In the era of rapidly developing information technologies, electronic communication between people has become a preferred method of communication. Digital signatures can help to provide secure communications. The providers of certification services related to digital signatures play an important role in this process. They purport to create trust by issuing electronic certificates to support digital signatures. This work analyzes the provisions of Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures, OJ L 13, 19.01.2000, p.12, and criticizes the need for such an approach in a new market, since it leads to the erection of market barriers. The text analyzes the affects of the transposition of the Directive on digital signatures in Bulgaria. The finding of this work may be of use to all legal practitioners who encounter problems relating to the liability of certification service providers. It gives national legislators guidelines for the re-interpretation of the liability concept of the Directive and gives ideas for its future improvement.

This is a PhD thesis by Svein Yngvar Willassen, and his defence took place on 16 May 2008

Abstract (taken from http://www.timeforensics.com/ with permission)

This work explores how the evidential value of digital timestamps can be enhanced by taking a hypothesis based approach to the investigation of digital timestamps. It defines the concepts of clock hypotheses, timestamps and causality in digital systems. These concepts are utilized to develop methods that can be used in an investigation to test a clock hypothesis for consistency with timestamps found in an actual investigation, given causality between specific events occurring in the investigated system. Common storage systems are explored for the identification of causality between the events of information storage. By using a logic programming variant of predicate calculus, a formalism for modelling the relationship between events and timestamp updating is defined. This formalism can be used to determine invariants in digital systems.

Invariant and causality relations can be used to check a clock hypothesis for consistency with timestamp evidence. These methods can be utilized in software for digital investigation. By checking the large number of timestamps typically occurring on a digital medium, the methods can assist with the justification of a clock hypothesis, and thereby increase the confidence in specific timestamps found during the investigation. Previously, the checking of timestamps has relied upon the existence of timestamps from other evidence sources. With the methods defined in this work, justification of timestamp interpretation can be achieved without having to rely on timestamps from other sources of evidence.

The methods developed in this work were implemented in a clock hypothesis consistency checker. This checker was tested in an experiment where subjects were asked to antedate a document. The checker was found to be able to produce evidence supporting a hypothesis that the document was antedated.

The book includes an introductory chapter by Stephen Mason, providing an in-depth analysis of the USA case of *State of Connecticut v Julie Amero* (2007), and provides guidance on digital evidence across the 35 jurisdictions listed below, covering:

The substantive law of evidence, including the types of evidence, admissibility of evidence, weight, proof, electronic signatures, presumptions and inferences;

Civil proceedings, pre-trial, urgent search and seizure orders, preservation of evidence, rules on disclosure, confidentiality and privilege;

Criminal proceedings, pre-trial, powers of search and seizure, the obligations of both prosecution and defence respecting the disclosure of evidence before trial, including the consequences of non-disclosure, human rights issues in relation to the gathering of evidence, the trial and how a defendant may challenge the authenticity of digital evidence.