

## REPORT - 1

### 7.5. Video authentication

#### 7.5.1. Visual Examination

7.5.1.1. The recording 'Q' appears to have been made by an individual continuously holding or positioning the recording device, as constant movement is observed throughout the recording.

7.5.1.2. A male individual is seen holding a wine glass and walking towards the photo frame. He is then observed dipping his hand into the wine glass and sprinkling liquid onto the photo frame. Thereafter, he slowly moved towards the bed and sat there for a few seconds while holding the wine glass. He subsequently got up, walked towards the TV table where a small idol was placed, kept the wine glass beside the idol, and stood

in front of the idol. He then picked up the wine glass again, dipped his hand into it, and started sprinkling liquid onto the idol.

#### 7.5.2. Frame-by-Frame Analysis

7.5.2.1. No sequential frame distortions (temporal editing) were detected in the picture-by-picture or scene-by-scene video signals in the video recording marked 'Q'.

7.5.2.2. No spatial distortions were found in the individual frames of the video recording marked 'Q'. Samples of the video frame analysis are shown below:

| 00 Minute<br>36 Seconds<br>100 Milliseconds                                         | 00 Minute<br>36 Seconds<br>133 Milliseconds                                         | 00 Minute<br>36 Seconds<br>196 Milliseconds                                          | 00 Minute<br>36 Seconds<br>233 Milliseconds                                           |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |

Table 5: Frame-By-Frame studies of 'Q'

**Note:** No temporal distortions are observed in all the frames in the video of the recording 'Q'. However, due to the voluminous nature of the screenshots, only a few are shown for illustration.

8.4 No signs of temporal or spatial distortions were observed in the video recording marked 'Q' attached to the email marked 'E'.

8.5 The technical specifications and file properties did not reveal the make and model of the device used to capture the audio-video recording. However, the encoded and tagged date and time associated with the recording marked 'Q' were found to be **2026-01-04 and 11:41:23**, respectively.

## 9. **OPINION**

Based on the above examinations, observations and findings it is opined that:

9.1. *The email sent from [redacted] to the email ID info@sriakaltakhatsahibji.net, marked "E", is found to be authentic and represents genuine email communication between the sender and the recipient.*

9.2. *The email addresses [redacted] and [info@sriakaltakhatsahibji.net](mailto:info@sriakaltakhatsahibji.net) were found to be valid at the time of examination.*

9.3. *The video attachment marked 'Q' available in the email marked 'E' did not contain any signs of editing or tampering.*

9.4. *Hence, it is concluded that the email marked "E" and the video recording marked "Q" are authentic.*

## REPORT – 2

### 10. KEY FRAME ANALYSIS

- Total Key Frames: 44
- Representative Key Frame Locations:

KF-01: 00.000 sec  
KF-02: 00.967 sec  
KF-03: 01.933 sec  
KF-04: 02.900 sec  
KF-05: 03.867 sec  
KF-06: 04.833 sec

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KF-07: 05.800 sec  
KF-08: 06.767 sec  
KF-09: 07.733 sec  
KF-10: 08.700 sec

(Continuing at approximately 0.97 second intervals throughout the recording.)

#### Observations:

The key frames exhibit continuity of scene content, stable image characteristics and consistent visual representation throughout the examined duration.

#### Forensic Inference:

No discontinuity was identified in the examined key frame sequence that would indicate abrupt scene replacement or artificial frame generation.

### 11. FRAME-BY-FRAME VISUAL & CONTEXTUAL EVALUATION

A manual, high-magnification visual assessment was conducted frame-by-frame to evaluate physical logic, temporal coherence, and edge integrity.

| Time Stamp Range | Subject/Action Focused                                 | Visual Observation & Forensic Interpretation                                                                                                                                                                                                                                                                                                     | Anomaly Status |
|------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 00:00 – 00:03    | Subject enters room near blue entrance door.           | <b>Spatial Coherence:</b> The room's architecture (door frame, crown moulding, desk arrangement) remains structurally locked. No spatial inconsistencies or background instability were observed where backgrounds subtly shift or morph as the camera moves. No drifting observed.                                                              | <b>Clear</b>   |
| 00:04 – 00:11    | Subject walks to the left wall and adjusts framed art. | <b>Occlusion &amp; Hand Interaction:</b> No anomalies were observed in hand-object interaction boundaries. Close inspection of the subject's fingers touching the frame shows exact boundary occlusion. The frame doesn't blend into the fingers, and the hand maintains a constant, anatomically correct structure (5 fingers, natural joints). | <b>Clear</b>   |

|               |                                                    |                                                                                                                                                                                                                                                                                    |       |
|---------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 00:12 – 00:20 | Camera pans slightly; room empty.                  | <b>Lighting &amp; Shadows:</b> Shadow projection from the desk lamp onto the wall remains stationary and mathematically consistent with the light source. The television screen correctly shows dull reflection matching the room's ambient light distribution.                    | Clear |
| 00:21 – 00:25 | Subject sits on the edge of the bed/couch profile. | <b>Temporal Consistency:</b> The subject's sunglasses, profile, and hair do not morph or change texture. In synthetic videos, small complex details like the frame of eyewear often briefly disappear or blend into facial skin across frames. The asset shows complete stability. | Clear |
| 00:26 – 00:30 | Subject approaches desk, sets down wine glass.     | <b>Physical Logic &amp; Gravity:</b> The subject handles a glass containing liquid. The liquid reacts naturally to kinetic force and physics. The base of the glass makes definitive, flush contact with the wooden desk surface without clipping or floating.                     | Clear |
| 00:31 – 00:41 | Subject stands close to the TV, adjusting items.   | <b>Reflective Surfaces:</b> The back of the subject is reflected in the glossy black bezel/screen of the television. The reflection tracks the subject's exact spatial movements in real-time without latency or rendering artifacts.                                              | Clear |

## 12. VISUAL FORENSIC EXAMINATION

The recording was examined for:

- Scene continuity
- Perspective consistency
- Geometric consistency
- Lighting behaviour
- Shadow behaviour
- Texture preservation
- Motion continuity
- Reflection behaviour

**Observations:**

- The examined frames display stable environmental geometry and consistent spatial relationships. Lighting and shadow behaviour appear physically coherent. Surface textures remain stable and no apparent temporal distortions were observed.
- Objects maintain consistent dimensions and positioning throughout the recording.

**Forensic Inference:**

The visual characteristics observed are consistent with a conventionally captured digital recording. No observable forensic indicators suggestive of synthetic generation, material manipulation, splicing, compositing, or visual fabrication were identified during the examination.

**13. AI-GENERATED CONTENT ASSESSMENT**

The recording was specifically examined for indicators commonly associated with AI-generated and synthetically rendered media, including:

- Temporal instability
- Object morphing
- Texture hallucination
- Artificial edge reconstruction
- Deepfake artifacts
- Reflection inconsistencies
- Synthetic lighting behaviour
- Frame hallucinations
- Geometric distortions
- Scene reconstruction anomalies

**Observations:**

- No obvious indicators of AI-generated video content were observed during examination.
- No frame-to-frame morphing, hallucinated objects, unstable textures or synthetic rendering artifacts were identified.

**Forensic Inference:**

The examined recording does not exhibit observable characteristics commonly associated with AI-generated or deepfake video content.

#### 14. MANIPULATION ASSESSMENT

The recording was examined for:

- Frame insertion
- Frame deletion
- Compositing
- Splicing
- Object insertion
- Object removal
- Visual reconstruction

##### **Observations:**

- No visible indicators of manipulation were identified within the scope of the present examination.
- No abrupt visual discontinuities or encoding anomalies indicative of editing were observed.

##### **Forensic Inference:**

No apparent evidence of visual tampering was identified during the examination.

#### 15. AUTHENTICITY INDICATORS

The following observations support consistency with a naturally captured recording:

- (a) Internally consistent file structure;
- (b) Stable GOP pattern;
- (c) Consistent compression characteristics;
- (d) Continuous temporal progression;
- (e) Stable object geometry;
- (f) Consistent lighting and shadows;
- (g) Absence of observable synthetic rendering artifacts;
- (h) Absence of obvious manipulation indicators.

## 24. SUMMARY OF FINDINGS AND CONCLUSIONS

Based on the multi-layered technical, metadata, and manual frame analysis of Item 001, the following forensic conclusions have been reached:

1. **No Forensic Indicators Suggestive of Generative AI Content:** The video lacks the tell-tale visual artifacts of current generative video technology (such as edge-warping, temporal morphing, physical clipping, texture bleeding, or anatomical inconsistencies).
2. **High Behavioral /Environmental Realism:** Interactions between the subject, light sources, reflections, and physical objects conform strictly to real-world physics and optics.
3. **Verification Limitations:** No metadata, technical artefacts, or visual indicators were identified that would suggest generation by any specifically identifiable AI platform. However, because the metadata has been scrubbed (likely due to transit compression), absolute mathematical exclusion of all global third-party AI editing software cannot be achieved solely via software verification.

**Final Determination:** The video exhibits characteristics consistent with a conventionally captured digital recording and no observable indicators of synthetic generation or material manipulation were identified during examination. No observable forensic indicators suggestive of synthetic generation were identified during the examination.