

EdReNe - Strategic Seminar



**The ISO Metadata Standard MLR for Learning Resources
@ The EdReNe Strategic Seminar in Lisbon, Portugal**

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Chair CEN TC 353 and ISO-Convener SC36 for QM & QA

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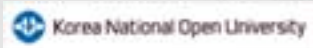


Christian M. Stracke

About the author



- Assistant Prof., University of Duisburg-Essen <www.wip.uni-due.de>



- Adjunct Prof., Korea National Open University <www.knou.ac.kr>



- Convener of the international ISO standardization committee SC36 WG5 "Quality Assurance and Descriptive Frameworks" <www.iso.org/jtc1/sc36>



- Chair of the European standardization committee CEN/TC 353 "IT for Learning, Education, and Training" <www.cen.eu/issc/TC_353>



- German E-Learning Association D-ELAN: Board of Directors <www.d-elan.net>

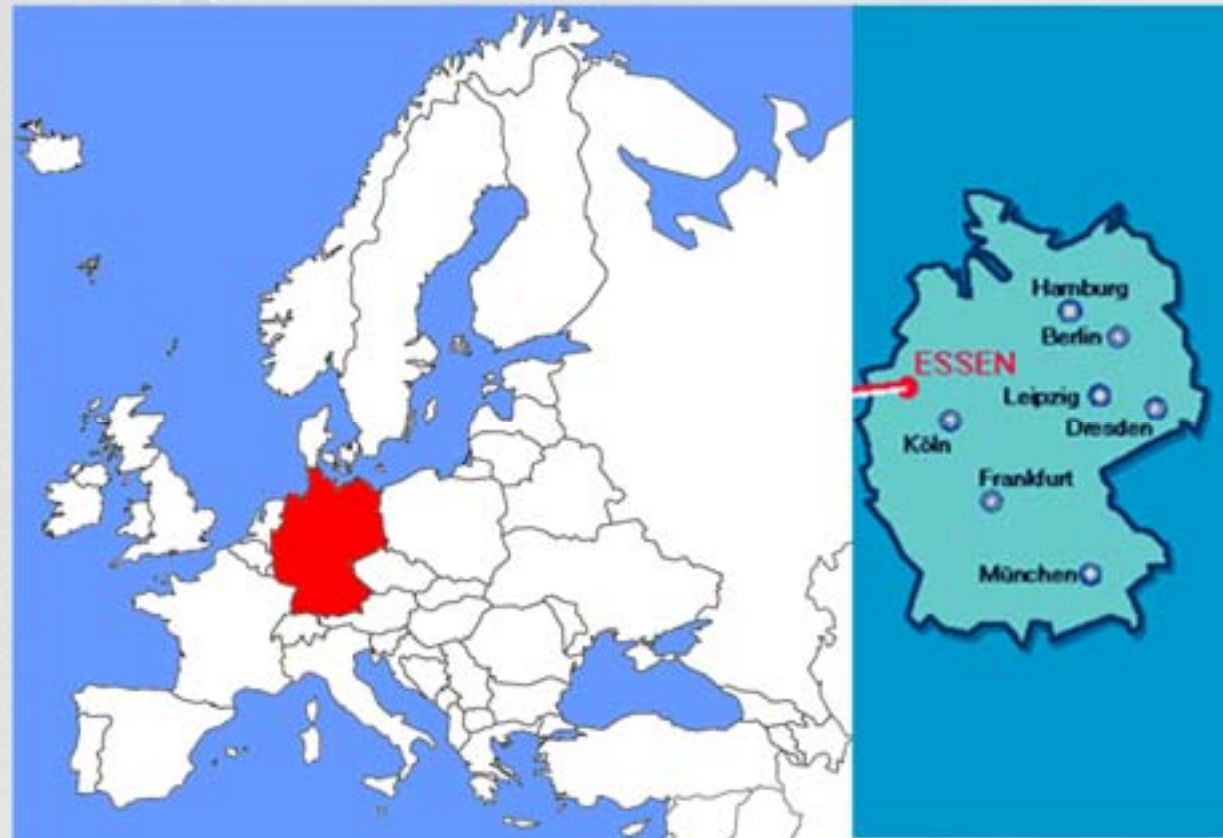


- eLC - European Institute for Learning, Innovation and Cooperation, Director and Founder, Bonn (Germany) <www.elc-institute.org>

- Expert for: E-Learning, Quality, Competences, Standardization, HR



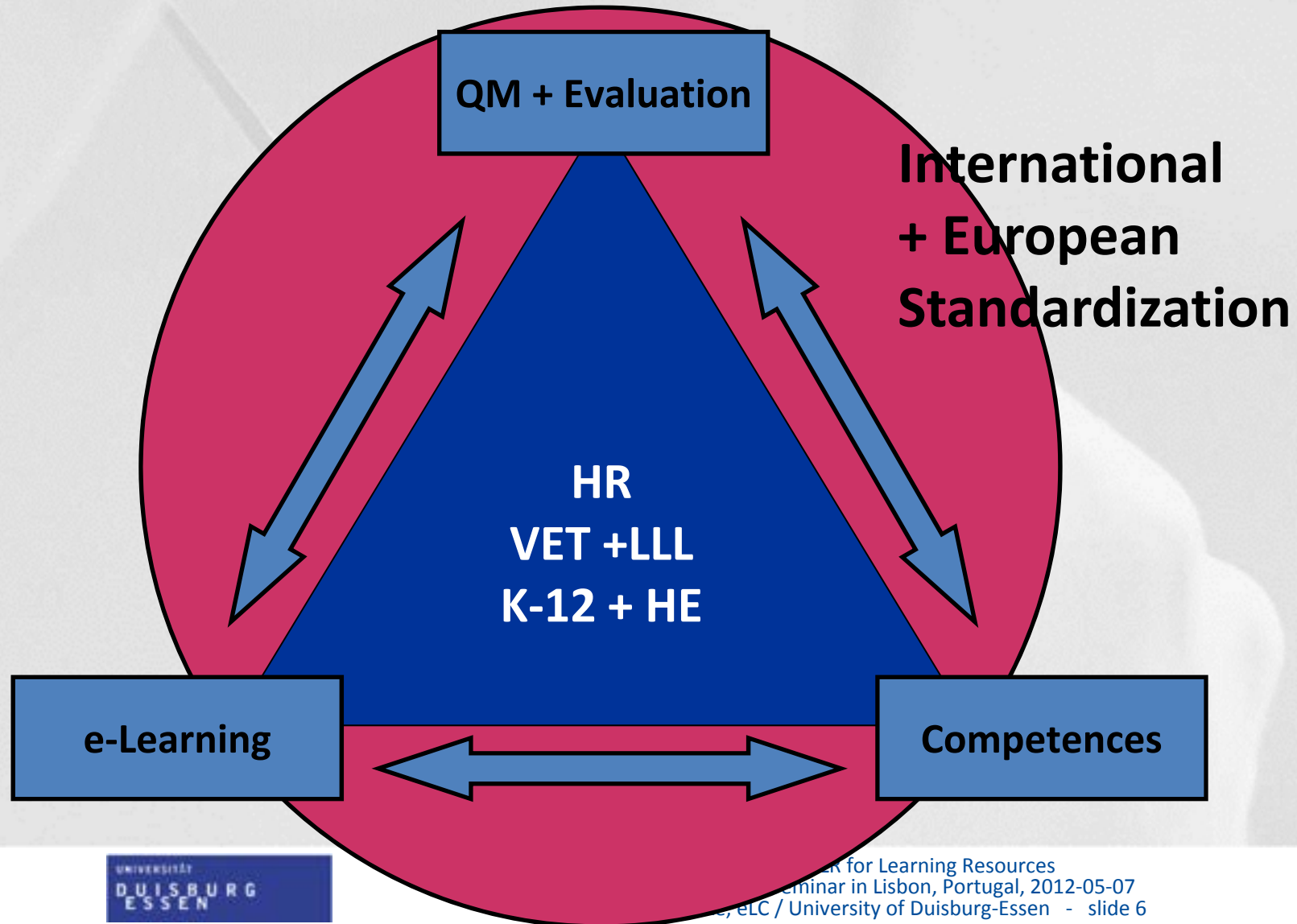
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Where is Essen? Just in the Center of Europe!



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Quality and Innovations in LET**

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Official Certifications in > 30 countries**

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> 15 international and EU projects in parallel

Chairing ISO-committee SC36 WG5 + CEN TC 353

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Quality matters for us!



Quality

most important

**for Learning, Education
and Training!**

Our main successes:

PAS 1032-1 = German QM standard

QSEL = Quality Mark E-Learning

QPL = Quality Platform Learning

Q.E.D. = largest QM & E-Learning project

RFDQ = 1. ISO QM standard for LET

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www.wacom-project.eu

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www.ecompetence.eu

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for

best learning outcomes!

European Quality Standards for LET





International Standardization

ISO SC36: Unique de-jure Body

inter-
national

ISO/IEC JTC1 SC36:
„IT for Learning, Education,
and Training (ITLET)“



<http://www.sc36.org>

Leading international standardization organization in the field of information technologies for learning, education, and training

Established 2000-03 in London (UK), current status: 7 WGs and participation by > 60 National Bodies + > 30 Liaisons Organizations from all five continents, bi-annual plenaries around the world

More information online:

<http://www.iso.org/jtc1/sc36> or:

<http://www.sc36.org>

Main results of ISO SC36

ISO/IEC 19796-1 "RFDQ"

- Unique ISO **Quality Standard** for LET worldwide with Reference Process Model published in 2005, other Parts: Methods & Metrics (2009), Quality Model (soon)

Metadata for Learning Resources (MLR)

- ISO/IEC 19788 – **Metadata** for Learning Resources, also Multi-part standard, compliant with Dublin Core (DC), Parts 1 and 2 published now

ISO/IEC ELM "Access4All"

- Multi-part **Accessibility** Standard for Individualized Adaptability (> 10 Parts) Parts 1 (Framework), 2 (Personal Needs) and 3 (Digital Resources) published now

ISO/IEC 29163 "SCORM"

- Combined Specifications (4 Parts) for **Learning Management Systems** & Objects



European Standardization

CEN TC 353: Unique de-jure Body

European

**CEN/TC 353:
„ICT for Learning,
Education, and Training“**



http://www.cen.eu/iss/TC_353

The European de-jure standardization organization in the field of ICT for learning, education, and training (LET)

EN Standards: Obligation to use within European Union

Established 2007-05 in Milan (Italy), current status: 2 WGs and participation by > 30 National Delegations and > 60 Experts, bi-annual plenaries across whole Europe

More information online:

http://www.cen.eu/iss/TC_353



Main results of CEN TC 353

EN ISO/IEC 19796-1:

- First EN **Quality Standard** for ITLET including the reference process model "RFDQ" (published as EN in 2009 by 100% adoption of ISO/IEC 19796-1)

Metadata for Learning Opportunities

- "MLO - Advertising": First part of multi-part standard for **Metadata**, compatible to DC, MLR, CDM, XCRI and PAS 1068 (published in 2010)

ELM "European Learner Mobility"

- Multi-part **Framework** for the harmonization of European Policies (EQF, Europass, ECTS, ECVET), first part for Europass + ECTS (published in 2010)

CEF "Curriculum Exchange Format"

- Information model & vocabulary bank for **Curricula** exchange

1. EN + ISO Quality standard:

EN ISO/IEC 19796-1

unique QM standard for LET

adapted & used worldwide in
> 60 countries (also EU, RF + China)!

1. EN + ISO Quality standard:

EN ISO/IEC 19796-1

- developed by ISO committee SC36 WG5
- focus on process, product and potential
- includes reference process model
- multi-part QM standard
- based on German PAS 1032-1
- Co-Authors: Christian M. Stracke et al.



<http://www.iso.org/jtc1/sc36>
<http://www.sc36.org>



Learn from your e-mistakes...

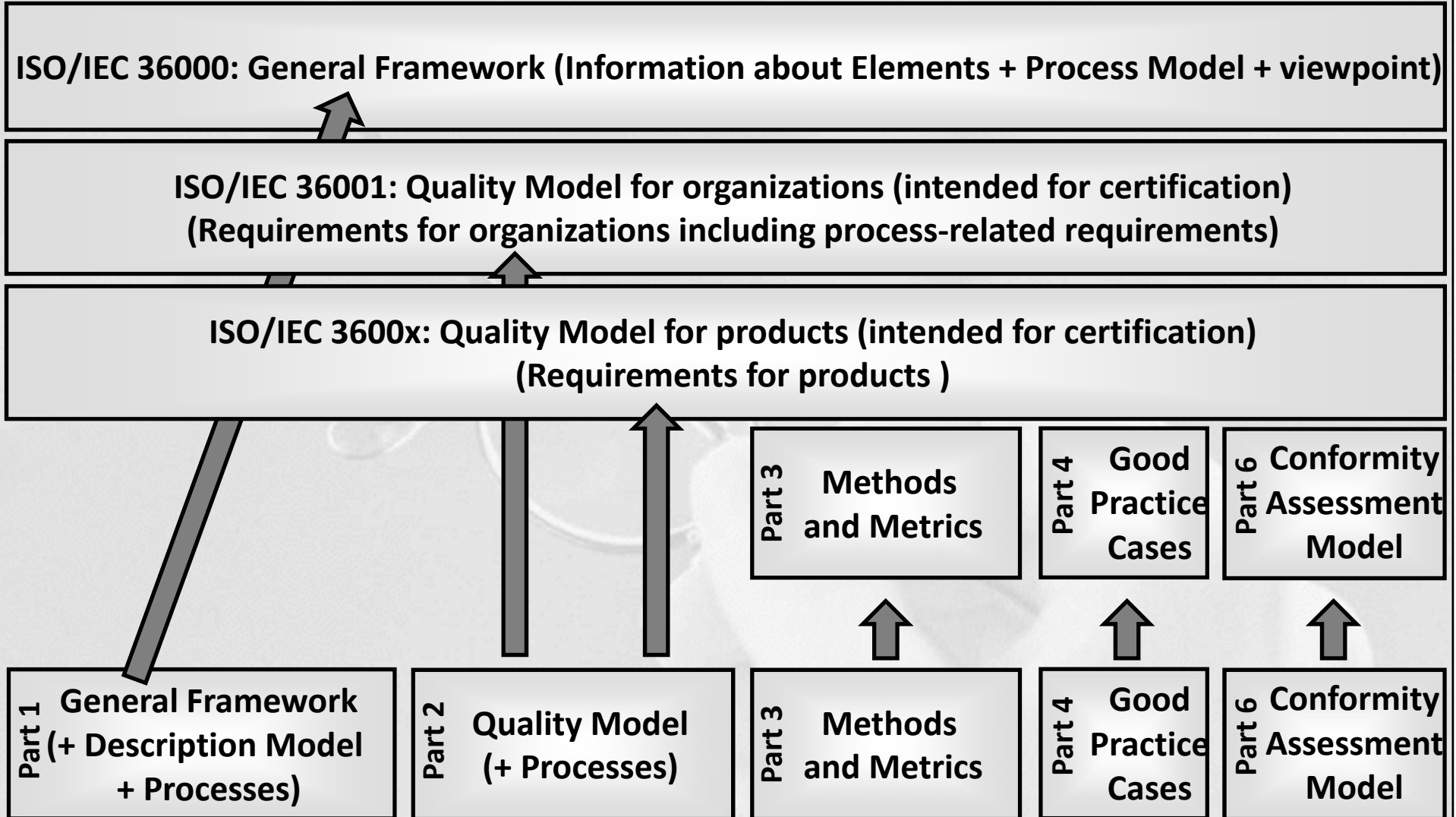


Unique ISO QM standard ISO/IEC 19796-1

Needs Analysis	Framework Analysis	Conception / Design	Development / Production	Implementation	Learning Process / Realization	Evaluation / Optimization
Initiation	Analysis of the external context	Learning objectives	Content realization	Testing of learning resources	Administration	Planning
Stakeholder identification	Analysis of staff resources	Concept for contents	Design realization	Adaptation of learning resources	Activities	Realization
Definition of objectives	Analysis of target groups	Didactical concept/methods	Media realization	Activation of learning resources	Review of competencies levels	Analysis
Demand analysis	Analysis of the institutional and organizational context	Roles and activities	Technical realization	Organization of use		Optimization / improvement
	Time and budget planning	Organizational concept	Maintenance	Technical infrastructure		
	Environment analysis	Technical concept				
		Concept for media and interaction design				
		Media Concept				
		Communication concept				
		Concept for tests and evaluation				
		Concept for maintenance				

WG5 Luxembourg Meeting: Final Result (2012-02-29)

Harmonization - The Roadmap and next steps within SC36 WG5



New Metadata standard:

ISO/IEC 19788-1 "MLR"

approved and published now!

ISO/IEC 19788

Multi-part ISO Metadata Standard

Unique ISO Metadata standard to be used in all IT systems & branches by adaptations

Defining rules sets, UIDs and templates

Based on Dublin Core (100% compliant) to keep international consensus & acceptance

ISO Metadata Standard MLR

Categories for Metadata and their Attributes

Data element specification	Chapter 6.3
Identifier (mandatory)	
<i>Data element attributes</i>	
Property name (mandatory)	
Definition (mandatory)	
Linguistic indicator (mandatory)	
Domain (mandatory)	
Range (mandatory)	
Content value rules (conditional)	
Refines (conditional)	
Example(s) (optional)	
Note(s) (optional)	

MLR Data Element Specification

Example 1:

Data element specification Chapter 6.4	
Identifier (mandatory)	ISO_IEC_19788-3:2010::DES0300
Data element attributes	
Property name (mandatory)	format (eng)
Definition (mandatory)	file format of the learning resource (eng)
Linguistic indicator (mandatory)	non-linguistic
Domain (mandatory)	<i>Learning Resource</i> (ISO_IEC_19788-1:2010::RC0002)
Range (mandatory)	<i>literal</i>
Content value rules (conditional)	RS_DES0300
Refines (conditional)	ISO_IEC_19788-2:2010::DES0900
Example(s) (optional)	video/mpeg text/html
Note(s) (optional)	-

MLR Data Element Specification

Chapter 7.1

Example 2:

EXAMPLE 2 (same as example 1, but presented differently)

Data element specification ID	ISO_IEC_19788-2:2010::DES0300
Subject	urn:ISBN:978-1-4000-1952-6
Content Value	Fodor's New Zealand 2009
Language Code	eng

Example 3: (RDF)

EXAMPLE 3 (same as example 1, but expressed in RDF)

Predicate	ISO_IEC_19788-2:2010::DES0020
Subject	urn:ISBN:978-1-4000-1952-6
Object	"Fodor's New Zealand 2009"@eng

ISO/IEC 19788-1 MLR

Chapter 9.4

ID: PRS0003 Name: DATE_&_TIME	
Rule_ID	Rule statement / Example(s) & Note(s)
01	<p>A string constructed according to "ISO 8601:2004 (E) Data elements and interchange formats - Information interchange - Representation of dates and times" (subclause 4.1 Date, subclause 4.2 Time of day, and subclause 4.3 Date and time of day)</p> <p>NOTE Both the basic format and the extended format may be used.</p> <p>EXAMPLE 1 1985-04-12T10:15 EXAMPLE 2 1985-W15-5T10:15+04 EXAMPLE 3 1985W155T1015+0400</p>
02	Meaning is provided by ISO 8601:2004

ISO/IEC 19788-1 MLR

Data element group specification Chapter 11.4.2						
Identifier (mandatory) (DEGS_Identifier)		ISO_IEC_19788-3:2010::DEGS0001				
Name (ISO English) (mandatory)		MLR basic DESG				
Description (mandatory)		MLR entry level element set, based on most commonly used elements in LOM repositories				
Position	DES_Identifier/ DEGS_Identifier	Name (ISO English)	Presence Type indicator	Repeability indicator	Order indicator	Order semantic
(01)	(02)	(03)	(04)	(05)	(06)	(07)
1	ISO_IEC_19788-2:2010::DESO100	title	mandatory	non repeatable	-	-
2	ISO_IEC_19788-2:2010::DES0200	creator	conditional C0001	repeatable	ordered	In order of importance, most important first
3	ISO_IEC_19788-	subject	conditional	repeatable	ordered	In order of importance

ISO/IEC 19788-1 MLR

Chapter 12.5

Application profile specification	
Identifier (mandatory) (AP_Identifier)	
Name (ISO English) (mandatory)	
Description (mandatory)	
Underlying data element group specification (mandatory)	

ISO/IEC 19788-1 MLR

Annex A.1

A.1 Consolidated list of ISO/IEC 19788-1 terms and definitions in ISO French

Identification	ISO English Language		ISO French Language	
	Term	Definition	Term	Definition
3.1	application profile	<p>defined structured collection of data element specifications (3.14) chosen to satisfy the particular needs of a community or communities</p> <p>NOTE The data element specifications are from the various parts of ISO/IEC 19788 and from other sources.</p>	profil d'application	<p>collection structurée de spécifications d'éléments de données (3.14) choisies pour répondre aux besoins particuliers d'une communauté ou d'un ensemble de communautés</p> <p>NOTE Les spécifications d'éléments de données proviennent de diverses parties de la norme ISO/CEI 19788 et d'autres sources.</p>
3.2	application profile record	<p>Specified set of data elements (3.11) describing a specific learning resource (3.20) and obeying the rules (3.32) of a specific application profile (3.1)</p>	enregistrement relatif à un profil d'application	<p>Ensemble d'éléments de données (3.11) décrivant une ressource pédagogique (3.20) et respectant les règles (3.32) d'un profil d'application (3.1) particulier</p>

ISO/IEC 19788-1 MLR

Annex A.2

A.2 Consolidated list of ISO/IEC 19788-1 terms and definitions in Chinese

Identification	ISO English Language		Chinese Language	
	Term	Definition	Term	Definition
3.1	application profile	<p>defined structured collection of data element specifications (3.14) chosen to satisfy the particular needs of a community or communities</p> <p>NOTE The data element specifications are from the various parts of ISO/IEC 19788 and from other sources.</p>	应用概要	<p>有结构的数据元素规范 (3.14) , 用于满足某一或一些团体的特定需求</p> <p>注: 数据元素规范可以出自 ISO/IEC 19788 各个部分或者其他的来源。</p>
3.2	application profile record	<p>Specified set of data elements (3.11) describing a specific learning resource (3.20) and obeying the rules (3.32) of a specific application profile (3.1)</p>	应用概要记录	<p>用于描述一个特定学习资源 (3.20) 的数据元素 (3.11) 集合, 该集合中的元素遵循某一特定应用概要 (3.1) 的规则 (3.32)</p>

Basic MLR

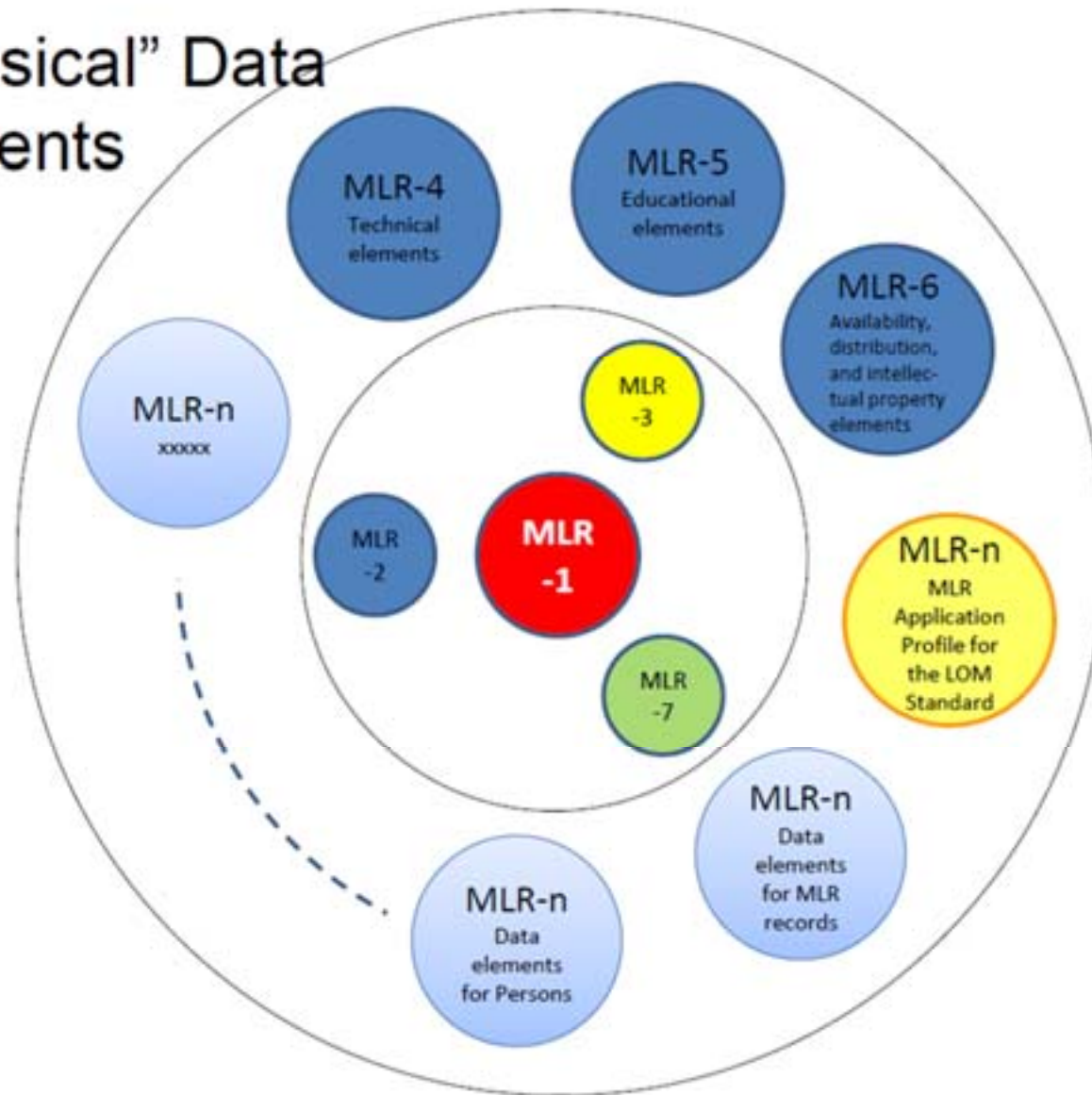
MLR



(Slide by Gilles Gauthier:
SC36 WG4 Convener)

MLR

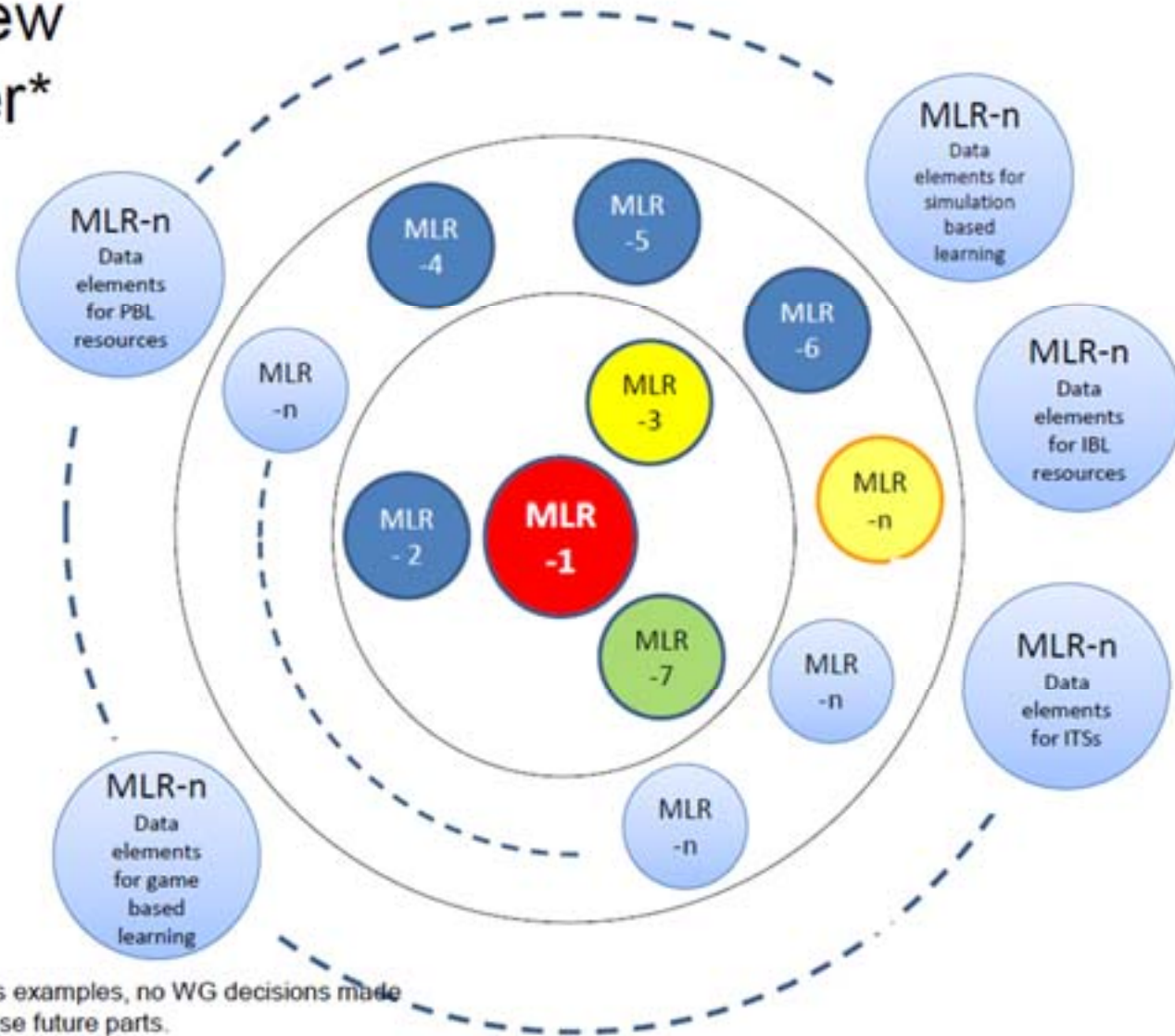
“Classical” Data Elements



(Slide by Gilles Gauthier:
SC36 WG4 Convener)

The New Frontier*

MLR



(Slide by Gilles Gauthier:
SC36 WG4 Convener)

* Parts provided as examples, no WG decisions made yet concerning those future parts. The frontier is to be explored!



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Submission... 07.06.11
The period for submission of "Innovations in the Environmental Sector" has ended. Submissions have been...
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References for further information and literature

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Thank you very much for your attention!

Your Questions?

- Contact:

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