

# How to maintain Authenticity and Integrity of Electronic Information without Utilizing Electronic Certificates

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## Introduction

How to manage integrity and authenticity are key areas for all kinds of long term preservation of electronic information. Today, many e-archive solutions are built to support the Records Continuum Model, i.e. a record is never definite, it can continuously be provided with more information, such as metadata. This shift provides further demands on securing integrity and authenticity within the e-archiving systems. One way to address that is by using solutions for qualified electronic time stamps in order to securely track every event of a record.

## Workshop Outline

Qualified electronic timestamps are provided either by using technology based on electronic certificates or by using one-way hash functions. The time span of electronic certificates is limited and therefore not suitable for long term applications, thus this workshop will focus on solutions using one-way hash functions.

Advanced one-way hash functions are perfect basis for proving the existence of electronic information. But the problem is how to secure that the proof of existence hasn't been tampered with. The provider of the qualified trusted timestamp has to be able to prove that the proof of existence (i.e. the hash code) is "written in stone".

This workshop will enlighten participants about different technologies for providing a non-manipulated publication channel for the proof of existence and thereafter elaborate on how this can be used also for streaming media (such as: continuous log file tracking, video and voice recording).

## Part 1: How to utilize Block Chain Technology for providing proof of existence

- How does it work?
- Bitcoin and alternatives
- Pros and cons

**Part 2: How to secure authenticity for streaming media by utilizing timeloop**

- How to secure authenticity of streaming media?
- How does it work?
- Use cases

Anyone who has concerns on how to secure long-term authenticity and integrity of data is welcome. This workshop will explain some possibilities and solutions in this area of research.