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**Deliverable D3.1: Initial Verification Framework**  
(confidential document - only a summary is publicly available)

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Work Package 3: Content Verification

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Video Content for the News Industry**

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**Abstract:** Videos collected from the Web and social media sources contain information, which can be analyzed in order to assist investigators in verifying the authenticity of their content and the veracity of the surrounding claims. This information can either be found within the files, in the form of content or metadata, or by exploring the context in which they were shared, such as the social media activity around them. WP3 aims to provide the necessary tools to assist professionals in the verification process. We achieve that by implementing and improving state-of-the-art approaches that can speed up existing verification procedures, most of which are currently conducted manually, and by using an assortment of various content verification and analysis methods. This document presents progress achieved during the first year of the project towards this direction. We begin by presenting the various cases of fake video posts, in which we expect that the proposed verification tools will be able to offer support. These cases stem from analyzing a dataset of real-world use cases, which contains various types of “fake” videos. Following this typology of fake videos, we explore how the various modules of WP3 can assist investigators in different verification problems.

The consecutive sections of the document present the various WP3 modules: The section on *Video Forensics* presents preliminary investigations into developing tampering detection algorithms for videos, based exclusively on video content. The *Near-Duplicate Detection* section presents two algorithms that have been developed with the aim of detecting whether a near-duplicate version of a submitted video already exists in a collection of known videos. One algorithm is very fast, while still retaining competitive recall performance, while the other exceeds several state-of-the-art methods in terms of precision, without excessively increasing computational cost. Their combination can be used to identify whether a video posing as UGC from an unfolding event actually originates from past events. We then present the *Logo Detection* module, which aims to identify logos present in images and videos, and through them inform the investigator on the origin and intermediate distribution channels of the multimedia content. Finally, we present two Contextual Verification modules, one for *Location Detection* and one for *Context Aggregation and Analysis*, both of which can provide valuable hints to support investigators in identifying misleading material. The document concludes by summarizing the key highlights of the conducted work, and setting the directions for work in the second year.