

2.3.2.4 Satellite-based Data Services

Through its first generation national domestic satellite, Brasilsat A1 and A2, (with its 24 transponders each), Embratel provides the following DC services :

Datasat Uni - unidirectional information diffusion up to 19.2 kbps, VSAT stations. Very low commercial use, mainly news agencies/resellers. No growth or investments forecasted.

Datasat Bi - bi-directional, interactive communications, VSAT stations (TDMA and variations), offered in dedicated and shared configurations. In dedicated networks, the master antenna is provided by the user and with speeds up to 64 kbps, depending on the technology used. Main users are banks and very large private and state companies, and the total number of VSAT stations contracted by the major 8 users exceeds 2,500. In shared mode, Embratel provides the master antenna and speeds do not exceed 9.6 kbps, due to limitations in the access network. There are currently 120 VSAT stations in this shared network. Typical applications are on-line/real-time transaction systems, mainly in banking. Embratel forecasts saturation of the market for dedicated VSAT networks, with not more than 3,000 stations by 1996, while it forecasts expressive growth in the number of shared network stations to about 2,000 by 1996. Investments in 1991 were US\$ 8.2 million, and shall reach a total of US\$ 8.7 million in 1992. Little investments forecasted for the 1993-1996 period.

Datasat Plus - dedicated circuits, 19.2 kbps through 2 Mbps, SCPC/MCPC. Typically used by very large users and by 12 major private intracompany networks, presents contracted equivalent capacity of approximately 120 x 48 kbps circuits. Users can provide and run their own earth stations or can lease them and contract Embratel for operation. The current major 20 companies use 125 earth stations with the main application being for the transfer of very large files.

Table 5 - Datasat Plus Service Figures - shows Embratel's 1991-effective and forecasted number of installed earth stations and circuits, and the associated investments. Note that these investments refer only to Embratel and do not reflect the direct user expenditures on their own earth stations.

Table 5 - Datasat Plus Service Figures

Year	1991	1992	1993	1994	1995	1996
No. of Circuits	107	145	177	188	190	190
Embratel Leased Earth Stations	48	71	76	81	82	82
User-owned Earth Stations	19	52	78	80	80	80