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INSURUNG QUALITY AND SAFETY OF SATELLITE GROUND SYSTEM WITH CONSTRAINED
COST BASED ON PROGNOSTICS AND HEALTH MANAGEMENT

Abstract

High in-service reliability is critical to satellite ground segment for aerospace mission, or any other mission critical or safety critical system. Also the high life-time cost of management and maintenance lead to the requirement to find the economic affordable methods to keep equipment in high reliability and extend system service time. Prognostics and Health Management is an integrate process that combines all management and maintenance strategy and activities during the useful life of a system with the purpose of increasing efficiency and reducing cost. An Data driven approach of Prognostics and Health Management is introduced to monitor the health of satellite ground systems and are capable of intelligently detecting and assessing correlated trends in the system dynamics to estimate the current and future health of the system. Anomaly detection, fault identification, fault isolation and prediction of remaining useful life are completed based on current and historical data to statistically and probabilistically derive decisions.