

COMMUNICATION SATELLITE ANTENNAS: SYSTEM ARCHITECTURE, TECHNOLOGY, AND EVALUATION

ABSTRACT

Communication satellite antennas are described from a system perspective for system and technology developers engaged in both space and user segment designs. System architectures and design requirements are described for both segments for military and commercial applications. Space segment antennas are described for earth coverage, spot beam, multiple beam, crosslink, broadcast, and TT&C applications. User segment antennas are addressed including antenna tracking techniques needed for high data rate transfer. Techniques for interference mitigation required in today's crowded spectra are described. Finally, test methodologies specific to satellite requirements are presented.

Biography

Bob Dybdal is a Distinguished Engineer at The Aerospace Corporation where he has actively participated in system and technology development and design and the evaluation of systems for both military and commercial space and ground segments. His publications span a wide range of topics and include chapters on satellite antennas and antenna tracking in the recently published Antenna Engineering Handbook. He is an active participant in IEEE technical activities and a past president of the Antenna Measurement Techniques Association. He holds patents in instrumentation, adaptive antennas, satellite transponder architectures, microwave components, and antenna tracking techniques.