Readiness of control banding tools for safe innovation and regulatory occupational exposure assessment of nanomaterials

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management is lagging behind. We therefore need to bridge the gap between knowledge on hazard and risk, and 'fit-for-purpose' risk management tools and strategies supported by measurement and control methods.

EC4SafeNano will bridge this gap in an efficient and sustainable way by setting up an independent, science-based, managed Centre (hub) linked with several networks (spokes) to act at the interface between research organisations, industry, regulatory bodies, and civil society.

The objectives are to:

1. understand the needs of all stakeholders along the innovation value chain for nanotechnologies, ensuring safer, marketable, regulated and accepted long-lived products;
2. identify the resources and capabilities available to address these needs, and evaluate the capacity to provide technical solutions and actions;
3. build, test and benchmark a range of services, based on selected resources that answer stakeholder needs across the innovation value chain;
4. develop mechanisms and operating procedures to facilitate periodic updating of the "needs and resources" mapping and of the service provision;
5. develop networking activities aiming to share, benchmark and promote the EC4SafeNano services thereby enhancing and harmonizing the overall expertise, at EU level and beyond; and
6. develop governance rules and a strategic plan to prepare for self-sufficient operation beyond the project lifetime.

P64

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The nanotechnology industry has been referred to as the "new industrial revolution" because of the novel material properties of nanomaterials. Nanotechnology applications occur to diverse sectors such as electronics, clean energy, information and communication, chemistry, biotechnology, health, and the construction industry. It is estimated that by 2020, approximately 20% of all goods manufactured worldwide will involve nanotechnology, which will lead to an increased development, production and application of engineered nanomaterials. Consequently, there will be further increased risk of nanomaterial exposures in the working environment. Because adequate exposure limits have not been established for nanomaterials, there is a growing risk that an increasing number of workers may be exposed to concentrations at which hazardous effects can occur.

In order to protect workers from potential risks related to nanomaterials a number of methods have been developed including the Control Banding Nanotool, IVAM Technical Guidance, Stoffenmanager Nano, ANSES CB Tool, NanoSafer, the Precautionary Matrix and the ISO/TS 12901 control banding scheme.