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## **INTERNET ADMINISTRATION IN AUSTRIA: ICANN, NIC.AT OR THE GOVERNMENT?**

*This paper discusses the assignment of the country code Top Level Domain ".at" by the "National Information Center", NIC.AT (Internet Verwaltungs- und Betriebs-GmbH), in Austria. The findings made here may also be of significance for other European countries as the authority to allocate domains has scarcely been dealt with from a legal perspective anywhere in the world.*

### **Introduction**

Although technically, "domain-law" does not constitute a separate legal discipline, the quick spread and ever growing economic weight of the Internet has brought with it the emergence of an area that has yet to be addressed legally: in recent months and years, arbitration panels and courts around the world have found themselves confronted with the issue of domain-grabbing in all its guises. Domains have developed into an important (economic) commodity because companies, but also individuals, are eager for an online presence against the backdrop of a domain that fits their name, trademark etc.

An issue which has so far received little attention in the legal discourse is the regulatory framework governing the allocation of domains in the "Net of all nets". The following paper deals with this issue in the light of the Austrian regulations.

### **The Assignment of Domains in Austria**

On the global level, the conferring of Top-Level-Domains and IP-Addresses is conducted by the Internet Corporation for Assigned Names and Numbers (ICANN). The organisation of the bodies responsible for administering the specific country code Top-Level-Domains (ccTLD) - such as ".at" - varies from country to country. In some countries, the assignment of ccTLD's is carried out directly or indirectly by government authorities. A big stir was recently caused in the Internet community of Canada when the function of assigning the ccTLD was transferred: the Canadian government withdrew the authority to confer domain names under ccTLD ".ca" from a commission<sup>2</sup> consisting of members of the university and other private individuals and, instead, took over this task itself<sup>3</sup>. On April 1 2002, the legal basis for the administering of domains also underwent a change in Switzerland and the government declared that it was henceforth responsible for the assignment of the ccTLD ".ch", even though the allocation continues to be carried out by the same entity (SWITCH) as before.

The history of the Internet in Austria<sup>4</sup> reveals that - with the exception of the Sub-Level-Domains ".ac.at"<sup>5</sup> and ".gv.at"<sup>6</sup> not the government, but private companies conduct the

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<sup>2</sup> Until then, this task had been performed since 1987 by John Demco of the University of British Columbia (UBC) together with a committee of volunteers.

<sup>3</sup> The ccTLD ".ca" is now administered by the officially recognised Canadian Internet Registration Authority (CIRA).

<sup>4</sup> Cf. *Wolfsgruber* in *Gruber/Mader*, Internet und e-commerce (Vienna, 2000), 61et seq.

assignment of domains under the ccTLD ".at"<sup>7</sup>. At the end of 2000, NIC.AT Internet Verwaltungs- und Betriebs-GmbH (NIC.AT), originally founded in 1998 by the Association of Internet Service Providers Austria (ISPA) was brought as a whole into the non-profit private foundation Internet Privatstiftung Austria (IPA), established by ISPA. In early 2001, the "administering and maintenance of Internet address space" was spun off from NIC.AT and operations were transferred to the newly founded Verwaltungs- und Betriebsgesellschaft m.b.H., of which IPA is the sole shareholder. Because of the lack of clarity in the distribution of responsibilities between these two limited liability companies, the following will only refer to ".at"-Registry.

Somewhat unusual to lawyers perhaps - albeit common practice throughout the entire (TLD)-World -, is the total absence of a written contract between the domains' progenitor, John Postel, and AConet in Austria, to which Postel delegated the TLD ".at" to in 1988, as well as its successor organisations. Apart from this legal issue, there is also the question as to where ICANN or the ".at"-Registry derives its authority to administer the ccTLD ".at". There is no legal foundation for ICANN's activities, neither from the Austrian legislator nor from the government. For this reason, the authors investigate whether the current situation contradicts Austrian law and from where ".at" -Registry's authority could be derived.

### **Domains from a Technical and Legal Perspective**

In order to properly analyse domains from a legal perspective, it is essential to first establish a domain's technical purpose: in the Internet<sup>8</sup>, every destination<sup>9</sup> of a communication must have a unique address. The destination of any communication in the World Wide Web is a (virtual) server containing the data to be read, and not the individual webpage<sup>10</sup>, as the data (e.g. the webpage) is exchanged with the server. In general terms it can be said that the so-called Internet-Protocol(IP)<sup>11</sup> addresses are used to designate the destination. Since IP addresses consist of strings of numbers which are difficult to remember<sup>12</sup>, the so-called Domain-Name-System (DNS) was introduced which maps the more easily remembered domains to the IP addresses and vice versa<sup>13</sup>. In their simplest form, domains<sup>14</sup> consist of a domain name (e.g.

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<sup>5</sup> This Sub-Level-Domain (SLD), which is reserved for the academic sector under ".at" is assigned and administered by the Central Data Processing Service (ZID) at the University of Vienna.

<sup>6</sup> The allocation and management of this SLD, which is reserved for the government, is conducted by the Austrian Federal Chancellery.

<sup>7</sup> This includes the management of the SLDs „.or.at“ and „.co.at“.

<sup>8</sup> The term Internet can generally be understood to mean the world-wide linkage of networks and individual computers which are connected to each other by different protocols in order to enable the transfer of data. Internet services include, for example, WWW, FTP, SMTP and Telnet.

<sup>9</sup> The destination of the connection is the respective (virtual) server, thus either a Web-space, an e-mail-Server etc.; cf. the Swiss definition below.

<sup>10</sup> A Webpage is defined by the Uniform Resource Locator (URL), a "sub-form" of the Uniform Resource Identifier (URI), e.g. <http://it-law.at/index.htm>.

<sup>11</sup> The Internet-Protocol (IP) and the Transmission-Control-Protocol (TCP) together comprise the Standard-Internet-Protocol TCP/IP.

<sup>12</sup> An IP address consists of a 32-bit long binary number, whose individual bytes are expressed in decimal format as a dotted decimal number, e.g. 195.230.39.2.

<sup>13</sup> Cf. the possibility of a so-called "reverse lookup", in which the domain is translated to the IP address.

<sup>14</sup> The complete domain is also referred to as fully qualified domain name, cf. among many *Thiele*, *Rechtliche Grundlagen der Domainvergabe - Regulierung für ".at"?: Thesen und Antithesen zur Domainverwaltung in Österreich*, wbl 2001, 307.

"it-law") and a Top-Level-Domain (TLD; thus, for example: "it-law.at").<sup>15</sup> The Internet user, therefore, must only remember an alphanumeric name - the domain - instead of an up to twelve-block long combination of numbers. Until recently, this only served the comfort of the user without being a technical necessity because a specific (virtual) server could only be reached via its IP address. Today, many servers are configured so that they have only one IP address, though they may support several different domains, each of which refers to a different destination. Thus, although domains were not necessary in the past in order to contact a specific website or e-mail address, today a domain is sometimes indispensable for identifying a (virtual) server on the net.

Because of the necessary uniqueness of a domain and the prescribed standards<sup>16</sup>, the name space available for domains is fairly flat. Frequent legal (out-of)-court disputes (even in Austria) clearly demonstrate that domains are a limited resource. It follows from an old Austrian legal tradition that the administration of scarce goods requires special regulations and supervision, as was recently seen again in the telecommunications' sector.<sup>17</sup> There is another - new - area of limited resources in telecommunications requiring careful management: discussions are taking place on both the national and international level about a linkage of the publicly operated and IP-based networks through an interoperability of the addressing in telephony with that used in the DNS. ENUM<sup>18</sup> should make it possible to use telephone numbers<sup>19</sup> for different resources in different networks. The ENUM-addresses<sup>20</sup> will also require appropriate administration.

The relationship between domains, IP addresses and telephone numbers is obvious and they exhibit a tendency - not least due to ENUM - towards convergence. Following the deregulation of the telecommunications' market, the allocation and management of telephone numbers is now statutorily regulated in almost all European countries, for example in Austria through the Telecommunications Act (TKG)<sup>21</sup>:

#### Number Management and Number Assignment

§ 57 TKG. (1) The regulatory authority is responsible for the efficient administration of the numbering plans, in particular for the registration of the use and the allocation of address elements to providers. The

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<sup>15</sup> Due to the architecture of the DNS, domains are modelled from left to right so that the requesting server would have to make its request at different servers at different levels of the DNS before getting the actual IP address of the destination.

<sup>16</sup> Cf. on the Internet [www.icann.org](http://www.icann.org) and the RFC 1591, but also the restrictions on the TLD ".at" under Point 1.4.1 of the General Terms and Conditions of NIC.AT; <http://www.nic.at/english/agbs.html>, cited February 15 2002.

<sup>17</sup> Thus, radio frequencies and telephone numbers are examples of limited resources whose allocation and management need to be regulated.

<sup>18</sup> Cf. the activities of the International Telecommunication Union; <http://www.itu.int/osg/spu/infocom/enum/>.

<sup>19</sup> This refers to the "E.164" numbers which have been in use in telephony for years following the ITU-T Recommendation E.164.

<sup>20</sup> The Internet Engineering Task Force (IETF) has suggested using the domain ".e164.arpa".

<sup>21</sup> Federal law with which a Telecommunications Act is enacted, the Telegraph Route Act, the Telecommunications Tariffs Act and the Cable and Satellite Broadcasting Act are amended as well as supplementary provisions with respect to the Radio-broadcasting Act and the Radio-broadcasting Ordinance are made, BGBl I 100/1997 as amended by BGBl I 32/2002.

providers may be granted the right to administer sub-elements.

(2) The regulatory authority can allocate address elements to providers of telecommunications services upon application. The allocation shall be carried out in an objective, non-discriminatory and transparent manner, with due regard to the principles of equal opportunity. Providers of address elements may be granted the right to allocate sub-address elements independently.

The regulatory authority in this case is the Rundfunk und Telekom Regulierungs-GmbH (RTR)<sup>22</sup>. The question thus arises, whether the TKG does not also apply for the assignment of domains. In this connection, attention must first be turned to the definitions contained in § 52 TKG and these must then be applied to domains:

#### Addressing and Numbering

##### Definitions

§ 52 TKG. In this section the term

1.,,Address elements'' shall mean symbols, letters, digits and signals for the selection of a certain connection;

2.,,Address'' shall mean the sum of all address elements which serve to designate the destination of a communications connection;

3.,,Numbers'' shall mean numeric strings that are used for addressing purposes in telecommunications networks;

4. ,,Addressing plan'' shall mean the sum of all possible combinations of the address elements that are used to unambiguously identify individuals, computer processors, machines, equipment or telecommunications facilities and which are involved in a telecommunications process;

5. ,,Numbering plan'' shall mean the sum of all possible combinations of address elements which serve to unambiguously identify individuals, computer processors, machines, equipment or telecommunications equipment through series of digits and which are involved in a telecommunications process;

[...]

A domain used for addressing is translated into an IP address by the DNS which, in turn, contacts a specific server. IP addresses in the IPv4 (Internet Protocol Version 4) format are binary numeric strings which unambiguously identify destinations - the individual computers - in a network. It follows, therefore, that IP addresses constitute numbers within the meaning of § 52 (3) TKG.<sup>23</sup> In Switzerland, the Regulation on Address Elements in the Telecommunications' Sector (AEFV)<sup>24</sup> (issued on the basis of the Swiss Telecommunications Act) defines the Internet- or IP-Address (Internetworking Protocol Addresses) as a "numerical communications parameter which makes it possible to identify an internet domain, in

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<sup>22</sup> Pursuant to § 109 TKG.

<sup>23</sup> But see *Mayer-Schönberger/Hauer*, Kennzeichenrecht & Internet Domain Namen, *ecolex* 1997, 947, who qualify IP addresses as "numerical addresses". However, this term does not coincide with the legal definition of address; Cf. also *Brandl/Fallenböck* wbl 1999, 481, who compare IP addresses to telephone numbers.

<sup>24</sup> Ordinance of 6 October 1997, regarding address elements in the telecommunications sector SR 784.104, based on the Telecommunications Act of 30 April 1997 (FMG), SR 784.10.

particular one consisting of network computers or servers, as well as the computers of the users participating in the connections in the network". Under this definition, the IP address clearly also fits the Austrian definition of "number". Criticism must be raised against the Swiss definition because the destination of a connection is not the "Internet domain" but rather a server.

In conjunction with an IP address, a domain unambiguously defines a certain connection. It follows from this that domains, or their components, are address elements, which also coincides with the Swiss definition of address elements. According to this definition, domain names are alphanumerical communications' parameters which, together with an IP address, enable the identification of an internet domain, consisting, in particular, of network computers or servers as well as the computers of the users participating in the connections in this network.

It may be asserted, then, that domains constitute address elements within the meaning of the TKG and that the Austrian legislator has therefore claimed his competence with respect to the administration of the ccTLD ".at". The question as to where John Postel, the IANA or ICANN derive(d) the authority to assign the ccTLD ".at" from is a separate matter which cannot be addressed at this time.

### **Domain-Administration under the Austrian Telecommunications Act (TKG)**

The Act distinguishes between addressing and numbering plans. § 52(4) TKG defines addressing plans as the sum of all possible combinations of address elements which serve to positively identify individuals, computer processors, machines, equipment or telecommunications facilities and which are involved in a telecommunications' process. Pursuant to § 52(5) TKG numbering plans, on the other hand, comprise only those "address elements [<sup>25</sup>], which are depicted by numerical series. From a technical perspective, these constitute a sub-group. The law, however, defines them as being equal to the addressing plans. As domains have already been established as constituting address elements, the legislator has thus stipulated how the administering of domains has to occur: namely, by way of a (government) addressing plan for domains under the ccTLD ".at". The Federal Minister for Science and Transport<sup>26</sup> (BMVIT) is authorised to issue an addressing plan. To this day, however, no such plan has been put forward. It has been argued that, regardless of the existence of an addressing plan, § 57(2) TKG covers the assignment of domains and that, therefore, the regulatory authority (RTR GmbH, which has been entrusted with this government task) is exclusively legitimised to administer them.<sup>27</sup> This view cannot be followed, wherefore the assignment of address elements under the ccTLD ".at" by the ".at"-Registry does not contravene any effective legal provisions as the BMVIT has so far failed to issue a corresponding ordinance to regulate this issue.

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<sup>25</sup> Meant are probably (combinations) of numbers within the meaning of § 52(3) TKG or only numeric strings but not address elements as these - by definition - belong to addressing plans.

<sup>26</sup> Now the Federal Minister for Transport, Innovation and Technology.

<sup>27</sup> *Thiele*, wbl 2001, 307.

The Federal Minister of Transport, Innovation and Technology (BMVIT) can change the domain management of the ccTLD ".at" at a moment's notice. This translates into an unacceptable legal uncertainty for the Austrian Internet community. On the other hand, the ccTLD ".at" is currently being administered by private companies without appropriate authorisation. It is crucial that the BMVIT - or the legislator if necessary - clarifies how domain management is to be carried out so that both legitimisation and, with it, government supervision, as well as legal certainty for the Internet users in Austria are ensured. The upcoming amendment to the TKG, made necessary by the EU telecommunications review, provides a suitable opportunity.