

# **Adaptive Array Control Concepts for TDRSS**

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## **Summary**

The Tracking and Data Relay Satellite System (TDRSS) will use an Adaptive Ground Instrumented Phased Array (AGIPA) system for remote beamforming and tracking of low-orbit user spacecraft. This paper introduces the control concepts involved in its beamforming, tracking, and calibration. These concepts are related to the Kalman filter. Several suboptimal, but attractive, tradeoff options are discussed.