Computer Aided Diagnosis of Medical Image Data in Gastrointestinal Procedures

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The work outlined in this paper focuses on the development of the technologies necessary to allow the use of Computer Aided Diagnosis (CAD) by clinicians in gastrointestinal procedures. The presentation will focus on two complimentary research streams. We will initially examine the application of CAD to *Computed Tomography Colonography* (CTC) [1]. CAD-CTC is an emerging technique for colorectal cancer screening, which facilitates noninvasive screening by generating a computer model of the colon that can be readily, analyzed using custom image analysis software. The second research stream involves the automated extraction of the biliary tree region image data from Magnetic Resonance (MR) images with the view to automatically flagging potential regions of interest, such as gallstones [2]. The CAD-MRI system will examine and process medium to high-resolution (dependant on the patients age) MR images to extract and model the biliary tree structure. Results will be presented.

References:
1. Sadleir RJT, Whelan PF, Sezille N, Bruzzi JF, Fenlon HM, Moss AC, MacMathuna P (2002), "Automated Detection and Flagging of   Potential Colorectal Neoplasia at CT Colonography", **3rd International Workshop on Multislice CT 3D Imaging Virtual Endoscopy**, Rome, Italy   June 6-8
2. Robinson K, Whelan PF, Stack J., "Segmentation of the Biliary Tree in MRCP Data", **OPTO-Ireland**, Galway, 5 - 6 September 2002.