a **NEW** *directive for* **EUROPE !**

new approach

Potentially ← ATEX → **EX**plosive **AT**mospheres

ATEX *DIRECTIVES*

- **94/9/CE** (manufacturers' directive) = European instruments using

- **1999/92/CE (workers' directive)** = employees protection:
  - annexe **I**:types of zones
  - annexe **II**:categories of instruments for each zone.

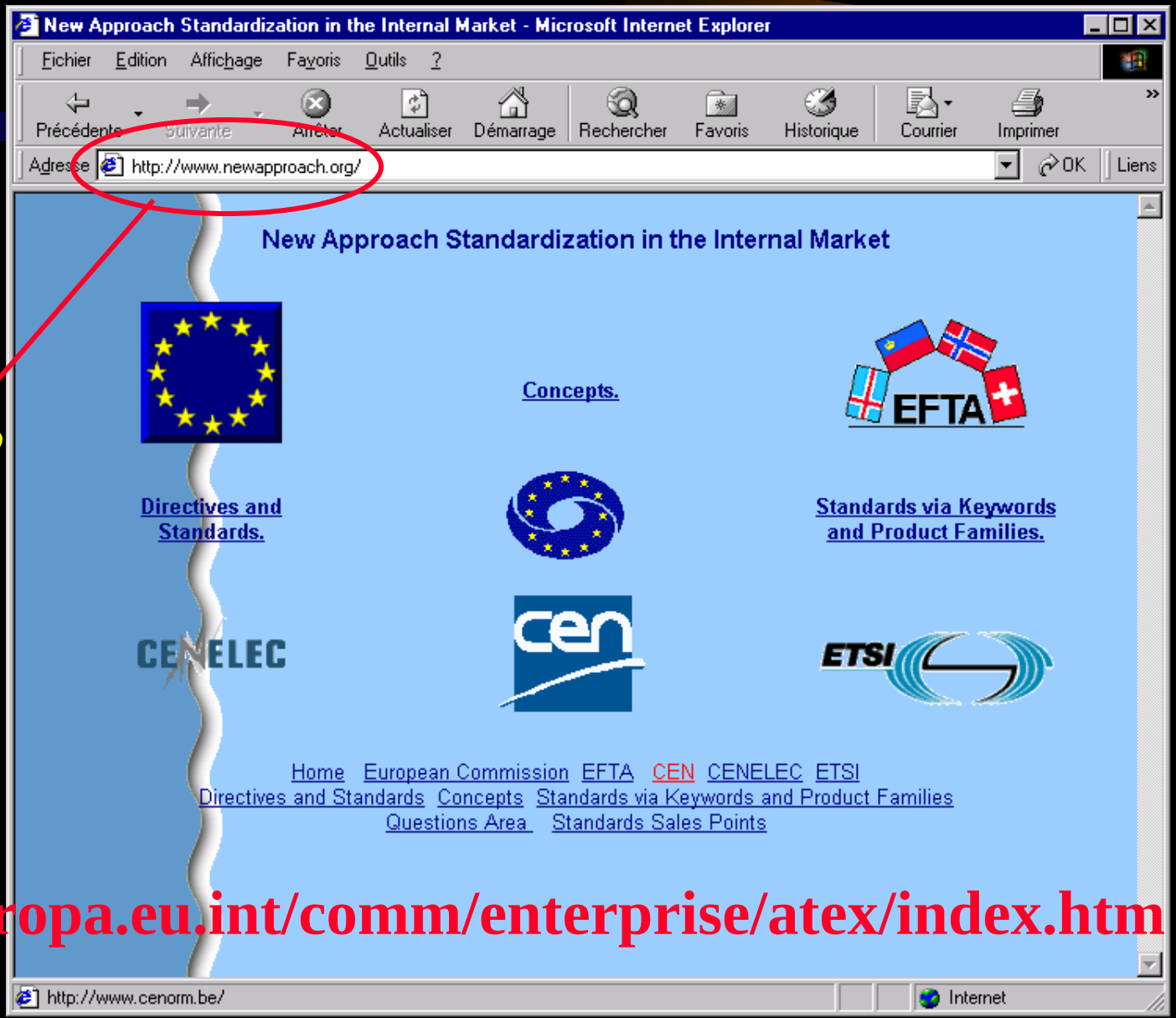
NEW DIRECTIVES **ATEX...**

- Since **July 2003**, it has been mandatory that all equipment with a potential source of ignition which is being sold on the european market for the first time is accompagnied by a declaration of conformity to the ATEX product Directive **94/9/EC**.
- Since july 2003, it has been mandatory that all new installations (and modifications to existing installations) should meet the requirements of the ATEX User directive 1999/92/EC.

NEW DIRECTIVES **ATEX...**

- By **July 2006**, all plants within Europe should be able to demonstrate full compliance with the requirements of **1999/92/EC** as adopted in each member state.
- In the UK this is « the dangerous substances and explosive atmospheres regulations » : **DSEAR**.

NEW DIRECTIVE **ATEX...**



www.newapproach.org

Or : www.ineris.fr

Or: europa.eu.int/comm/enterprise/atex/index.htm

The new directive **ATEX** *(01/07/2003)*

- **Requires in short**:

- a **certification** delivered by a **notified laboratory**

- **CE marking** to be affixed to all electrical and electronic instruments marketed in **EUROPEAN UNION MEMBER STATES***(The CE marking guarantees that the instrument conforms to applicable electromagnetic radiation and immunity requirements).*

- Compliance is mandatory,which means you must ensure that your products meet all of the directive's requirements.

List of European Standard

relevant to Performance Requirements (additional standard to Explosion Protection i, d, e , m, etc) and mandatory for safety relevant devices according article 1.5 de l'Annex II de la Directive Atex 94/9/CE

EN 61779-1 (replace EN 50054). ***Performance requirements of Electrical apparatus for the detection and measurement of flammable gases - Part 1: General requirements and test methods***

List of European Standard

EN 61779-2 (replace EN 50055) : ***Performance requirements for group I apparatus indicating a volume fraction up to 5 % methane in air*** .

- **EN 61779-3** (replace EN 50056) : ***Performance requirements for group I apparatus indicating a volume fraction up to 100 % methane in air*** .

EN 61779-4 (replace EN 50057) : ***Performance requirements for group II apparatus indicating a volume fraction up to 100% lower explosive limit.*** .

- **EN 61779-5** (replace EN 50058) : ***Performance requirements for group II apparatus indicating a volume fraction up to 100% volume.*** .

List of European Standard

EN 50104: *Electrical apparatus for the detection and measurement of oxygen – Performance requirements and test methods.*

EN 50270: *Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen*

EN 50271: *Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen - Requirements and tests for apparatus using software and/or digital technologies.*

List of European Standard relevant to Performance Requirements not mandatory, eg not yet in the Atex list for harmonised standard

EN 45544-1 : Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours -- Part 1: General requirements and test methods

EN 45544-2 :*Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours -- Part 2: Performance requirements for apparatus used for measuring concentrations in the region of limit*

List of European Standard relevant to Performance Requirements not mandatory, eg not yet in the Atex list for harmonised standard

EN 45544-3 : *Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours -- Part 3: Performance requirements for apparatus used for measuring concentrations well above limit values*

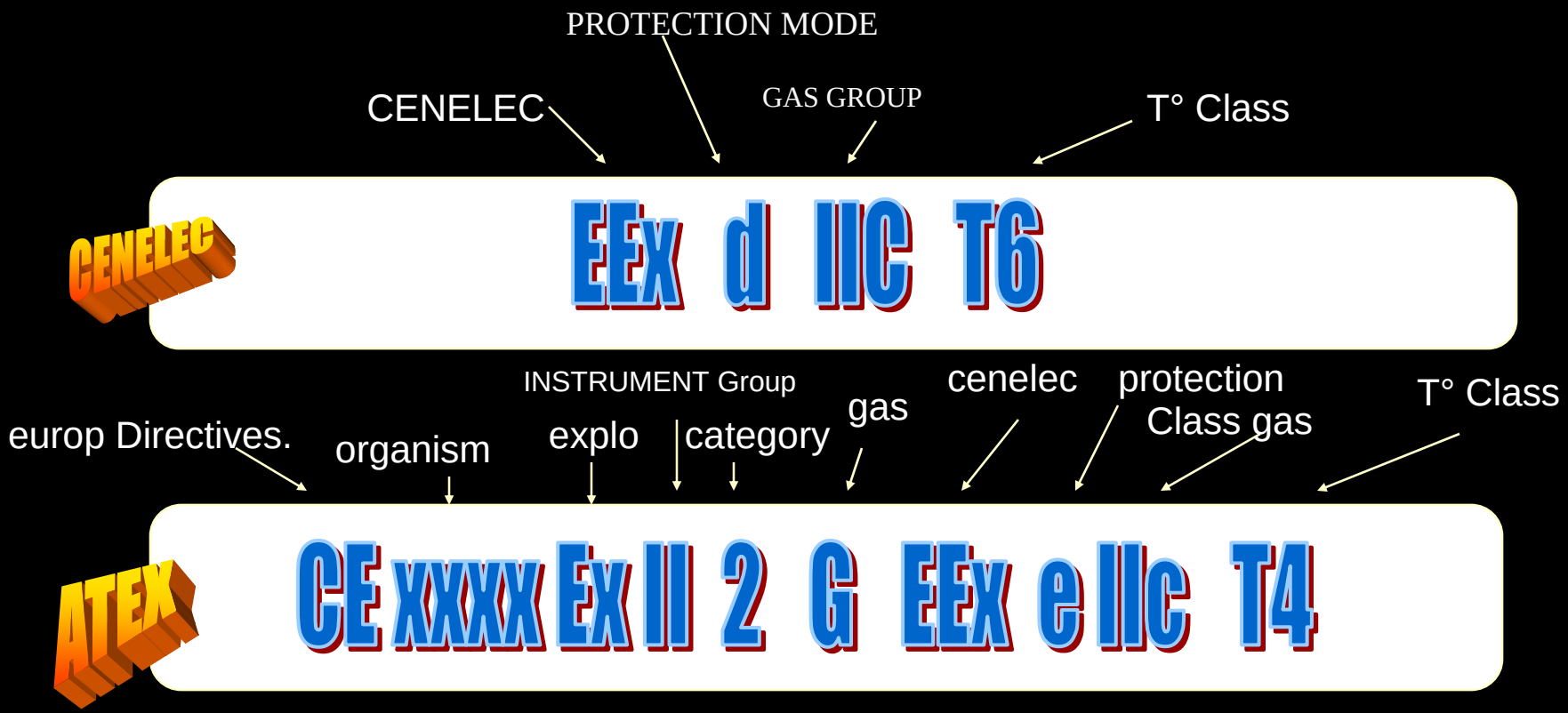
EN 45544-4 :*Workplace atmospheres - Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours -- Part 4: Guide for selection, installation, use and maintenance*

The new directive **ATEX** *(01/07/2003):continued...*

- Safety systems fail safe application.
- **GAS** or **DUST** hazardous areas indication (marking)
- production quality assurance
- product verification
- conformity to type tests carried out under the responsability of notified organisme.

ATEX / CENELEC: *marking*

- Until July 2003, a new marking:



CE MARKING example

- **The certified equipment must carry a plate indicating :**

-the name and address of the manufacturer

-designation of the type of equipment

-CE marking followed by the identification number of the organism where such body is involved in the production control stage:**CE xxxx**

-the serial number of the equipment

- year of construction

-specific marking followed by group II for group II,2 for category 2 and G for gas

- complementary marking:**EEx d IIB T4**

INERIS xxATEXxxxx X


What is an
HAZARDOUS
AREA as per ATEX
1999/92/CE:annexe I ?

ATEX 1999/92/CE

- New directive **ATEX** concerning the instruments in hazardous areas and **mines** “group I”:
- the whole concentrations: **M1**
- above a limit value: **M2**

ATEX 1999/92/CE:ZONES

- New directive **ATEX** concerning the instruments in hazardous areas and surface industries “group II” distinguishes the next groups of zones:
- Zone **0 G** (gas) and zone **20 D** (dusts)
- Zone **1 G** (gas) and zone **21 D** (dusts)
- Zone **2 G** (gas) and zone **22 D** (dusts)

ZONE 0G /20 D

ATEX probability = very high

- *Where ignitable concentrations of flammable gases, vapours, liquids or dusts can exist* all of the time or some of the time *and for* a long time *under normal operating conditions* .*required equipment (annexe II):category* ***1*** = ***ia*** ***only !***

intrinsic Safety

ZONE 1G/21D

ATEX probability = high

- *Where ignitable concentrations of flammable gases, vapours,liquids or dusts can exist* some of the time *under normal operating conditions.*
- *required equipment* (annexe II):category 2 = **d** or **is** or **e** .

ZONE 2G/22D

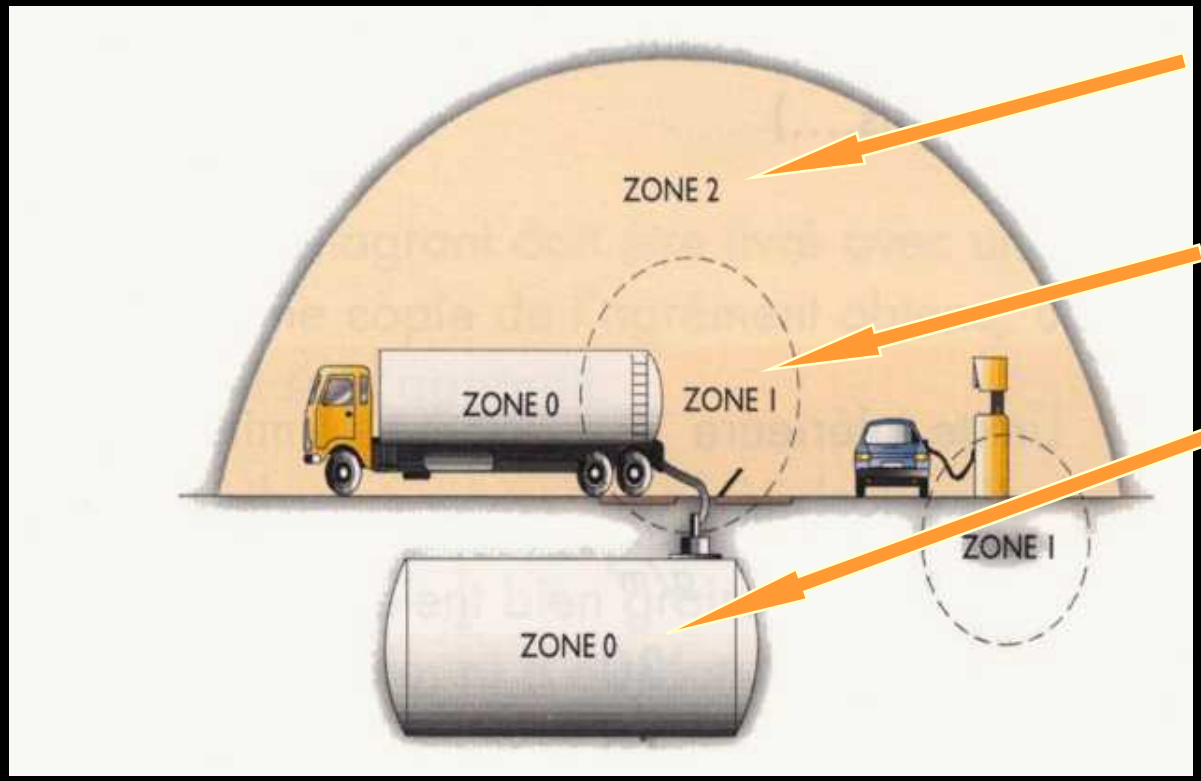
ATEX probability = low

- Where ignitable concentrations of flammable gases, vapours,liquids or dusts are not likely to exist under normal operating conditions.

- Required equipment (annexe **II**):category **3** (minimum protection).

DANGEROUS ZONE:example

- In accordance with the new regulation **ATEX:**



Required equipment

CATEGORY 3

CATEGORY 2

CATEGORY 1