

8.2 System Elements (Continued)

Three MCC facilities are required, equally spaced about the globe to effect control over the spacecraft operating in the geosynchronous orbit. Three such locations could be France, Canada and Australia. If, however, operations were confined to the low earth orbit domain, a single MCC would be sufficient under the assumed degree of automation postulated for the Paxsat spacecraft. Each of the MCC facilities would contain the necessary elements to command the Paxsat satellites including command and tracking antennas with ranging capabilities and sufficient computer resource facilities to effect control of the satellites. The MMO could also be co-located with one of the MCC facilities.

Ground Receiving Centers (GRC) are also required to receive the payload imaging data from the Paxsat spacecraft during investigations of suspect satellites. The image data will be received by the tracking antennas, demodulated and then may or may not be initially processed at the stations depending upon the security required on the images. Archiving facilities would be maintained at each station for temporary storage before distribution to the Intelligence Interpretation Center. Received data would be then sent either by computer compatible tapes or over the communications network to the Intelligence Interpretation Center. Security of data may be insured by introducing an encryption step before transmitting data over the communications network. As with the MCF's, three GRC's are required for satellite operations in the geosynchronous orbit but only one need be built if operations were confined to low earth orbit.

More than three GRC's may be employed around the world to collect and distribute data to the IIC though this is not entirely needed. The advantage of numerous GRC's strategically located around the globe is the lessened requirement for on-board data storage for later playback on the Paxsat spacecraft. The current Paxsat spacecraft concept includes tape recorders to store data when the satellite is not within view of a GRC.