

The amount of data generated at each facility will depend on the size and nature of the facility and on the monitoring requirements established for the facility in the convention. Preliminary analyses showed that more than 80 percent of the data (equal approximately to 500 single-spaced typewritten pages per day) would be generated by on-site monitoring instruments, in particular, TV surveillance systems. Therefore, the system specifications used in the study are based on the need to transmit instrument data from each of the facilities to the headquarters of the Technical Secretariat.

DATA COLLECTION SYSTEM

Data from each facility would be transmitted to the Technical Secretariat from a satellite earth terminal located at the facility. Figure 1 shows a possible configuration of such a terminal. These transmissions will be via one or more geostationary satellites which provide either global or regional coverage. The INTELSAT system provides global coverage while regional networks, typically at the national level, provide regional coverage. Examples of regional systems with the corresponding areas of coverage are given in Table 1.

If a facility were located in an area where there is regional service, small-size satellite earth stations could be used; in that case, regional data collection centers with large terminals would be needed. Data would be sent from the facility to the regional center and then to the Technical Secretariat through the INTELSAT system. This approach is feasible if many facilities are within the area of coverage of a regional system. On the other hand, if few facilities are scattered in areas not covered by a regional system, large terminals would be needed at each facility to transmit the data directly from the facility to the Technical Secretariat through the INTELSAT system. At the headquarters of the Technical Secretariat, or near it, a large-size central satellite terminal would collect the data transmitted from the remote earth terminals. Figure 2 shows the earth as viewed by an INTELSAT satellite over the Atlantic Ocean. The cross marked "INTELSAT" indicates the position of the satellite in geostationary orbit. The second cross marked "EUTELSAT" indicates the geostationary

FIGURE 1. TYPICAL REMOTE MONITORING INSTALLATION