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(54) **DATA COMPRESSION WITH SIGNATURE-BASED INTRUSION DETECTION**

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(57) **ABSTRACT**

A system and method for data compression with intrusion detection, that measures in real-time the probability distribution of an encoded data stream, compares the probability distribution to a reference probability distribution, and uses one or more statistical algorithms to determine the divergence between the two sets of probability distributions to determine if an unusual distribution is the result of a data intrusion. The system further comprises a signature generating component which correlates anomalous event data with known vulnerabilities and exploits to create a signature based on statistical information of the anomalous event. Computed statistics may be compared against a signature database to determine if a data intrusion has occurred.