

# OeBF Rights Grammar Requirements

Required Rights Features for Digital Books

*Rights and Rules Working Group*

*Open eBook Forum*

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# Contents

1	Introduction.....	7
2	Version 1.0 requirements.....	8
2.1	Social and legal issues.....	8
2.1.1	Required acknowledgments.....	8
2.2	Attributes of the rights language.....	8
2.2.1	Efficiency.....	8
2.2.2	Compatibility.....	8
2.2.3	Extensibility.....	8
2.2.4	Machine readability.....	8
2.2.5	Metalanguage.....	8
2.2.6	Well-defined semantics.....	9
2.2.7	Governance.....	9
2.2.8	Core primitives.....	9
2.2.9	Users and roles.....	9
2.2.10	Identifiers for entities.....	9
2.2.11	Identifiers for rights expressions.....	9
2.2.12	Usage and business models.....	9
2.2.13	Definition of terms.....	10
2.2.14	Data dictionary terms.....	10
2.3	Identifiers and metadata.....	10
2.3.1	Identifiers.....	10
2.3.2	Unambiguous identification.....	10
2.3.3	Title and author.....	10
2.4	Digital objects.....	10
2.4.1	Object classes.....	10
2.4.2	Availability.....	10
2.4.3	Derivative works.....	11
2.5	Rights and obligations.....	11
2.5.1	No rights unless explicitly granted.....	11
2.6	Constraints.....	11
2.6.1	Conditions.....	11
2.6.2	Time-based conditions.....	11
2.6.3	Conditions based on users or groups.....	11
2.6.4	Conditions based on reading systems.....	11
2.6.5	Count-based usage.....	12
2.6.6	Fee-based usage.....	12
2.6.7	Portion-based usage.....	12
2.7	Pricing models.....	12
2.7.1	Free objects.....	12
2.7.2	Unlimited use for a fee.....	12
2.7.3	Tiered pricing based on quantity.....	12
2.7.4	Pay per use.....	12
2.7.5	Subscription.....	12
2.7.6	Time-based pricing.....	13
2.7.7	Metered pricing.....	13

2.7.8	Site licensing	13
2.8	Distribution and transfer	13
2.8.1	Interoperability of transfer	13
2.8.2	Ease of transfer	13
2.8.3	Direct sale by publishers	13
2.8.4	Delegation	13
2.8.5	Limits to delegated rights	13
2.8.6	Limiting distributor copies	14
2.8.7	Required delivery schedules	14
2.8.8	Delegation of perpetual rights	14
2.8.9	Content modification rules	14
2.8.10	Content modification to overcome disability	14
2.8.11	Superdistribution	14
2.8.12	Preview	14
2.8.13	Self-publishing	15
2.8.14	Updated versions	15
2.8.15	Library lending	15
2.8.16	Rights accompany content in end-user exchange	15
2.8.17	End-user lending	15
2.8.18	End-user giving	15
2.9	Usage rights	15
2.9.1	Simultaneous use	15
2.9.2	Cleartext copying	15
2.9.3	Display	16
2.9.4	Printing	16
2.9.5	Offline use	16
2.9.6	Accessibility	16
2.10	Object management rights	16
2.10.1	Digital copying	16
2.10.2	Library archival	16
2.10.3	Format conversion to preserve access	16
2.11	Changing and adding rights	17
2.11.1	Changing rights	17
2.11.2	Obtaining additional rights	17
2.11.3	Updating rights	17
2.11.4	Renewing rights	17
2.11.5	Updating and renewing rights based on conditions	17
2.12	Accounting and privacy	17
2.12.1	Privacy protection	17
2.12.2	Private rights and obligations	18
2.12.3	End-user access to rights	18
2.12.4	Anonymous acquisition	18
2.13	Trust model	18
2.13.1	Authenticity and integrity of digital objects	18
2.13.2	Authenticity of rights expressions	18
2.13.3	Authenticity of metadata	18

2.13.4	Integrity of metadata .....	18
3	V1.1 requirements .....	18
3.1	Social and legal issues .....	19
3.1.1	Permission by contract .....	19
3.1.2	Multiparty contracts .....	19
3.1.3	Contract requiring permission for each use .....	19
3.1.4	Acknowledgment of contract terms .....	19
3.1.5	Required legal notices .....	20
3.1.6	Liability specifications .....	20
3.2	Attributes of the rights language .....	20
3.2.1	Customizability .....	20
3.2.2	Interoperability .....	20
3.2.3	Predicate logic .....	20
3.2.4	Types of creations .....	20
3.2.5	Life cycle of digital objects .....	20
3.3	Identifiers and metadata .....	21
3.3.1	Metadata .....	21
3.3.2	Processing information .....	21
3.3.3	Additional metadata .....	21
3.4	Digital objects .....	21
3.4.1	Composite objects .....	21
3.4.2	Separate rights for components of composite objects .....	21
3.4.3	Combination rights .....	21
3.4.4	Collections .....	22
3.4.5	Variable rights for composite objects .....	22
3.4.6	Bundling of objects .....	22
3.4.7	Multiple versions .....	22
3.4.8	Object references .....	22
3.5	Rights and obligations .....	22
3.5.1	Categorization of rights .....	22
3.5.2	Narrowing of rights .....	22
3.5.3	Exclusive rights .....	22
3.5.4	Exceptions to rights .....	23
3.5.5	Sequences of rights .....	23
3.5.6	Inheritance of rights .....	23
3.5.7	Rights and interaction context .....	23
3.5.8	Obligations .....	23
3.5.9	Obligations as a consequence of rights exercise .....	23
3.5.10	Ordering of obligations .....	23
3.5.11	Extensible rights and obligations .....	23
3.5.12	Conflicting rights and obligations .....	24
3.5.13	Rights and obligations with and without state .....	24
3.5.14	Relational binding .....	24
3.6	Constraints .....	24
3.6.1	Territory-based conditions .....	24
3.6.2	Conditions based on printing devices .....	24

3.6.3	Bundling of conditions.....	24
3.6.4	Expiration based on conditions.....	24
3.6.5	Fallback conditions.....	25
3.7	Pricing models.....	25
3.7.1	Tiered pricing based on quality.....	25
3.7.2	Tiered pricing based on usage time.....	25
3.7.3	Pay per use followed by free access.....	25
3.7.4	User-based pricing.....	25
3.7.5	Subscription with limited usage.....	25
3.7.6	Nested revenue models.....	25
3.7.7	Changing pricing models.....	26
3.7.8	Combining pricing models.....	26
3.8	Distribution and transfer.....	26
3.8.1	Quality of service requirements.....	26
3.8.2	Branding requirements.....	26
3.8.3	Bandwidth requirements.....	26
3.8.4	Requirements for delivery media.....	26
3.8.5	Offline acquisition.....	26
3.9	Usage rights.....	27
3.9.1	Annotation.....	27
3.9.2	Usage requirements.....	27
3.10	Object management rights.....	27
3.10.1	Backups.....	27
3.10.2	Restoration of backups.....	27
3.10.3	Deletion.....	27
3.10.4	Multiple reading systems.....	27
3.11	Changing and adding rights.....	28
3.12	Accounting and privacy.....	28
3.12.1	Collecting accounting information.....	28
3.12.2	Payment rules.....	28
3.12.3	Usage tracking and reporting.....	28
3.12.4	Confidential sources of content.....	28
3.12.5	Required identification.....	28
3.13	Trust model.....	28
4	Indefinitely deferred requirements.....	28
4.1	Social and legal issues.....	29
4.1.1	First sale.....	29
4.1.2	Fair use.....	29
4.1.3	Expiration of copyright.....	29
4.1.4	Export restrictions.....	29
4.1.5	No nation favored.....	29
4.1.6	Enforcement of national laws.....	29
4.1.7	European Union Copyright Directive.....	30
4.1.8	European Union data protection.....	30
4.1.9	European Union distance selling.....	30
4.2	Attributes of the rights language.....	30

4.2.1	Standards.....	30
4.2.2	Default schema with local extensions.....	30
4.2.3	Alternative predicate expressions.....	30
4.2.4	Namespaces.....	30
4.2.5	Abstract terms in the core.....	31
4.2.6	Element types and hierarchy.....	31
4.2.7	Data dictionary references.....	31
4.2.8	Data dictionaries as digital objects.....	31
4.3	Identifiers and metadata.....	31
4.3.1	“Fuzzy” identification.....	31
4.3.2	Identification by object attributes.....	31
4.3.3	Identification by content attributes.....	31
4.3.4	Size and efficiency.....	32
4.4	Digital Objects.....	32
4.4.1	Interoperability of content.....	32
4.4.2	Object data types.....	32
4.5	Rights and obligations.....	32
4.5.1	Expression evaluation services.....	32
4.5.2	Conversations.....	32
4.6	Constraints.....	32
4.6.1	Environmental conditions.....	32
4.7	Pricing models.....	33
4.7.1	Sponsored pricing.....	33
4.7.2	No price distinction based on disability.....	33
4.7.3	Refunds.....	33
4.8	Distribution and transfer.....	33
4.8.1	Age-based restrictions on queries.....	33
4.8.2	Load-based restrictions on queries.....	33
4.8.3	Restrictions on records retrieved.....	33
4.8.4	Restrictions on data elements retrieved.....	33
4.8.5	Subordinate rights.....	34
4.8.6	End-user trades with user identification.....	34
4.9	Usage rights.....	34
4.9.1	No rights distinction based on disability.....	34
4.9.2	No usability distinction based on disability.....	34
4.9.3	Restrictions on purpose of use.....	34
4.10	Object management rights.....	34
4.10.1	File management rights.....	34
4.10.2	Configuration rights.....	35
4.10.3	Object retention rules.....	35
4.11	Changing and adding rights.....	35
4.12	Accounting and privacy.....	35
4.12.1	Privacy obligations.....	35
4.13	Trust model.....	35
5	Definitions.....	35
6	Notes and Comments.....	36

# 1 Introduction

In June 2001, the Rights and Rules Working Group (RRWG) of the Open eBook Forum (OeBF) issued a call for requirements for digital rights management (DRM). By September 2001, the working group had received nearly 400 requirements. Of these requirements, all but about 25 addressed or had implications for a rights grammar.

At a meeting on September 11, 2001, the RRWG agreed to address requirements related to a rights grammar before addressing other requirements. The working group established a Rights Grammar Subgroup to receive the normalized requirements, assign priorities to the requirements, and to prepare a coordinated requirements statement for the rights grammar. It is also intended as a possible submission to the MPEG-21 group.

The requirements introduced by the acronym “DRM” are not properties of the rights grammar but still are of interest to OeBF stakeholders and should be considered for OeBF DRM standards. These include requirements related to *enforcement* of rights expressions by products, requirements for a trust model, and so on. This compilation includes some requirements of that kind. In addition, a separate document, compiled in October 2001, describes requirements for a trust model and will be reviewed separately.

The Rights Normalization Subgroup prepared the document “Requirements for a Rights Expression Language,” which served as source material for this draft specification. The subgroup first deferred for later consideration those requirements that did not clearly relate to a rights grammar. The subgroup then identified duplication and overlap among the remaining requirements. In some cases the subgroup split submitted requirements into multiple discrete requirements. The subgroup then created new requirements in normalized form, linking each to one or more of the submitted requirements. Finally, the subgroup placed the normalized requirements into broad categories.

The Rights Grammar Subgroup began with the set of normalized requirements and, through a series of discussions, proposed the priority ordering presented in this document. The subgroup divided all normalized requirements into the following categories:

- Version 1.0 requirements
- Version 1.1 requirements
- Indefinitely deferred requirements

In August 2002, the RRWG held a joint meeting with the Metadata and Identifiers Working Group (MIWG) to resolve differences in wording for 3 of the Version 1.0 requirements. The secretary of the Rights and Rules Working Group also discussed several requirements with the chair of the Publication Structure Working Group (PSWG). The meeting and discussion resulted in agreement between RRWG, MIWG, and PSWG on the wording of all Version 1.0 requirements. The meeting and discussion also identified some issues for joint exploration among the working groups.

Beneath each requirement is a list of one or more numbers. These numbers are the IDs in the OeBF requirements database of the original stakeholder requirements to which each normalized requirement is linked.

## **2 Version 1.0 requirements**

These received a “must” from at least the content provider representatives to the Rights Grammar subgroup. Most of the requirements in this category received a “must” from most or all respondents in the group and therefore represent the requirements that the subgroup considered to be the most urgent.

The requirements in this category are therefore required to be met by functional specifications for products that comply with an OeBF Rights Grammar specification, version 1.0.

### **2.1 *Social and legal issues***

#### **2.1.1 Required acknowledgments**

DRM shall allow for required acknowledgements (for example, copyright notices or corporate logos) to be specified as a consequence of using data.

10365

### **2.2 *Attributes of the rights language***

#### **2.2.1 Efficiency**

DRM shall be sufficiently efficient that performance does not have noticeable delays for end users and time-critical machine processing is not impaired.

10137, 10372

#### **2.2.2 Compatibility**

DRM shall provide that future versions of the rights grammar are backward compatible with older versions.

10141

#### **2.2.3 Extensibility**

The rights grammar shall be extensible and allow alternative schemas wherever sensible to meet the future needs of the digital content industry.

10199, 10219, 10303

#### **2.2.4 Machine readability**

The rights grammar shall be machine-readable.

10217

#### **2.2.5 Metalanguage**

The rights grammar shall be defined in an open, standard metalanguage.

10224



## **2.2.6 Well-defined semantics**

The rights grammar shall have useful, concise, unambiguous, and easily understandable semantics and predictable effects.

10225

## **2.2.7 Governance**

The rights grammar shall be specified, documented, and otherwise managed in a way that meets general coordination requirements of industry standards.

10226

## **2.2.8 Core primitives**

The rights grammar shall define a minimal core set of primitive constructs from which all other expressions can be constructed or derived. For example, instead of defining pay-per-view, rent-to-own, and other such models, the core shall provide the fundamental building blocks to link obligations (e.g., payment) to actions, to allow obligations to repeat according to various criteria, provide metering syntax, etc.

10300

## **2.2.9 Users and roles**

The rights grammar shall support the articulation of roles undertaken by users. Example: User may be associated with the role of "illustrator" for an identified digital object.

10200, 10201, 10330

## **2.2.10 Identifiers for entities**

The rights grammar shall support an open standard identification system for entities in the model. Example: ISO TC46 SC9 identification systems, open standards based on the URI standard (RFC2396)

10202

## **2.2.11 Identifiers for rights expressions**

The rights grammar shall provide mechanisms to unambiguously and universally identify rights expressions written in the language and allow these expressions to be treated as digital objects in their own right.

10222, 10228, 10315

## **2.2.12 Usage and business models**

The rights grammar shall enable the description of rights, permissions, conditions and obligations to support existing usage and business models and shall not constrain future models.

10204, 10419

### **2.2.13 Definition of terms**

The rights grammar shall support the separation of the semantics from any syntactical encodings. Terms can be defined with a formal definition, name, comment and usage notes.

10208

### **2.2.14 Data dictionary terms**

The rights grammar shall support a hierarchy of data dictionary terms such that local definitions may be referenced within closed communities. Default and user-specified augmentation and over-ride semantics are required.

10336

## **2.3 Identifiers and metadata**

### **2.3.1 Identifiers**

The rights grammar shall use standard identifiers for digital objects.

10091, 10159.1, 10229, 10329

### **2.3.2 Unambiguous identification**

Metadata for a digital object in the DRM context shall unambiguously identify the digital object for both supplier and recipient in a transaction.

10159

### **2.3.3 Title and author**

Metadata for a digital object in the DRM context shall include, in addition to the identifier, at least the title and creator of the digital object.

10159.2

## **2.4 Digital objects**

### **2.4.1 Object classes**

It shall be possible to construct a single rights expression to apply to a class of digital objects. The rights grammar shall therefore support class definitions and affiliations.

10322

### **2.4.2 Availability**

The rights grammar shall support standard mechanisms to indicate where digital objects are available for retrieval or access.

10235

### **2.4.3 Derivative works**

DRM shall provide mechanisms to allow the rights holder to control whether and how derivative works can be created from a digital object.

10075, 10241, 10319

## **2.5 Rights and obligations**

### **2.5.1 No rights unless explicitly granted**

DRM shall have default semantics in the case when no rights and obligations expressions are currently applicable to a digital object. For example, each component in the exchange of a digital object shall deny rights for the digital object unless the rights are explicitly granted. A mechanism to override the default shall be made available in the rights grammar.

10156, 10325

## **2.6 Constraints**

### **2.6.1 Conditions**

The rights grammar shall allow for the specification of a set of conditions that must be fulfilled before a right (or set of rights) can be exercised.

10309

### **2.6.2 Time-based conditions**

The rights grammar shall support unambiguous specifications of time to allow for commerce across time zones and rights expression based on time specifications such as specific times, fixed intervals, sliding intervals and metered intervals.

10056, 10246, 10341, 10399

### **2.6.3 Conditions based on users or groups**

The rights grammar shall support rights expressions for different individual users or for different groups of users. Individual user rights may differ from those granted to a group of users.

10061, 10418, 10466

### **2.6.4 Conditions based on reading systems**

The rights grammar shall support the expression of rights and rules associated with the capabilities of specific reading systems or other applications.

10062, 10407

### **2.6.5 Count-based usage**

The rights grammar shall provide mechanisms to specify conditions based on the number of times a right can be exercised.

10247

### **2.6.6 Fee-based usage**

The rights grammar shall support the specification of fees in industry standard terms.

10248

### **2.6.7 Portion-based usage**

The rights grammar shall provide mechanisms to specify information about portions of digital objects, including both identified portions and generic portions (such as “any 5 pages”), in order to support limiting rights to these certain portions.

10253, 10385

## **2.7 Pricing models**

### **2.7.1 Free objects**

The rights grammar shall support distribution and management of free digital objects.

10047, 10397

### **2.7.2 Unlimited use for a fee**

The rights grammar shall support specifying a price, including a price of “free”, for unlimited usage of a digital object.

10262, 10397.2

### **2.7.3 Tiered pricing based on quantity**

The rights grammar shall support specifying conditions (such as different pricing levels) based on the number of copies of a work requested.

10048, 10265, 10397.6

### **2.7.4 Pay per use**

The rights grammar shall support payment of a fee for each use of a digital object either online or offline.

10050, 10050.1, 10266, 10397.1

### **2.7.5 Subscription**

The rights grammar shall support subscription-based pricing and access to content.

10052.1, 10267

### **2.7.6 Time-based pricing**

The rights grammar shall support time-based pricing rules for digital objects.

10056.1

### **2.7.7 Metered pricing**

The rights grammar shall support metered pricing.

10057

### **2.7.8 Site licensing**

The rights grammar shall support digital object access and use under a site license.

10271

## **2.8 *Distribution and transfer***

### **2.8.1 Interoperability of transfer**

DRM shall support the transfer of a digital object and its associated rights between components made by different technology providers.

10110, 10205

### **2.8.2 Ease of transfer**

DRM shall make buying and borrowing electronic publications easier than buying and borrowing the equivalent publications in print.

10136

### **2.8.3 Direct sale by publishers**

DRM shall allow publishers to sell digital objects to end users.

10125

### **2.8.4 Delegation**

DRM shall support the delegation of rights and rules associated with digital objects. For example, the rights grammar will provide means for publishers to give distributors and sellers the right to sell digital objects to sellers, libraries, and end users.

10071, 10126

### **2.8.5 Limits to delegated rights**

DRM shall support the enforcement of limits associated with delegation of rights, where a third party could only grant rights to individuals according to limits established by the rights holder during the initial acquisition of the digital object by that third party.

10071.1

### **2.8.6 Limiting distributor copies**

The rights grammar shall support specifying a maximum number of copies that a distributor can make of a work for further transmission or sale.

10276

### **2.8.7 Required delivery schedules**

Provision shall be made in the rights grammar so that content originators can specify on their downstream partners the requirement for fair delivery schedules, including time windows for delivery or release of content at specific times.

10367, 10368, 10398

### **2.8.8 Delegation of perpetual rights**

The rights grammar shall support the delegation of perpetual rights associated with a digital object to a consumer.

10098

### **2.8.9 Content modification rules**

The rights grammar shall provide syntax for rules defining how agents may alter digital objects subsequent to publication.

10383

### **2.8.10 Content modification to overcome disability**

DRM shall allow trusted agencies to modify existing content for the purpose of enabling persons with disabilities to exercise the rights granted. Example: An agency might need to alter an audio publication to provide additional navigational features such as track announcements, page numbers, the bibliography, or the index.

10435

### **2.8.11 Superdistribution**

DRM shall support superdistribution to enable recipients of digital objects to purchase or legally obtain a license for the object. The license can be for any set of rights that the content owner chooses to grant.

10070, 10124, 10275

### **2.8.12 Preview**

DRM shall support preview of the digital object, in whole or in part, free or for compensation.

10145, 10264, 10443

### **2.8.13 Self-publishing**

DRM shall support self-publishing by authors. This support shall include a range of security options, among which is the distribution of unprotected works.

10113

### **2.8.14 Updated versions**

DRM shall provide means of making updated versions of a literary work available to end users.

10123.1

### **2.8.15 Library lending**

DRM shall allow libraries to lend digital objects to end users and to designate the duration or expiration times of the loans.

10130, 10274, 10421

### **2.8.16 Rights accompany content in end-user exchange**

When two end users exchange a digital object, the rights to the digital object shall be exchanged along with the content.

10441

### **2.8.17 End-user lending**

DRM shall allow an end user who has purchased a digital object to lend it to another end user. During the period of the loan, the lender shall not have access to the digital object.

10040, 10067, 10138, 10239, 10425

### **2.8.18 End-user giving**

DRM shall allow an end user who has acquired a digital object to give it to another end user. The giver shall relinquish all rights to access and use of the digital object.

10069, 10138

## **2.9 Usage rights**

### **2.9.1 Simultaneous use**

The rights grammar shall provide mechanisms to specify the number of instances of a digital object that can be used simultaneously.

10115

### **2.9.2 Cleartext copying**

DRM shall allow rights holders to control whether or not authorized users can make unprotected/unmanaged copies of originally protected/managed digital objects.

10078

### **2.9.3 Display**

The rights grammar shall provide mechanisms to express display rights relative to all or a portion of the digital object.

10240.1

### **2.9.4 Printing**

The rights grammar shall provide mechanisms to express print rights relative to all or a portion of the digital object.

10076, 10240

### **2.9.5 Offline use**

DRM shall support offline enforcement of rights and rules associated with digital objects.

10097

### **2.9.6 Accessibility**

The rights grammar shall allow for alternative usage permissions or constraints for digital objects to meet the needs of communities with special needs.

10214, 10467

## **2.10 *Object management rights***

### **2.10.1 Digital copying**

DRM shall support the ability to make copies of the digital object. The rights grammar shall allow the rights holder to establish rules that are specific to copies made.

10072

### **2.10.2 Library archival**

DRM shall allow libraries and cultural heritage institutions to archive digital objects.

10132, 10469

### **2.10.3 Format conversion to preserve access**

DRM shall support the conversion of a digital object to alternative content formats for the purpose of preserving access to the object. The converted digital object shall retain the rights and conditions that accompany the original object.

10724



## **2.11 Changing and adding rights**

### **2.11.1 Changing rights**

DRM shall provide mechanisms that express under what conditions rights expressions can be altered or augmented. Examples:

- 1) Rights holder may want to change price.
- 2) Retailer needs to add markup to distributor's price.
- 3) Consumer may want to buy additional rights to a digital object.

10066, 10245, 10343

### **2.11.2 Obtaining additional rights**

DRM shall allow consumers to obtain additional rights for a digital object for which they already have certain rights (or none at all) either individually or through a group association. Support shall be provided in the rights grammar for specifying how licenses are thus obtained, with additional support for context-based variations.

10065, 10348

### **2.11.3 Updating rights**

DRM shall support updating rights and obligations during their lifetime.

10343

### **2.11.4 Renewing rights**

DRM shall support renewing rights and obligations once their lifetime has expired (or have been otherwise revoked).

10344

### **2.11.5 Updating and renewing rights based on conditions**

The rights grammar shall provide for cases where rights and obligations require update or renegotiation when specified trigger conditions are met.

10345

## **2.12 Accounting and privacy**

### **2.12.1 Privacy protection**

DRM shall protect the privacy of end users. It shall allow the end user to control the dissemination of his private information and include hooks to make reference to privacy specification protocols such as P3P wherever possible.

10100, 10142, 10413

## **2.12.2 Private rights and obligations**

The rights grammar shall provide a mechanism for specifying that the details of rights and obligations expressions are private and exclusive to the subjects of those expressions.

10351

## **2.12.3 End-user access to rights**

DRM shall allow end users to access the rights and rules associated with a digital object.

10100.1, 10463

## **2.12.4 Anonymous acquisition**

DRM shall support acquisition of rights and rules associated with digital objects where the consumer's identity is not required.

10102, 10157

## **2.13 Trust model**

### **2.13.1 Authenticity and integrity of digital objects**

DRM shall ensure that digital objects are not tampered with or altered after they are published, except insofar as the rights holder allows modification.

10083, 10144, 10233, 10412

### **2.13.2 Authenticity of rights expressions**

DRM shall allow for authentication of expressions and documents written in the language.

10223

### **2.13.3 Authenticity of metadata**

DRM shall support verification of authenticity of parts or all of metadata associated with a digital object.

10092.1

### **2.13.4 Integrity of metadata**

DRM shall protect the integrity of parts or all of metadata associated with a digital object.

10092.2

## **3 V1.1 requirements**

These requirements are recommended for deferral and reconsideration in version 1.1. If representatives on the Rights Grammar Subgroup interested in content (ALA, AAP, Accessibility SIG, et al.) specifically recommended deferring a requirement to version 1.1, the subgroup gave that recommendation extra weight.

The requirements in this category are therefore possibly required to be met by functional specifications for products that comply with an OeBF Rights Grammar specification, v1.1.

Version 1.1 is a hypothetical revision of the OeBF Rights Grammar standard. It would be issued after version 1.0 not so much because more requirements gathering was needed but because, for example:

- More research is needed by technology companies or
- The features are not needed soon; the requirements reflect business models that publishers are interested in but not practicing today.

Version 1.1 requirements should be briefly documented in the version 1.0 standard as likely extensions, as a guide to implementers. Ideally, the guide is so specific as to suggest, “If you’re going to implement a feature in this area, do it this way, because that is the likely standard.”

### **3.1 Social and legal issues**

#### **3.1.1 Permission by contract**

The rights grammar shall support expression of permission by contract, in a chosen language of contract, which may be a formal XML-based standard or informal natural language.

10207, 10392

#### **3.1.2 Multiparty contracts**

The rights grammar shall make provision for multiparty contracts.

10395

#### **3.1.3 Contract requiring permission for each use**

A special case of contract establishment is one that requires a value-chain participant to seek explicit permission for each and every use of a digital object. The rights grammar shall provide a method for describing this case and all its attributes.

10396

#### **3.1.4 Acknowledgment of contract terms**

The rights grammar shall provide syntax for specifying that (and the method by which) a publisher requires explicit acknowledgement of contractual terms before access to an object is granted.

10393, 10394

### **3.1.5 Required legal notices**

The rights grammar shall make provision to describe requirements on all participants in the value chain (including rendering tools used by the end-consumer) on the placement of legal notices alongside content.

10366

### **3.1.6 Liability specifications**

It shall be possible within the rights grammar to describe liability incumbent upon value chain participants if they agree to interact with digital objects in a particular fashion.

10380

## **3.2 Attributes of the rights language**

### **3.2.1 Customizability**

The rights grammar shall be customizable for specialized applications within the current version of the language.

10220

### **3.2.2 Interoperability**

The rights grammar shall support interoperable DRM services, such as clearinghouse rights authentication, transactions processing, and secure storage.

10221

### **3.2.3 Predicate logic**

The rights grammar shall support (possibly via extensibility mechanisms) arbitrarily complex predicate logic.

10333

### **3.2.4 Types of creations**

The rights grammar shall support the description of rights associated with all types of creations. Note: This includes abstractions, expressions, manifestations and artifacts. Example: To support the description of rights in musical works, performances of musical works, sound recordings and physical sound carriers.

10203, 10216

### **3.2.5 Life cycle of digital objects**

The rights grammar shall provide a set of default mechanisms to express all essential types and modes of usage and consumption of digital objects throughout their life cycles, including creation, publishing, distribution, consumption, and invalidation/disposal.

10206, 10218, 10236, 10388

### **3.3 *Identifiers and metadata***

#### **3.3.1 Metadata**

DRM shall provide mechanisms to reference metadata as part of the rights grammar, make reference to external content metadata and include existing content metadata. It shall support the enforcement of metadata where all or part of the metadata may be controlled by DRM.

10092, 10230

#### **3.3.2 Processing information**

Metadata for a digital object in the DRM context shall include enough information to allow a component that receives the object to process it correctly. For a reading system for electronic publications, this information includes the work's content format and information about how the work is encrypted, such as encryption algorithm, method, and key length.

10160

#### **3.3.3 Additional metadata**

DRM shall provide means for associating a digital object with large bodies of metadata about the object.

10162

### **3.4 *Digital objects***

#### **3.4.1 Composite objects**

DRM shall support a combination of digital objects where the objects can be of different media types, including sound, animation, video and electronic text. DRM shall support rights and rules for the entire set of objects and/or for specific objects within the set.

10051, 10114, 10231, 10370

#### **3.4.2 Separate rights for components of composite objects**

The rights grammar shall support specifying different rights, conditions, and obligations to individual components of a composite work, as well as to the entire composite work.

10269

#### **3.4.3 Combination rights**

DRM shall allow the rights holder to control whether a digital object can be combined in any way (for example, by a third party content aggregator) with and into other digital objects.

10073, 10381

#### **3.4.4 Collections**

The rights grammar shall provide mechanisms to reference collections of digital objects.

10232

#### **3.4.5 Variable rights for composite objects**

The rights grammar shall support expression of rights and rules which may vary according to the relationships between and/or navigation through a collection of digital objects that constitute a larger digital object.

10048.1, 10312

#### **3.4.6 Bundling of objects**

The rights grammar shall support bundling of digital objects (for pricing or rights purposes) independent of the channel, delivery method, or time frame.

10060, 10324

#### **3.4.7 Multiple versions**

The rights grammar shall provide means of distinguishing versions of a literary work.

10123

#### **3.4.8 Object references**

It shall be possible within the rights grammar to specify rules regarding how a digital object may be referenced by other digital objects.

10390

### **3.5 *Rights and obligations***

#### **3.5.1 Categorization of rights**

The rights grammar shall enable the organization of rights into categories.

10237

#### **3.5.2 Narrowing of rights**

The rights grammar shall support the expression of narrowing of rights.

10211

#### **3.5.3 Exclusive rights**

The rights grammar shall support the expression of exclusive rights.

10212

### **3.5.4 Exceptions to rights**

The rights grammar shall support the expression of exceptions to rights.

10213

### **3.5.5 Sequences of rights**

The rights grammar shall allow for the specification of a set of rights that exist according to a total or partial sequence. Transition between rights in the sequence may be triggered by time-based or other events.

10311

### **3.5.6 Inheritance of rights**

The rights grammar shall allow for the specification of inheritance semantics to define how rights are transferred between associated digital objects.

10313

### **3.5.7 Rights and interaction context**

Provision shall be made in the rights grammar for the formation of rights expressions in terms of attributes of the context in which the interaction between users and digital objects is taking place.

10331, 10350

### **3.5.8 Obligations**

The rights grammar shall provide mechanisms to express a set of obligations in order to support building and deploying DRM solutions, systems and services. Examples are: Watermarking, Usage Tracking, Legal Notices.

10257

### **3.5.9 Obligations as a consequence of rights exercise**

The rights grammar shall allow for the specification of a set of obligations that are a consequence of exercising a right (or set of rights).

10308

### **3.5.10 Ordering of obligations**

The rights grammar shall allow for the specification of a set of obligations that must be fulfilled in order.

10310

### **3.5.11 Extensible rights and obligations**

The rights grammar shall be sufficiently extensible to allow for the description of all possible models of rights and obligations transfer between digital objects.

10314

### **3.5.12 Conflicting rights and obligations**

DRM shall have default semantics in the case when rights and obligations expressions are in conflict. A mechanism for globally overriding the default conflict-resolution scheme shall also be provided.

10326

### **3.5.13 Rights and obligations with and without state**

It shall be possible to rights and obligations expressions with and without state.

10354

### **3.5.14 Relational binding**

An electronic contract may wish to bind together numerous rights and data entities in a relational manner. Provision shall exist in the rights grammar to support this.

10321

## **3.6 Constraints**

### **3.6.1 Territory-based conditions**

The rights grammar shall support industry-standard mechanisms to reference physical regions, areas, and locations as well as digital domains, networks, and systems.

10053, 10252, 10268, 10400, 10401, 10456

### **3.6.2 Conditions based on printing devices**

The rights grammar shall support the expression of rights and rules associated with the capabilities of specific printing devices.

10077

### **3.6.3 Bundling of conditions**

The rights grammar shall provide mechanisms to bundle conditions and reference the bundle as a single entity.

10255

### **3.6.4 Expiration based on conditions**

In addition to temporal constraints on the lifetime of rights and obligations expressions, arbitrary trigger conditions shall be allowed to expire an expression.

10347



### **3.6.5 Fallback conditions**

If a rights set denies access to one class of data, the rights grammar shall allow a publisher to specify another class of data to which the rights apply.

10349

## **3.7 Pricing models**

### **3.7.1 Tiered pricing based on quality**

The rights grammar shall support specifying conditions (such as different pricing levels) based on the quality of different versions of a same work offered.

10265.1

### **3.7.2 Tiered pricing based on usage time**

The rights grammar shall support specifying conditions (such as different pricing levels) based on the length of time to use a work.

10048.2, 10265.2

### **3.7.3 Pay per use followed by free access**

The rights grammar shall support payment of a fee for each use of a digital object up to a limit and then switch to free access for allowed uses (“rent-to-own”).

10397.1

### **3.7.4 User-based pricing**

The rights grammar shall support user-based pricing levels for different individual users or for different groups of users.

10270

### **3.7.5 Subscription with limited usage**

The rights grammar shall support the consumer’s payment of a minimum up-front charge on a subscription basis. The subscription expires when either a time limit expires or a permitted number of uses or amount of usage time is exceeded. Subsequent uses incur separate per-use charges.

10397.4

### **3.7.6 Nested revenue models**

The rights grammar shall support specifying payments for Digital Object usage in terms of percentages of previous transactions. Example: Pay to B 2% of how much is paid to A.

10278

### **3.7.7 Changing pricing models**

DRM shall support changing between pricing models that are allowed by the rights and rules enforced.

10052

### **3.7.8 Combining pricing models**

DRM shall support the combining of different pricing options for rights and rules associated with digital objects.

10055

## **3.8 *Distribution and transfer***

### **3.8.1 Quality of service requirements**

The rights grammar shall allow the specification of minimum levels of quality of service to be met by downstream distributors of content.

10355

### **3.8.2 Branding requirements**

The rights grammar shall make provision to describe requirements on distributors and other value-chain participant for branding content. Metadata constructs for describing the branding material (e.g., logos) are required.

10364

### **3.8.3 Bandwidth requirements**

It shall be possible to specify in the rights grammar minimum bandwidth to be operated by downstream distributors and channel partners when they are responsible for downstream real-time data delivery.

10369

### **3.8.4 Requirements for delivery media**

The rights grammar shall support the specification of allowed (or disallowed) media via which content may be delivered.

10378

### **3.8.5 Offline acquisition**

DRM shall support acquisition of rights to a digital object while offline with asynchronous clearance of that transaction.

10097.1

### **3.9 Usage rights**

#### **3.9.1 Annotation**

The rights grammar shall allow for rules governing the manner in which annotations may be added to an original object. It shall be possible for the rules to describe how annotations are presented and distinguished from the original content.

10384

#### **3.9.2 Usage requirements**

It shall be possible to specify in the rights grammar the manner in which content is to be used, such as by the application of style guides and templates to define “look and feel”.

10360

### **3.10 Object management rights**

#### **3.10.1 Backups**

DRM shall allow consumers to create backups of digital objects which have rights and rules enforced by the DRM. Each backup copy shall itself be controlled by the same rights and rules that pertain to the original digital object.

10084, 10140

#### **3.10.2 Restoration of backups**

DRM shall allow consumers to restore backup copies of digital objects which have rights and rules enforced by the DRM. Each restored backup copy shall itself be controlled by the same rights and rules which pertain to the original digital object.

10086

#### **3.10.3 Deletion**

DRM shall support the right to delete a digital object. The rules shall extend to the manner of destruction of the object, which will include such requirements as caching a deleted object within a retrieval area until a condition is met (timeout, flushing of the cache, etc).

10085, 10387

#### **3.10.4 Multiple reading systems**

DRM shall allow an end user to transfer a digital object to any reading system that the user owns and exercise all rights granted to the user on any such reading system. DRM shall allow any conversion of the digital object’s content format that is necessary to transfer the digital object to and exercise rights on another reading system that the user owns.

10087, 10087.1, 10421.1, 10425.1, 10445

### **3.11 Changing and adding rights**

### **3.12 Accounting and privacy**

#### **3.12.1 Collecting accounting information**

DRM shall support collection of accounting information throughout the value chain for commercial and non-commercial distribution.

10065.1, 10120, 10363

#### **3.12.2 Payment rules**

The rights grammar shall make provision for rules specifying when particular actions must be completed. For example, payment shall be made to rights holders within 30 days.

10065.2, 10373

#### **3.12.3 Usage tracking and reporting**

The rights grammar shall provide the mechanisms to express the requirement for usage tracking and the conditions that apply. DRM shall enforce the collection of usage metrics throughout a value chain.

10042, 10099, 10099.1, 10122, 10258, 10362

#### **3.12.4 Confidential sources of content**

The rights grammar shall make it possible to specify confidentiality clauses that require downstream contributors to respect the confidentiality of the source of the content or of organizations.

10415, 10416, 10417

#### **3.12.5 Required identification**

The rights grammar shall provide syntax to require that data delivered to a recipient at any stage in a distribution chain be marked in some manner to identify the recipient.

10357

### **3.13 Trust model**

## **4 Indefinitely deferred requirements**

Requirements in this category are not likely to be considered for either version 1.0 or version 1.1. Requirements may appear in this category for a number of reasons:

- Some are outside the scope of the working group or its mission
- Some are specific to particular countries or regions
- Some are sufficiently covered by requirements for version 1.0 or 1.1
- Some pertain more to design and implementation than to expression of requirements

Nonetheless, the working group may reconsider some of these requirements in the future.

## **4.1 Social and legal issues**

### **4.1.1 First sale**

DRM shall support the “first sale” principle to the extent that “first sale” is supported by applicable copyright laws. For example, in some circumstances “first sale” may permit purchasers of digital objects to use them on multiple reading systems, resell them, lend them, or give them to others without paying a fee to the copyright holder or breaking any laws.

10425, 10425.1, 10425.2, 10464

### **4.1.2 Fair use**

DRM shall allow end users to make “fair use” of digital objects to the extent that “fair use” is allowed by applicable copyright laws. For example, in some circumstances “fair use” may include copying and printing portions of a digital object, or it may include the right to obtain an unprotected version of the work upon completing a registration procedure.

10031, 10131, 10424, 10450.1, 10465

### **4.1.3 Expiration of copyright**

When copyright expires on a digital objects and it legally moves into the public domain, the digital object shall then be accessible by the public. At this point, anyone shall be allowed to read, copy, and convert the digital object without paying a fee to the (former) copyright holder, and without committing a felony.

10422, 10468

### **4.1.4 Export restrictions**

DRM shall not require levels of encryption strength or other technology that would prevent components from being legally exported from one country to another.

10158, 10453

### **4.1.5 No nation favored**

DRM shall not innately favor one national jurisdiction over another.

10454

### **4.1.6 Enforcement of national laws**

DRM shall be able to identify content with sufficient precision in order to enable national laws on content, including laws protecting minors, to be enforced.

10455

#### **4.1.7 European Union Copyright Directive**

DRM shall take into account recent EU legislation, specifically the "EU Directive on Certain Aspects of Copyright and Related Rights in an Information Society" (known generally as "the EU Copyright Directive" (<http://eurorights.org/eudmca/CopyrightDirective.html>)).

10450

#### **4.1.8 European Union data protection**

DRM shall take into account the EU legislation on data protection, as given in the European Directive on Data Protection.

10451

#### **4.1.9 European Union distance selling**

DRM shall take into account the EU rules on distance selling, as given in the Directive on the Protection of Consumers in respect of Distance Contracts. In the UK, this was enacted as the Consumer Protection (Distance Selling) Regulations 2000 (<http://www.hmsso.gov.uk/si/si2000/20002334.htm>). The Act specifies what has to be said about any product that is sold online, and the rights of the consumer to cancel the contract of purchase and be reimbursed.

10452

### **4.2 *Attributes of the rights language***

#### **4.2.1 Standards**

The rights grammar shall support requirements from standardization activities, including MPEG IPMP, DOI, INDECS, W3C, cIDf, and others.

10440

#### **4.2.2 Default schema with local extensions**

The rights grammar shall be defined in terms of an extensible core and a default schema which may be extended or overridden on a local basis.

10301

#### **4.2.3 Alternative predicate expressions**

For full flexibility, it shall be possible to specify in the rights grammar alternative predicate expressions as per a rule-based system.

10334

#### **4.2.4 Namespaces**

The rights grammar shall support the concept of namespaces in all areas where extensibility might lead to name or syntax clashes.

10335

#### **4.2.5 Abstract terms in the core**

The core rights grammar shall contain only abstract terms, with concrete enumerations placed in either the default or alternative schemas.

10302

#### **4.2.6 Element types and hierarchy**

The rights grammar shall allow definition of abstract and concrete elements and shall allow for a hierarchy of elements.

10209

#### **4.2.7 Data dictionary references**

The rights grammar shall provide facilities to reference data dictionary definitions from any source including dynamic sources such as LDAP directories and relational databases which may require dynamic resolution.

10337

#### **4.2.8 Data dictionaries as digital objects**

Data dictionaries are digital objects and shall therefore be subject to rights and obligations constraints.

10339

### **4.3 Identifiers and metadata**

#### **4.3.1 “Fuzzy” identification**

It shall be possible in the rights grammar to identify digital objects according to fuzzy matching criteria such as “looks like” (with respect to image data), “sounds like” (with respect to audio data), etc. The default schema shall contain an initial set of definitions and enumerations of such criteria.

10328

#### **4.3.2 Identification by object attributes**

It shall be possible to identify digital objects according to their attributes.

10323

#### **4.3.3 Identification by content attributes**

It shall be possible to identify digital objects within data streams according to attributes of the content.

10371

#### **4.3.4 Size and efficiency**

Metadata that resides in the license or voucher for a digital object shall be limited in size to allow for efficient transactions.

10161

### **4.4 Digital Objects**

#### **4.4.1 Interoperability of content**

DRM shall protect digital objects and allow reading systems to access digital objects regardless of their content format.

10094, 10134, 10147, 10148

#### **4.4.2 Object data types**

Digital objects shall include all data types both passive and dynamic, including infinite data streams and application program interfaces.

10316

### **4.5 Rights and obligations**

#### **4.5.1 Expression evaluation services**

The rights grammar shall make it possible for specific Expression Evaluation Services to be nominated for the evaluation of rights and obligations expressions.

10353

#### **4.5.2 Conversations**

The rights grammar shall provide syntax for the expression of rights and obligations describing which parties may converse with each other within a transactional (or other) system (the system being identified as a digital object), and limitations on the nature of the conversations.

10391

### **4.6 Constraints**

#### **4.6.1 Environmental conditions**

It shall be possible within the rights grammar to predicate expressions on any environmental elements and attributes that can be uniquely identified within the syntax and definitions of the rights grammar.

10402



## **4.7 Pricing models**

### **4.7.1 Sponsored pricing**

The rights grammar shall support sponsored charging models (where charges are applied to a different organizational unit than that causing the charge).

10397.5

### **4.7.2 No price distinction based on disability**

Persons with disabilities shall pay no more than persons without disabilities for the same rights.

10430

### **4.7.3 Refunds**

DRM shall provide means for end users to obtain refunds for digital objects they purchase, subject to sellers' refund policies.

10146

## **4.8 Distribution and transfer**

### **4.8.1 Age-based restrictions on queries**

It shall be possible to express restrictions on the formation of queries according to the age of data being retrieved from historical data sources.

10374

### **4.8.2 Load-based restrictions on queries**

It shall be possible to express restrictions on the execution of queries according to the load imposed on a server.

10375

### **4.8.3 Restrictions on records retrieved**

It shall be possible to express restrictions on records retrieved from an interface according to attributes of the records being returned.

10376

### **4.8.4 Restrictions on data elements retrieved**

It shall be possible to express restrictions on what data elements may be retrieved from an interface.

10377

#### **4.8.5 Subordinate rights**

DRM shall allow the creation and granting of subordinate rights to the ones originally associated with a digital object.

10079

#### **4.8.6 End-user trades with user identification**

DRM shall support end-user trades of digital objects and shall require users to identify themselves for tracking purposes.

10442

### **4.9 Usage rights**

#### **4.9.1 No rights distinction based on disability**

DRM shall enable any individual to exercise any rights granted regardless of ability or disability. Example: A user has the right to read a digital object, but the reading system allows only rendering on a screen. A user who cannot read text on screen cannot exercise this right and must have access to an alternate means of reading (without broadening the right beyond reading).

10427

#### **4.9.2 No usability distinction based on disability**

DRM shall enable access technologies used by persons with disabilities to render content with a level of usability comparable to that provided to nondisabled end users. DRM shall not prevent the use of such technologies by persons with disabilities to exercise rights granted for a digital object.

10428

#### **4.9.3 Restrictions on purpose of use**

The rights grammar shall provide syntax via which a publisher can contract with consumers to limit the purpose for which (and “real world” context in which) the content may be consumed.

10379

### **4.10 Object management rights**

#### **4.10.1 File management rights**

The rights grammar shall provide mechanisms to express file management rights to digital objects in order to govern their use across repositories or directories. Examples include: Delete, Verify, Backup, Restore.

10242

## 4.10.2 Configuration rights

The rights grammar shall provide mechanisms to express configuration rights for the loading of software. Examples: Install and Uninstall.

10243

## 4.10.3 Object retention rules

It shall be possible to state in the rights grammar rules for how a digital object may be retained for future use. The access context may be different for a digital object accessed directly from an authorized supply mechanism than it is for the same object accessed from an agent's local store. The context may alter merely because the object is retained in a local store or be dependent upon criteria such as the number of accesses previously made to the retained object or the time for which it is retained.

10386

## 4.11 Changing and adding rights

## 4.12 Accounting and privacy

### 4.12.1 Privacy obligations

The rights grammar shall provide a mechanism for defining the obligations incumbent upon value chain participants with respect to their maintaining the privacy of terms and conditions.

10352, 10414

## 4.13 Trust model

# 5 Definitions

This section contains definitions of some terms used in the text of the normalized requirements. For additional definitions, see the glossary of the OeBF document *A Framework for the Epublishing Ecology* ([http://www.openebook.org/doc\\_library/ecology.htm](http://www.openebook.org/doc_library/ecology.htm)).

**Attribute** — A quality or characteristic.

**Authenticity** — The property that the identity, origin, authorship, and content of sensitive data are genuine.

**Business/usage model** — A commonly understood and practiced way that contents can be accessed, used, and priced during the entire life cycle of content.

**Certificate authority** — A trusted third party who issues and manages digital certificates.

**Condition** — Something that must exist or be fulfilled before a right can be exercised or granted.

**Constraint** — A restriction, limit, or regulation.

**Digital certificate** — A set of data that unambiguously identifies an entity, contains the entity's public key, and is digitally signed by a trusted party, binding the public key to the entity.

**Element** — A fundamental, irreducible constituent.

**Encryption** — The process of scrambling the unprotected information (sometimes called clear text or plain text) to produce protected information, or cipher text.

**Integrity** — The property that sensitive data has not been modified or deleted in an unauthorized and undetected manner.

**Key** — A string of bits, characters, or words used along with a cryptographic algorithm to scramble or unscramble a message.

**Obligation** — A course of action that a person or entity is bound to perform when exercising a right granted by the rights holder.

**Right** — A privilege that entitles someone to access, transfer, copy, use, or manage all or part of a digital object.

**Rights data dictionary (RDD)** — A dictionary of terms that describe rights and permissions for digital content.

**Rights expression** — A string, file, or document written in a rights expression language to describe rights, conditions, and obligations associated with a digital content or a component of a digital content.

**Rights expression language (REL)** — A machine-readable language that can declare rights and permissions for access to or use of digital content.

**Rights grammar** — The language and terms that together describe and declare rights and permissions for digital content. Conceptually, rights grammar includes a rights data dictionary and a rights expression language, although these may or may not be separate components of the rights grammar.

**Trust infrastructure** — The technology and processes used to make system components trustworthy. Trusted system components are known with confidence to perform a range of functions in a specified way.

**Usage** — The act or manner of consumption.

**Watermark** — A cryptographic technique for protecting digital content by placing a pattern of bits in the content in way that is invisible to the consumer, but can be read by special programs.

## 6 Notes and Comments

This section contains comments on changes to requirements and implementation notes added in the course of revising this document.

<b>Section or Requirement</b>	<b>Comment</b>
2.1.1 Required acknowledgments	Rights Grammar Subgroup: Note wording change.
2.2.2 Compatibility	PSWG: If DRM makes any assumptions about the publication structure, DRM compatibility must also consider the need to remain compatible with different versions of the OeB Publication Structure.
2.2.8 Core primitives	Changed from “per-per-view” to “pay-per-view” in response to comment from OeBF member James Pritchett.
2.3.1 Identifiers	Note wording change agreed upon by RRWG and MIWG.
2.3.2 Unambiguous identification	Note wording change agreed upon by RRWG and MIWG.
2.3.3 Title and author	Note wording change agreed upon by RRWG and MIWG.
2.8.14 Updated versions	PSWG: If updates are made to only parts of a work, interactions with the OeB Publication Structure are likely; parts must be identified, and parts of the digital object and related objects must be changed.
2.9.1 Simultaneous use	Heading changed from “Use one copy at a time” and text changed from “DRM shall ensure that an end user who purchases one copy of a digital object has rights to use only one copy of the object at any time” at the Rights and Rules Working Group meeting of 20 February 2003.
2.10.3 Format conversion to preserve access	Requirement added at the Rights and Rules Working Group meeting of 20 February 2003.
3 V1.1 requirements	Second sentence changed from Grammer to Grammar in response to comment from OeBF member James Pritchett.

<b>Section or Requirement</b>	<b>Comment</b>
3.2.2 Interoperability	Heading changed from “Interoperability of operations” to “Interoperability” in response to comment from OeBF member James Pritchett.
3.2.3 Predicate logic	Rights Grammar Subgroup: We must discuss this requirement at the V1.0 design and implementation phase.
3.12.5 Required identification	Rights Grammar Subgroup: Note wording change.
4.2.2 Default schema with local extensions	Rights Grammar Subgroup: We must discuss this requirement at the V1.0 design and implementation phase.
4.2.4 Namespaces	Rights Grammar Subgroup: We must discuss this requirement at the V1.0 design and implementation phase.
4.2.5 Abstract terms in the core	Rights Grammar Subgroup: We must discuss this requirement at the V1.0 design and implementation phase.
4.2.6 Element types and hierarchy	Rights Grammar Subgroup: We must discuss this requirement at the V1.0 design and implementation phase.
4.7.2 No price distinction based on disability	Changed from “Persons with disabilities shall pay the same price for the same rights as persons without disabilities” to “Persons with disabilities shall pay no more than persons without disabilities for the same rights” in response to comment from OeBF member David Offen.
4.7.3 Refunds	Rights Grammar Subgroup: We must discuss this requirement at the V1.0 phase that considers general DRM issues, including enforcement.