



Forschungsschwerpunkt Technologien  
der Mikroperipherik



Fraunhofer Institut  
Zuverlässigkeit und  
Mikrointegration

# Status and Developments in the RoHS and the ELV Directive

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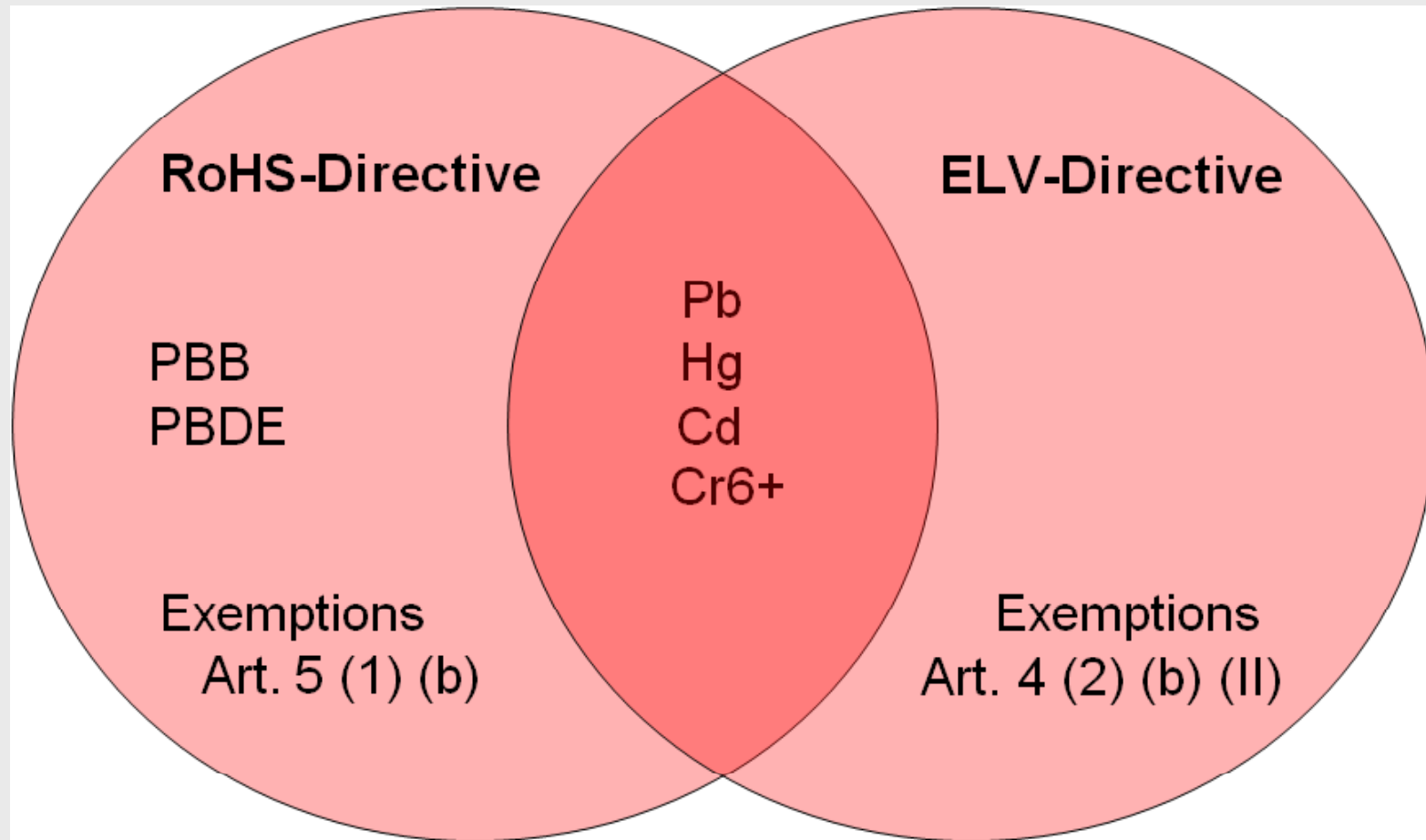


Technische Universität Berlin  
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# Material Bans



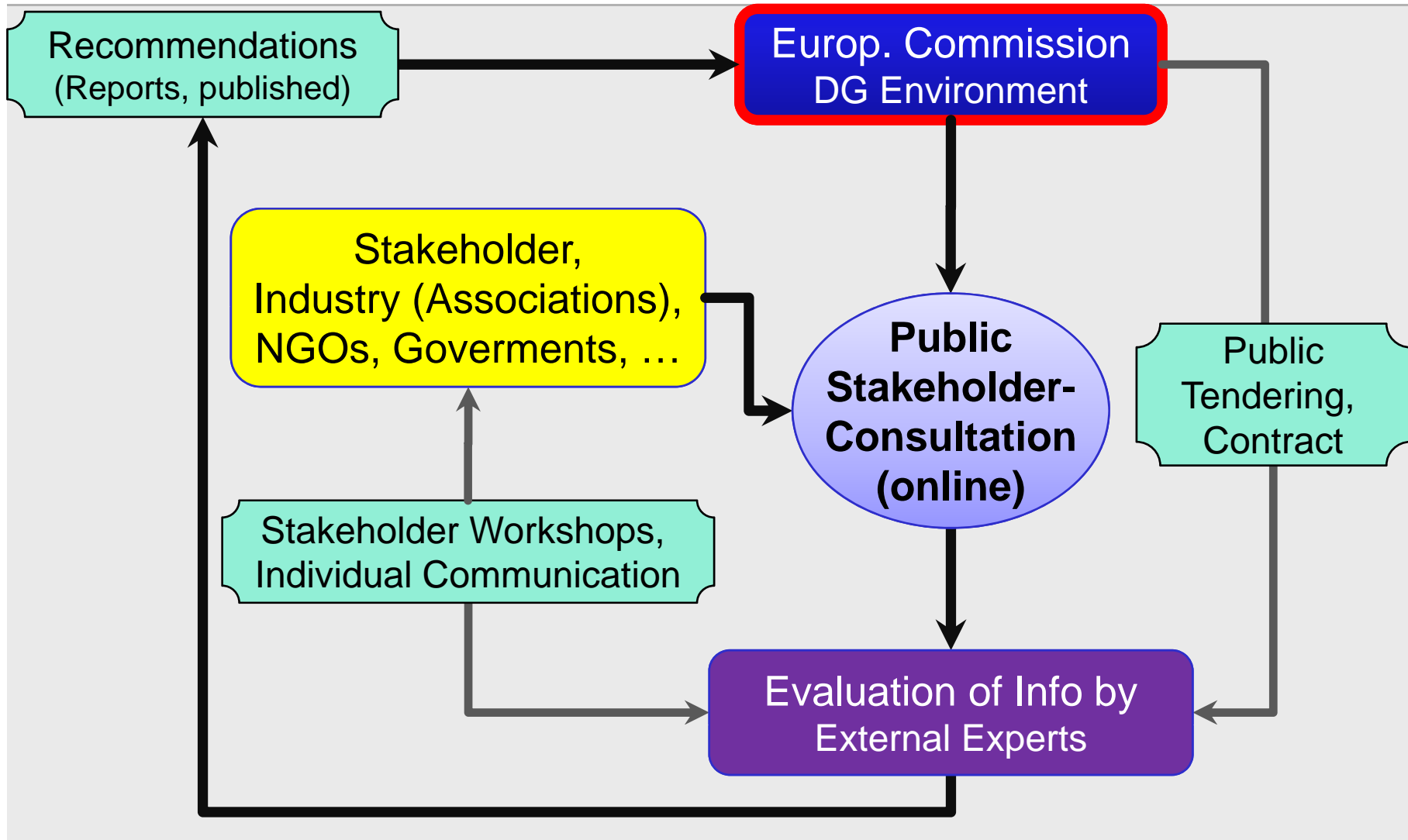
ELV-RL: End-of-Life of Vehicles, Altautorichtlinie

# Activities around RoHS and ELV

- Review of existing RoHS exemptions 1 – 29
  - Oct. 2007 to Nov. 2008
  - Ökoinstitut, Fraunhofer IZM
  - Final report published in March 2009  
[http://ec.europa.eu/environment/waste/wEEE/pdf/final\\_reportl\\_rohs1\\_en.pdf](http://ec.europa.eu/environment/waste/wEEE/pdf/final_reportl_rohs1_en.pdf)
  
- Review of exemptions in RoHS- und ELV-Directive, evaluation of new exemptions
  - December 2008 to June 2010
  - Ökoinstitut, Fraunhofer IZM
  
- Commission proposal for recast of RoHS Directive
  - Published in December 2008
  - [http://ec.europa.eu/environment/waste/wEEE/index\\_en.htm](http://ec.europa.eu/environment/waste/wEEE/index_en.htm)

# REVIEW OF ANNEX ROHS DIRECTIVE (EX. 1 – 29)

# Periodical Review of RoHS- and ELV Exemptions



# Commission Settings for the Review

- No exemption without expiry!
  - Before 2014, if (partial) substitution possible or foreseeable
    - "Technical" expiry date
  - Mid of 2014, even if no substitution possible or foreseeable
    - "Political" expiry date
  
- No request for continuation before 2014,  
no exemption after 2014!

# Recommended Changes

- Exemption 7a
  - Pb in high melting point solders (85% and more of Pb)
  - Transformation of material specific to application specific exemption
  - Expiry recommended in mid 2013
  - Industry applies for specific exemptions before expiry
  - Application and technology specific exemptions in place before expiry
  
- Exemption 7b
  - Pb in solders of servers, networking equipment, ...
  - General expiry recommended in 2014 for technical reasons
  
- Exemption 7c
  - Pb in ceramic of electronic components
  - Expiry recommended in 2012 for "dielectrical ceramics"
  - "Political" expiry for other ceramics in 2014

# Recommended Changes

## ➤ Exemption 8

Cadmium and its compounds in electrical contacts and cadmium platings

- Revoke "Cadmium platings" , no longer needed
- Expiry for one-shot pellet type connectors in June 2010
- Expiry for other contact materials in 2014

## ➤ Exemption 11

Lead in pin compliant connector systems

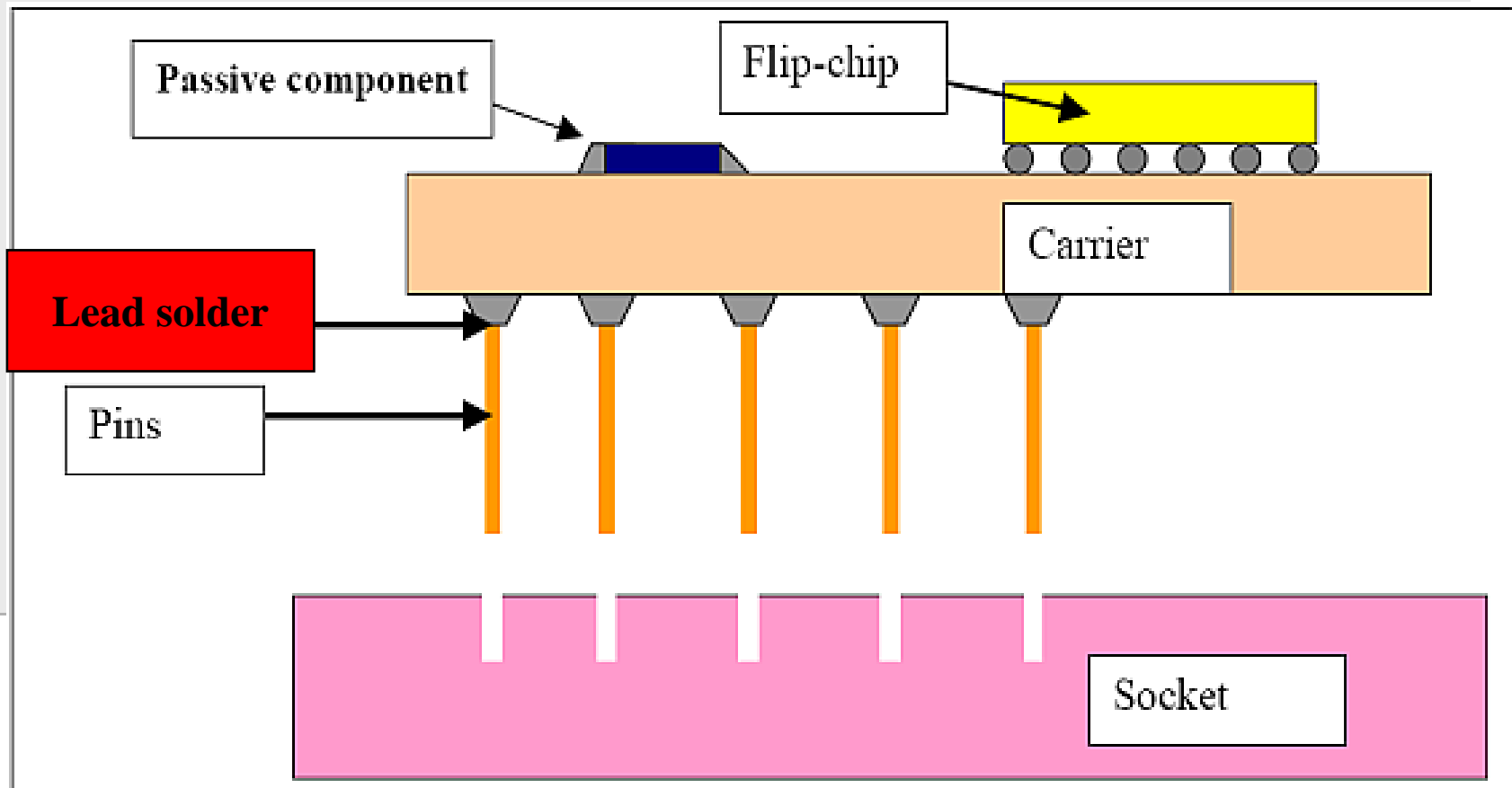
- Expiry for C-press type connectors end of June 2010
- Expiry for other types of connectors in December 2012

# Recommended Changes

## ➤ Exemption 14

Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors with a lead content of more than 80% and less than 85% by weight

- Expiry end of 2010

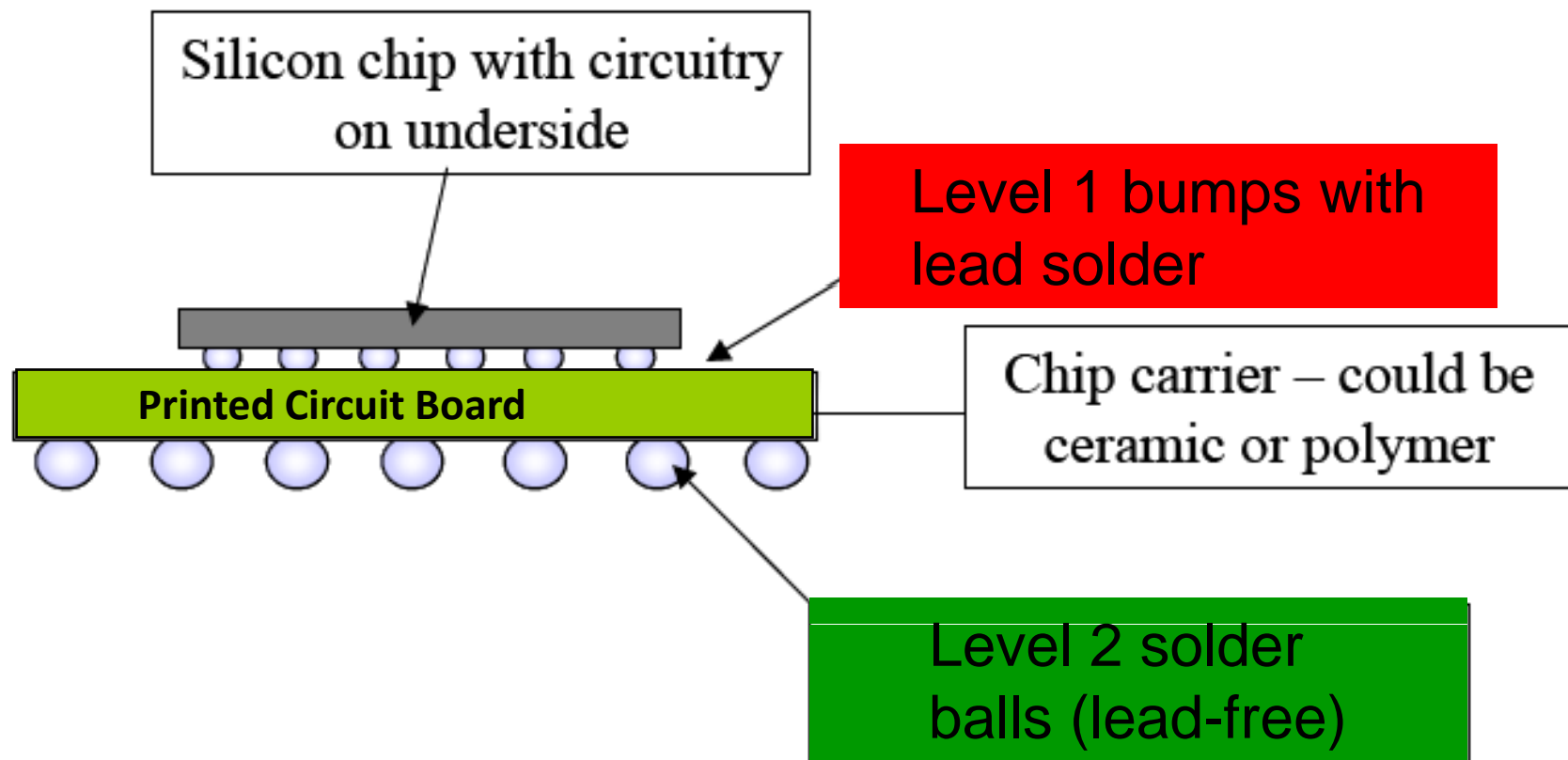


# Recommended Changes

## ➤ Exemption 15

Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip Chip packages

- Expiry in 2014



# Recommended Changes

- Exemption 22  
Lead in RIG Faraday Rotators used for fibre optic communication systems
  - Expiry end of 2009

**The most important changes**

# **COMMISSION PROPOSAL FOR RECAST OF ROHS DIRECTIVE**

# More RoHS than Ever!

- "Old" RoHS-Directive
  - 11 Articles
  - 1 Annex (Exemptions)
  
- Proposed recast
  - 23 Articles
  - 9 Annexes
  
- Online Stakeholder-Consultation (closed):
  - [http://ec.europa.eu/environment/waste/weee/events\\_rohs2\\_en.htm](http://ec.europa.eu/environment/waste/weee/events_rohs2_en.htm)

# Material Bans

- No new material bans proposed
- Risk evaluation of (already) banned substances according to REACH- Method
- Priority for evaluation of
  - Hexabromocyclododecane (HBCDD, flame retardant in HIPS)
  - Phthalates
    - Bis (2-ethylhexyl)-phthalate (DEHP, in PVC)
    - Butylbenzylphthalate (BBP, in PVC)
    - Dibutylphthalate (DBP, in PVC)
- Tetrabromobisphenol A (TBB-A) taken off from the list
  - Flame retardant, in particular in PWBs

# Easier and Quicker to New Material Bans

- Material Bans (Pb, Cd, Hg, ...) and threshold values now in Annex IV
  - New material bans easier and within shorter time in Comitology process
  - Proceeding similar to exemption process

# New Frame Conditions for Exemptions

- Commission (COM) may define
  - format for exemption requests
  - type of information to be submitted, e. g. substitution plans according to REACH
  - compliance rules with minimum threshold values
  
- Exemptions for max. of 4 years, with Option for continuation, BUT:
- No request, no exemption!
  
- COM must decide in time, if exemption request submitted at least 18 months prior to expiry!

# New Criteria for Exemptions

- Elimination/Substitution scientifically/technically not practicable
- Availability/reliability of substitute insufficient
- negative impacts of substitution on environment, health, consumer safety  
or socioeconomic effects  
outweigh advantages of substitution
- Socioeconomical effects related to REACH Annex XVI

# Extension of Scope

- Inclusion of Cat. 8
  - Medical devices from 2014 on (Def. in Directive 93/42/EWG)
  - Medical in-vitro-Diagnostics from 2016 on (Def. in Directive 98/79/EG)
  
- Inclusion of Cat. 9
  - Monitoring- and control instruments from 2014 on
  - industr. monitoring and und control instruments from 2017 on
  
- Exemptions for specific devices in Cat. 8/9 in Annex VI

# Producers' Declaration of Conformity

## Internal Production Control (Decision 768/2008/EG Module A, Annex II)

- Producer prepares technical documentation
- Keeps documents for 10 years
- Producers fill out EC-Declaration of Conformity (Annex VII)
- Producers label device with CE-label
  - Assumption of conformity until proof of non-compliance by authorities
- Similar approach like in EuP-Directive

# Technical Documentation I

- Plausible demonstration and illustration of RoHS compliance
- Product description, design, drawings, ...
  - *Highlight RoHS-relevant components and materials*
- Standards used according to Directive 98/34/EG, technical specifications
  - *IPC lead-free standards?*
  - *ISO-Product standards?*
  - *Analytical results according to standard IEC 62321?*
  - *Standardized marking for RoHS-compliant components?*
  - *Data sheets of components with composition?*
- Explain conformity if you did not use standards

Note: The text in italics reflects the author's considerations on what kind of information might be useful; it is not part of the COM proposal or the indicated Directives

# Technical Documentation II

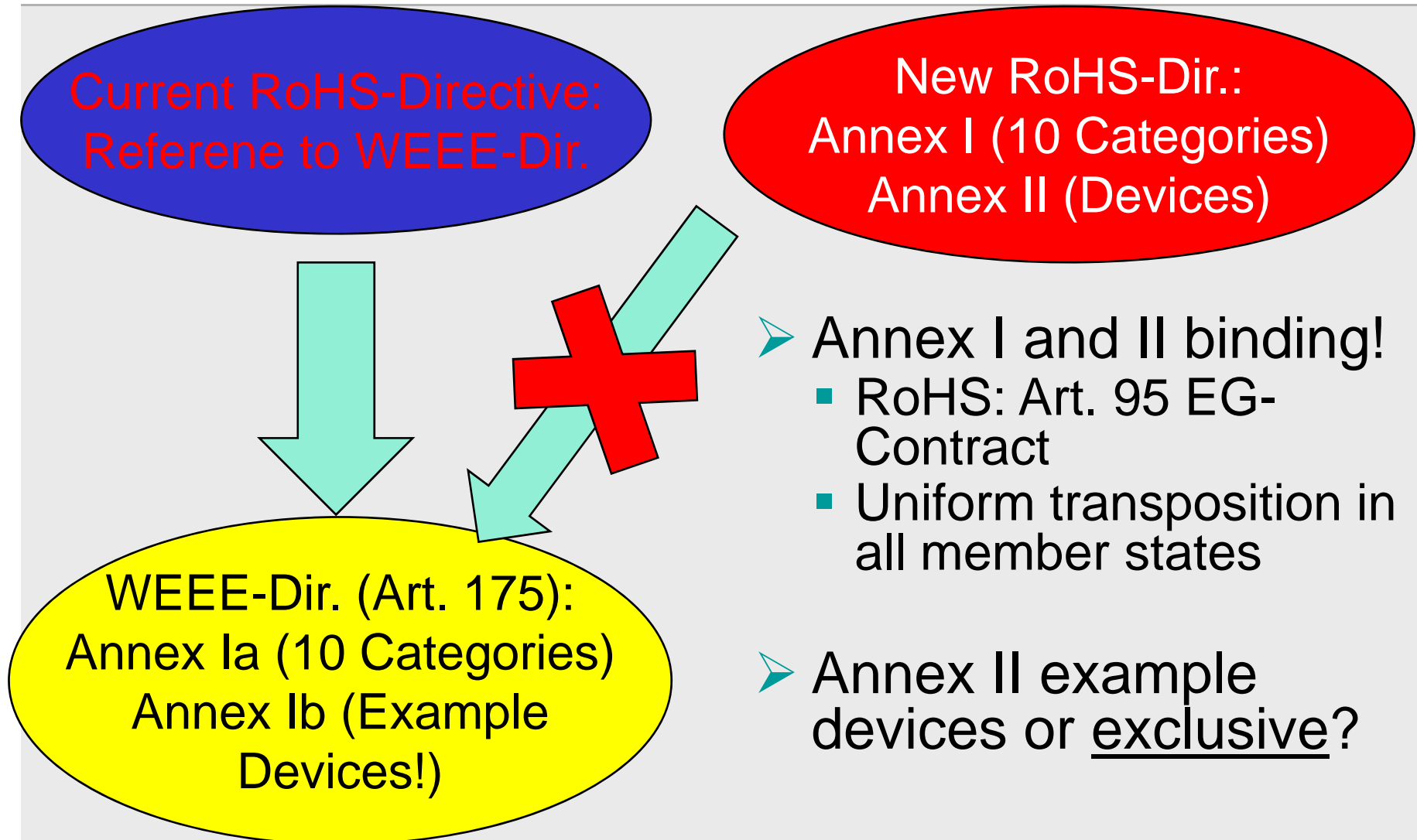
- Construction calculations, tests, test reports
  - *Component specific conformity declarations from suppliers*
  - *Random checks and analyses on RoHS compliance*
  
- Ensure Compliance in volume production
  - *Schedule and plan for testing and analysing of components*
  - *Schedule and plan for renewal of supplier certificates*
  - *Plan how to ensure conformity with new suppliers*
  - *Compliance plan for product changes*
  - *Etc.*
  
- Producer maintains "Complaint Book"
- Producer informs retailers and wholesalers on his measures

Note: The text in italics reflects the author's considerations on what kind of information might be useful; it is not part of the COM proposal or the indicated Directives

# New Responsibilities for Importers and Traders

- Put only compliant products on the market
- Check and keep available producers' proof of conformity
- Interfere with corrective measures like random compliance checks (Importers)
- Inform authorities

# New Hope for the Scope: Clarification?



# The Time will Come ... ?

- Adoption of new RoHS Directive and Annex with reviewed exemptions probably not before early/mid 2010
- Member states have 18 months time for transposition into national regulation

# Europe's Car of the Year 2011 because ...

absolute electronics free!

easy to repair!

zero-emission  
air-conditioned!



Source: [www.wikipedia.org](http://www.wikipedia.org)

# Current Wording and Deadlines

## ➤ Exemption 8a

- Solder in electronic circuit boards and other electrical applications except on glass

in

- vehicles type approved before 31 December 2010
- and spare parts for these vehicles
- Review in 2009

## ➤ Exemption 8b

- Solder in electrical applications on glass

in

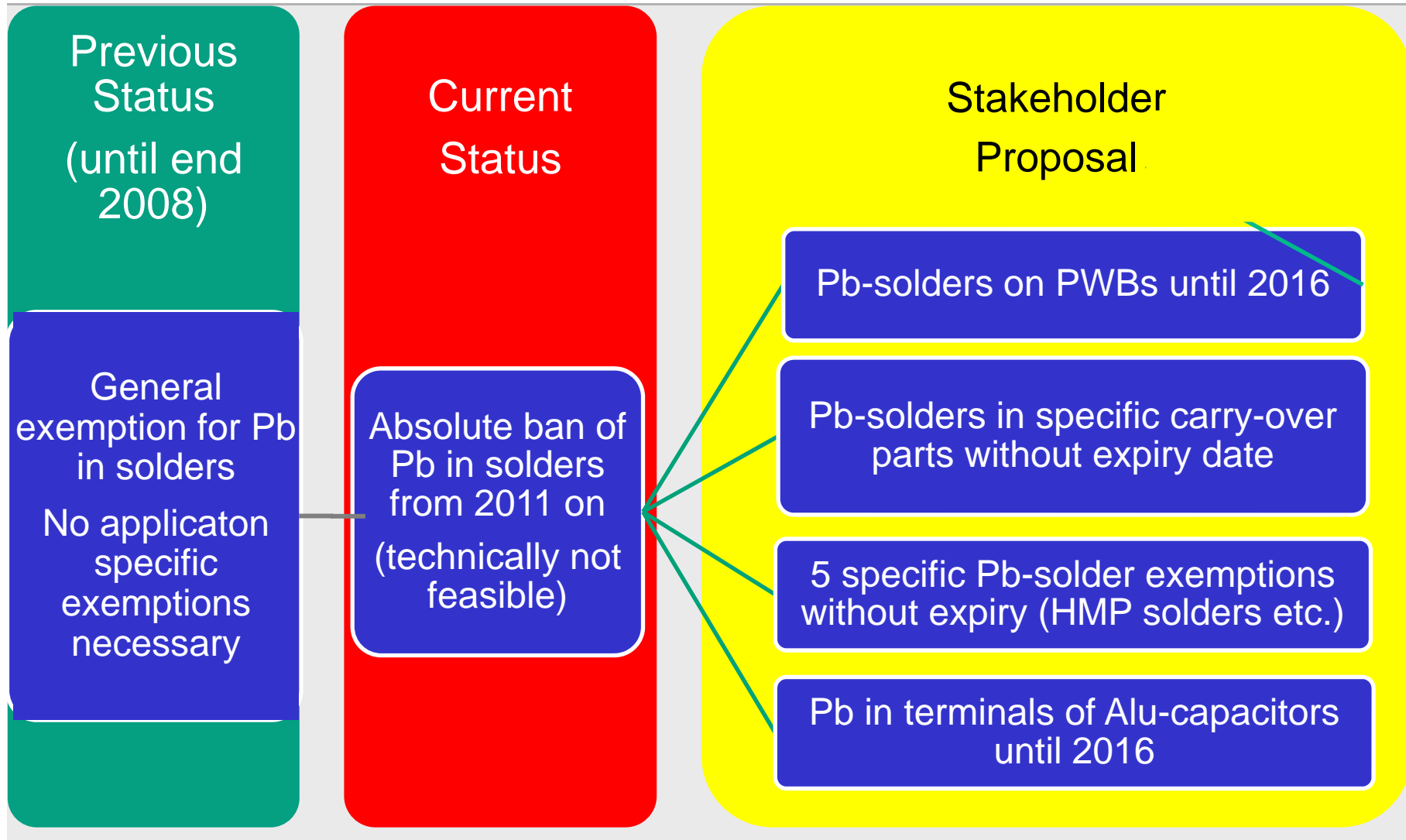
- vehicles type approved before 31 December 2010
- and spare parts for these vehicles
- Review in 2009

# Let's do it all together: RoHS & ELV

- Review of exemptions in RoHS & ELV
- Ökoinstitut, IZM
- Dec. 2008 bis Juni 2010
- Review of ELV Annex II (all exemptions?)
- Assimilation to RoHS exemptions as far as (technically) possible
- Online-Consultation for exemptions 8a/b (Lead in solders) closed 9 March 2009

ELV: End-of-Life of Vehicles, Altautorichtlinie

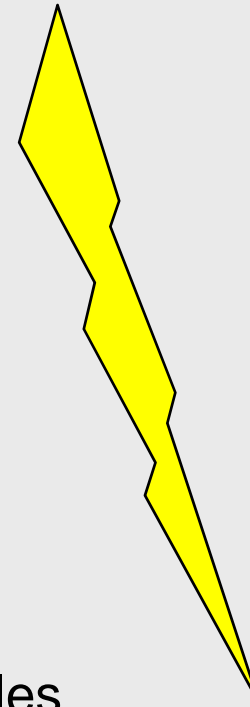
# From General to Specific - Splitting of 8 a



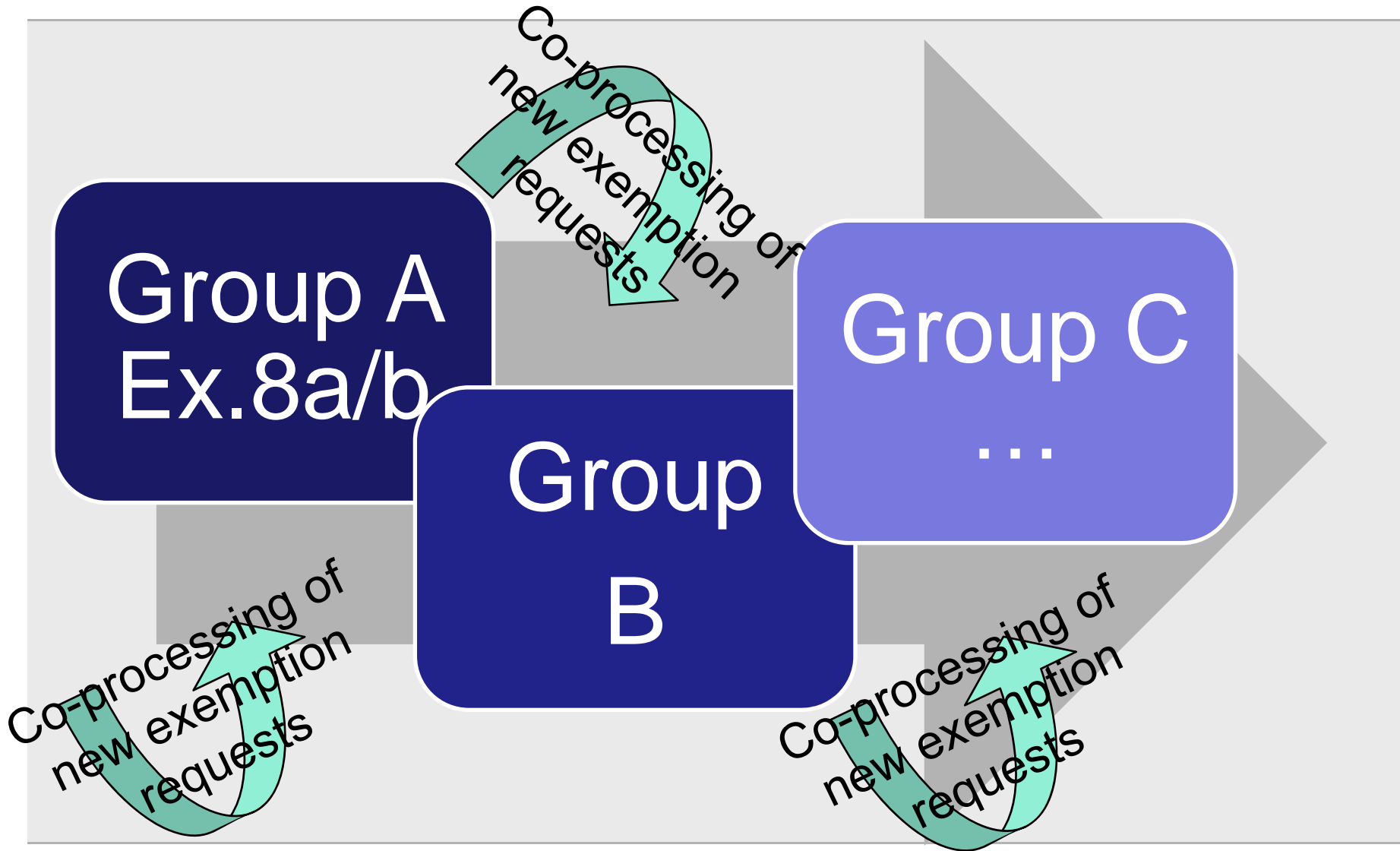


# Status Exemption 8b

- Lead in solders on glass in vehicles
- Vehicle and glass manufacturers
  - Pb-free from 2015 on
  - in new type-approved vehicles
- Counterposition Antaya
  - Pb-free from 2011 on in new type-approved vehicles



# Further Proceeding



# The Process

## Group of Exemptions



# The End

## Use our information services:

### RoHS, ELV, REACH, EuP

- Current status?
- Upcoming changes and what do they mean for you?
- Subscribe our customer specific newsletter
- We do individual consulting

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