ELECTRICAL ENGINEER

DEVELOPMENT OF ANALYSIS TOOLS AND INCORPORATION OF COMMERCIAL DIGITAL SIGNAL PROCESSORS IN A SIGNAL ANALYSIS GRAPHICAL USER INTERFACE

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This work is part of an ongoing effort to integrate the separate BEARTRAP post mission analysis tools into an application operating in a Microsoft Windows environment. This new integrated system will contain software modules designed to replace the array of diverse processing systems currently being used for BEARTRAP post mission analysis. This thesis develops the module responsible for Fast Time Analysis. This module allows an analyst to generate, display, and analyze broadband and narrowband sonograms collected from a BEARTRAP mission. The overall objective of the module is to quickly identify acoustic events of interest. This document describes the development of the generation and display of broadband and narrowband grams using Microsoft Visual C++ as the implementation language, the development of the tools necessary for gram analysis, the development of a supplemental digital signal processing board for increased computational power, and the testing of the various parts of the Fast Time Analysis module in a standalone Microsoft Windows application.

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