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Investigation of Indecent Images of Children Cases: Challenges and Suggestions Collected from the Trenches

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Abstract

Previous studies examining the investigative challenges and needs of Digital Forensic (DF) practitioners have typically taken a sector-wide focus. This paper presents the results of a survey which collected text-rich comments about the challenges experienced and related suggestions for improvement in the investigation of Indecent Images of Children (IIOC) cases. The comments were provided by 153 international DF practitioners (28.1% survey response rate) and were processed using Thematic Analysis. This resulted in the identification of 4 IIOC-specific challenge themes, and 6 DF-generic challenges which directly affect IIOC. The paper discusses these identified challenges from a practitioner perspective, and outlines their suggestions for addressing them.

Keywords: Indecent Images of Children (IIOC), Sexually Exploitative Imagery of Children (SEIC), Survey, Practitioners Perception, Digital Forensics, Digital Investigation, Child Pornography.

1. Introduction

Possession, production, distribution, and/or publication of Indecent Images of Children (IIOC), also referred to as Sexually Exploitative Imagery of Children (SEIC) or Child Pornography (CP), is a crime in the UK [1] and around the World (e.g., [2]). They are a form of child sexual exploitation which depict children being sexually abused [3].

Technological advances in recent years (e.g., cloud storage, social media, mechanisms for anonymisation, encryption, and P2P communication) have facilitated this type of crime [4, 5]. As a consequence, there has been a sharp increase in indecent image-related offences worldwide [6, 7, 8, 9, 10]. This has put pressure on law enforcement to forensically investigate an overwhelming number of cases, ultimately resulting in offenders being charged and victims safeguarded [11].

This paper reports on the analysis of free-text comments collected via an online survey among

Digital Forensics (DF) practitioners¹ dealing with IIOC cases. They were asked to elaborate on the perceived challenges of working in this area, and to suggest relevant solutions and improvements. The contribution of the paper is twofold. First, it adds to the small number of surveys in the DF literature which have examined practitioners' perspectives on the challenges they encounter during their work. Importantly, it also reports on the challenges and suggested solutions for a specific type of case based on 153 respondents working in this area. Second, it takes a multidisciplinary approach to the discussion of the themes identified, adding new perspectives to the challenges and potential solutions which relate to this category of DF investigations.

The paper is organised as follows. Section 2 reviews related survey research examining practi-

¹The term "DF practitioner" is used in this paper in a broad sense. Therefore, it includes DF roles such as analysts, examiners, investigators, first responders, data recovery engineers, managers, advisors, and consultants. It also includes police officers (e.g., detective inspectors and officers), and unit chiefs currently working in this field.

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