The Electronic Agent: A Legal Personality under German Law?

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Abstract

Electronic agents are meant to perform also legally relevant actions in the near future. We study how declarations of intention stated by an electronic agent are related to ordinary declarations of intention given by natural persons or legal entities, and how the actions of electronic agents in this respect have to be classified under German law. We propose agents with limited liability, enrolment of agents into an agent register and agent warranty funds as means to serve the needs of all contracting parties.

I. An electronic agent: What it is

1. Human and electronic agents

The term agent derives from the Latin word "agere", which meant as much as acting or work. An agent is a person, who acts for or in the place of another by authority from him/her, a representative.[3] Humans avail themselves a representative, in order to settle tasks, which they cannot implement by their own or are not willing to do. This saves time and resources, and the agent extends the activity space of a person, also for legally relevant actions (e.g. conclusion of contracts). In the material world we have different designations for this type of agent: representative, messenger, broker, assistant etc.

In the virtual computer world there is also the need to delegate tasks to an electronic agent (special software). Software-agents[4] are programs, which react autonomously to changes of their environment. They solve their task as far as possible independently. Time-intensive and iterating working processes can be delegated to electronic agents[5] and automated thus.

There are stationary as well as mobile agents.[6] Stationary agents are not able to leave their original environment. Mobile agents[7] are software programs, which move around (migrate) independently in heterogeneous computer networks. Therefore an infrastructure of agent

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[3] Longman Dictionary of the English Language 1988 (as cited in Murch/Johnson, p.17).

[4] Brenner/Zarnekow/Wittig "Intelligente Softwareagenten"; Murch/Johnson "Agententechnologie".

[5] Other designations are: intelligent agent, digital agent, shopping agent, autonomous agent, softbot, crawler, userbot, knowbot etc. A comprehensive introduction to the agent technology is the "UMBC Agent Web" - University of Maryland Baltimore County, online: <http://agents.umbc.edu/> and "Agentlink" the European Network of Excellence for Agent Based Computing, online: <http://www.agentlink.org/>.

[6] Brenner/Zarnekow/Wittig, pp.60ff.

[7] Brenner/Zarnekow/Wittig, p.60; Murch/Johnson, pp.67ff., 126ff.; Roth, Funkschau 2000, pp.48ff.

servers is necessary, which can dispatch, receive and implement agents. The *mobile code* moves itself thus to the information and evaluates this directly at the source. The advantage of the mobile agents consists of the fact that they can act independently at different places. It can, assigned with the task, be dismissed into the network and the connection thereafter terminated. This is in particular important for mobile devices in the future. Agents can be configured locally independent and infused into the network. Equiped with the desired information they return to the device. Expensive permanent connections can be reduced in such a way to a minimum period.

2. Characteristics of electronic agents

There is no generally accepted definition of the *electronic agents*. It concerns an interdisciplinary area, in which different scientific fields of research (e.g. artificial intelligence, information and communication systems, social science, computer science) with different emphasis are represented.[8] The distinction to conventional software programs is described by different characteristics of the electronic agents. The most important are:[9]

reactivity:	the ability to perceive an environment and respond to changes that occur with it;
proactivity:	the ability to initiate goal-directed behaviour;
autonomy:	the ability to operate without the direct intervention of humans or others, and have some kind of control over their action and internal state;
social ability:	the capacity to interact with other software agents or with human beings through a shared value;
adaptive behaviour:	the ability to adjust to the habits, working methods and preferences of a user;
mobility:	the ability to move around an electronic environment.

II. Contractual basics

A contract is a legal transaction comprising declarations of intention of at least two persons, one stated relatively to the other;[10] we use the term *meeting of minds* as a metaphor. Substantial element of any contract conclusion is thus the declaration of intention. A declaration of intention [henceforth DOI] is a private expression of one's will, addressed to another person and directed towards the achievement of a certain legal consequence.[11] As a precondition, the legal effectiveness of any digital statement depends on the acknowledgment as DOI: Even a digital statement has to be understood as DOI in the sense of the BGB (Bürgerliches Gesetzbuch, i.e., the German Civil Code)[12]. By the BGB, a DOI becomes

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[8] Brenner/Zarnekow/Wittig, p.21.

[9] Brenner/Zarnekow/Wittig, pp.25ff.; Murch/Johnson, pp.29ff.; Weitzenboeck, pp.3ff.; van Haentjes, LEA 2002, p.81(82); Kerr, "Providing ...", pp.5ff.; Kerr "Spirits...", pp.188 (196ff.) in each case with further references.

[10] Brox, p.51 No. 76.

[11] Brox, p.52 No. 80.

[12] German version of the BGB online: <http://www.staat-modern.de/gesetze/uebersicht/index.html>;
English excerpts online: <http://www.hull.ac.uk/php/lastcb/bgbengl.htm> (older version), also
<http://www.iuscomp.org/gla/statutes/BGBrest.htm> and <http://www.iuscomp.org/gla/statutes/BGB.htm>.

effective only when received by the addressee (§ 130 I BGB); this is called a DOI with requirement of receipt. A contract generally comes off by the fact that a person delivers a DOI (called offer) to another person, and the addressee of this offer in due time (§ 146 BGB) likewise delivers another DOI (called acceptance) that he/she is willing to accept the offer (§§ 145 BGB et seq.).
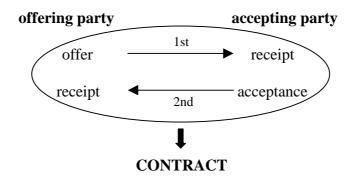
offering party   **accepting party**

offer ——— 1st ———▶ receipt

receipt ◀——— 2nd ——— acceptance

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CONTRACT

Figure: Principal mechanism of any contract conclusion.

III. Automated legal procedures revisited

The advent of automation has also introduced the problem of automated legal procedures. As early as the end of the sixties, first scientific arguments on this new topic appeared. Although, at that time, probably nobody could suspect the paramount importance of the InterNet as we know it today. Relevant work focuses on the declaration of intention.[13] The DOI, apart from the legal capacity (*Rechtsfähigkeit* in German) and the contractual capacity (*Geschäftsfähigkeit* in German) of the concerned party (cf. section IV. 2.), represents the essential legal basis for attributing (or not) rights and obligations to a certain person.

The possibilities arising from the new technical developments had to be integrated into existing systematics. Although there are different designations and justifications, one can differentiate between essentially three case groups:[14]

1. Electronic declaration of intention (*elektronische Willenserklärung* in German)
By this one understands declarations that are produced as usual but conveyed electronically then to the other party. Think of inserting a name, address, commodity into an order mask on the computer, eventually forwarding the completed order electronically. Here, the computer acts as a kind of electronic order form, only, the declaration of intention being still formed by humans.

2. Automated declaration of intention (*automatisierte Willenserklärung* in German)
Contrary to electronic declarations of intention, automated declarations of intention are mechanically produced as a whole with the help of a computer program. Consider e.g. an insurance policy composed and printed after collecting the necessary data, such as customer, term, insured risks etc. The insurance policy produced in such a way is then mailed to the insured person by ordinary letter.

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[13] Mehrings in Hoeren/Sieber, p.12 No. 18ff.; Kuhn, pp.47ff. in each case with further references.
[14] Mehrings in Hoeren/Sieber, p.14 No. 22ff.

3. Computer declaration (*Computererklärung* in German)

Here, the actual declaration, for instance an order, is electronically produced with the help of a computer program in a completely automatical way and also conveyed electronically, no human action is involved.[15] The operator of the computer system does not even know of any declaration and never exerts any direct influence on whether a declaration is made, and if so, to whom it is addressed. Still more autonomously, the transaction could be performed on both sides via computer, e.g. between two data processing systems. Prevailing opinion concludes that a computer declaration has to be seen as a DOI of the facility user.[16] Reasoning for this may be two-fold:[17]

a.) Declaration "ad incertas personas" (computer as a declaration vending machine)

One possible explanation gives the legal institution of a declaration "ad incertas personas" (offer to whomsoever).[18] Metaphorically, a computer here acts like a vending machine, delivering declarations instead of goods. By installing the vending machine, its owner implicitly delivers an offer to everyone, provided normal operation of the machine and availability of goods.[19] Once set to work, no further intervention of the owner is necessary. By putting money into the slot, whomsoever can accept the offer, thereby concluding a contract. We may now think of a machine keeping complete declarations of intention on stock.[20]

b.) Blank declaration – "stretched procedure" (computer as a working tool)

On the other hand, a computer declaration can be seen as a blank declaration (*Blanketterklärung* in German), like a signature in blank. In consequence, a computer declaration would be a DOI of the computer user.[21] At the issue time of a blank declaration, the issuer does not yet know the concrete future contents of the eventually completed form. The declaration is provided in a "stretched procedure"-like way (*gestrecktes Verfahren* in German)[22] on demand, by having completed the blank form through a *personified tool*.[23] The declaration itself is due to the issuer of the blank form. Starting point for this solution are thus the general legal rules.[24] At the time of the data input, there is still no concrete DOI of the computer user.[25] It cannot make a difference, whether the user, instead of a human, employs a computer, thus a *technical tool*, to mechanically complete the declaration.[26] This is just a division of labor between man and machine.[27] Evidently, the computer user wants this declaration attributed to himself, so it is his/her own DOI.

IV. Classification of the agent declaration with respect to German law

Particularly in eCommerce, there exists an interest to automate certain tasks. Often, this concerns also legally relevant actions. Here, automated DOI as well as automated contract conclusion by means of an electronic agent enter the game. If a person acts by an electronic

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[15] Mehrings, MMR 1998, p.30 (31); Kuhn, p.65; Mehrings in Hoeren/Sieber, p.16 No. 27ff.
[16] Mehrings, MMR 1998, p.30 (31); Kuhn, p.62.
[17] Kuhn, pp.62ff.; Mehrings in Hoeren/Sieber, p.19 No. 37ff.
[18] Köhler, AcP 182 (1982), p.126 (132).
[19] Kuhn, p.61.
[20] Köhler, AcP 182 (1982), p.126 (132); Kuhn, pp.61f.
[21] Kuhn, pp.66ff.; Mehrings in Hoeren/Sieber, p.20 No. 39; also Gitter/Roßnagel, K&R, p.64 (66).
[22] Cornelius, MMR 2002, p.353 (355).
[23] Köhler, AcP 182 (1982), pp.126 (133f.); Kuhn, pp.66ff.
[24] Cornelius, MMR 2002, p.353 (355).
[25] Mehrings, MMR 1998, p.30 (31); Kuhn, p.57.
[26] Köhler, AcP 182 (1982), p.126 (134); Mehrings, MMR 1998, p.30 (31).
[27] Cornelius, MMR 2002, p.353 (355).

agent, the question arises, how the agent resp. the agent declaration has to be classified with respect to German law.[28]

Four different approaches to classify the agent declaration deserve further interest as possible solutions to this question: 1. Traditional approach: agent declaration as computer declaration, 2. Modern approach: agent as legal personality, 3. Historical approach: contractual capacity without legal capacity, and 4. Progressive approach: the "electronic person".

1. Traditional approach: agent declaration as computer declaration

For reasons stated above, the agent declaration can be compared with the computer declaration. The disciples[29] of this traditional approach equate the latter to the computer declaration, therefore considering it as DOI of the agent's owner (i.e., the computer user). One can justify this with some similarities in the essential structure of the generation process. Specification of the concrete contents of the DOI is left to both the computer as well as the electronic agent, due to a data input.[30] It appears noteworthy however that the agent possesses special capabilities. It features an increased degree of intelligence and the ability to autonomous decision, which is not fixed by rigid rules: exact prediction of the program flow is not possible. If the user could indeed predict the behaviour, there would be no need for any agent.[31] Thus it is hardly possible to speak of completed declarations on stock.[32] However, comparison with the blank declaration and the stretched procedure seems capable to build on solid grounds for this opinion. In this case the situation of interest appears similar from the angle of the declaration's addressee, despite the special capabilities and the intelligence of the agent. A classification as computer declaration and thus as declaration of the agent's owner seems possible. Yet, mobile electronic agents deserve a special treatment. The institute of the computer declaration has been developed at a time, when today's technical possibilities were not yet foreseeable. Concerning the computer declaration, it is assumed that the computer system (and so the agent) is accessible to the user; the user is the operator of the system (or acts relatively close to it). But this premise is not always true with mobile agents. Mobile code is executed in environments that may be completely unknown to the owner of the agent or where he/she possibly can take few influence. Due to larger independence and greater spacial distance from the user, the parallel to a human representative seems more obvious with mobile agents.

2. Modern approach: agent as legal personality

The "modern approach" consists in the consideration whether the property of a legal personality (*Rechtspersönlichkeit* in German) can be granted to an electronic agent. If this would be the case, the agent possibly states its own DOI, so rights and obligations of an effective contract could apply to it. As unusual this construction may appear at first sight, further discussion is worthwhile since this has been a starting point of numerous discussions in other countries also.[33]

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[28] The legal regulations for "electronic agents" in the USA and in Canada are not discussed here. For the situation in these and other states see: LEA 2002; Kerr "Ensuring..."; Kerr "Providing..."; Kerr "Spirits..."; Weitzenboeck; Zankl "E-Commmerce…".
[29] Cornelius, MMR 2002, pp.353ff.; Gitter/Roßnagel, K&R 2003, pp.64ff.
[30] Mehrings, MMR, 1998, p.30 (31).
[31] Sartor, LEA 2002, p.3 (6).
[32] Also Cornelius, MMR 2002, p.353 (354).
[33] Schweighofer, pp.45ff.; Schwarz, pp.65ff.; van Haentjes, LEA 2002, pp.81ff.; Weitzenboeck, pp. 8ff.; see also supra, note 28.

a.) The nature of legal personalities

The German legal system differentiates between legal subjects and legal objects. Legal subjects, usually humans, can be holder of rights and obligations. For legal objects (e.g. things, intellectual property rights) this is not possible. These can only be object of legal owner rights.[34] Legal objects are thus assigned to legal subjects.[35] Essential characteristics of legal subjects and thus the property of a legal personality are the legal capacity (*Rechtsfähigkeit* in German) and the contractual capacity (*Geschäftsfähigkeit* in German).

aa.) Natural persons

Legal capacity is the ability to hold rights and obligations.[36] This ability is given to each human being with birth (§ 1 BGB)[37], and it ends with death. Even babies and persons with mental disease own this ability.

Contractual capacity is the ability to perform legal transactions effectively, i.e., actions that imply legal consequences. But this is only meaningful if the acting person can understand the consequences of his/her declarations.[38] In the BGB there is no definition of the contractual capacity. In contrast, all exceptions are specified, in which a person does not apply as capable of contracting (§§ 104 BGB et seq.). § 104 BGB declares as not capable of contracting: minors under seven (No. 1), and persons who permanently are mentally diseased (No. 2). DOIs of these persons are legally ineffective. Minors from seven to seventeen are considered as capable of contracting in a limited way (§ 106 BGB, *beschränkte Geschäftsfähigkeit* in German). That is, their declarations get effective under certain conditions, only (§§ 107 – 113 BGB)[39]. Persons from eighteen are thus regularly considered as capable of contracting (§§ 2, 104 BGB et seq.).

bb.) Legal entities

Beside natural persons, also legal entities have been introduced. A legal entity (*juristische Person* in German) can be: an association of humans (e.g. a registered association) or an asset (e.g. a limited liability company, Ltd., *GmbH* in German), to which legal capacity and contractual capacity is accorded by a legally relevant act or by a special law. For associations, §§ 21 BGB et seq. is applicable; for the GmbH, the regulation is § 13 GmbHG.[40]

b.) Preliminary result

An electronic agent is an artefact and can thus not be regarded as a natural person. Also there are no special legal regulations in Germany that would attribute legal capacity or contractual capacity to a computer or an electronic agent. Thus, the property of a legal personality cannot be assumed so far for an electronic agent.

c.) Reasoning by analogy

However, the historic legislator of the BGB could not have foreseen the technical development, eventually resulting in independently acting electronic agents. Few counted on the fact that there once would be "intelligent machines" that autonomously represent a user and act as representatives. But any willing person should be allowed to be represented by a

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[34] Brox, p.352 No. 731.
[35] Schweighofer, p.45 (50).
[36] Brox, p.318 No. 655.
[37] *§ 1 [Beginning of legal capacity] The legal capacity of a human being begins with the completion of birth.* (source - see supra note 12).
[38] Brox, p.133 No. 222.
[39] English excerpts, see supra note 12.
[40] "Gesetz betreffend die Gesellschaften mit beschränkter Haftung". German version online:
   <http://www.staat-modern.de/gesetze/uebersicht/index.html>.

software agent.[41] Thus we are faced with a historical gap in the law here. Such a gap can be filled with an analogy, by applying an already existing legal regulation to the problem in case. Now, a precondition of this approach would be an unwanted regulation gap (*planwidrige Regelungslücke* in German) as well as a comparability of interest. The necessary irregularity in the plan has already be argued on: the technical development was not foreseeable. A comparable interest may be deduced from the following existing regulations:

aa.) Agent as representative (double analogy)

We can regard the electronic agent as a representative[42] of the agent's owner, following § 164 BGB[43] et seq. A representative (*Stellvertreter* in German) states its own DOI on behalf of another person with mandate of the principal. One problem here seems to be the notion of an "own" DOI, since this is possible for a legal personality, only. Besides, a representative must be at least capable of contracting in a limited way (§ 165 BGB)[44]; our analogy could cover this problem. But here we need a double analogy since both, legal capacity as well as (at least limited) contractual capacity is necessary.

However, from the view of transaction protection (*Verkehrsschutz* in German), § 179 BGB[45] appears problematic at this solution: If a representative acts without representative authority, § 179 BGB states that the contracting party can adhere to the representative, because the latter acted toward the third party. The contract in this case is taken as concluded with the representative. But the electronic agent as contracting party is useless to the third party as long as it cannot incur a liability in a material way. Thus § 179 BGB to that extent would be without any effect.[46]

bb.) Agent as messenger (simple analogy)

A further approach would be to regard the electronic agent as messenger of the agent's owner.[47] A messenger (*Bote* in German) does not make an own declaration, but solely conveys the DOI of another person (§ 120 BGB)[48]. Here a simple analogy would suffice, since legal capacity is sufficient to act as a messenger. It is argued against that an electronic

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[41] Schwarz, p.65 (69).

[42] In result Schwarz, p.65 (69).

[43] *§ 164 [Effect of declaration by a representative] (1) A declaration of intention which a person makes in the name of a principal within the scope of his agency operates directly both in favor of and against the principal. It makes no difference whether the declaration is made expressly in the name of the principal, or if the circumstances indicate that it was to be made in his name.*
(2) If the intention to act in the name of another is not apparent, the agent's absence of intention to act in his own name is not taken into consideration.
(3) The provisions of (1) apply mutatis mutandis if a declaration of intention required to be made to another is made to his agent. (source - see supra note 12).

[44] *§ 165 [Representative limited in competency] The validity of a declaration of intention made by or to an agent is not impaired by the fact that he is limited in competency to enter into legal transactions.*

[45] *§ 179 (Liability of an unauthorized agent) (1) Whoever has entered into a contract as agent is, if he has not given proof of his authority, bound to the other party at his choice either to carry out the contract or to compensate him, if the principal refuses to ratify the contract.*
(2) If the agent did not know that he had no authority, he is bound to compensate only for the damage which the other party has sustained by relying upon the authority; not, however, beyond the value of the interest which the other party has in the validity of the contract.
(3) The agent is not liable, if the other party knew or should have known of the lack of authority. The agent is also not liable if he was limited in his competency to enter into transactions, unless he had acted with the consent of his legal representative. (source - see supra note 12).

[46] Also Cornelius, MMR 2002, p.353 (355) and Gitter/Roßnagel, K&R 2003, p.64 (66) there footnote 16; Kuhn, p.66.

[47] So van Haentjes LEA 2002, p.81 (85).

[48] *§ 120 [Rescission because of incorrect transmission] A declaration of intention which has been incorrectly transmitted by the person or institution employed for its transmission may be rescinded under the same condition as a declaration of intention made in error as provided for by § 119.* (source - see supra note 12).

agent participates in fixing the contents of a declaration,[49] thus doing more than a messenger. According to Schwarz,[50] this solution also is not applicable if the receiver of the declaration recognizes that the declaration is provided by the agent and not by the user. In this case, only the solution with the representative can help.

cc.) Agent as minor, capable of contracting in a limited way (double analogy)

Not yet considered in details has been the approach to regard the electronic agent as a minor capable of contracting in a limited way (*beschränkt Geschäftsfähiger* in German), only. This possibility was also mentioned by Zankl,[51] but without further treatment. If one continues to pursue this idea, the situation would present as follows: A double analogy would be needed since both, legal capacity and (here) limited contractual capacity would be necessary from this view. As already mentioned, DOI statet by persons with limited contractual capacity are regulated in §§ 106 BGB et seq.[52] (cf. supra section IV. 2. a.) aa.)). This serves the protection of minors. Note, however, that these regulations concern constellations, in which the minor himself wants to conclude a contract. So far, we have assumed that an electronic agent only tries to serve the interest of its owner, i.e., that it is not interested in contracting for its own sake. This again would lead to the view of a representative. Any person with limited contractual capacity may be representative (§§ 107, 165 BGB) and messenger at the same time. These cases thus appear as already covered by solutions discussed above (assuming only limited contractual capacity here).

d.) Comparability of interest

Comparability of interest (*vergleichbare Interessenlage* in German) in all three regulations essentially concerns the question how close an electronic agent can get to the legal status of humans.[53] A comparison of the abilities of the intelligent electronic agent to those of humans is necessary. Here, we notice a clash of the technical and the philosophical/ethical interpretations of the terms autonomy, intelligence etc. The technical interpretation poses no major problem, but the philosophical/ethical interpretation is closer to the legal view. Nevertheless certain authors accept the analogy.[54] It has been argued against that a person is a kind that is sensitive to reasoning and can act on it. The person is self-determined and morally.[55] In addition, identification of the intelligent agent is problematic: "Is it the hardware? Is it the software? What if hardware and software are dispersed over several sites and maintained by different individuals?"[56]

The basis of the will, consciousness of the own existence, is not yet accepted for current information processing systems, and thus an analogy is rejected.[57] However, it does not seem in principle impossible to acknowledge a legal personality, provided a still larger independence and further progress in the research on artificial intelligence.[58] This philosophical question on one hand would lead too far here, and on the other hand we see no opportunity to answer it unambiguously. Schweighofer[59] suggests to develop material criteria

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[49] Cornelius, MMR 2002, p.353 (355); Gitter/Roßnagel, K&R 2003, p.64 (66).
[50] Schwarz, p.65 (68).
[51] Zankl "Juristische...", p.2.
[52] English excerpts, see supra note 12.
[53] Schweighofer, pp.45 (50f.).
[54] Schwarz, p.65 (69); van Haentjes, LEA 2002, p.81 (85) for the messenger solution.
[55] Schweighofer, p.45 (48 and 51).
[56] Allen/Widdison (as cited in Weitzenboeck, p.9).
[57] Weitzenboeck, pp. 8f., Cornelius, MMR 2002, pp.353 (354ff.); Gitter/Roßnagel, K&R 2003, p.66; Kuhn, p.65.
[58] Also Cornelius, MMR 2002, p.353 (354). Probably in result also Zankl, "Juristische..."; Schweighofer, p.45 (52).
[59] Schweighofer, pp.45 (51f.) with further remarks.

for the legal personality and provides also some starting points, e.g. beginning, end etc. More research is necessary on this topic.

3. Historical approach: contractual capacity without legal capacity

A further idea is mentioned by Schweighofer[60] who suggests trying the *model of a contractual capacity without legal capacity*. In Roman law, slaves had no legal capacity but were allowed to act at their will; their actions were legally attributed to their master.[61] But this contradicts the dogmatic construction of current law. Contractual capacity inherently presumes legal capacity in this thinking.[62] If a person is not legally responsible, he/she cannot possess the right to conclude contracts. Schweighofers suggestion has to be rejected therefore. There cannot be an *electronic slave* after the Roman model.

4. Progressive approach: the "electronic person" - proposal for a new legislation

Thinking about an analogy to existing institutes of law, the creation of new legal regulations is not far away. Why shouldn't there be an *electronic person* (or *ePerson*) beside the natural person and the legal entity?[63] No objections from a law-theoretical view! The existing legal system already knows a construct different from humans, which possesses legal capacity and contractual capacity by legal regulation: the legal entity.[64] This is conceivable also for electronic agents. Comparable to the register of companies (*Handelsregister* for the GmbH in Germany), there could be an agent register.[65] Due to the technical closeness such a register could even be kept online. The owner of an agent could grant a certain amount of money to the agent by enrolling it into this register. The result would be a kind of agent with limited liability (Ltd. Agent). Since liability safeguarding is very important, this fund could back up claims of the contracting parties in case of problems.[66] The crucial question always is:

Who is liable? If business is done correctly, legal concerns usually are irrelevant. But if problems emerge, matters change dramatically. The approaches discussed so far would yield the following results: Following the traditional approach, the owner of the agent is liable, because the DOI is attributed to him. Following the modern approach, the electronic agent possibly would be liable in principle; but since claims practically cannot be realised against the agent, liability falls back again on the owner of the agent. The concept of an *electronic person (ePerson)* offers a crucial advantage over the other approaches: It allows to limit the liability for the owner of the agent. The contracting party also draws some advantage from that: If he experiences that he negotiates with an electronic agent, he could check the soundness of the agent in the register and thus steer his decision to conclude the contract.[67] Thus we get a win-win-situation, satisfying all parties. Eventually, this could heavily promote the confidence into the agent technology.

V. Conclusions

At first sight the electronic agents can be interpreted unproblematically as computer declaration. However this probably applies only to the "normal" (stationary) software agents. The legal classification of the computer declaration took place at a time, when today's technical possibilities were not yet foreseeable. A renewed examination of the resulting

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[60] Schweighofer, p.45 (52) with reference to Schwarz.
[61] Schweighofer, p.45 (52) footnote 10.
[62] Also Zankl, "E-Commerce...", p.99 considers such a solution as problematic.
[63] Schweighofer, p.45 (51) calls this an "artificial human".
[64] Zankl, "Juristische...", p.2.
[65] Kind of a register also suggested by Allan/Widdison and Karnow (both quotes after Weitzenboeck, p.9).
[66] Also Sartor, LEA 2002, p.3 (9). Schweighofer, p.45 (52) has also the idea of funds.
[67] Similarly Allan/Widdison (quoted afterWeitzenboeck, p.9).

chances and risks of agents is thus required. With the mobile agents a new problem appears. While the current legal systematics attributes an action of a computer to the operator, the program of a mobile agent resides not on the computer system of the agent owner, but on another computer. This represents a new quality, since the agents owner usually does not have influence on the foreign computer system. A manipulation thus would be outside his control. Due to larger independence compared with the computer and the spacial distance of the user, the parallel to the material representative and thus the acknowledgment of its own legal personality seem thus more obvious with mobile agents. But it showed up, that this is a kind of tightrope walk between a technical, legal and philosophical/ethical interpretation of the used terms. The creation of an agent register could be a possibility to eliminate existing ambiguity over the legal status of electronic agents. This contribution is to energize at least to further discussion.

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