UN-R155 versus CRA: an in-depth assessment

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Glossary

CE (Marking): Conformité Européenne

CRA: Cyber Resilience Act

CSMS: Cyber Security Management System

EU: European Union

NIS2: Network Information Security v2

NLF: New Legislative Framework

GDPR: General Data Protection Regulation

MS: Member States

NRMMR: Non-Road Mobile Machinery Regulation

PAS (ISO): Publicly Available Specification

PLD: Product Liability Directive

RED DA: Radio Equipment Directive Delegated Act

SR: Standardisation Request

TR: Tractor Regulation (167/2013)

ACEA: European Automobile Manufacturers' Association

AEF: Agricultural (Industry) Electronics Foundation

CEMA: European agricultural machinery industry

CECE: Committee for European Construction Equipment

COM: EU Commission

CLEPA: European Association of Automotive Suppliers

CEN: European Committee for Standardization

CENELEC or CLC: European Committee for Electrotechnical Standardization

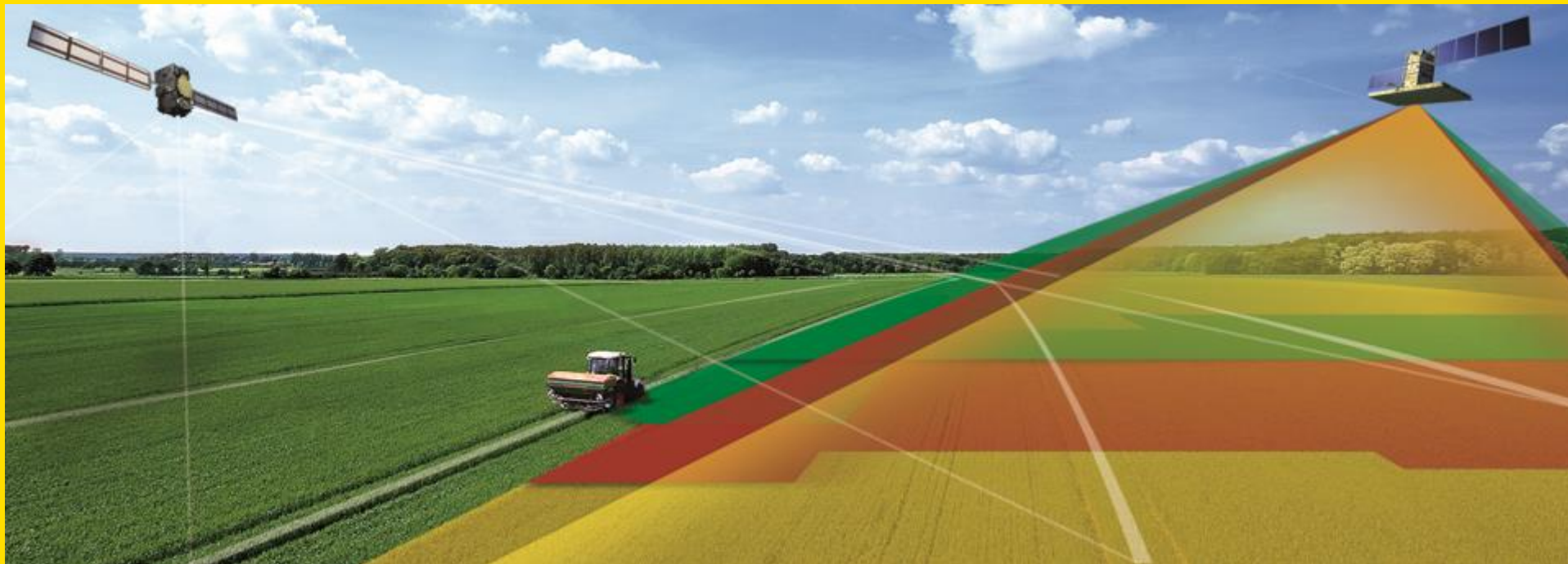ETSI: European Telecommunications Standards Institute

ISO: International Organization for Standardization

NWIP: New Work Item Proposal

UNECE: United Nations Economic Commission for Europe

CEMA –
the voice of the innovators & developers of Agricultural industry in Europe

CEMA

CEMA in a few numbers

7,000 MANUFACTURERS

11 NATIONAL MEMBERS

LARGE INTERNATIONAL COMPANIES & SMEs

€40 billion

450 different Types

300,000 JOBS

Agricultural industry specificities

Agricultural industry specificities

Off-road industry:

Field Road

- Non-road industry products primary function in the field

- On the road to go from off-road site to another at low speeds

On-road industry:

Road Field

- On-road industry products primary function on the road (all roads)

Agricultural industry specificities

CEMA

Off-road industry: Small

CEMA represents in EU:

- **7.000** manufacturers
- average: **21** employees per manufacturer)
- 150.000 direct employees

CECE represents in EU:

- **1.200** companies
- average: **250** employees per manufacturer)
- 300.000 direct employees

On-road industry: **Big**

ACEA represents in EU:

- Less than **50** Manufacturers
- average: **160.000** employees per manufacturer
- 8.1 Million direct employees

CLEPA represents in EU:
- Approx. 20 major TIER1 Suppliers
- 5.7 Million direct employees

Agricultural industry specificities

Off-road industry:

DiveRse

Agricultural vehicle manufacturer:

- Many products models (different chassis, architecture, etc.)

- Many more variants (engine or function) for these models and Millions of option per variant

- High variability EU volumes of tractor models: **100 to >10.000**

- High variability EU volumes of towed machinery models: **1 - > 1000**

On-road industry:

Streamlined

Average automotive manufacturer:

- Low number of models/variants

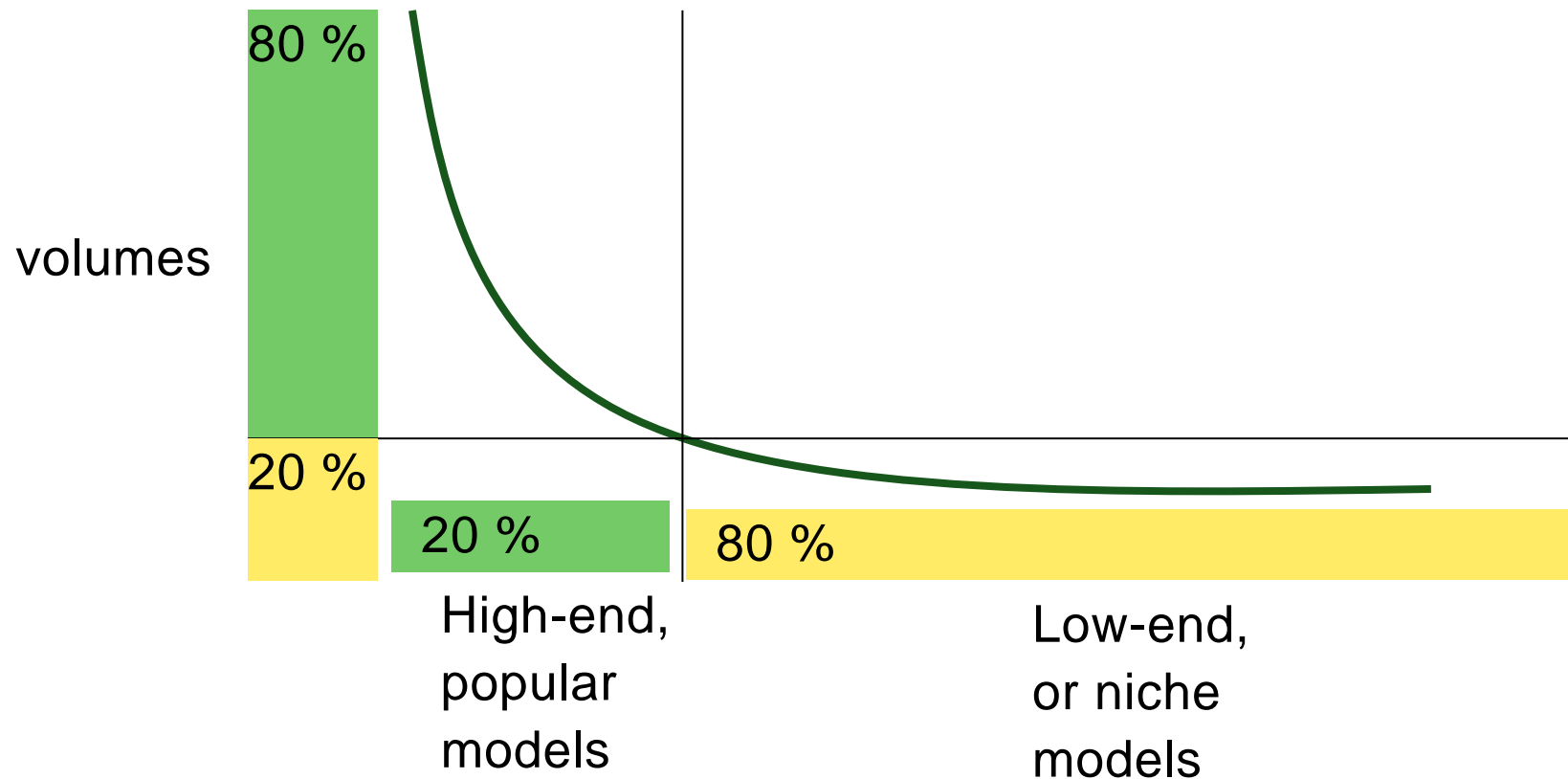- high EU volumes of one model with low variability, with some models easily **> 150.000**

Agricultural industry specificities

Off-road industry:

DiveRSe

volumes

80 %

20 %

20 %

80 %

High-end,
popular
models

Low-end,
or niche
models

Agricultural industry specificities

Off-road industry:

Com-bin-ED

- Extensive machine collaboration in off-road application and thus large number of combination that needs to be tested

On-road industry:

Separated

- Rarely connected to the outside

Agricultural industry specificities

Off-road industry:

Com-bin-ED

On-road industry:

Separated

- AEF (Agricultural Industry Electronics Foundation)
  - ISOBUS (ISO 11783 - 1Mbps)
    - Under dev. HSI (High Speed ISOBUS – 1Gbps)
  - TIM (Tractor Implement Management)
  - Platooning

- Rarely connected to the outside

CEMA position – most suitable solution for agricultural vehicles and what situations to avoid

CEMA position

The EU agricultural machinery industry:

1. Has chosen not to be included in the scope of the UN-R155,

2. Would prefer to be tight to industrial products,

3. Stands clear and unanimous behind the **CRA** as the best alternative to UN-R155.

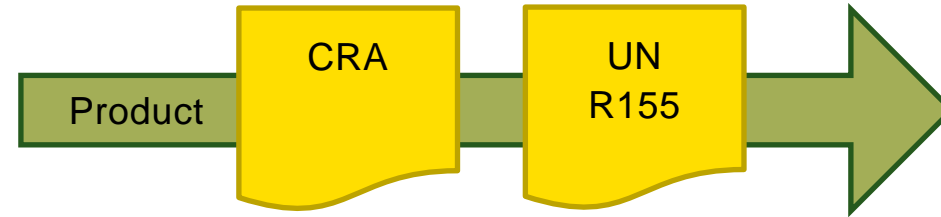**CRA**
For our industry

UN-R155
For the automotive industry
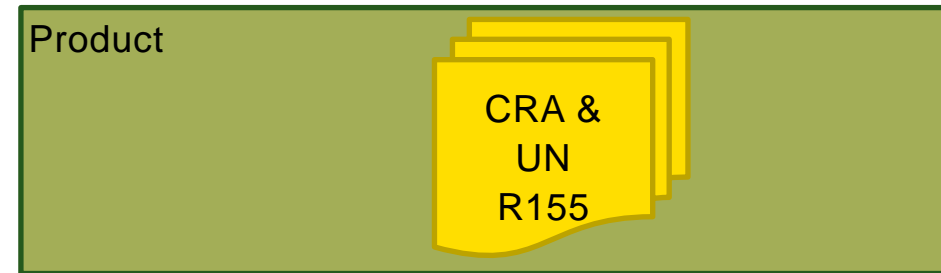
Situations to avoid:

CEMA

1. Parallel application

| Tractor | UN R155 |
| Machine | CRA |

2. Sequential application

Product — CRA — UN R155 →

3. Double-regulation

Product — CRA & UN R155

4. No regulation: solved as there is the CRA

5. Too early application: CRA application date should be mid 2027

Argumentation why the CRA is the most suitable solution

Argumentation

1. At least **equal stringency** with CRA/NIS2 versus UN-R155

2. **One single legislation** for all products

3. Point to point cybersecurity **full coverage by EU NLF legislation**

4. **Clear** framework due to NLF principles

5. **Lean** legislation concerning compliance

Argumentation

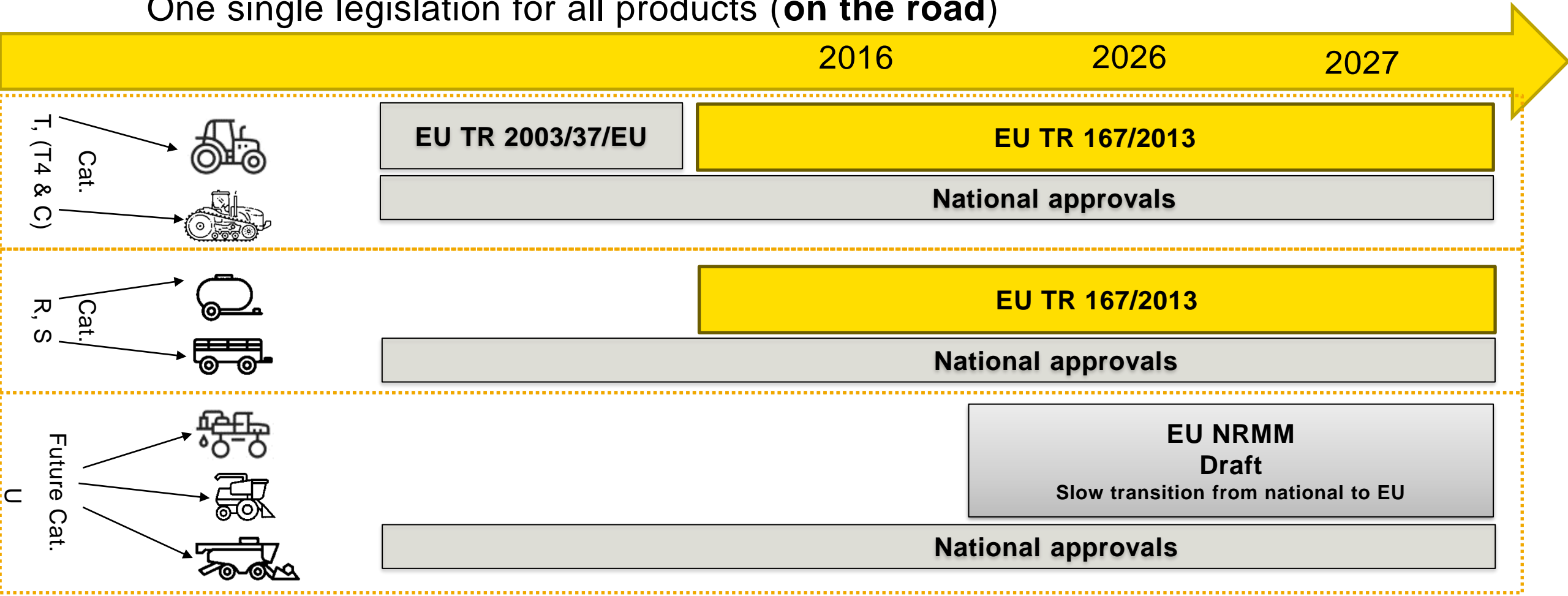One single legislation for all products

Legislation:	UN R155	EU CRA
Scope:	UNECE Vehicle Categories	'Product with digital elements' made available on the market and that should be connected
Limitation:	Not a UNECE Vehicle Category, not in scope	No limitation – all in! A product with a software susceptible of being connected is automatically in scope

For agricultural machinery and vehicles:
- Type Approved Category U for NRMM not defined yet.
- Application of EU Type Approval Category C and T4.1, T4.2, R&S is optional.
- Currently and in the future, certain machine types will remain nationally homologated for the road (CRA applies).

Argumentation
One single legislation for all products (**on the road**)

2016   2026   2027

Cat. T, (T4 & C)

EU TR 2003/37/EU | EU TR 167/2013
National approvals

Cat. R, S

EU TR 167/2013
National approvals

Future Cat. U

EU NRMM
Draft
Slow transition from national to EU

National approvals

In yellow: published and EU enforced

Argumentation

One single legislation for all products (**in the field**)

2009   2016   2027

Cat. T, (T4 & C)

EU TR 2003/37/EU   EU TR 167/2013

National approvals

Cat. R, S

Future Cat. U

EU MD*
2006/42/EC

EU MR* (EU) 2023/ 1230

EU CRA

In yellow: published and EU enforced

*: Machinery Directive, to be replaced by the Machinery Regulation, that will cover 'Cybersafety'

Argumentation

One single legislation for all products (**on the road and in the field**)

| Category	T1, T2, T3, T4.3	T1, T2, T3, T4.3	R, S	R, S	T4.1, T4.3, C	T4.a, T4.2, C	NRMM	NRMM
Use environment	In field	On road	In field	On road	In field	On road	In field	On road
167/2013	CRA or R155	CRA or R155	X	CRA or R155	CRA or R155	CRA or R155	X	X
Machinery Regulation	X	X	CRA	X	X	X	CRA	X
NRMM road circulation Regulation	X	X	X	X	X	X	X	CRA
National type approval legislation	X	X	CRA	CRA	CRA	CRA	X	?

EU implementation of UN-R155 will inevitably lead to the use of parallel and/or double legislation and the creation of grey zones.

Argumentation

CRA tight application date

Steps for the CRA to be applicable:

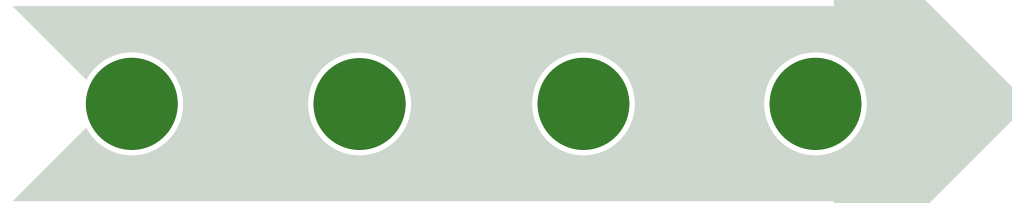(Est.) publication of the harmonized standard: beginning 2026
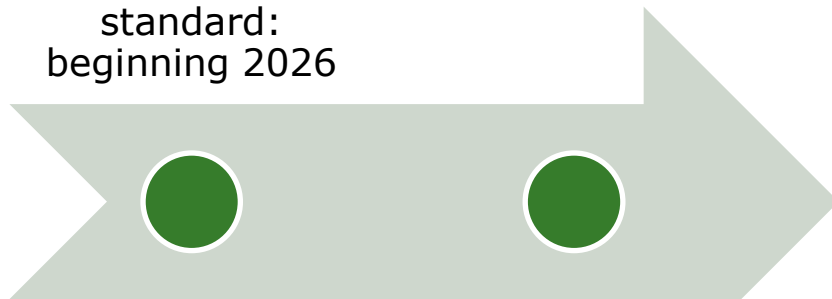
(Est.) CRA date of application: mid 2027

Steps to include category 'U' in UN R155:

Adopt the new category at the UNECE level

Wait for the NRMMR to be applicable and include the technical requirements (separated act)
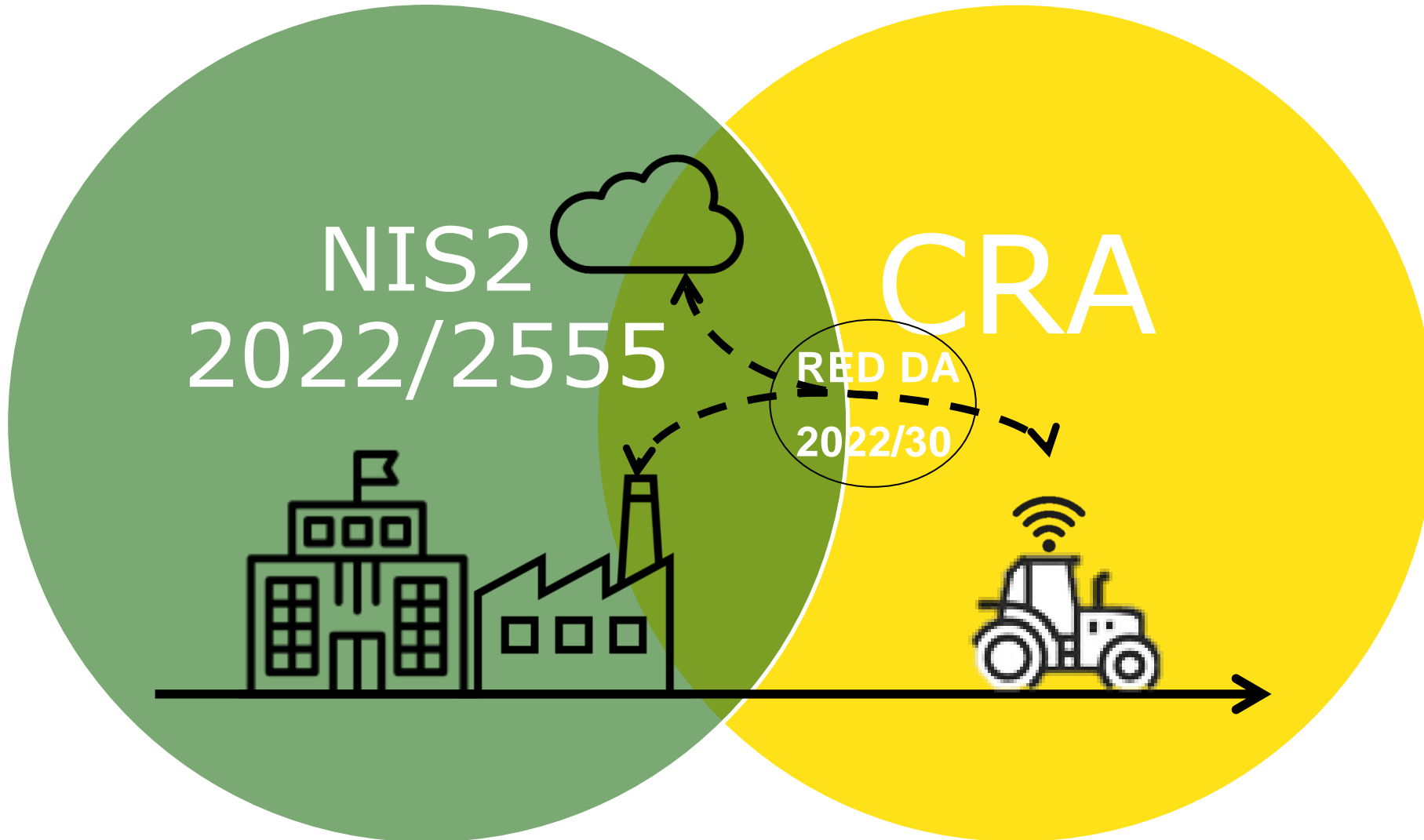
UN R155 update scope and requirements

ISO 21434 update for specificities of category U

It might take more than 3 years…

Argumentation

Point to point full cybersecurity coverage (see table in CEMA PP doc)

NIS2 2022/2555

RED DA 2022/30

CRA

CRA definition of 'product with digital elements' (agreed text):

any software or hardware product including its <u>remote data processing solutions</u>, and software or hardware components to be placed on the market separately

NIS2 covers <u>entities</u>

Argumentation

Clear framework for the conformity assessment

CRA follows the NLF principles of essential requirements, presumption of conformity, CE marking and harmonised standard providing legal certainty

CRA is risk based on cybersecurity goals (Future proof requirements)

With the product liability directive: liability of manufacturer is engaged with 3rd party or not

UN R155 is risk based on the list of threats

A guide is available between the ISO 21434 and the UN R155, but not legally binding

Argumentation

Clear framework for the conformity assessment (NLF)

The New Legislative Framework (also known as the "NLF"), is a package of legislation first adopted in 2008 that consists of:

- Regulation (EC) **765/2008**, which sets out the requirements for accreditation and the market surveillance of products;

- Decision **768/2008**, which sets out a common framework of requirements for selling products under a number of key regimes (essentially, a template for legislation for many CE marked products); and, finally,

- Regulation (EU) **2019/1020** on market surveillance and the compliance of products
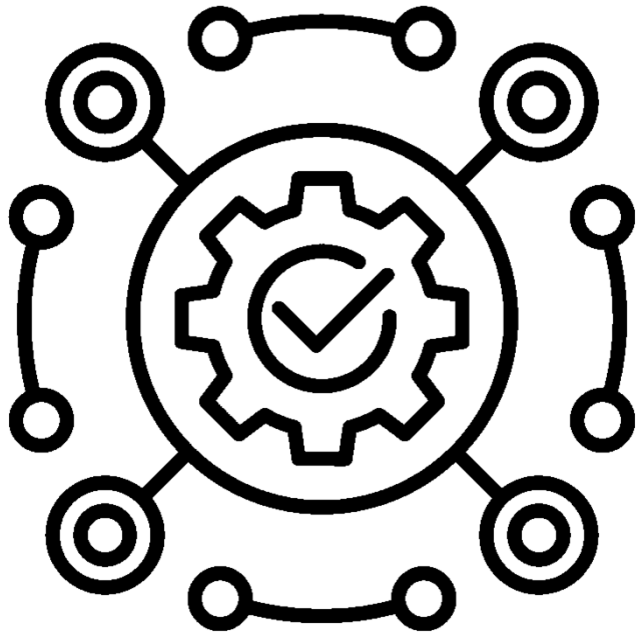
Link: https://single-market-economy.ec.europa.eu/single-market/goods/new-legislative-framework_en

Argumentation

Clear framework for the conformity assessment

2008

Blue Guide {
Reg. + Decision 765/2008

Reg. (EU) 2019/1020

NLF Goal:

Establish within the EU the overarching framework for:

- Product (CE) marking,

- Market surveillance (set rules + EU harmonization),

- Conformity assessment

  - Incl. "presumption of conformity" to a harmonized standard or a common specification,

- And accreditation of Conformance Assessment Bodies at the EU level

Argumentation

Clear framework for the conformity assessment
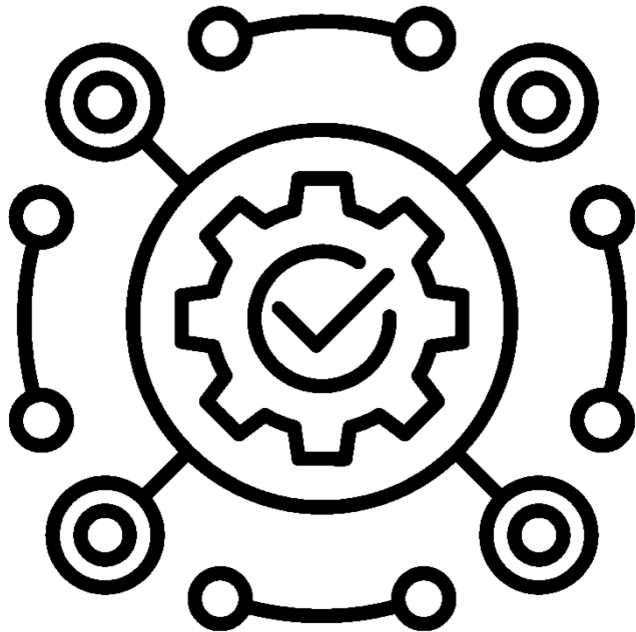
"A" NLF legislation:

- Covers a wide range of products,

- Lays down "essential" req. for the design and construction,

- Describes obligations of manufacturers, importers, and distributors

- Defines conformity assessment procedures at the placement on the market

  - with "presumption of conformity" principle

- Requires the marking of conform products

Argumentation

Clear framework for the conformity assessment

Get higher presumption of conformity to the CRA when:

1. EU standard, with harmonized status for the CRA, is fulfilled

2. A common specification is available for the CRA

Argumentation

Clear framework for the conformity assessment

Argumentation

Development of an ISO standard for the Agriculture

Cybersecurity Standard in progress:

- ISO/TC23/SC19/**AHG2** created **to map ISO 21434 to CRA**

- ISO **NWIP 24882** started (Agricultural Machinery & Tractors — Cybersecurity Engineering)

  - Under ISO/TC23/SC19/**WG8** for Off-road industry

  - To be <u>harmonized</u> to the CRA

  - Plan to provide <u>compatibility</u> to supplier already compliant under UN-R155 (see further)

- In the process of creating a **Joint Work Group** (ISO/TC127, ISO/TC23/SC13)

- Technical requirements are easy to update if they are in a standard
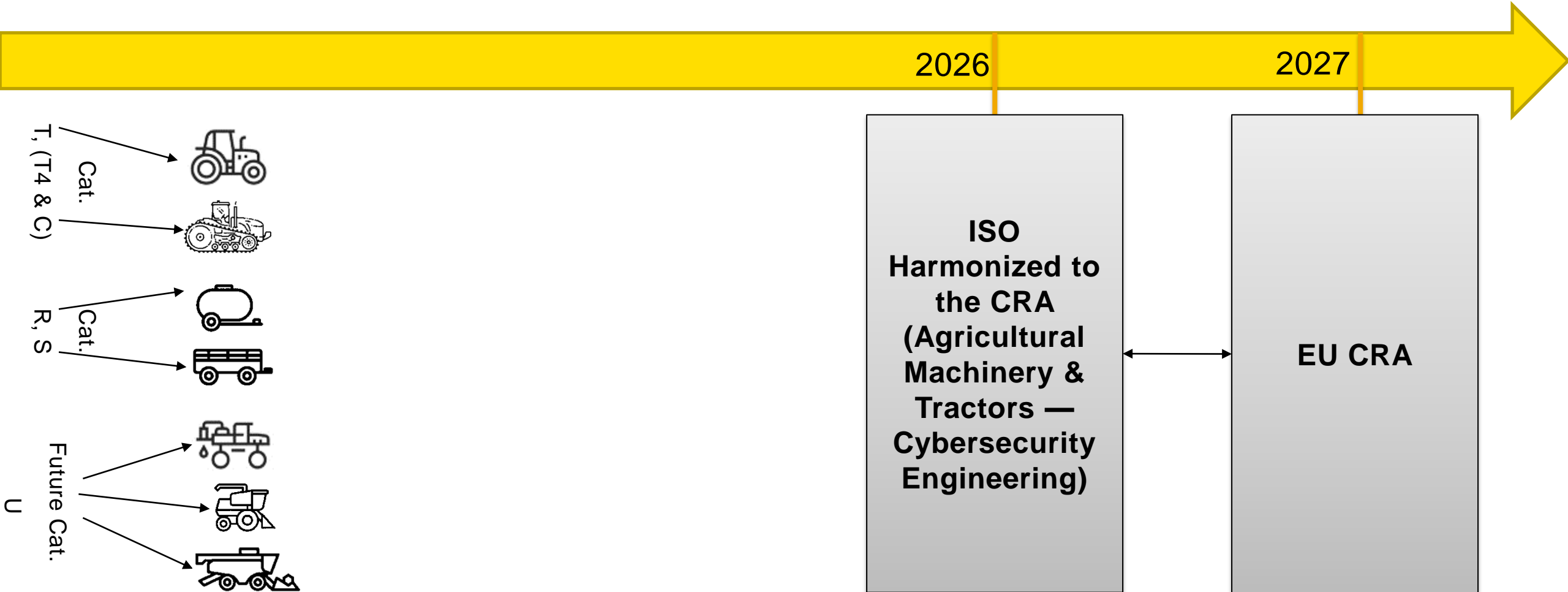
Argumentation

Lean legislation concerning compliance

The CRA offers different compliance pathways from self-certification to 3rd party certification on class I and II equipment - all types of conformity assessments are available.

Simplified supplier oversight:

- Each component placed on the market is considered as a 'product with digital elements' → Manufacturer of the final product verifies the presence of CE marking and is responsible for the integration (shared responsibility – SME friendly)

Reported CRA limitations are covered

CRA limitations?

Reporting obligation

Where is the support period definition in the **UN-R155**?

CRA: Harmonisation of the support period definition with various criteria

Agreed text: is not limited to 5 years but linked to expected useful lifetime…!

CRA limitations?

Missing of explicit Management System in the CRA

CRA has the product-oriented part of the CSMS (see Art. 10.2, 10.3, 10.5, 10.6, 10.7, 10.8, 10.9, 10.12 and Art. 11.1, 11.4, 11.7 and Art. 20, Art. 22, Art. 23, Art. 24 as well as Annex I, V, VI): **it already implies the use of a management system.**

NIS2 is the complementary part of the CRA for the CSMS

CRA limitations?

Broad cybersecurity goal coverage

- Cybersecurity in products, network infrastructure and remote data processing solutions

- Vulnerability handling of products and remote data processing solutions

- Cybersecurity of entities

- Vulnerability handling of entities

- Protection of personal data / privacy

- Protection against fraud (RED DA)

- Support interoperability

CRA

NIS2

GDPR 2016/679

Data Act 2023/2854

AI Act (agreed)

Interplay is covered

Guidelines are in preparation

CRA limitations?

Compatibility with UN R155

Automotive industry suppliers are in scope of the CRA if the final product, in which the component will be included, is not in scope of the UN R155.

Efforts from industry are ongoing, to provide <u>compatibility</u> to suppliers using UN-R155 via the hEN NWIP ISO 24882.

CRA limitations?

Integration of CRA requirements into **EU vehicle type-approval**

With the off-road industry currently in scope of the CRA this means:

- no reference is necessary in the type approval legislation.

- There is no issue related to the co-existence of the EU type approval legislation and NLF legislation (Type Examination) and any possible overlap could be clarified. For example: for Cat R and S, for certain on-road requirements, are considered sufficiently covered by the MD and that is indicated in the technical requirements (delegated acts).

CRA limitations?

Global alignment

- On **technical requirements** the **ISO** standard in draft would be the basis for global alignment as drafted by and for the global agricultural machinery industry.

- On **compliance**: focus lies on **lean procedures**. Main remaining point is for OEMS to be embedded in a reporting structure to alert authorities on incidents

- Any engagement towards **global alignment** should be based on the CRA or more general an **industry sector approach**. Are all UNECE contracting parties aware of the initiatives in their countries?

Any questions?

Thank you!

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