EMF standards and standardisation in an EU context

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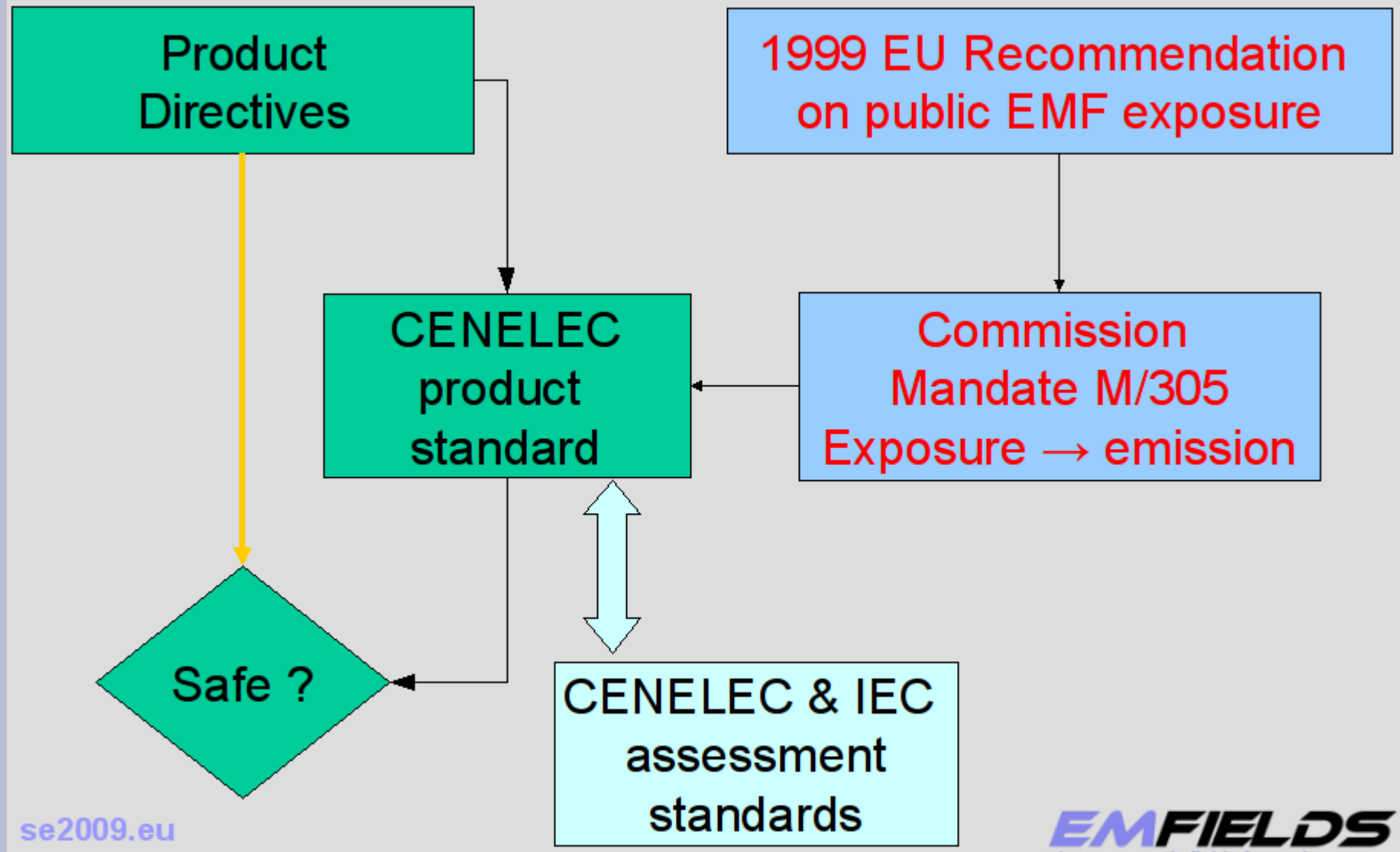
CENELEC

- ICNIRP is the Commission's official advisor on exposure levels
- CENELEC is the official electrotechnical standardisation body of the EU, producing assessment and measurement standards
- Technical Committee 106X deals with "electromagnetic fields in the human environment"

CENELEC product standards

- Mandated by the European Commission
- They are used to fulfil the safety requirements of product Directives
- They refer to the 1999 EU Recommendation on public exposure, and hence to ICNIRP public exposure guidelines.
- Take account of background/summed contributions where appropriate
- Apply to products used by the public, only.

CENELEC product standards



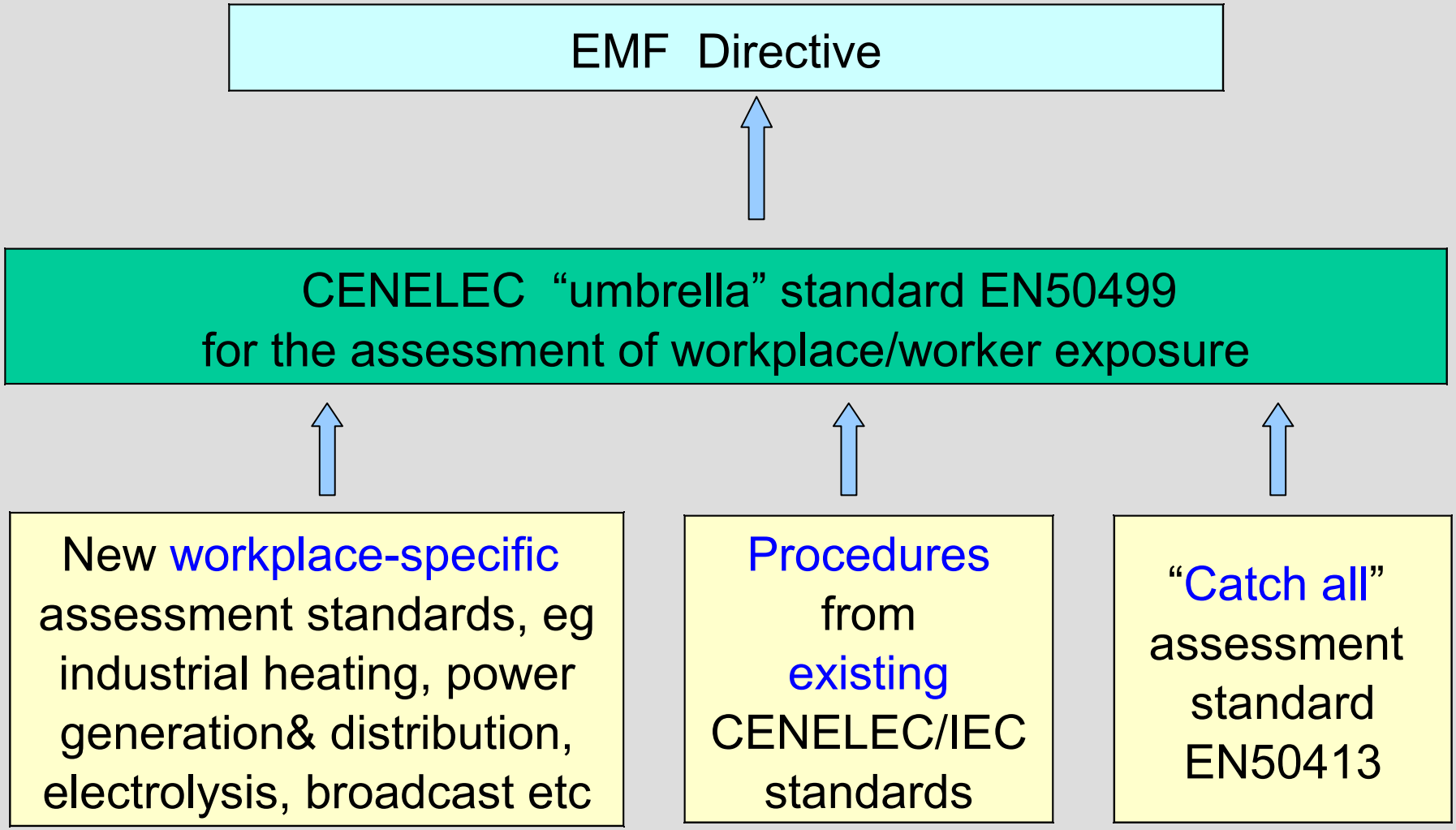
Occupational exposure standards

- Address the exposure of people and the characterisation of environments, not emissions from products.
- IEC has no role in this, and until 2004 nor did CENELEC.
- Directive 2004/40/EC, Article 3.3, requires the use of CENELEC assessment standards once these cover all relevant exposure scenarios.
- Commission Mandate M/351 instructs CENELEC etc to develop standards for the assessment of workers' exposure

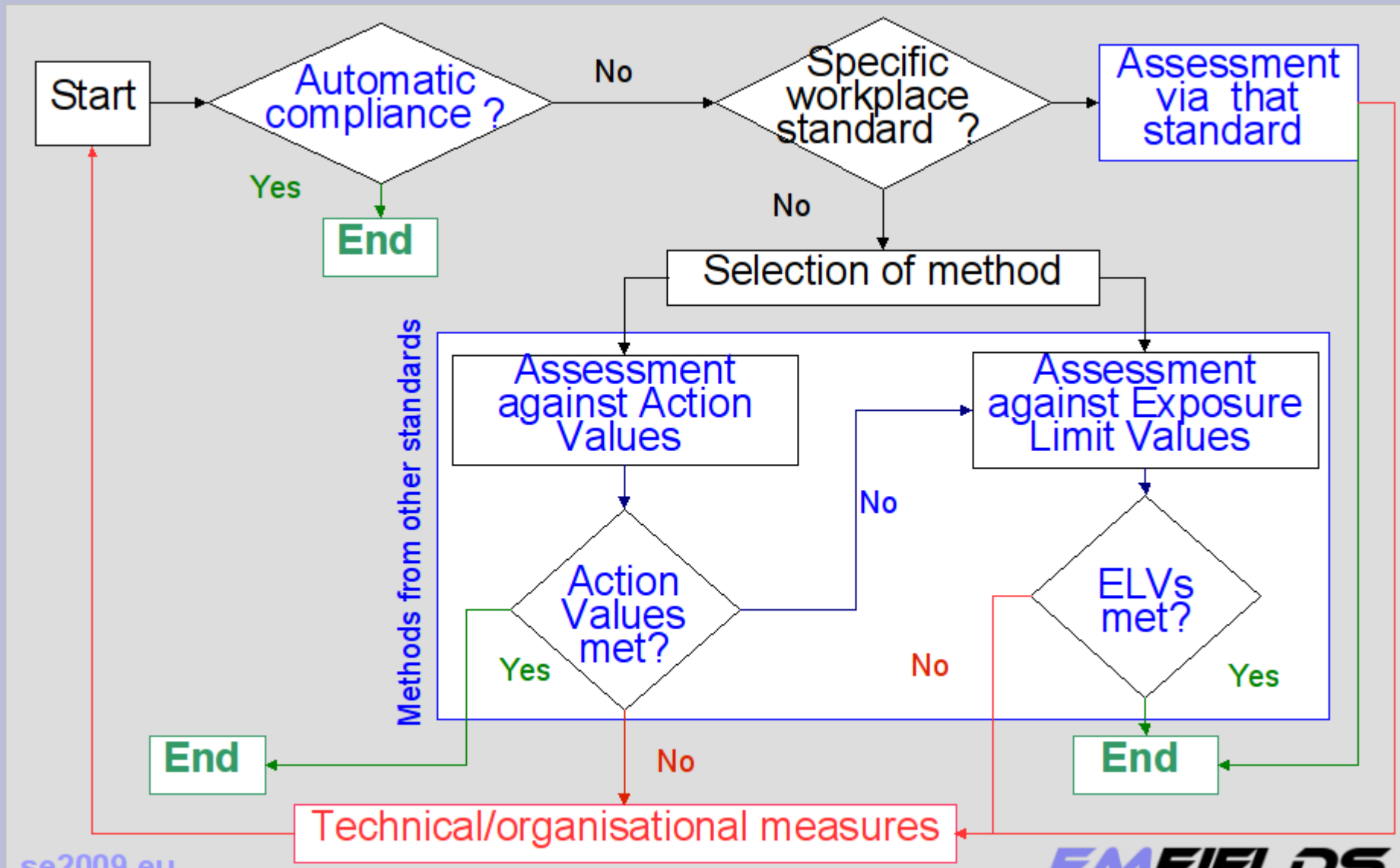
Mandate M/351 requires:

- Coverage of all exposure scenarios
- Limits as in 2004/40/EC
- Avoidance of measurement where exposure can be calculated on the basis of compliance with product directives.
- Simple procedures where possible
- Consideration of sensitive workers

Standardisation and the EMF Directive



EN50499 process



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Automatically compliant exposure situations

- **Any situation shown to be compliant at public exposure levels**
- Containing only equipment certified for public use *and used as intended*
- Specific technologies:
  - Phones etc
  - Household equipment
  - Base stations at public access locations
  - Low power electrical installations
  - Etc.

Harmonics/multifrequencies

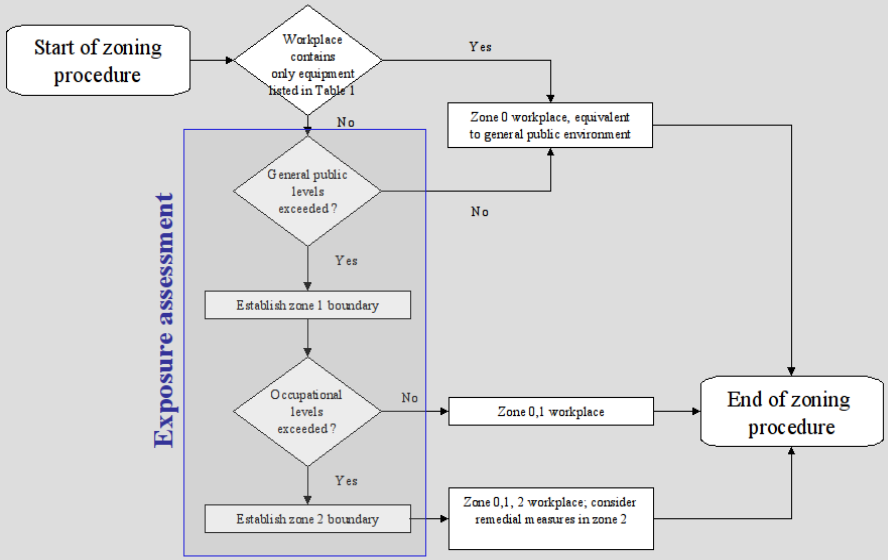
- *Shall* be addressed
- Options:
  - ICNIRP summation formulae (with/without phase)
  - Time-domain techniques
  - Fourier techniques
  - Simplified approaches (TEQ)
  - Other methods.

Pregnant workers – limits ?

- This Directive does not foresee specific limit values for pregnant workers.
- Therefore the only binding occupational limit and action values are those laid down in the Directive
- Under Directive 92/85/EEC.….the employer is obliged to assess in detail any specific risk of exposure of pregnant workers and in particular the exposure to non-ionizing radiation in order to decide what measures should be taken, including the moving of the worker concerned or the granting of a leave.

EN50499 zoning concept

- Simple zones linked to public/occupational exposure limits
- Intended to allow an employer to control access *where desired* – for example school visits to power stations



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Active Implanted Medical Devices (AIMD) standards – for users

- New activity area for CENELEC
- EMF dosimetry approaches used to determine internal voltage and current distributions on device for given field strengths
- General AIMD standard under vote at present
- Specific pacemakers standard near completion

Summary

- CENELEC standards in place to cover all exposure situations under Directive 2004/40/EC
- These standards address the exposures of people, not emissions from equipment
- They provide simple approaches
- Harmonics/multifrequencies must be considered, and options to do this are included