Identitas Paper

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Judul Paper	A Comparative Analysis of Digital Forensic Investigation Tools on Facebook Messenger Applications
Authors	SUNARDI, Herman, Syifa Riski Ardiningtias
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Journal of Cyber Security and Mobility

Q3 — Computer Networks and Communications — best quartile

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Proses Pengelolaan Paper

Tahap	Tanggal	Proses/Aktivitas
1	25 January 2022	Submit paper melalui OJS
2	16 June 2022	Respon dari Editor agar paper dilakukan revisi/perbaikan
3	20 July 2022	Resubmit paper yang telah direvisi
4	25 August 2022	Respon dari Editor bahwa Accept Submission
5	23 and 30 November 2022	Konfirmasi dalam proses published

Tahap 1: Submit paper melalui OJS, 25 January 2022

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Round 1 Round 2

Round 2 Status
Submission accepted.

Notifications

[JCSANDM] Editor Decision	2022-06-16 10:43 PM
[JCSANDM] Editor Decision	2022-08-25 11:52 PM
[JCSANDM] Editor Decision	2022-09-21 07:22 AM

Tahap 2: Respon dari Editor agar paper dilakukan revisi/perbaikan, 16 June 2022

Notifications   ✕

[JCSANDM] Editor Decision

2022-06-16 10:43 PM

Sunardi, Herman, Syifa Riski Ardiningtias:

We have reached a decision regarding your submission to Journal of Cyber Security and Mobility, "A Comparative Analysis of Digital Forensic Investigation Tools on Facebook Messenger Applications".

Our decision is: Revisions Required

Kind regards,

Prof. Wojciech Mazurczyk

JCSM EiC

Reviewer D:
Recommendation: Revisions Required

Confidential Comments to Authors

This paper compares four different tools used in mobile forensics with each other: MOBILedit, Dr. Fone, Magnet Axion and Belkasoft. Unfortunately, the market leaders in mobile forensics Cellebrite UFED and MSAB .XRY are not considered.

The examined device Samsung J2 Prime is unfortunately not a really up-to-date smartphone. Unfortunately, only one type of smartphone was investigated. The quantity of evidence on the smartphone is very small (e.g. 2 images). This drastically reduces the statistical significance of the paper.

Overall, the paper is of little interest to the forensic community in Europe. However, the author team is from Indonesia. it is difficult for the reviewer to assess whether the paper is of greater interest in emerging countries. In any case, it is recommended to investigate more recent smartphoe and to populate it with more

**Tahap 3: Resubmit setelah paper dilakukan revisi, 20 July 2022**

NO	REVISION POINT	BEFORE REVISION	AFTER REVISION	LOCATION
1	The examined device Samsung J2 Prime is unfortunately not a really up-to-date smartphone. it is recommended to investigate more recent smartphone and to populate it with more data	Only one type of smartphone: Samsung J2 Prime	Only one type of smartphone: Samsung J2 Prime, Xiaomi Redmi 5 Plus, Vivo 1718	Page 7
2	unfortunately, only one type of smartphone was inverstigated. the quantity of evidence on the smartphone is very small (e.g. 2 images). This drastically reduces the statistical significance of the paper.	the paper before the revision contained forensic data information on a smartphone using four different tools	This paper has contained forensic data information from three smartphones using four different tools.	Page 12

		The study result can be used as evidence by investigators on handling criminal cases with the results obtained in the shape of application versions, accounts, emails, conversation, time of occurrence, pictures, audio, and video. MOBILedit Forensic Express has an accuracy of 90.9%, Wondershare Dr. Fone 27.27%, Magnet Axiom 81.81%, and Belkasoft Evidence Center 72.72%	The study result can be used as evidence by investigators on handling criminal cases with the results obtained in the shape of application versions, accounts, emails, conversation, time of occurrence, pictures, audio, and video. MOBILedit Forensic Express has an accuracy of 84.85%, Wondershare Dr. Fone 36.36%, Magnet Axiom 75.76%, and Belkasoft Evidence Center 69.70%	
3	Abstract			Page 1
4	Table 1 Research data variable	There are two picture as digital evidence	There are three picture as digital evidence	Page 5
5	Table 3 Hardware Material	The smartphone only Samsung J2 Prime	There are three smartphone, namely Samsung J2 Prime, Xiaomi Redmi 5 Plus, and Vivo 1718.	Page 7
6	Preservation Stage: Figure 3.1	Only one smartphone device for isolation	There are three devices for investigation	Page 7
7	Examination Stage	The extraction process, which employed forensic tools, yielded data that included files and directories stored on the Samsung J2 Prime smartphone. The extracted data are files in the mobile device's memory that are accessible to all of the extracted files contained in the Facebook Messenger instant messaging application	The examination stage in this study uses forensic tools. This test checks and generates data that includes files and directories stored on the smartphone. The data contains files in the mobile device memory associated with the instant messaging application Facebook Messenger	Page 8
8	Analysis Stage	1. In addition to the specifications, other information such as time zone, IMEI, Storage, and others, is also obtained, as shown in Figure 3.5. 2. From the evidence obtained during the extraction process, there was one Facebook Messenger	1. In addition to the specifications, other information such as time zone, IMEI, Storage, and others, is also obtained, as shown in Figure 3.5, Figure 3.6, and Figure 3.7. 2. The digital evidence extraction process results show one of the Facebook Messenger accounts used. It contains three selfies, a video of a woman with pornographic elements, and a conversation. This	Page 9

		account used. It contains two selfies, a video of a woman with pornographic elements, and a conversation. It proves that there are elements that lead to cases of pornography. In addition to conversation evidence, photo evidence that was deleted from Facebook Messenger can also be obtained as shown in Figure 3.7, Figure 3.8 and video evidence is shown in Figure 3.9.	proves that there are elements that lead to cases of pornography. In addition to conversation evidence, photo evidence deleted from Facebook Messenger can also be obtained, as shown in Figure 3.9, Figure 3.10, Figure 3.11 and video evidence is shown in Figure 3.12. There are more evidence pictures and additional three devices, namely Samsung, xiaomi, and vivo.	
9	Reporting	After analyzing the Facebook Messenger application with MOBILedit Forensics, Wondershare Dr. Fone, AXIOM Magnet, and Belkasoft Evidence Center, it is known that the four forensic tools used have different features. The extraction accuracy as shown in Table 4 of MOBILedit Forensics Express was 90.9%, Wondershare Dr. Fone was 27.27%, AXIOM Magnet was 81.81%, and Belkasoft Evidence Center was 72.72%.	Table 4 provides an overview of some data after the testing and analysis process on three different smartphones, especially on the Facebook Messenger application. Collecting data process with mobile forensic tools, namely MOBILedit Forensics, Wondershare Dr. Fone, AXIOM Magnet, and Belkasoft Evidence Center. Table 4 shows that the four forensic tools used have different features. For example, data extraction accuracy as in Table 4, mobile forensic tool MOBILedit Forensics Express has a value of 90.9%, Wondershare Dr. Fone is 27.27%, AXIOM Magnet is 81.81%, and Belkasoft Evidence Center is 72.72%.	Page 13
10	Conclusion	The results obtained from the research can be used for evidence by investigators in handling criminal cases and as a reference for investigators in looking for evidence in the spreading of pornographic content cases on the Facebook Messenger application. MOBILedit Forensic	The results obtained from the research can be used for evidence by investigators in handling criminal cases and as a reference for investigators in looking for evidence in the spreading of pornographic content cases on the Facebook Messenger application. MOBILedit Forensic Express has the highest accuracy of 84.85%, while Wondershare Dr. Fone is 36.36%, Magnet Axiom is	Page 13

| | | Express has the highest accuracy of 90.9%, while Wondershare Dr. Fone is 27.27%, Magnet Axiom is 81.81%, and Belkasoft Evidence Center is 72.72%. Further research can be carried out using forensic tools and other possible methods to complement each other and get the best results | 75.76%, and Belkasoft Evidence Center is 69.70%. Further research can be carried out using forensic tools and other possible methods to complement each other and get the best results | |

Tahap 4: Respon dari Editor bahwa Accept Submission, 25 August 2022
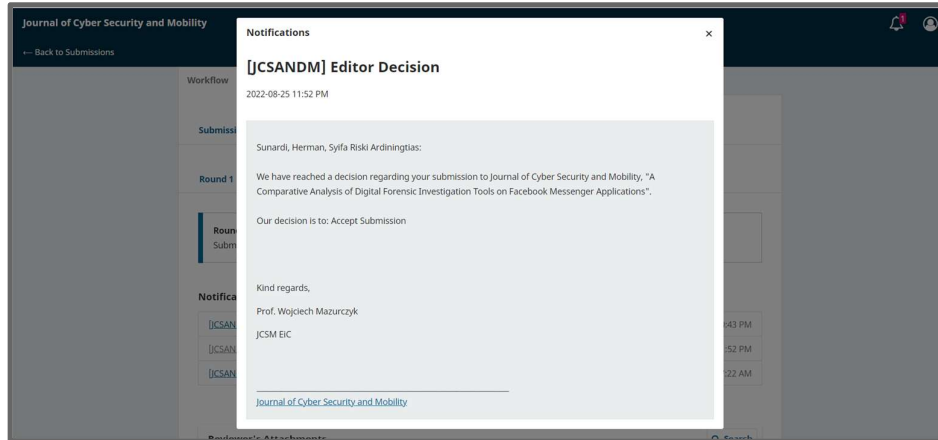
Tahap 5: Konfirmasi untuk Published, 23 and 30 November 2022