

SDI Terms-of-Use IPR Management: GDI NRW Modeling Approach

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MAJOR THEME:

- 1. GI policy and society, e-Government**
- 2. Spatial Data Infrastructure**
- 3. Interoperability**

NATURE OF THE ABSTRACT: Strategic

SUMMARY

The paper describes an approach to structure Terms-of-Use (ToU) statements to manage intellectual property rights (IPR) in spatial data infrastructures (SDI) with regards to more transparencies by harmonized categories. The complexity of open lists of different ToU in SDIs should be reduced by a mechanism, which results in easy understandable named states.

KEYWORDS: *SDI Digital Rights Management, DRM, Terms-of-Use,*

INTRODUCTION

After the introduction of the OGC Web Mapping Service Specification (WMS) in 2001 (De La Beaujardière, 2001), the development of spatial data infrastructures (SDI) is growing. 222 OGC discovered services were up and running worldwide in spring 2005 (Ramsey, 2005) and much more are expected. The GDI NRW Joint Project (Verbundprojekt) 2005 (Wagner, Panzer, Menge, 2005) registered more than 120 interoperable services and 20 applications. The initiatives show that the interoperable access to spatial information via the Internet is feasible from a technology perspective.

From a legal perspective the use of e.g. web mapping services creates many open questions. If spatial data is considered as a valuable good, the Intellectual Property Rights (IPR) management needs to be solved at least for commercial/professional use. The current situation is undefined from the legal point of view. Only basic rights like copyright laws are in force. An example in the next paragraph shows the situation and the legal uncertainty.

NEED

Recently, the University of Münster, third largest university of Germany, was taken to court, because of an illegal publication of spatial information. The map was used to illustrate a research topic. After a scientific thesis was finalized, it was published in the Internet. The owner of the spatial map was successful in court. After this impact the rector of the university reacted with a formal letter to request the removal of all geographic content if the ownership or the rights-of-use

are not defined (Universität Münster, 2005). The University of Münster has 40.000 directly related persons.

Another relevant case is the INSPIRE discussion between the EU Council, EU Parliament and the EU Commission in 2005 (INSPIRE 2005). More and more paragraphs of the directive handle in the current EU INSPIRE co-decision procedure IPR issues (Brepoels, 2006). Therefore it is expected that intellectual rights must be managed in the European SDI. Because the EU INSPIRE directive targets on 25 EU member states and the EU institutions, this expected decision will have an impact in the technical and organizational design of SDIs.

PROBLEM STATEMENT

Although “Intellectual Property Rights” are currently topics for various discussions, the basic copyright fundamentals are classic. The expression “All rights reserved” is also often used since many years. In most cases the broad distribution of information records via the Internet is even intended. Therefore some publishers shift to a “some rights are reserved” statement (creative commons, 2006).

After the introduction of e-commerce, electronic contracting is more and more used today. A click of a specific button (e.g. “order it”) represents electronically the signature of a contract from a legal point of view. This procedure is today accepted worldwide.

Therefore electronic contracting is in the Internet a suitable procedure to handle less critical IPR issues. The expression “click-through contract” or “license” is often used. Another often used expression is “Terms-of-Use” (ToU). Although often considered as not effective, it is a relevant mechanism to manage a large proportion of IPR issues efficiently with Internet capabilities and a legal environment. The (draft) EU INSPIRE directive uses explicitly the expression “click-licenses” (§14.3 Council of the EU, 2005) as a way to manage IPR. Although different expressions are still in use, the click-through contracting is a way out of many IPR discussions. This paper uses the expression “Terms-of-Use”. Google recorded 2.590 million records for that expression.

The definition of Terms-of-Use may be considered as a barrier. On the other hand it is a very elegant instrument to address different user groups. An example is that Terms-Of-Use grant research and education institutions the right to use and to publish spatial data and services within a research context, if these institutions are considered as promoters. The instrument Terms-Of-Use is working only within a legal environment and its borders. A legal enforcement is therefore limited to national borders. But often out-of-range users are also considered as out-of-range customers.

The technical standardization organization Open Geospatial Consortium (OGC) started together with sponsors a first action in the field of digital rights management (DRM) with the OWS3 Testbed initiative (OGC 2005). The approach is to manage IPR with a click-through license mechanism. This mechanism is known in the software domain, e.g. as an End-user License Agreement (EULA). A user needs to acknowledge a (legal) text prior access to an OWS Service. The testbed also identified many other web service architectural questions especially from a web service chaining point of view. The results were documented in the OWS3 interoperability report (Wagner et al, 2006) in detail.

The OGC OWS3 testbed focused as a first step only on *unstructured* text. Assuming that a Terms-of-Use statement with two pages covers 5 WMS layers, a WMS has 10 layers in average, and 100 services are registered in a spatial community, the result would be 400 different ToU’s pages. This assumption with a two pages is very conservative, but it shows already that these requirements would neutralize on a legal/commercial level the advantages an interoperable SDI.

APPROACH

Beyond the OGC OWS3 another action was taken by the GDI NRW community. Observations show that many data providers have similar backgrounds, e.g. a neighboring institution under the same (governmental) framework or similar views on user groups in market. Therefore harmonization might be possible to reduce complexity for end user. The need was identified by the GDI NRW Joint project 2004, addressed in the following Call for Participation 2005 (CfP) with an obligation to declare for each OWS service the Terms-of-use. The sub group "AK Geo-eBusiness" discussed the problem in detail. The harmonization efforts should be stimulated by providing ToU templates for different use cases. It is assumed that easy accessible templates are an effective instrument for a soft harmonization, because of a current lack of alternatives. The GDI Task Force "Terms-Of-Use"/"GDI Nutzungsbedingungen" was founded to develop an approach.

A first step is the development of an easy understandable and humane readable structure, which is able to store approximately 80% of used terms-of-use conditions. It was named "Matrix" due to its table form. The second step is the identification and harmonization of often used constellations. This depends on the usage of the templates. Therefore the GDI NRW community will be involved (about 100 members). A third step is to name these often used constellations with human readable names. The first step is described in this paper.

TERMS-OF-USE MATRIX

The design of a ToU model needs to take into account the business environment, which is always a compromise between the relationship complexity of offer and the number of potential customers. Therefore a simple matrix seems to be suitable. The matrix relates operations and intentions. Each axis consists of an enumeration. The already identified operations are shown in figure 1. A (service) resource could be used with different operations. An example is OGC WMS with viewing (view). It is possible that a resource type can not offer all operations. The enumeration content needs to be explained to users and expert administrators in detail. The details are less relevant for the overall structure. The enumeration is open in principal and could be augmented by operators or communities. Currently the operations simple view, enhanced view, plot, analyse, integrate, link (traceable), link (not traceable), publish, relay and modification are identified.

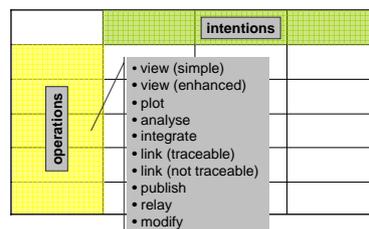


Figure 1: Terms-of-Use Matrix and operations.

The y-axis of the matrix relates to intentions. An intention is the purpose of desired use. From another point of view it is the market related user group. A resource operator can design its offer according to the market potential of different user groups. The discussion showed that is recommended to use an abstract expression to name each intention rather than a concrete one, because of potential (legal) misunderstandings. Therefore the task force introduced types (see figure 2). Each type can be described in detail. It is possible to have an end-user description and a

legal description. Another advantage is the potential to describe the content with different languages, but under the same abstract type.

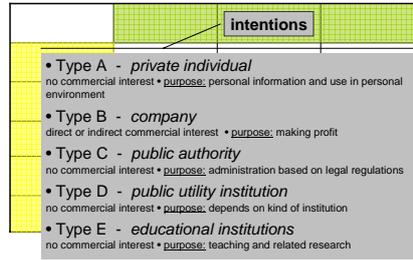


Figure 2: Terms-of-Use Matrix and intentions.

The relationship between operations and intentions expresses if a usage is permitted or not or controlled with other obligations (2nd level of detail). Figure 3 shows the identified states.

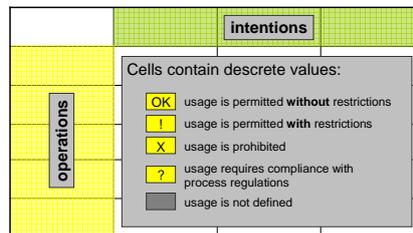


Figure 3: Usage permit states.

The exclamation mark “!” represents that some additional, but well-defined and (system) known restrictions apply. Restrictions are enumerated with an ID and have names. An example is a disclaimer (see table 1).

restrictionType	ID	Language	End User Text	Legal text
DisclaimerNRW	GDINRW_A	De	Text.de	Text.de
DisclaimerNRW	GDINRW_A	En	Text.en	Text.en
..

Table 1: Enumeration of restrictions.

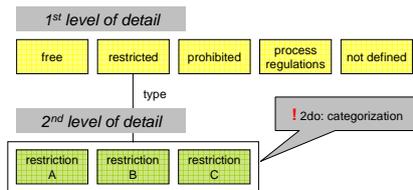


Figure 4: Restrictions

Figure 4 illustrates the restrictions types on a more abstract level. The restriction enumeration may contain also regular used contract paragraphs (elements), which are often used and therefore potentially shared within a community.

The question mark “?” indicates that further processes are required to obtain the right to use the desired resource and its access. The process regulation may also contain workflows of multiple required obligations. Figure 5 illustrates three examples. The first example is the obligation for a user to register.

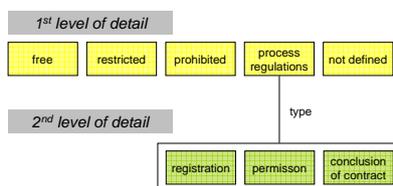


Figure 5: Process regulation

The kinds of process regulations are depending on the specific business case. The need of an interoperable description of SDI business service workflows was also identified in the OGC OWS3.geoDRM initiative (Wagner et al., 2006). Therefore the process regulation (workflow description) should not be expressed within the ToU model, but referenced to other workflow describing SDI Business components.

CONCLUSION

The GDI NRW matrix approach offers as a first step a structure to handle Terms-Of-Use and therefore IPR issues. The structure is still simple enough for end users and providers, but offers already engine readable features to reduce repetition of legal text.

The second step, the identification and **harmonization** of often used constellations, and the third step, the naming, can be realized after more experiences with the matrix are collected. Because Terms-of-Use are legally defined rules, which cover the technical and not technical usage of resources and unstructured text is difficult to process automatically, an harmonization with a small number of types is the key goal for more transparency within the SDI market.

OUTLOOK

The future goal is to reduce the complexity of many terms-of-use statements with a software supported mechanism to simple “traffic light” states:

- Green: Usage possible
- Yellow: Usage, possible, but some sub processes need to be carried out (e.g. pricing & ordering or registering)
- Red: At least a layer does not allow usage in this context
- No color: Usage unclear.

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