Introduction
The rapid developments in the area of computer, information and communications technology carries along with it an increasing digitalization of all types of information. Digital documents have numerous advantages vis-à-vis paper documents, in particular with regard to the frequency and the speed of processing and the storage capacity. Thus, on the one hand, digitalization makes it possible to record enormous quantities of data without limitation in terms of technical space and, on the other hand, digital data can be transmitted to a multitude of recipients on a simultaneous basis, without any added time. At the same time, however, the ability to easily change digital data entails the risk of manipulation, which leads to doubts as the legal certainty of electronic business and legal communications.

Relevance of archiving documents
The trend towards digitalization can also be seen in judicial evidentiary proceedings. The electronic storage of the most diverse types of information, logically, leads to an ever-increasing desire to carry out evidentiary proceedings by means of electronic evidence. In connection with this, the courts and attorneys are raising the issue of the consequences of digitalization as a matter of evidentiary law. This article is intended, in particular, to explain the inclusion of digital documents and the introduction of digital data in litigation proceedings. First, a presentation of the provisions of law in connection with digital documents is intended to provide a brief overview. Then, for the sake of completeness, the preliminary draft of a uniform Swiss code of civil litigation will be dealt with.

Overview of the provisions of law in the area of digital documents
The Ordinance on Services in Connection with Electronic Certification has been in effect in Switzerland since April 12, 2000. It lays down certain parameters for the operation of a certification office and therefore governs the use of electronic certifications.

On January 1, 2005, the Federal Law on the Electronic Signature and the accompanying Ordinance entered into force. These provisions of law create the prerequisites for the recognition of the providers of certification services and, based on the new Article 14 Para. 2bis of the Swiss Code of Obligations (CO), place the electronic signature on a par with the manual signature. The rules with regard to the digital signature are intended to ensure that data integrity and authenticity can be safeguarded. Upon the effective date of the Federal Law on the Electronic Signature, the new Article 59a of the CO was added to the Code of Obligations, which governs the liability of the owner of a signature key.

The revised provisions of the Code of Obligations on the keeping of commercial accounts (Arts. 957-963 of the CO) entered into force as from June 1, 2002. These new provisions make it possible to keep and retain business records, business correspondence and supporting documents in digital form, regardless of paper (Art. 957 Para. 3 of the CO). Pursuant to Article 957 Para. 4 of the CO, such electronically retained documents have the same probative force as do documents in paper form, provided that they assure the
principles of the proper keeping of accounts and are capable of being made readable at any time. The exact requirements in terms of electronic retention will be governed by a corresponding ordinance.

No legal rule exists with respect to the question of the consequences of digital documents in general as a matter of evidentiary law, neither under cantonal nor federal law. Accordingly, the Swiss civil litigation system is still based on the idea of the use of paper documents. Due to the lack of a legal rule concerning digital documents as evidence, the habits of the individual courts play an important role, particularly because corresponding case law at the federal level is practically non-existent. In connection with the Swiss civil litigation system, it should be explained, for clarity, that the law of civil procedure in Switzerland, and therefore also the provisions of the evidentiary proceeding, are governed at the cantonal level. Rules of federal law intrude into the cantonal provisions of law only on a selective basis. A harmonization of the Swiss civil litigation system is, however, intended in the future. A draft uniform Swiss code of civil procedure exists; however it is not likely to enter into force before 2010.

**Permissibility of submitting evidence by means of digital documents**

Today, it is acceptable to submit documents in digital format as evidence. In 1999, however, various courts still answered this question differently. In some cantons, the permissibility was generally rejected. In certain cantons, digital documents were granted the character of evidence only on condition that the documents were printed out. Other cantons spoke in favour of their permissibility from the very beginning. E-mail communications, in particular, have long been viewed as permissible evidence, with the argument that e-mail communications that are electronically stored could be put into the form of official documents at any time.

With the introduction of Article 957 Para. 4 of the CO in 2002, the law addressed the probative force of electronically retained documents for the first time, and set a certain standard in this regard. The principal core substantive of this provision, according to legal commentators, is that electronic documents may not be precluded as evidence based on their form, and that their probative force is not reduced from the very outset solely due to the fact that the retention occurred in electronic, and not paper, form. However, this provision relates only to business documents that are required to be retained by law. The Federal Council has made it clear that this provision of substantive law has a general effect on procedural law to the extent such provision relates to the probative force of recordings on image and data carriers. In this sense, Article 957 Para. 4 of the CO is intended, according to the Federal Council, to serve as a general guideline as to how digital documents must be assessed in a legal dispute.

According to court practice and legal commentary, yet another, more cogent reason speaks in favour of permitting digital documents as means of evidence: if digital documents cannot be adduced as a means of evidence, this would represent a clear violation of the constitutional law right to submit proof pursuant to Article 8 of the Swiss Civil Code, Article 29 of the Swiss Federal Constitution and Article 6 of the European Human Rights Convention. The person who bears the burden of proof must be permitted to submit proof, provided that legally significant facts are in issue.

Unfortunately, the Federal Tribunal, to date, has not yet expressed an opinion on the question of the permissibility of digital documents as a means of evidence. Also, there is no Federal Tribunal case law on the question of the analogous application of Article 957 Para. 4 of the CO to business documents other than those required to be retained by law.

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Categorization of digital evidence in the limited catalogue of means of evidence

All cantonal codes of civil procedure in Switzerland proceed on the principle of a closed system of the permissible means of evidence. The permissible means of evidence consist, as a rule, of official documents, witnesses, inspections, expert witnesses, party questions and party affidavits.

Therefore, to prevent the principle of the closed system of means of evidence from being violated, the digital means of evidence must be allocated to one of the permitted means of evidence. To date, Swiss courts have reacted to the advent of new technological developments in a pragmatic fashion. Thus, for example, it is now generally recognized that picture and sound recordings may be introduced in civil litigation, even though picture and sound recordings are not encompassed by the traditional definition of official documents. The definition of official documents is also being increasingly understood in a broader, more functional sense so as to include items or movable objects for the recording of thoughts or the reproduction of things, whether in writing, picture or otherwise. In many cantons, in application of this functional definition of official documents, digital documents are allocated to official document evidence, provided that the contents are of importance to the submission of evidence. Cantonal rules of evidence, that are based more on a factual, narrow definition of official documents, allocate digital documents to inspection evidence, because such documents do not have the same quality as an official document in that they do not originate on paper. According to the draft federal code of civil procedure, it is intended that digital documents will, in future, be subject to official document evidence (Art. 174 of this draft). However, an allocation to inspection evidence will also occur under future law, if the external form of digital documents capable of being perceived, is the object of evidence. If the court lacks the required expertise to evaluate digital documents as evidence, these documents are, both at present as well as under future law, to be allocated to expert witness evidence.

Probative force

It must be stressed that the basic admissibility of digital documents does not say anything as to their probative force, which, instead, depends on various factors that are primarily related to the idiosyncrasy of digital documents.

By way of analogy to official documents in paper form, what is determinative with respect to the probative force of digital documents is, on the one hand, the authenticity and accuracy of the piece of evidence and, therefore, the identity of the issuer (authenticity) and the intact nature of the piece of evidence (integrity). The integrity of digital documents depends heavily on the type of data carrier on which they are recorded. To this extent, it is important that a distinction is drawn between documents that can be written over, and documents that cannot be written over. The authenticity of digital documents can be ensured by means of digital signatures.

On the other hand, it is important to distinguish whether an original in paper form exists in addition to the digital document that could be presented to the court at any time, or whether the paper original was destroyed following the scanning process or whether the data are only available in digital form due to comprehensive electronic data processing.

Probative force of digital documents on data carriers that can be written over

Digital documents on data carriers that can be written over (diskettes, chip cards, flash storage cards) can be

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2 Gasser and Häusermann (Fn. 2), p. 310-311.
3 Reto Fanger (Fn. 4), p. 146-154.
manipulated by third parties without being noticed, which is why they do not offer any certainty in terms of their integrity. Accordingly, digital documents are only assigned a low probative value if they are not protected against manipulation through special measures.

**Probative force of digital documents on data carriers that cannot be written over**

On the other hand, digital documents on data carriers that cannot be written over (CD-ROMs, DVD, CD-R, smartcards) cannot be manipulated, at least not as from the time of the recording. As a matter of practice, it is assumed that there is heightened legal certainty, and therefore heightened probative force, in connection with such change-resistant digital documents. This practice was also considered in the revision of the commercial accounting provisions of the Swiss Code of Obligations. Accordingly, under Article 957 Para. 4 of the CO, business records, booking vouchers and business correspondence that are retained electronically or in a comparable manner are assigned the same probative force as those that are readable without any assistance, assuming that they can be made readable at any time and are recorded on data carriers that cannot be written over. Through the recording on digital carriers that cannot be written over, the requirement of the keeping of proper accounts within the meaning of Article 957 Para. 1 of the CO will be met (Art. 3 of the Business Record Ordinance).

In the case of data carriers that cannot be written over, the issuer of the digital document cannot be reliably recognized where there is no evidence to demonstrate what happened in the period of time between the creation and the recording. Only the digital signature is able to redress this problem.

**Probative value of digitally signed documents**

Digital signatures were developed, in particular, to ensure the authenticity and integrity of digital documents. In using digital signatures, it may be assumed with a high degree of certainty that the named sender is in actual fact identical with the person making the declaration and, in addition, that the communication is not forged. Consequently, digitally signed documents offer the highest degree of certainty in terms of the risk of manipulation and, therefore, also in terms of probative force, regardless of the type of data carrier on which they are recorded.

**Paper original and digital “copy” – exclusively electronic data**

No uniform practice exists with respect to this point, because the probative force is heavily dependent on the specific individual case. However, it is clear that many lawyers nonetheless assume that documents that are no longer available in original form, but are only on hand as the print-out of a scanned version, are not, based on deduction or hypothesis, assigned the same probative force in evidentiary proceedings as the originals. Article 957 Para. 4 of the CO does not deal with this problem and does not draw this distinction. In this regard, legal commentators⁸ represent the view, in part, that Article 957 Para. 4 of the CO could not have been intended to put electronically retained documents on an absolute equal footing with the originals. This provision, according to them, does not relate to the event of digitalization but, rather, primarily relates to the probative force of documents that are generated in a purely electronic fashion. In order to assess the probative force, therefore, a distinction should be drawn between various groups of cases. Thus, the probative force of a digital document should not be reduced if the digital copy is no different than the original. On the other hand, if the digital copy is different from the original, this can have disadvantages as a matter of evidence law for the party submitting the evidence. If original documents are digitalized and subsequently destroyed, the risks in terms of the probative force vary strongly, depending on the type of document, which is

⁸ Gasser and Häusermann (Fn. 2), p. 308-309.
why a case-by-case approach is necessary.

**Submission of digital documents in litigation**

In many codes of civil procedure, there is a well-established principle that evidence can be submitted in original form or as copies. If a copy is presented, however, the court may at any time demand the original or an official certification of the copy. This principle no longer corresponds to the current situation, and can entail considerable difficulties for the parties bearing the burden of proof. In particular, companies who scan information and subsequently destroy the original documents based on reasons of efficiency and space, can be affected by this principle. Until now, there was hardly any practical experience in terms of this question and no case law whatsoever. Because the parties are presumably increasingly affected by this topic within the scope of the increasing process of digitalization, prospective legislation should strive for a uniform solution. This problem was, after all, recognized within the scope of the revision of the rules on the keeping of commercial accounts, and a solution was found in Article 963 Para. 2 of the CO, at least for business documents that are retained electronically. Pursuant to Article 963 Para. 2 of the CO, although the court may continue to demand, as before, the written production of electronic documents, it is now possible to order the means to make the document into human readable text be made available. Therefore, a court, at least to the extent that it has available the necessary means, may directly order the production of the corresponding computer diskettes, CD-ROMs or other storage options. With respect to business documents, therefore, the basic obligation to present the original ceases to apply.

Otherwise, the submission of digital documents, as in the case of other means of evidence, is determined by the allocation to the means of evidence as well as through possession. Digital documents that are in the possession of the party submitting evidence must be directly submitted to the court as an official document or an object of inspection. In the event that digital documents are not in the possession of the party submitting evidence, a request must be submitted to the court for production by the party opposing the evidence or a third party.

**Preliminary draft of the Swiss Civil Code of Procedure**

The draft Swiss civil code of procedure, for purposes of legal certainty, continues as before to proceed based on a closed system of evidentiary means. The means of evidence that are enumerated in the draft merely include those that are customary to date. Digital documents are also not included in the catalogue of evidentiary means set out in the draft. The rigidity of the catalogue of evidentiary means with a view to new technical developments, however, is intended to be lessened through defining the individual means of evidence in a manner that is not overly narrow. This is expressed, in particular, in the legal description of the concept of “official documents”, pursuant to which all documents that are suitable to prove legally significant facts are deemed to be official documents. Writings, drawings, plans, photographs, films, sound recordings and electronic data are enumerated as examples.

The principle that the court can demand the submission of the original or of an official copy is no longer included in the draft. Instead, a party may demand the submission of the original or of a certified copy if there is justified doubt as to authenticity. Practice will show the way in which this provision will affect the current situation.

**Conclusions**

At present, there is considerable legal uncertainty in terms of the submission of evidence through digital data. This is related, on the one hand, to the fact that the cantonal codes of civil procedure that are still applicable do not include any corresponding rules, and that therefore the practice of the courts and probably also, increasingly, case law play a determinative role. On the other hand, the probative force of a digital document depends heavily on the circumstances in the individual case, and are therefore difficult to assess in advance. Also, the technical developments of the future are uncertain and it is therefore uncertain how important documents have to be retained in order for them to still be able to satisfy, in the event of future litigation, the technical requirements and therefore the requirements for an assured quality as evidence.

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