message artefact s, and image file artefact s. The highest ability index for logical acquisitions on Samsung A3 was obtained by Magnet AXIOM with a value of 77.77% and followed by Oxygen Forensics with a value of 44.44%. WA Key/DB Extractor failed in making logical acquisitions on Samsung A3. Magnet AXIOM and Oxygen Forensics managed to meet most of the NIST parameters used. However, the Magnet AXIOM outperformed Oxygen Forensics in fulfilling the additional parameters of the WA artefact provided by the researcher.

From the research, it can be concluded that the acquisition ability index can be used to assist investigators in determining the type of forensic tool that should be used to handle a case related to WA on a device with the Android operating system. From the results obtained, the researcher argued that the acquisition ability with unweighted value index was deemed not to reflect the ability of forensic tools accurately due to several parameters that had a more significant role than other parameters in helping to find evidence on a mobile device. For that, in the future, it is necessary to analyze with different calculations to get more accurate results. Mobile forensic analysis related to Instant Messaging applications other than WA on the latest Android operating system or other operating systems also needs to be done given the diversification that exists in mobile technology.

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