Action Plan Session:
Working Group on Exposure Models

Dr. Natalie von Goetz

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Dr. Urs Schlüter

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BAuA – ISES-Europe Councillor Communication & Capacity Building

Contents

- **Invited speakers**
  - Nenad Savic: "TREXMO plus"
  - Natalie von Goetz, Urs Schlüter: "Possible Future Plans of the Working Group on Exposure Models“
- **Translation of Needs/Trends of Working Group topics into Action Plan and Road Map 2020-2030**
  - Prioritisation of Actions
  - Projects/Tasks
  - Timelines
- **Wrap up presenting draft action plan and roadmap**

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Possible Future Plans of the WG on exposure models

Dr. Natalie von Goetz

– FOPH – ISES-Europe Councillor Outreach & Education

Dr. Urs Schlüter

– BAuA – ISES-Europe Councillor Communication & Capacity Building

What happened so far:

– **Needs Assessment** during Workshop last year, June 2018

– First Ideas Paper, Dec. 2018

– WebConferences, Feb., April, May 2019, and E-Mail-exchanges for Identification of "**Fields of Interest**"

– First Face-to-Face meeting, NOW

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Needs Assessment

1. Improving Existing Models

Develop guidance on what tool/model to use in different situations ensuring the complexity for use in regulatory context is not too high

a. mapping of relevant models,
b. define applicability domains,
c. identify/develop good modelling practice
d. detailed look on model parameters (e.g. activity, vapor pressure) and how they are coded for exposure modelling purposes
e. analysis on parameters that may have to be included in models but are still missing (e.g. turbulence)

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Needs Assessment

1. Improving Existing Models

Develop criteria for reliability of modelled data

a. Scoring system for reliability of modelled data
b. Develop methods for evaluation of models
c. Define uncertainty factors for default values in models

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Needs Assessment

2. Identification of (applicability) gaps and inform on needs for new data generation / model developments. Further develop models/methods for

a. mixtures,
b. release from articles,
c. aggregate exposure
d. nanomaterials
e. oral or dermal exposure

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Needs Assessment

3. Development of innovative methods/approaches in exposure modelling, e.g.:

a. big data,
b. machine learning,
c. 3D input data,
d. artificial intelligence,
e. neural networks,
f. link external and internal exposure.

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Needs Assessment

4. **Develop methods to address the inter-user variability in exposure modelling**

5. **Best practices for modelling (e.g. as a chapter for a handbook covering all aspects of exposure science)**

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Needs Assessment

6. Long term goals, with possibly higher regulatory impact and consequences:

a. Harmonized template for model documentation and reporting across and within regulations.
b. Proposal for a common framework for model acceptance across and within regulations.
c. Contribution to the development of tools until their regulatory readiness, including validation, user-interface, transparent documentation and user-group testing with case studies.
d. Contribution to a business model ensuring long-term maintenance of models.

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Fields of Interest

Existing models

- evaluation of criteria for exposure models/tools
- compilation of a list of exposure models/tools
- (model uncertainty characterisation)

New developments

- future of regulatory exposure modelling
- develop methods and techniques for release and exposure of substances from materials and articles
- (modelling of multiple exposures)

Dissemination, Training

- develop a list of training course details

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Existing models

- **Evaluation of criteria for exposure models/tools**
  - Draft available by Peter Fantke et al., not yet discussed
  - Represents parts of **Need 1** “Develop guidance on what tool/model to use …”

- **Compilation of a list of exposure models/tools**
  - Agreed as action during WebConference
  - Tim Meijster in lead, not yet available
  - Represents **Need 1**a “mapping of relevant models”

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New Developments

- **Future of regulatory exposure modelling**
  - Input by Nenad Savic in this session
  - Draft available, already under discussion via Email
  - Represents parts of **Need 3** “Development of innovative methods/ approaches in exposure modelling…”

- **Release and exposure of substances from materials and articles**
  - Draft available by Tatsiana Dudzina et al., not yet discussed
  - Represents parts of **Need 2** “…. Further develop models/methods for: mixtures, release from articles,…”

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List of Training Course Details – Example

Focus / Tool	Type of Event	Language	Date	Location	Fee	Prerequisites	Remarks	Information / Contact
GESTIS-Stoffenmanager	Training course	German	March 18-19 2020	IFA, Sankt Augustin DE	375 €	E-Mail address Notebook with connection to the internet	Includes practical exercises	G13-Seminar: Einstieg in die Gefährdungsbeurteilung mit GESTIS-Stoffenmanager®
Stoffenmanager	Webinar	English	April 11 2019	---	---	---	---	Registration
French tools for chemical risk assessment	Series of OnLine Webinars	French (subtitles available)	---	YouTube Channel „Seirich“	---	Internet connection	Playlist „webinars“ SEIRICH, MiXie	https://www.youtube.com/playlist?list=PL5QUdWQmf-e91Ti4LrwqBFHvOfyQpwWKq

- Represents parts of **Need 4** “Develop methods to address the inter-user variability in exposure modelling”
- information missing?

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Presenting Draft Action Plan and Roadmap

Action	Specific Tasks	Priority	Suggested Lead Stakeholder (not necessarily workshop participants).	Suggested Supporting Stakeholders (not necessarily workshop participants)	Timeline
1. *Improving Existing Models* *Develop guidance on what tool/model to use in different situations ensuring the complexity for use in regulatory context is not too high* a. *mapping of relevant models,* b. *define applicability domains,* c. *identify/develop good modelling practice* d. *detailed look on model parameters (e.g. activity, vapor pressure) and how they are coded for exposure modelling purposes* e. *analysis on parameters that may have to be included in models but are still missing (e.g. turbulence)* *Develop criteria for reliability of modelled data* a. *Scoring system for reliability of modelled data* b. *Develop methods for evaluation of models* c. *Define uncertainty factors for default values in models*	Field of Interest – Existing models • Evaluation of criteria for exposure models/tools	☐ H ☐ M ☐ L ☐ No	Peter Fantke, DTU; Christian Delmaar, RIVM; Frederic Clerc, INRS; Stefan Hahn, ITEM; Natalie von Goetz, BAG; Dorothea Koppisch, IFA; Karen Galea, IOM; Sandrine Fraize-Frontier, ANSES	ISES Europe Regional Chapter	☐ 2020-2022 ☐ 2022-2024 ☐ 2024-2026 ☐ 2026-2028 ☐ 2028-2030