

location of a EUTELSAT satellite. Examples of configurations of the geographical distribution of hypothetical facilities are also shown as they would be viewed from the INTELSAT satellite. The x's indicate a high concentration of facilities in an area served by a regional satellite network, while the o's denote locations of scattered hypothetical facilities served by a global satellite network.

Since the capital costs of the terminals are roughly proportional to their size, cost could be minimized through proper system design. If many facilities are concentrated in an area where satellite coverage is sufficient, a regional system would be cost-effective because the lower cost of small-size terminals would more than offset the cost of the additional regional terminal. If the facilities are scattered over a very large geographical area, however, a regional system with small local terminals would not be possible.

The estimated costs of the data collection system are composed largely of capital costs and operating costs. Capital costs generally cover all items necessary to place the system into operation. (Sensors or other data processing equipment from which data are collected are not included in this study). Operating costs have three major components: satellite leasing services, operating personnel, and maintenance. Each of the cost factors is discussed below, with costs estimated in 1988 US dollars.

Capital costs cover equipment purchases and development efforts. Equipment purchase costs are proportional to the number of facilities. Development costs are more difficult to estimate because there is a system cost independent of the number of facilities and a second component dependent on the number and type of facilities. It is realistic to assume that there is substantial commonality among the development activities for most sites. On the basis of these assumptions, the total capital costs for a system covering 500 facilities would range from US\$42,000,000 to US\$72,000,000.

	Capital Costs	Operating Costs (Annual)	Total
Equipment Leasing	1.5	5.5	7.0
Personnel	0.7	0.7	1.4
Maintenance	1.0	1.0	2.0
TOTAL	3.2	7.2	10.4