



Drafting EU Legislation in the era of AI and Digitisation

Algorithmic Law Design and Implementation

Prof. M. Palmirani (University of Bologna)
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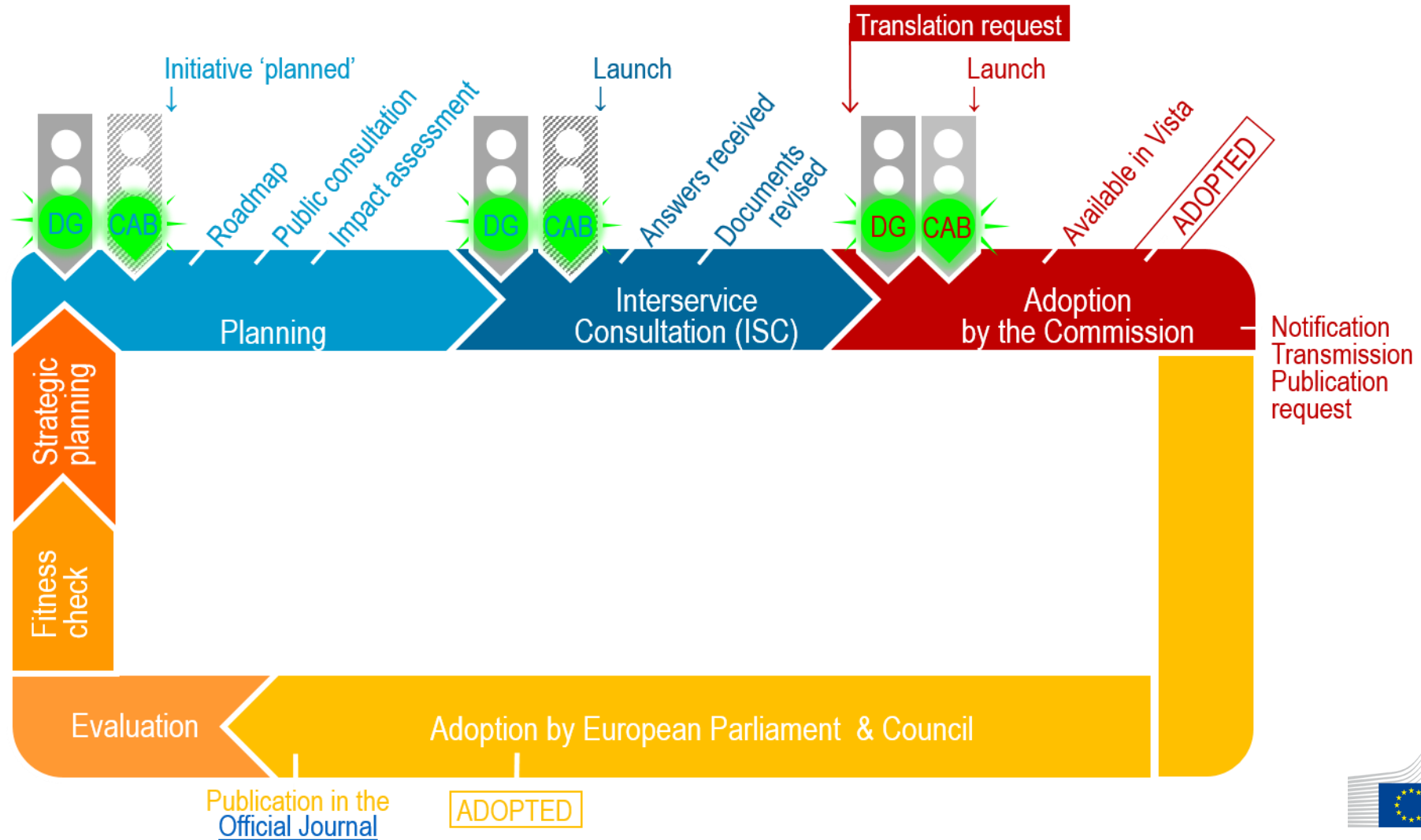
Overview of Law-Making in the EU

Willy Van Puymbroeck, (ASN) European Commission

Preamble

- The presentation draws on
 - Ongoing work on a law drafting tool – EdiT and LEOS
 - A study on ‘Drafting law in the era of AI and digitisation’ – carried out by the University of Bologna
 - In my case, browsing through recent literature, including EU funded research
- The presentation takes a legislative drafters point of view in the European Commission (EC), but goes
 - Beyond drafting, and take into consideration law lifecycle considerations
 - And beyond the EC, referring to EU Institutions and Member States

Overview of Law-Making in the EU



Overview of Law-Making in the EU

- Plenty of documents guide law-making
 - Better Regulation November 2021 – Commission Staff Working Document.
 - English Style Guide.
 - Interinstitutional agreement between the European Parliament, the Council of the European Union and the European Commission on better law-making of 13 April 2016.
 - Joint Practical Guide of the European Parliament, the Council and the Commission for persons involved in the drafting of European Union legislation.

Overview of Law-Making in the EU

- Observations
 - Teams of people in a collaborative manner draft law/develop policy.
 - Law is not developed in a vacuum.
 - Interoperability and cooperation between institutions and with Member States.
 - Law-making is a complex inclusive process with emphasis on consultation.
 - Multi-lingual – translation and publication.
 - Full lifecycle, end-to-end considerations.
 - Intertwining of drafting/revising of law and decision making.

Overview

- **LEOS – Legal Editing Open Source**
 - What it is and short demo
- **Drafting legislation in the era of AI and digitisation**
 - Digital Transformation brought about by ‘machine processable law’
 - Law as a Platform - Hybrid AI with Human Oversight
 - What it is and illustrating the power (and shortcomings) of innovative technology
 - An IT Augmented LEOS at the core of a developing IT Eco-System
 - Any role for proof systems?
- **Conclusions**



LEOS – what it is and a short demo

Fernando Nubla, Project Officer LEOS, European Commission

Challenges in legislative drafting

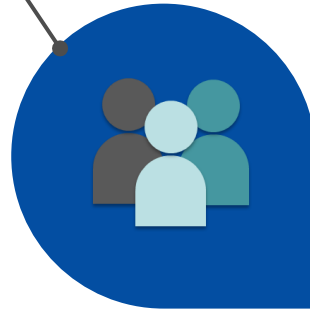
- complex process
- lots of stakeholders
- collaboration via various tools and practices (different throughout institutions)
- styles and formats not always respecting legislative drafting rules
- multiple versions circulating
- limited tools for re-use of texts
- cumbersome consolidation of comments



LEOS Legislation Editing Open Software

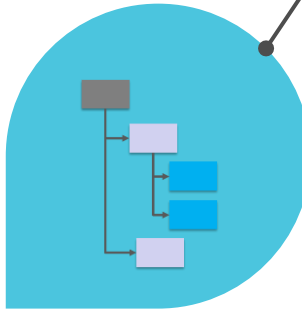
Collaboration

- facilitating efficient online collaboration



Structure

- helps the drafters follow the structure rules and avoid mistakes



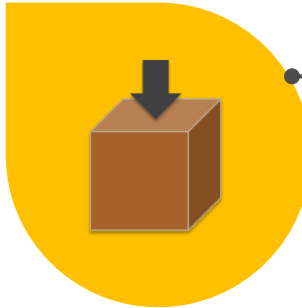
Versioning

- keeping all versions in one central place



Import

- reuse text from existing sources e.g. Official Journal of the European Union



About LEOS

Legislation Editing Open Software

Mission

"Make legislation drafting more efficient"

LEOS is designed to help those involved in drafting legislation, which is usually part of a complex process, by facilitating efficient online collaboration.

"Focus on the content not on the structure".

LEOS helps the drafters follow the rules and avoid mistakes.

Our journey

Our journey started under **ISA Programme** as **LEOS**.

Continued under **ISA² Programme** as **LegIT-2016.38 Legislation Interoperability Tools** from Q2/2016 until Q3/2021.

Moved to the new **Digital Europe Programme (DIGITAL)** as of 2021.

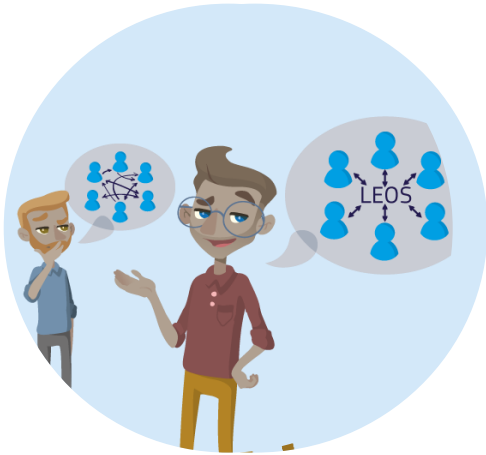
What we offer

- We deliver open source software that is inline with our mission and which is available for free under [European Union Public Licence](#).
- We foster the uptake of the solution, by providing supporting services to users e.g. training service, workshops etc.
- Last but not least, we support the growth of the open source community built around LEOS.

LEOS demo



Status



Positive feedback

- Fit for purpose
- Intuitive to use
- Efficiencies abundant



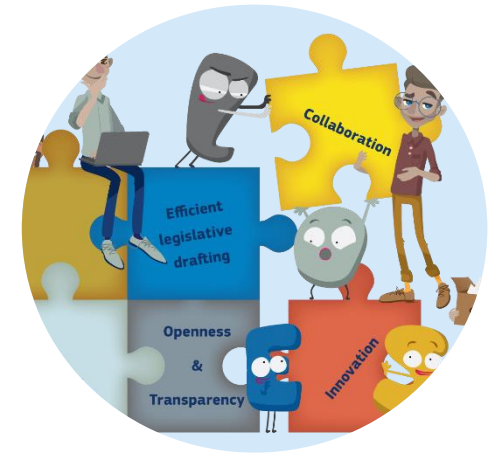
Open source

- All can use and contribute



@European Commission @Council

- A complex change process
- Scale - in time in the Commission at least some 5.000 users



Re-use in Member States

- Currently we are exploring the use of LEOS by Member States
- Building on positive experience in Spain

Digital Transformation brought about by 'machine processable law'

- Imperatives
- A very dynamic context
- Innovation
- Law-making is unique
- AI brings ethical issues to the fore
- Digital Readiness

Digital Transformation brought about 'machine processable law'

Imperatives

- Political - continuously improve law (quality, transparency) and the law-making process (efficiencies)
- Techno - embrace innovation
- Put technology at the service (and control) of the user
- Use of open standards
- Towards fully digital

In a very dynamic context

- Berlin declaration on Digital Society and Value-Based Digital Government
- Better regulation: Joining forces to make better laws
- Artificial Intelligence Act – Regulate and innovate

Digital Transformation brought about 'machine processable law'

- Drafting law is complex, many requirements need to be adhered to, IT can help but public authorities are not always well-equipped to embrace innovations
- Innovation needs inter alia a
 - Clear purpose
 - Willingness to explore novel avenues
 - Commitment to build capacity
 - A correct appreciation of the potential of technology

Digital Transformation brought about by 'machine processable law'

- Specificity of law-making – some issues (based on a quick literature scan):
 - **Promulgation** – ‘the rules must be made available to those who will be governed by them, who are thus empowered to interpret and criticise them, and observe how they are applied and enforced.’
 - **Clarity** of laws - ‘it is obvious that obscure and incoherent legislation can make legality unattainable by anyone, or at least unattainable without an unauthorized revision which itself impairs legality’.
 - **Contradictions** in the laws – ‘may necessitate an appeal to extra-legal factors’.
 - **Congruence** between declared rule and official action.
 - Principles of **coherence** – internal, rule, system and environment coherence.
 - Gödel’s theorem states that a coherent (i.e. non-contradictory) system of rules is necessarily incomplete, i.e., there are truths that cannot be proved with the axioms of the system itself

Digital Transformation brought about by 'machine processable law'

- **AI brings ethical issues to the fore:**
 - **Respect for human autonomy** - AI should augment, complement and empower human skills.
 - **Prevention of harm** – protection of human dignity, and mental and physical integrity, AI must be safe and secure.
 - **Fairness** – procedurally ability to appeal decisions made.
 - **Explicability.**
- **Digital Readiness:**
 - Policies (and legislative acts) are digital-ready if they enable smooth and digital by default policy implementation through best use of digital technologies and data
 - Implications on drafting rules – for parts that are 'likely to be automated - the digital-ready terms are as clear as code'

Law as a Platform

Hybrid AI with Human Oversight

Law as a Platform - A comprehensive practical solid framework for a 'Law as a Platform' concept compatible with

- Constitutional law, the theory of law, and democratic arrangements
- Multi-disciplinary including philosophy of law, legal informatics, computational linguistics, ...

Hybrid AI with Human Oversight

- Drawing on symbolic, sub-symbolic and non-symbolic AI, integrate ML/DL with Semantic Web annotation and legal deontic logic modelling.
- The use of LegalRuleML standards to bridge common annotated digital corpus for AI robust applications.



Study: Drafting legislation in the era of AI

Prof. Monica Palmirani – University of Bologna, CIRSfid-ALMA AI – Italy.

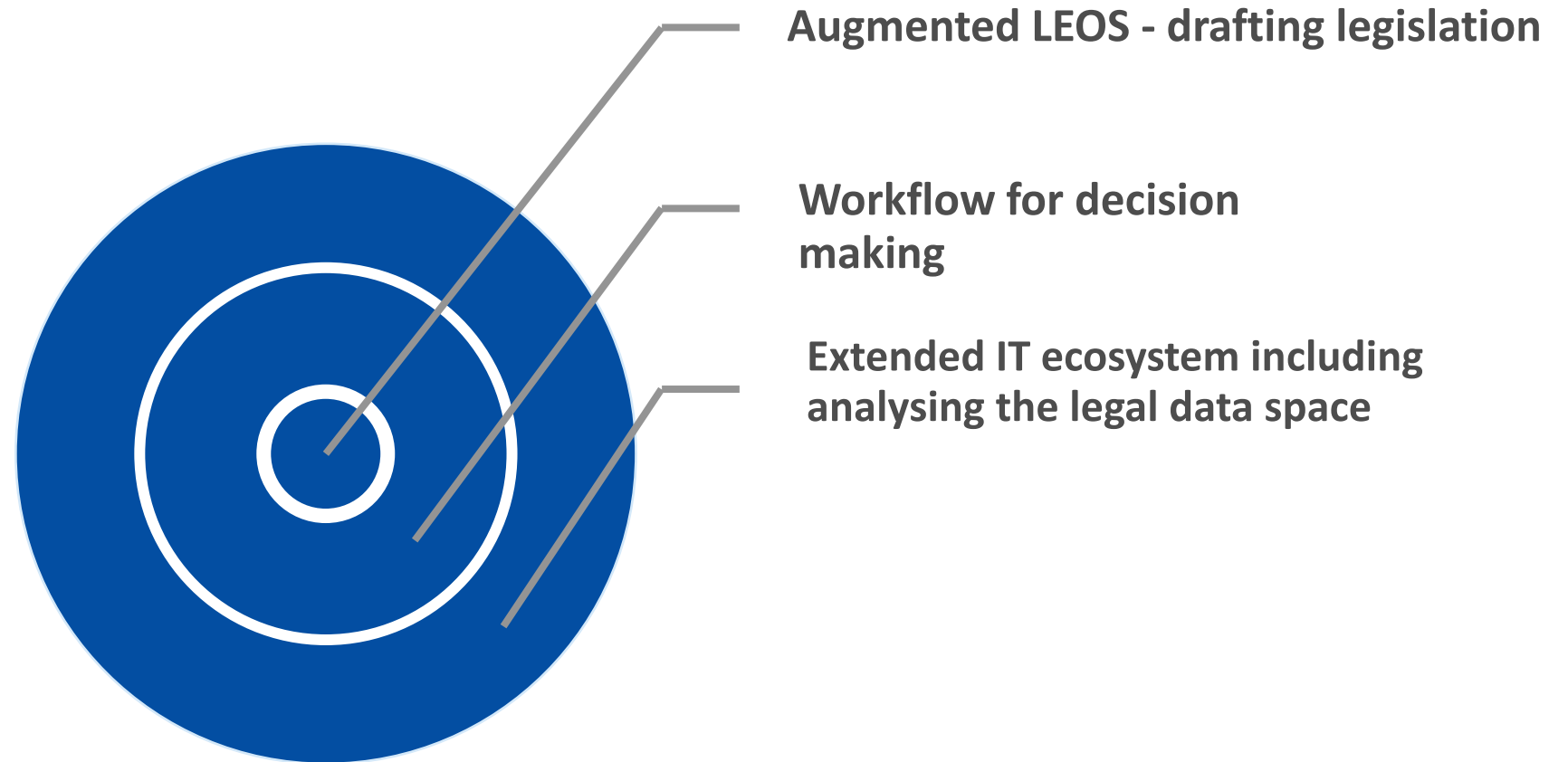
A Platform for Law-Making, Hybrid AI with Human Oversight

Law as a Platform

Hybrid AI with Human Oversight

- A significant contribution to the domain of ‘AI and Law’
- Of high importance in the Commission – showed the immediate potential of technology, inter alia to improve quality, efficiency and transparency of drafting law and in view of supporting the implementation of major policy initiatives such as digital readiness, or e.g., the ‘One In One Out’ principle
- Legal Data Acquis – a throve waiting to be mined

An IT Augmented LEOS at the core of a developing IT Eco-System



An IT Augmented LEOS at the core of a developing IT Eco-System

Context-aware verification	Correct usage of citations – validity and relevance, existing references, specific lexicon, acronyms, organisations and other abbreviations.
Granular change tracking	Comparison of documents, modifications, change tracking.
Linguistics support	Use correct linguistic formulations within the structure of the document, correct formulation in accordance with the English Style Guide, detect divergences between different linguistic translations, suggest linguistic formulations in provisions.
Support automatic legal drafting	Drafting transitional measures or construct the consolidation text applying amendments.
Legal assistant – within the act and between acts	Detect and avoid structures that could create issues in legal interpretation, correlation between recitals and the enacting terms between previous acts and new ones, identify incompatibilities in temporal parameters, detect explicit or implied obligations, highlight implicit or incomplete modifications or detect obligations, rights, permissions, penalties

An IT Augmented LEOS at the core of a developing IT Eco-System

Input on policy dimension	Measure impact of a legislative act, digital readiness, ...
Advanced visualisation	
Discovery of legal drafting practices	

Any role for proof systems?

- Ability to capture the full complexity of law?
- Are proof systems desirable?
 - If so, when and at which cost?
 - Which?
- Competition of 'no-code low-code' trend

Conclusions

1

‘Qubits for law-making’

- Deal with specificity of law
- And, need for foundational work, however
- At the same time there is a need for convincing proofs of concepts that scale

2

‘Need for flanking measures

- Community building, interoperability and related standardisation

3

Technology has its limitations, but

- Combining technologies reduces risks, and
- Open source software holds many promises

4

Organisational readiness!

Keep in touch



Subscribe to our newsletter [here](#).

Thank you



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ANNEX


- LEOS features in screenshots.

Global management of files

European Commission

 > Proposal Viewer

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on cross border delivery packages



Export ▾

Download

Delete

Details

Package title

Confidentiality level

Standard treatment ▾

Template

SJ-023

Internal reference

Language

English

☐ EEA relevance

Explanatory Memorandum

Language

English

Updated on 19-08-2019 19:35 , by CUMPS Veerle

→ Open

Legal Text

Language

English

Updated on 19-08-2019 19:35 , by CUMPS Veerle

→ Open

Annexes

Annex 1

Title

Type of packages

→ Open

Language

English

Updated on 19-08-2019 19:35 , by CUMPS Veerle

Annex 2

Title

Technical specification

→ Open

Language

English

Updated on 19-08-2019 19:35 , by CUMPS Veerle

Collaborators

NAME	ENTITY	ROLE	
NUBLA DURANGO Fernando	DIGIT	Contributor	▾
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CHAILLOUX Cedric	SG	Reviewer	▾
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TOULY Olivier	DIGIT	Author	▾

Milestones

TITLE	DATE	STATUS
Revision after Interservice Consultation	19/08/2019 19:37	Sent
For Interservice Consultation	19/08/2019 19:37	File n
For Interservice Consultation	24/06/2019 11:48	Sent

Intuitive edition of text

The screenshot displays the European Commission's legal text editor. The top navigation bar includes the European Commission logo and a home icon, with the text 'Legal Text'. Below this, the title of the document is 'Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on cross border delivery packages'. The version information is 'v2.0.1 (minor) - last edited by CUMPS Veerle (SG) on 29/09/2019'. The left sidebar shows a navigation pane with a tree structure: Preface, Preamble, Enacting Terms (expanded), and Signature. Under 'Enacting Terms', 'Article 6 - Assessment of cross-border single-p...' is selected and highlighted. The main editing area shows the content of Article 6, titled 'Article 6' and 'Assessment of cross-border single-piece parcel tariffs'. The text is as follows:

Article 6

Assessment of cross-border single-piece parcel tariffs

1. On the basis of the public lists of tariffs obtained in accordance with Article 5, the national regulatory authority shall identify, for each of the single-piece postal items listed in the Annex, the cross-border tariffs of the parcel delivery service provider that originates in its Member State and that are subject to a universal service obligation that the national regulatory authority objectively considers necessary to assess.

2. The national regulatory authority shall objectively assess, in accordance with the principles in Article 12 of Directive 97/67/EC, the cross-border tariffs identified under paragraph 1 in order to identify those cross-border tariffs that it considers to be unreasonably high. In that assessment, the national regulatory authority shall in particular take into account the following elements:

- (a) the domestic and any other relevant tariffs of the comparable parcel delivery services in the originating Member State and in the destination Member State;
- (b) any application of a uniform tariff to two or more Member States;

Management of higher divisions

European Commission

Legal Text

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on cross border parcel delivery services

Navigation pane

Elements

Preface

▶ Preamble

▼ Enacting Terms

▼ Chapter 1 - General provisions

Article 1 - Subject matter and objective

Article 2 - Definitions For the purpose

Article 3 - Level of harmonisation The

▼ Chapter 2 - Regulatory oversight

Article 4 - Provision of information 1.

Article 5 - Transparency of cross-border

Article 6 - Assessment of cross-border

Article 7 - Information to consumers For

▼ Chapter 3 - Final provisions

Article 8 - Penalties 1.Member States

Citation

Recital

Part

Title

Chapter

Section

Article

Selected element

Type Chapter

Number 3

Heading Final provisions

DAP

Delete

v0.1.8 (minor) - last edited by CUMPS Veerle (SG) on 29/09/2019 15:51

possible and appropriate, make available, at the pre-contractual stage, information about the cross-border delivery options in relation to the specific sales contract and charges payable by consumers for the cross-border parcel delivery, as well as, where applicable, their own complaints handling policies.

Chapter 3

Final provisions

Article 8

Penalties

1. Member States shall lay down the rules on the penalties applicable to infringements of this Regulation and shall take all measures necessary to ensure that they are implemented. The penalties provided for shall be effective, proportionate and dissuasive.

2. Member States shall, by 23 November 2019, notify the Commission of the provisions of their laws which they adopt pursuant to paragraph 1 and shall notify it, without delay, of any subsequent amendment affecting them.

Article 9

Confidentiality

Any confidential business information provided in accordance with this Regulation to

Automatic links to external references

The screenshot displays the EdiT (Editing Tool) interface for the European Commission. The top navigation bar includes the European Commission logo, the text "EdiT", and a language selector set to "English (en)". The main header area shows the document title: "Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the financing, management and monitoring of the common agricultural policy and repealing Council Regulations (EEC) No 352/78, (EC) No 165/94, (EC) No 2799/98, (EC) No 814/2000, (EC) No 1290/2005 and (EC) No 485/2008". A sidebar on the left contains a "Table of content" with a list of sections including Preface, Preamble, Citations, Recitals, and Enacting Terms, with sub-entries for various articles. The main content area shows the title page of the proposal, featuring the European Commission logo and the text: "Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the financing, management and monitoring of the common agricultural policy and repealing Council Regulations (EEC) No 352/78, (EC) No 165/94, (EC) No 2799/98, (EC) No 814/2000, (EC) No 1290/2005 and (EC) No 485/2008". Below the title, it says "LEGAL TEXT". The bottom status bar indicates the document was developed by DIGIT.B2, version 1.0.0-alpha5-SNAPSHOT (test), revision 1.0.0-alpha4-212-ga1cf924, dated 2018-07-02 14:31 CEST.

Easy creation of internal references

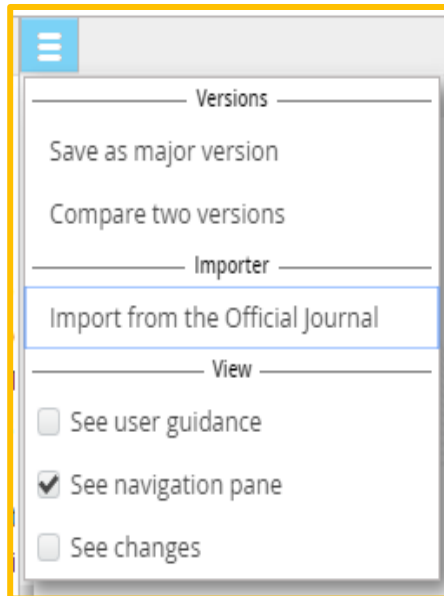
The screenshot displays the EdiT (Editing Tool) interface for the European Commission. The top navigation bar includes the European Commission logo and the text "EdiT". Below this, a breadcrumb trail shows "Home > Legal Text". The main content area displays a "Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the financing, management and monitoring of the common agricultural policy and repealing Council Regulation (EC) No 2799/98, (EC) No 814/2000, (EC) No 1290/2005 and (EC) No 485/2008".

An "Internal reference" dialog box is open, showing a list of documents on the left and a preview of the selected document on the right. The list includes:

- Preface
- Preamble
- Citations
- Recitals
- Enacting Terms
- Article 1 - Scope
- Article 2 - Terms used in this Regulation
- Article 3 - Funds financing agricultural expenditure
- Article 4 - EAGF expenditure
- Article 5 - EAFRD expenditure
- Article 6 - Other expenditure, including expenditure on rural development
- Article 7 - Accreditation and withdrawal of accreditation of paying agencies and coordinating bodies
- Article 8 - Commission powers
- Article 9 - Certification bodies
- Article 10 - Admissibility of payment
- Article 11 - Payment in full to beneficiaries
- Article 12 - Principle and scope
- Article 13 - Specific requirements relating to the management and control of expenditure
- Article 14 - Access to the farm advisory system
- Article 15 - Commission powers

The preview on the right shows the text of Article 7, titled "Withdrawal of accreditation of paying agencies and coordinating bodies". The text states that Member States shall be departments or bodies of the Member States responsible for the control of expenditure referred to in Article 4(1) and Article 5. It also mentions that the carrying out of those tasks may be delegated to departments or bodies which have an accreditation and a system of internal control which provide sufficient guarantees as to the legality and regularity of the expenditure. The text further states that the accreditation shall comply with minimum conditions for the accreditation with regard to control activities, information and communication and monitoring laid down in point (a) of Article 8(1).

Quick reuse from Eur-Lex



Import from the Official Journal of the European Union

Type * Year * Nr. *

REGULATION 2018 644

Search

Select the element(s) from the document below to import

CHAPTER II

REGULATORY OVERSIGHT

☒ *Article 4*

Provision of information

1. All parcel delivery service providers shall submit to the national regulatory authority of the Member State in which they are established the following information, unless that national regulatory authority has already requested and received it:

(a) their name, legal status and form, registration number in a trade or similar register, VAT identification number, the address of their establishment and the contact details of a contact person;

(b) the characteristics, and, where possible, a detailed description, of the parcel

Select all recitals Select all articles

Element(s) selected: 1 **Import** Close

Comments and suggestions

v0.1.15 (minor) - last edited by CUMPS Veerle (SG) on 29/09/2019 16:20

The Commission shall evaluate at least the following:

- (a) the contribution of this Regulation to the improvement of cross-border parcel delivery services, including the affordability for SMEs and individuals, especially those located in remote or sparsely populated areas and whether the transparency of cross-border tariffs has improved;
- (b) the impact of this Regulation on cross-border parcel delivery levels, including data on delivery charges;
- (c) the extent to which national regulatory authorities have had difficulties applying this Regulation, including a quantitative analysis of the administrative consequences;

Article 12

Committee procedure

1. The Commission shall be assisted by the Postal Directive Committee established by [Article 21 of Directive 97/67/EC](#). That committee shall be a committee within the meaning of [Regulation \(EU\) No 182/2011](#).

>

Annotations ² Document Notes

CUMPS Veerle SG.DSG1. (09/29/19, 06:19 PM)

the impact of this Regulation on cross-border parcel delivery levels, including data on delivery charges

the impact of this Regulation on cross-border parcel delivery levels and e-commerce, including data on delivery charges

Accept Reject

2

CUMPS Veerle SG.DSG1. (09/29/19, 06:21 PM)

the extent to which national regulatory authorities have had difficulties applying this Regulation, including a quantitative analysis of the administrative consequences;

Add point d) progress made concerning other initiatives for completing the single market for parcel delivery services, and in particular progress in the fields of consumer protection and development of standards.

Overview of other online drafters (users' display)

Table of content

- Preface
- Preamble
- ▼ Enacting Terms
 - Article 1 - Subject matter and scope - 1.In ord...
 - Article 2 - Minimum harmonisation - Member Stat...
 - Article 3 - Definitions - For the purposes of t...
 - Article 4 - Requirements for the accessibility ...
 - Article 5 - Disproportionate burden - 1.Member ...
 - Article 6 - Presumption of conformity with the ...
 - Article 7 - Additional measures - 1.Member Stat...
 - Article 8 - Monitoring and reporting - 1.Member...
 - Article 9 - Enforcement procedure - 1.Member St...
 - Article 10 - Exercise of the delegation - 1.The...
 - Article 11 - Committee procedure - 1.The Commis...
 - Article 12 - Transposition - 1.Member States sh...
 - Article 13 - Review - The Commission shall carr...
 - Article 14 - Entry into force - This Directive ...
 - Article 15 - Addressees - This Directive is add...
 - Article 16 - Entry into force - This Regulation...
- Signature

v1.6 (minor) - last edited by NUBLA Fernando (DIGIT) on 07/12/2018 09:37

can rather be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve that objective,

HAVE ADOPTED THIS REGULATION:

ADRIAN POLO Cristobal (DIGIT) editing since 07-12-2018 09:37

Subject matter and scope

1. In order to improve the functioning of the internal market, this Directive aims to approximate the laws, regulations and administrative provisions of the Member States relating to the accessibility requirements of the websites and mobile applications of public sector bodies, thereby enabling those websites and mobile applications to be more accessible to users, in particular to persons with disabilities.
2. This Directive lays down the rules requiring Member States to ensure that websites, independently of the device used for access thereto, and mobile applications of public sector bodies meet the accessibility requirements set out in Article 4.

Versioning

Navigation pane

Versions pane

Recent changes

Last change on 10/09/2020 15:40

1.0.2 Recital (1) updated

1.0.1 Suggestion content merged

Show less

Version 1.0.0

Milestone

For Interservice Consultation

10/09/2020 15:40 NUBLA DURANGO Fernando

Show modifications

Version 0.1.0

Document created

09/09/2020 17:26 NUBLA DURANGO Fernando

Show modifications

v1.0.2 - last edited by NUBLA DURANGO

Having regard to the opinion of the European Economic and Social Committee¹,

Acting in accordance with the ordinary legislative procedure,

Whereas:

(1) International trade is subject to Union customs legislation and a wide range of non-customs Union regulations established in different domains of Union competence under the Treaties. The laws governing non-customs regulatory requirements are applicable to specific goods in policy areas such as health and safety, the environment, agriculture, fisheries, cultural heritage and market surveillance. One of the main tasks assigned to customs authorities in line with the Union Customs Code (UCC)² is to ensure the security and safety of the Union and its residents, and the protection of the environment, where appropriate, other authorities. Customs and the authorities responsible for non-customs regulatory formalities ('partner competent authorities') often work in silos, creating complex and burdensome reporting obligations for traders and inefficient goods clearance processes conducive to error and fraud. To address the fragmented interoperability between customs and partner competent authorities in the management of goods clearance processes and to coordinate action in this area, the Commission and the Member States have taken a number of commitments over the years to develop single window initiatives for the clearance of goods.

(2) In accordance with [Article 4\(6\) of Decision No 70/2008/EC](#) of the European Parliament and of the Council of 15 January 2008 on a paperless environment for customs and

Track changes between versions

Comparing 0.1.20 and 0.1.23

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on ...

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article [...] thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national Parliaments,

~~Having regard to the opinion of the Committee of the Regions¹,~~

Acting in accordance with the ordinary legislative procedure,

Whereas:

(1) The High Level Group on Financial Supervision in the EU chaired by Jacques de Larosière ~~(the "de Larosière group")~~ invited the Union to develop a more harmonised set of financial regulations. In the context of the future European supervisory architecture, the European Council of 18 ~~and 19~~ June 2009 also stressed the need to establish a 'European Single Rule Book' applicable to all credit institutions and investment firms in the internal market. The High Level Group - HLP.

(2) The general prudential requirements set out in this Regulation are supplemented by individual arrangements that are decided by the competent authorities as a result of their ongoing supervisory review of individual institutions. The range of such supervisory arrangements should, inter alia, be set out in Directive 2013/36/EU since the competent authorities should be able to exert their judgment as to which arrangements should be imposed.

HAVE ADOPTED THIS REGULATION: