Merging of the Roadmaps

Kai Savolainen

NanoSafety Cluster meeting,
Grenoble, November 9, 2016

Overall goals of the merging of the roadmaps

- To carry out the necessary updating of the documents
- To align the documents with each other to prepare one stand-alone document the elements of which support each other
- To provide a meaningful path: 1) from the lab and discovery; 2) through supporting regulations; 3) to economically beneficial innovations and marketable products; 4) by supporting the safety and responsible use of ENM and nanotechnologies at all stages of the process

Strategic Research Agenda (SRA), Research Roadmap

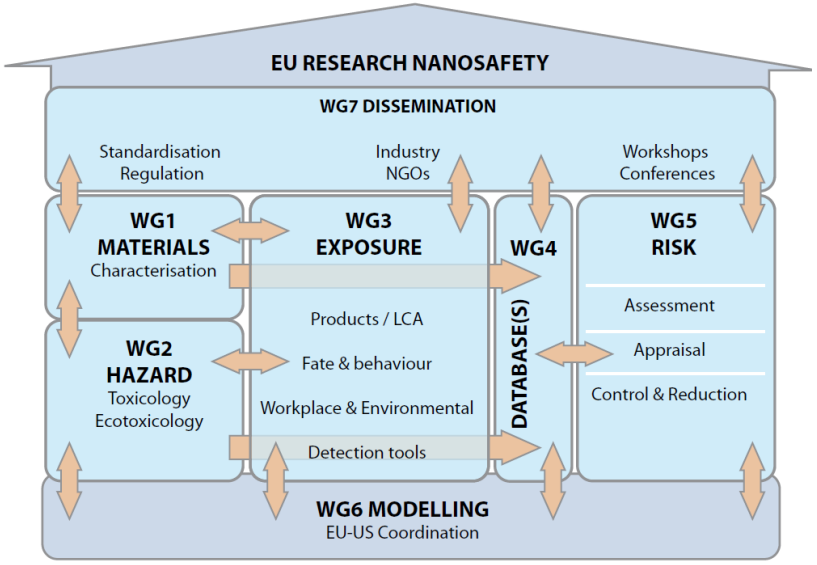
- Strategic Research Agenda (so called blue book) ”Nanosafety in Europe 2015 – 2025: Towards Safe and Sustainable Nanomaterials and Nanotechnology Innovations” was prepared by the NSC during 2011 – 2013 and modified and finalized by the Coordination Group
- The document was handed to the EU Commission during EURONANOFORUM ‘2013 in Dublin, and has been used to shape contents of the HORIZON’2020 nanosafety call texts

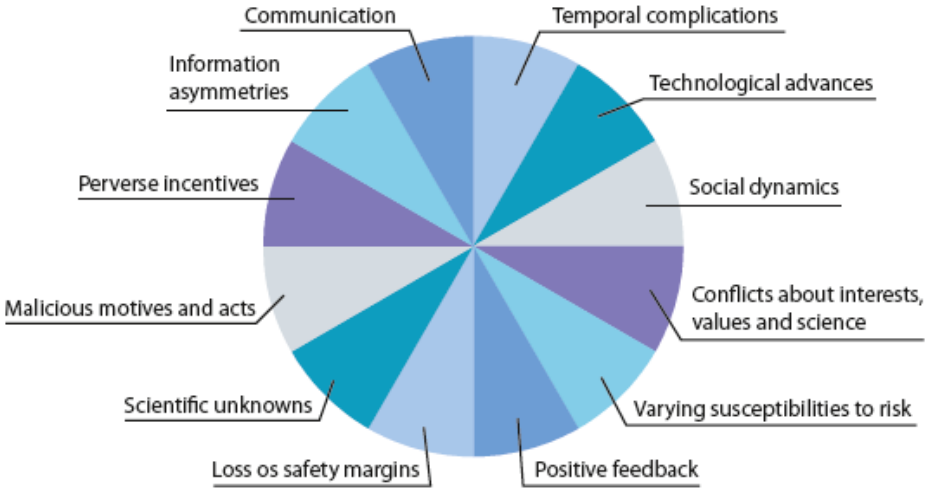
Purpose of the SRA

- Provide understanding of the current situation and present the research landscape when preparing the SRA
- Analyze the prerequisites of successful nanosafety research
- Identify the knowledge gaps and knowledge needs
- Propose priorities for future nanosafety research

CONTENTS OF THE SRA

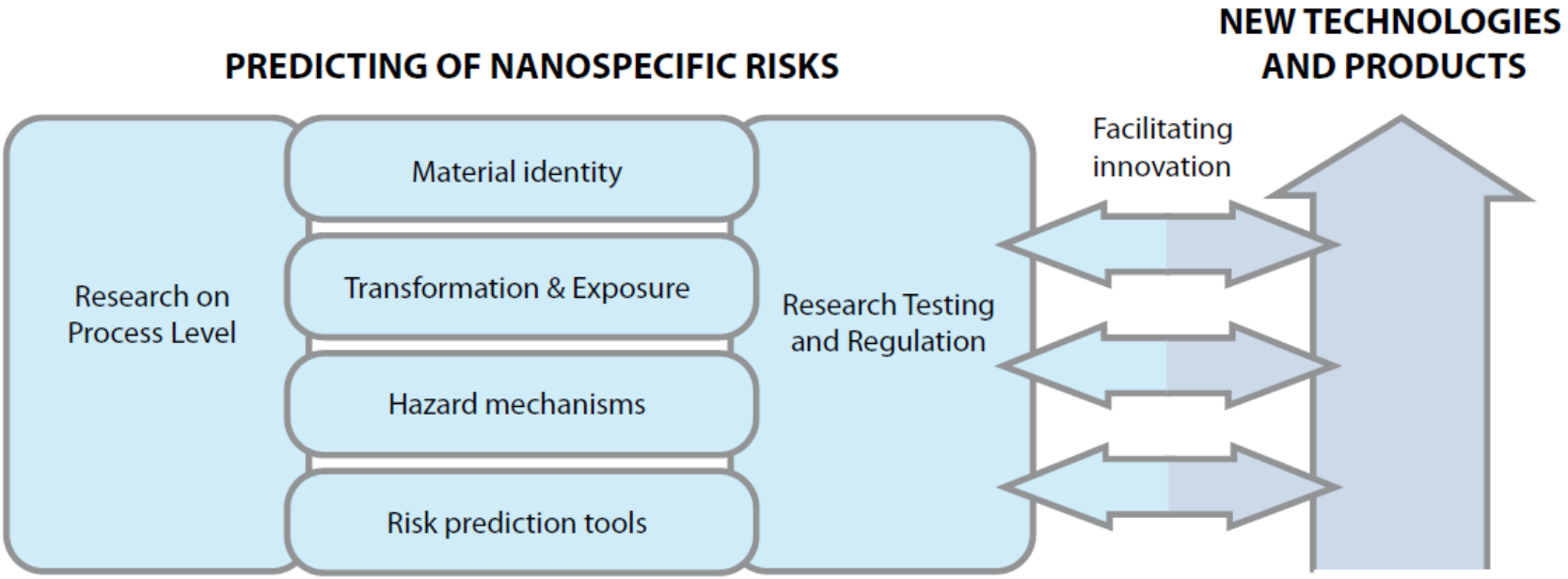
Introduction & the nanosafety research landscape





Introduction and background

Nanosafety for Innovation and Sustainability



All subaims shall feed to the overall aims of predicting and controlling possible nanospecific risks.

Common nanosafety research themes

1. Nanomaterial identification and classification
2. Exposure, transformation and the life cycle
3. Hazard mechanisms, biokinetics, and vulnerable populations
4. Risk prediction and management tools

The goal would be to reassess the nanoscience-based safety and innovation needs, the landscape & **research priorities** to boost innovations, and align the SRA with RRR & CTTM

Regulatory Research Roadmap
Vicki Stone & WG (following slides from Vicki Stone)

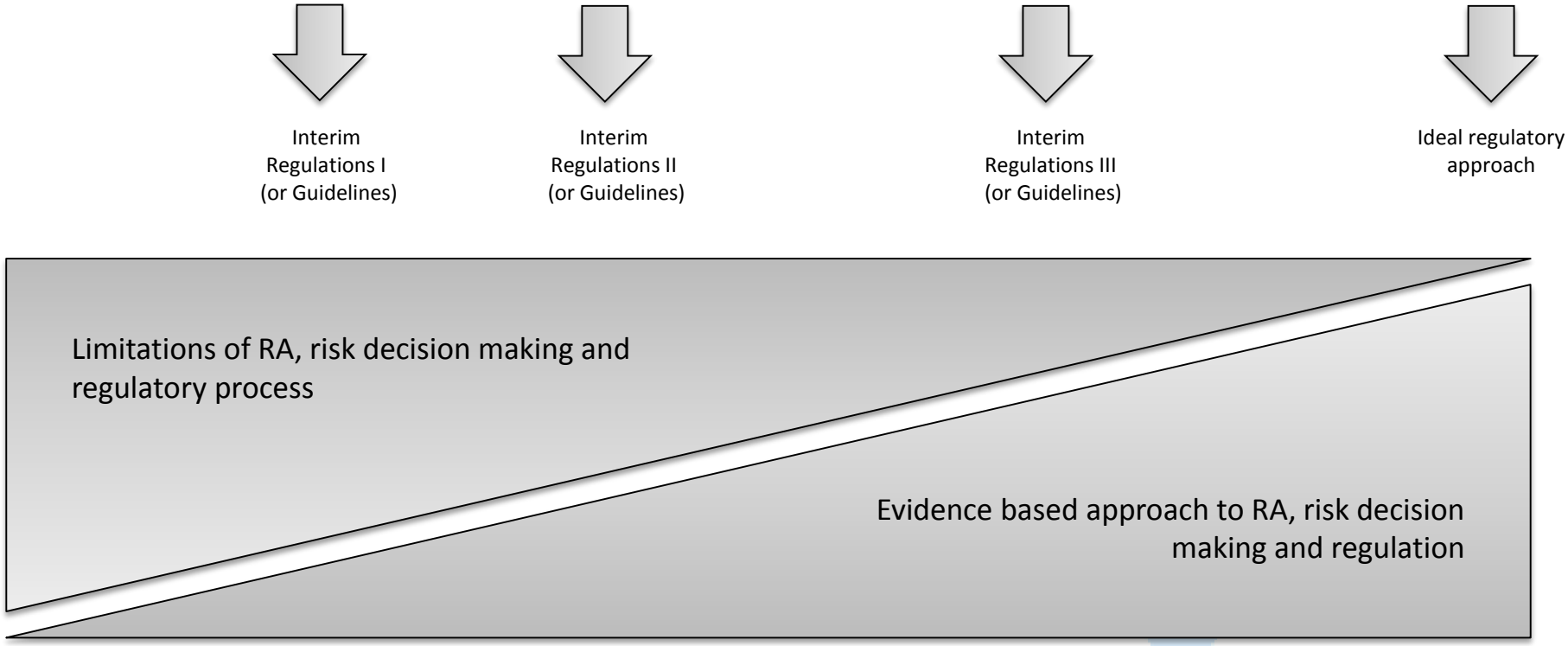
Regulatory Research Roadmap Purpose

- To identify and structure the research required to deliver effective regulation of nanomaterial safety
- Including
  - Consumer
  - Occupational
  - Sector specific issues
- Excluding
  - Nanomedicine

RRR diagram so far

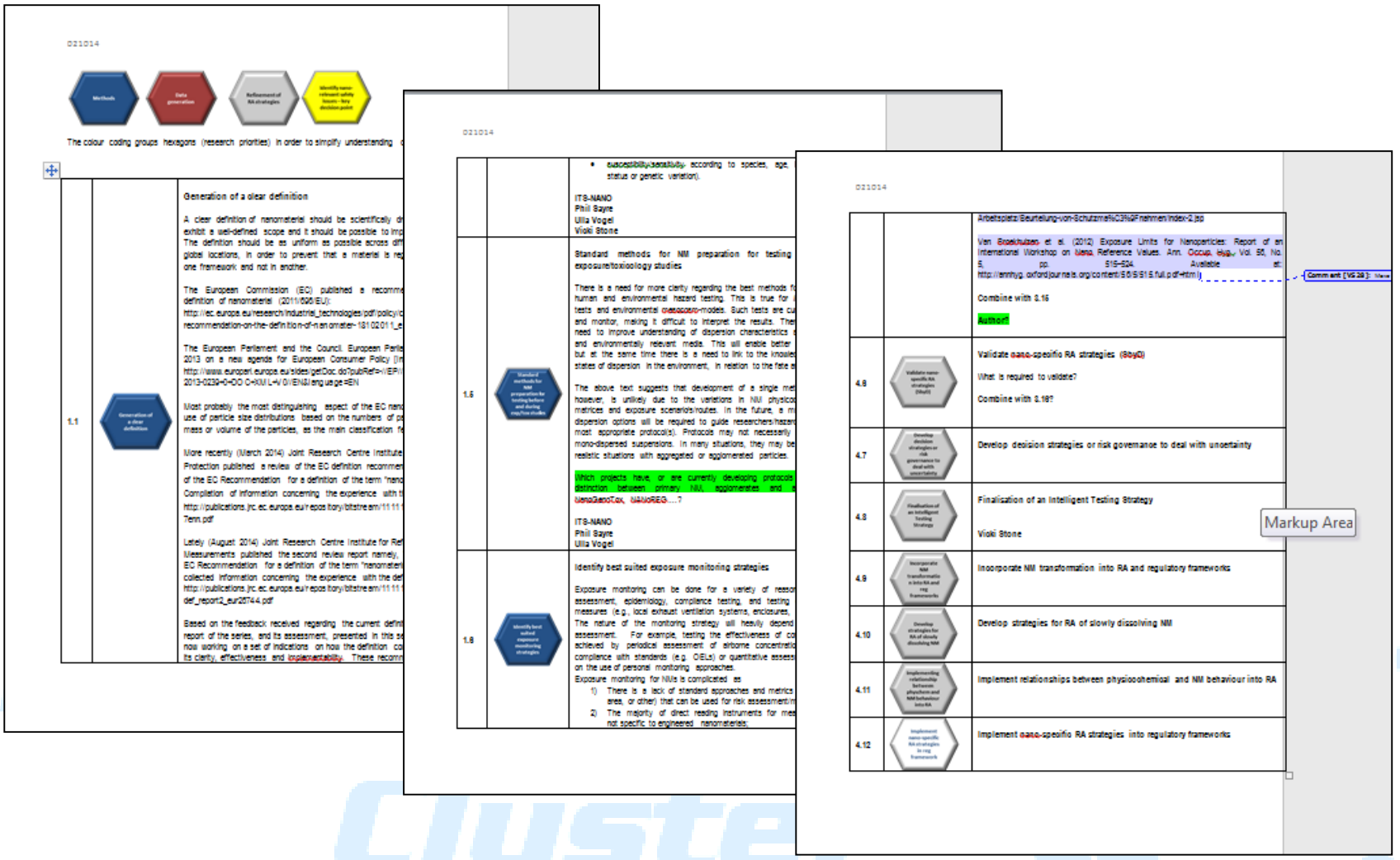
- 50 Research priority hexagons identified
- 21 methods
- 11 data generation
- 16 Refinement of RA strategies
- 1 Identify nano-relevant safety issues – key decision point
- 1 implement nano-specific RA strategies in regulatory frameworks
- 3 interim regulations generated over time lead to a final fourth ‘ideal regulatory approach’

We can't wait 15 years before identifying and acting upon nano-relevant regulation needs……



Regulatory approaches could increase in sophistication with time as the knowledge base increases - 'something is better than nothing'

RRR text so far (37 pages)



Goals & to be done

- Align identified research priorities with the regulatory needs, to assure large enough overlap
- A few days of edits to be incorporated
- Summary
- Conclusions
- Goal – finish by Christmas

Closer to the Market (CTTM) Roadmap

NanoSafety Cluster Meeting; 9th of November 2016, Grenoble

ANDREAS FALK

BIONANONET FORSCHUNGSGESELLSCHAFT MBH (BNN), AUSTRIA

(SLIDES FROM ANDREAS FALK)

Scope

- Identify best practice and unfulfilled gaps in terms of where and how the scientific/research community, via H2020 and member state funding initiatives, can support the commercialization
- main directions/goals:
  - Setting minimum requirements for nanosafety-related **jobs**, **skills** and/or **tools**
- CTTM is a plan that matches short-term to long-term goals with specific solutions to help meet those goals (see chapter 2.5 and 2.6)
- CTTM has three major uses:
  - it helps reach a consensus about a set of needs and the technologies required to satisfy those needs;
  - it provides a mechanism to help forecast technology developments; and
  - it provides a framework to help plan and coordinate technology developments

Bottlenecks

- Bottleneck – Solutions – Layer(s) concerned

Lack of nanosafety management systems **Lack of integration of nanosafety issues into industry processes.**	• **(sector specific) nanosafety management systems, proportional to the respective situation** • **Standardisation, training and certification** • **Translate and encapsulate the results of research in a battery of practical methods, strategies and tools for the management of nano-risks** • **Harmonized standards**	**1. Scientific knowledge** **3. CTTM**

- Chapter 2.5

Actions proposed

- Current challenges – Activities – Timeline

Lack of nanosafety management systems
Lack of integration of nanosafety issues into industry processes.
	• Reporting/Networking
	  ▪ Development, testing, validation and dissemination of holistic, consistent and cost effective RMM
	• Certification of methods
	  ▪ Transferability of RMM methods need to be demonstrated in a second stage, typically be performing round robin exercises
		Short term

- short term → 2018-2020; long term → 2020 and beyond
- Chapter 2.6

Expected outcome

- Guidance to market actors (e.g. industry, public authorities)
- Best practice
- Standards, technical approvals
- Environmental protection
- Operational certification systems
- Epidemiological studies

Impact

- improvement of efficacy of toxicology studies of nanomaterials and certification of methods
- provide industrial stakeholders and the general public with appropriate knowledge on the risks of nanoparticles and NMs for human health and the environment
- overcome the existing lack of knowledge transfer in the economic and societal point of view
- earlier building of “Business Plan(s)” and integrate in the “Business Plan” the nanosafety dimension of any product supports the better and the faster movement towards the market
- permit industry to “internalise” in their plans the safety issues

> integrate of CTTM in “strategic research and innovation agenda” of

NanoSafety Cluster

Goals and summary

- Update and align the roadmaps with each other
- Re-analyze the research landscape with the current achievements and identify updated research goals plus prerequisites to achieve them
- Identify, structure, and prioritize the research necessary for ENM RA & subsequent regulations
- Identify safety actions required for safe ENM innovations and safe commercialization
- Create a logical path from discovery through regulations supporting safe innovations reaching the market place

THANK YOU!