UNIVERSITY OF AMSTERDAM

FORENSIC LITERATURE THESIS

RESEARCH PROJECT

Title	: Spectral Imaging for detecting Buried or otherwise hidden remains and objects
Keywords	: Spectral Imaging, human cadavers,
Forensic Expertise Area	: ?
Department	: ?
Institute/Company	: National Police, Academic Medical Centre, UvA, Amsterdam
City	: Amsterdam
Supervisor	: Prof Dr MCG Aalders (AMC, CLHC) Ir. Jitteke Struik (National Police, Special Search Team)
Email address	: M.C.Aalders@amc.nl
Telephone number	: 020-5663829
UVA Co-assessor	: tbd
UVA Coordinator	: tbd

SHORT DESCRIPTION

Introduction

This project is commissioned by the Special Search Team of National Police in cooperation with the Department of Biomedical Engineering and Physics of the Academic Medical Center. The Special Search Team of the National Police uses a large variety of techniques to search for human remains and objects underwater or underground. Objects of interest to the police, for example, weapons/ explosives/ money or drugs are often buried using different types of packaging. Every week containers of various shapes, sizes and materials are recovered from woodlands, grasslands, and gardens or found hidden behind walls or underneath concrete floors. To locate these objects the team makes use of Ground Penetrating Radar (GSSI), Ground Conductivity (Geonics EM38) and Magnetometry (Ferex) and recently the use of UAV based photography and thermal imaging started. The use of non-destructive techniques can avoid unnecessary damages to a suspect's property but is often a time consuming exercise. Any technique that could help reduce large search areas to a number of potential sites of interest would be a valuable aid.

Objective

Investigate the potential of hyperspectral imaging as a tool in the detection of buried or otherwise hidden remains and objects. Perform a literature study on this application and determine the "spectral bands of interest" for this purpose. i.e. the effect on vegetation/soil by decomposition of a buried body and the effect of burial in itself, in case of objects that do not add "nutrients" to the area.

REQUIRED/RECOMMENDED EXPERTISE

Interest in imaging techniques.