellite operators directly, many of whom publish their current fleets on their web sites, or use one of the published almanacs (see Appendix K and the Bibliography). It is also important to note that the information listed here for any satellite system is only current as at the time of writing, and will probably have changed by the time you read this.

Overall, there are relatively few global systems, but many regional systems. As well as carrying SNG traffic, these systems also carry services such as:

- Telephony and data, including Internet connectivity.
- Private data networks for financial institutions, corporations and a wide variety of other businesses.
- Direct-to-home (DTH)/direct broadcasting services (DBS) for radio and TV.
- Backbone video/audio distribution services.

Many satellites are in orbit to provide these other services (although there are some that cater for SNG as well as other services). The range of services is wide, and the demand in all these areas is growing, feeding a multi-billion US dollar global industry. With about US\$6 billion in revenue in 1998, satellite operators constitute a dynamic business, made even more challenging by consolidation and new entrants, globalization and the search for more added value in service provision. This in turn is applying pressure on spectrum, and the result of this is that the number of geostationary satellites is increasing, with virtually all the satellite system operators expanding their fleets. There is also an increasing number of mergers and

**Table 7.1** Principal satellite systems that allow access for SNG

<i>Satellite system</i>	<i>Base country</i>	<i>Coverage areas</i>	<i>Number of satellites*</i>
Apstar	China	Asia	3
Arabsat	Saudi Arabia	North Africa and Mediterranean	5
AsiaSat	Hong Kong	Asia, Middle East, Australasia	3
Columbia Communications	US	Global	3
Deutsche Telekom	Germany	Europe	2
Eutelsat	France	Europe, Middle East, Russia	12
France Telecom	France	Europe	3
GE Americom	US	Global	12
Hispasat	Spain	Europe and Americas	2
INTELSAT	US	Global	19
Intersputnik	CIS	Asia and Europe	7
JSAT	Japan	Pacific	5
Nahuelsat	Argentina	S.America	2
New Skies Satellites	Netherlands	Global	5
Optus	Australia	Australasia and Pacific	7
Loral Skynet/Orion/Satmex	US	Europe, Americas, Asia Pacific	10
Palapya	Malaysia	Far East	2
PanAmSat	US	Global	19
Superbird	Japan	Far East	3
Telenor	Norway	Scandinavia and Europe	3
Thaicom	Thailand	Asia, Australasia, Europe, Africa	3
Turksat	Turkey	Europe, Turkey, Central Asia	2

\*In orbit in early 1999, excluding planned launches.

(Note: SES Astra, the Luxembourg-based satellite system operator, does not offer any SNG access.)

strategic alliances being formed to try to dominate as much of the market as possible; a recent example of this was the merger between Hughes Galaxy and PanAmSat. Table 7.1 shows the principal global and regional satellite systems that allow access for SNG uplinks.

It is also worth noting that some organizations operate their own satellites and lease capacity on a long-term basis on other satellite systems as well, usually in order to provide as diverse an offering of services and wide area of coverage as possible. These organizations tend to be smaller in size, without the resources to economically provide this added range. They may be in the process of expanding, and sub-leasing capacity from another operator is a stepping stone to fully developing their services. For other operators, it may be a way of offering some degree of service in an area that is only going to have a limited demand for them.

All satellite system operators, whatever their size, are aiming to provide as much of a 'one-stop shop' for their customers as they can, whether it be purely regional service or where trans-global connectivity is required. They are also trying to offer as high a reliability as they possibly can, because of the commercial value of the traffic carried.

## **7.2 In the beginning, there was INTELSAT. . .**

We will begin with INTELSAT, which was the first satellite system available for trans-global commercial use. It was also the first system that allowed international access for satellite newsgathering. As the first global commercial satellite system, it still holds a commanding position in the global market, but has come under intense pressure from the competition of other systems for most services in the last fifteen years. The early history of INTELSAT is closely bound up with US dominance in satellite communications.

In 1961, soon after his inauguration, President John F. Kennedy promoted the development of the US space programme as an intrinsic part of US foreign policy, including the establishment of a commercial satellite telecommunications programme. This was in response to the rapid development of the space programme of the USSR, who astonished the world by launching the first space satellite, SPUTNIK, in October 1957, closely followed by SPUTNIK 2 a month later. The US launched a number of experimental satellites in what was to become an intense race to beat the Russians; but Kennedy effectively propelled the 'space race' forward as a key strategy of US foreign policy from 1961.

In 1962, the US Congress passed the Communications Satellite Act, which called for the construction of a commercial, communal satellite system that would contribute to world peace and understanding. The Act called for the establishment of a US commercial communications organization. A private company was then established and in 1963 incorporated as COMSAT. In 1964, COMSAT entered into temporary agreements with ten other countries to establish an international telecommunications consortium to provide global satellite coverage and connectivity, forming the International Telecommunications Satellite Organisation (INTELSAT). COMSAT remains today the US Signatory to INTELSAT.

The two initial agreements were only temporary because several of the other member nations feared US domination through COMSAT. The eleven initial Signatories did not finally reach full agreement on all aspects of the new organization until negotiations were completed in 1971, and in 1973 INTELSAT officially became a legal entity. In the meantime, however, INTELSAT launched a number of satellites to establish and develop the system.

Today, INTELSAT is an intergovernmental organization (IGO) with 143 member governments (in 1999), and forming one of INTELSAT's principal governing bodies is the Assembly of Parties. Its original principal aim of providing global telecommunications links for all countries on a non-discriminatory basis is still the dominant principle, and the organization serves over 200 nations.

INTELSAT remains the primary provider of services to developing nations and remote areas of the globe. This is because of its mandate and commitment to provide universal access on non-discriminatory terms and conditions, though still mindful of some commercial viability. As we shall see, this commitment, while it is still important, may change due to the privatization of INTELSAT.

INTELSAT's activities are governed by the two separate but interrelated agreements mentioned earlier. The first, the INTELSAT Agreement, was completed