

**1<sup>st</sup> DRAFT (15 Dec'20)**

FOR REVIEW BY DAAB

(On 21 Dec'20)

The Digital Accounting and Assurance Board (DAAB) of The Institute of Chartered Accountants of India (ICAI) invites comments on a new Forensic Accounting and Investigation Standard (FAIS) on – **Applying Data Analysis** .

Comments are most helpful if they indicate a clear rationale and, where applicable, provide a suggestion for alternative wording.

Comments can be Submitted at

<https://forms.office.com/Pages/ResponsePage.aspx?id=DOHF0zhjoU6N>

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Last date for sending comments is January 28, 2021.

# **FORENSIC ACCOUNTING AND INVESTIGATION STANDARD No. 510**

## **APPLYING DATA ANALYSIS**

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**This Forensic Accounting and Investigation Standard (FAIS) Number 510, on “Applying Data Analysis,” issued by the Council of the Institute of Chartered Accountants of India (ICAI) should be read in conjunction with the “Preface to the Forensic Accounting and Investigation Standards”, the “Framework Governing Forensic Accounting and Investigation Standards” and “Basic Principles of Forensic Accounting and Investigations” issued by the ICAI.**

## 1 Introduction and Scope

1.1 Data Analysis (DA) is applied in Forensic Accounting and Investigation (FAI) engagements for examining digital data with an objective to analyse and discover patterns of inconsistent and fraudulent activity. Digital data used for this purpose is generally obtained from application systems or underlying databases of the organisation but, at times, even from external sources. The results of the DA work are used to support the hypotheses and observations which may form part of the conclusions to be reported.

1.2 **Definitions:** Some of the key terms used in the context of DA are as follows:

- (a) **Data source** – Data source includes various locations from where data can be collected / retrieved. A data source may be the initial location where data is created (first digitised), or from where it is stored, or accessed for use by another process or where it is reported in digital form.
- (b) **Data acquisition** – The process of retrieving data from data source for data analysis, storage or reporting.
- (c) **Data validation** – The process of inspecting the accuracy, completeness and quality of data collected.
- (d) **Data integrity** – The attribute of data that ensures its reliability and trustworthiness when used in an assignment.
- (e) **Data preparation** – The process of acquisition and validation of data for the purpose of data analysis without compromising on data integrity.
- (f) **Data profiling** – The process of exploring data to understand key data elements, data structure and content for the purpose of analysis.
- (g) **Data analysis** – The process of examining data using logical, statistical and mathematical techniques, visualization or any other techniques in order to identify relationships, trends, patterns, anomalies and exceptions within data (including potential red flags and alerts) and thereby provide insights to the user.
- (h) **Data preservation** – The process of storing, conserving and archiving data to maintain its safety and protecting data integrity.
- (i) **Test of reproducibility** – It is the principle that the data analysis run on an identified data set should produce the same results in case the same tests are performed by any competent person on that same data set.
- (j) **Data boundary** – The process of restricting the source and period of data to acquire only the relevant data sets on the basis of the objectives of the FAI assignment.

- 1.3 **Scope:** The Standard on Applying Data Analysis is applicable to all assignments which use DA to aid the achievement of assignment objectives.

## **2 Objectives**

- 2.1 The primary objective of this Standard on Applying Data Analysis is to enhance the confidence of Stakeholders on the facts, observations and findings included in the reports issued by the Professional.
- 2.2 The secondary objectives of the Standard are to:
- (a) Enable identification of red flags for further investigation: and
  - (b) Enhance consistency across forensic engagements with the use of similar processes, approach and methodology.

## **3 Requirements**

- 3.1 The Professional shall prepare and follow a Data Analysis Plan, the outcome of which shall be a document containing certain essential elements required to achieve the objectives of applying data analysis techniques (refer Para 4.1).
- 3.2 The Professional shall include pre-processing steps such as data acquisition, data validation and data transformation while ensuring data integrity and adherence to data boundary (refer Para 4.2)
- 3.3 The Professional shall undertake the process of performing data analysis in line with the objective, ensuring test of reproducibility and reporting results in an effective format (refer Para 4.3). Upon obtaining results, the Professional may access additional data and perform iterative procedures until satisfactory results are obtained.
- 3.4 The Professional shall undertake measures to maintain data confidentiality, integrity, archival and retrieval over the course of the assignment and till such time as required under relevant laws and regulations (refer Para 4.4).
- 3.5 The DA team as a whole shall possess adequate expertise and prior experience of applying DA techniques for conducting FAI assignments.

## **4 Explanatory Comments**

- 4.1. **Planning data analysis:** The Professional shall prepare and deploy a Data Analysis Plan (DAP) which includes elements of the following (indicative list):
- (a) Broad objectives of the assignment which are data dependent.

- (b) Specific objectives which can be achieved by applying data analysis.
  - (c) Various assumptions and hypothesis which permit the use of DA techniques to gain insights regarding the assignment objectives.
  - (d) Reporting template or format for the output from the DA exercise.
- 4.2. **Data preparation:** The Professional shall undertake important pre-processing steps during data preparation, such as the following (indicative list):
- (a) Data boundary on the sources and time period of data is established on the basis of the objectives of the assignment.
  - (b) Data is acquired with adherence to technical procedures which ensure data protection, data boundary, and no corruption to the data.
  - (c) Data preparation steps adhere to standard procedures of data integrity and the Chain of Custody (no alteration or corruption in data).
  - (d) Data completeness and data validation checks to prevent data loss.
  - (e) Data transformation steps do not compromise integrity of the data.
  - (f) Data preparation steps enable flexibility to incorporate additional data sources identified as the assignment progresses.
- 4.3. **Data analysis and reporting:** Based on the DAP and the outcome of the data preparation exercise, the Professional shall undertake certain Data Analysis and Reporting steps, such as the following (indicative list):
- (a) Develop a DA technique (statistical, mathematical, etc.) which is articulated and thereafter translated into analytical logic.
  - (b) Undertake Data profiling and exploratory analysis to gain an appreciation of the data structure and contents.
  - (c) Execute general DA procedures to identify data relationships and insights which are relevant to the assignment.
  - (d) Execute specific DA technique which seeks to prove or disprove a defined hypothesis in line with the objectives, as per FAIS 330 on “Conducting Work Procedures”.
  - (e) Link individual DA results amongst each other and with the broader assignment work procedures undertaken to corroborate the evidential matter and support the individual findings to be reported.
  - (f) Collate the results from the DA procedures and prepare draft report in a format acceptable to the stakeholders and in line with FAIS 360 on “Reporting Results”.
- 4.4. **Data preservation:** The Professional shall ensure certain data preservation steps, such as the following (indicative list):
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- (a) The data is saved and stored in a place and manner with adequate physical security controls.
- (b) Access to the data is restricted to only those authorised, so as to ensure data integrity for future access and reference.

## **5 Documentation for Compliance**

- 5.1 To confirm compliance of engagement procedures with the FAIS, all key steps undertaken in the data analysis process shall be adequately documented.
- 5.2 The following documentation shall be maintained by the Professional:
  - (a) **Data Analysis plan** -The document shall include a plan which includes elements of items indicated under Para 4.1.
  - (b) **Data preparation**– The document shall include file names of relevant data, data acquisition details, Chain of Custody.
  - (c) **Data analysis procedures and reporting** – The document shall list all analysis performed, analysis logic, algorithm/codes/queries/models used to perform the analysis. The document shall have date and time stamp with regards to the procedures performed.
  - (d) **Data preservation** – The document shall list and identify the details of how data is preserved for future access and reference.

Note: The above documentation shall be maintained in electronic format in a way that the integrity of such documentation can be verified whenever needed.

## **6 Effective Date**

- 6.1 This Standard is applicable for all engagements beginning on or after ... (a date to be notified by the Council of the ICAI).