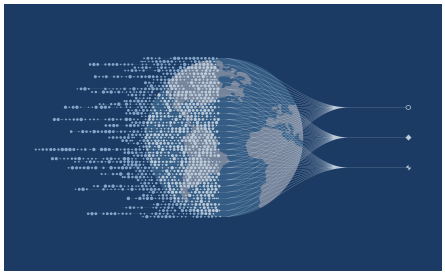

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Methodology for monitoring the correctness of the transmission of data received from the devices of the CTBTO On-Site Inspectors

Wednesday 10 September 2025 12:00 (1 hour)

This paper discusses ways to verify the integrity of information transmitted from tablets of on-site inspectors to a server for inspection data collection. Ensuring the integrity of incoming information is critical in on-site inspection work, as the slightest distortion of data, loss or addition of file, distortion of time and date of information collection, substitution or imitation of information transmission may result in incorrect inspection conclusions and incorrect decision. The solution to the problem of checking the integrity of information is not implemented in the on-site inspection at the moment, but this aspect of the information exchange process is one of the most important in the modern world. The options of the trust network using symmetric algorithms and the network without a common secret of the parties and using asymmetric algorithms are considered. We also consider options of authenticating the source of information in case such authentication is required. The approaches described in this paper can be implemented either with minor infrastructure changes or with significant changes depending on additional requirements, such as authentication, that either way do not result in additional time, space and information complexity overhead and thus do not significantly increase the total cost of information transfer.

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