Accepted Manuscript

Please cite this article as: Syed S. Rizvi, Abdul Razaque, Triangular data privacy-preserving model for authenticating all key stakeholders in a cloud environment, *Computers & Security* (2016), http://dx.doi.org/doi: 10.1016/j.cose.2016.08.006.

Triangular Data Privacy-Preserving Model for Authenticating All Key Stakeholders in a Cloud Environment

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Abstract - Cloud computing is a relatively new paradigm that provides numerous advantages to service providers, developers, and customers with respect to flexibility, scalability, and availability at a lower cost. Motivated by these technical and economical advantages, many data owners outsource their data to centralized large data centers where the data is not only stored but also shared among multiple users. This method of data outsourcing brings many new security challenges for data integrity. There have been several mechanisms proposed lately that allow data owners to use a public verifier (e.g., a third-party auditor (TPA)) for efficiently auditing cloud data integrity. The use of a TPA for this purpose is inevitable, since it provides several advantages to both cloud service users (CSUs) and cloud service providers (CSPs) in terms of efficiency, fairness, trust, etc. – which is essential to achieve economies of scale for cloud computing. Although the existing public auditing schemes are capable