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Closer to the Market (CTTM) Roadmap

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Introduction

The level of safety achieved from any application varies with space and time and is related to the quality and benefits the new technology offers, and consideration of safety in them

new technology application → **regulation → RRR**

Development of new rules/practices → **solid scientific knowledge → Coordinated contributions from science community**

Safety of a technology → market itself

Closer to the Market – Scope

Support the commercialization of new technology

- Provide the technology, skills, processes, necessary for science-based best NanoSafety practices in the industrial & commercial activities (based on coordinated NSC and national platforms activities)
- Setting minimum requirements for jobs and required skills
- Addressing bottle-necks
- Building capacity, building reliable tools, organisational tasks, international cooperation, epidemiology

Building capacity for formalisation of jobs

- Risk monitoring
- Risk prevention/ Risk minimization
- Risk mitigation
- Risk communication

- Monitoring of Exposure (benchmark levels)
- Epidemiological studies (using harmonized protocols)
- Data combination of hazard and exposure → Risk assessment → "**safe and/or tolerable**"
- Safety-by-Design
- Control mechanisms and measurements
- Best practice

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Building capacity for formalisation of skills

- Standardization
- Education
- Professional Training and Certification

- Documents on requirements, specifications, guidelines or characteristics
- Informed public
- Workplace safety

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Building reliable tools for nanosafety at work

- Risk management model
- Safety Data Sheets
- Occupational Exposure Limits (OELs) and Tox Reference Values (TRVs)´

- Test, validation and dissemination
- Risk Management Model (RMMe)
  - Occupational Exposure
- Detailed information on health & safety
- Exposure to workers and population
- Translation of scientific data

Organisation/Inventory

The challenge of managing safety may be given to nanosafety platforms in each country

- **NanoSafety Research Centers**
  - E.g. Finnish NanoSafety Research Centre , the Danish Nano Safety Centre, Namur nanoSafety Centre, EURO-NanoTox, Veneto Nanotech, LEITAT, RIVM, TNO, EMPA, INRS, DGUV,…
- **NanoSafety (experts) platforms**
  - E.g. KIR nano, BioNanoNet,…
- **NanoSafety Collaborations**
  - E.g. EHS-Advance, Nanocentre, NanoHouse, INERIS and CEA,…

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International cooperation

examples of cooperation potential with USA, Latin America, Australia, China

- United States: Community of Research [EU/US-collaboration in the frame of SIINN ERA.Net / ProSafe?]
- Latin America: NMP-DeLa and NANoREG collaboration
- Australian Initiatives: NICNAS; ARC Centre of Excellence in Convengent Bio-Nano Science & Technology
- China: dedicated research calls between certain countries (e.g. FIN, AT, UK, etc.) with China on Nanoscience and Nanotechnology, also adressing NanoSafety

Join forces with NANoREG in building up international cooperation...

Cooperation expectations to be collected...

- Industry and market view
- Science view
- Governmental view
- European Commission's view

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Examples of current bottle-necks
(potential market barriers)

- Occupational safety: sustainable marketing requires that employees and employers are confident in the safety of the process
  - Lack of awareness of employees and employers; of reference control banding tools; of reference protocols for NanoSafety assessment; of Occupational Exposure Limits (OELs); of transmission of the nanosafety information through the Safety Data sheets; of nanosafety management systems; of regulation specifying requirements to ensure the safety and health of workers exposed to nano-risks; …
  - Uncertainties in risk assessment and in efficiency of prevention/ protection measures; …in the agreement system;
  - Mistrust towards employers in the field of Nano-OSH

Examples of current bottle-necks
(potential market barriers)

- Public safety: …that consumers are confident in the safety of the products
  - Mistrust towards regulation (REACH: adapted to nanos?); towards employers in the field of Nano-OSH…
  - Lack of Toxicological Reference Values (TRVs)

Fields of Activities

- Networking
- Benchmarking
- Data collection
- Reporting
- Communication
- Standardisation

- Raw and processed data
- eNanoMapper
- Exposure Library
- Description for material and methods
- Unbiased, targeted and reliable communication
- Harmonized, validated methods and protocols
- Reference material
- Interlaboratory comparison
- Draft standards

Fields of Activities

- Certification
- Assistance to new-comers
- Feedback for fixing next research priorities
- Assistance to regulators
- Professional Training and Certification
- Certification of skills
- Pooling of national funding/ressources

- Standard Operating Procedures (SOP)
- Method validation
- Robust, reproducible and transferable method
- Validation of methods
- Nano-Network (Data sharing)
- Trained workforce (in all actions)
  - Up-to-date, Science-based training
- Investigation of common interest
  - Transnational approach

Expected outcome

Guidance to market actors (industry, public authorities)

Best practice

Standards, technical approvals

Environment protection

Operational certification systems

- SCCS, ECHA, REACH, EFSA, OECD…

1. Tier: Overlook
2. Tier: Closer-Look
3. Tier: Specific Guidance

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CTTM – Core Topics
(potential proposals)

- European hub structure in applied nanotoxicology and safety of nanoenabled products, facilitated by a scientific expert committee
- European Service Provider Platform (SPP) on nanotoxicology and safety of nanoenabled products
- Finalization, validation and characterization of uncertainties and limits of test protocols for the derivation of Toxicological Reference Values (TRVs)
- Evaluation the relevance of industrial techniques in terms of nanosafety
- New Test-Methods
- Up-to-date real-life monitoring
- Life-Cycle Assessment
- Professional training and Education, Certification

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Next steps (2015)

- Jan 2015 – finalisation of CTTM – roadmap
- Spring 2015 – preparation of Research- and CSA-topics for the next calls, addressing the bottlenecks.

Propose an activity bringing together the EC's and member states efforts and to build, staff, operate and coordinate nanosafety management platforms.

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Some impressions from this meeting…

„NM high likelihood to pass biological barriers“

“Encourage cross project technical best practice; formal collaborations between projects”

“Community building, data-sharing, data quality, open access, repository,…”

“Pursuating people – convince the public based on high quality science” “balanced dialogue”

“Benchmarking – asking the right questions”

“Characterisation, reliable results, classification,…”

“NSC workshop series…”

→ need for coordination&driver of all these efforts…

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