

NANOfutures boosting innovation: the Industrial and Research Roadmap on nanotechnology

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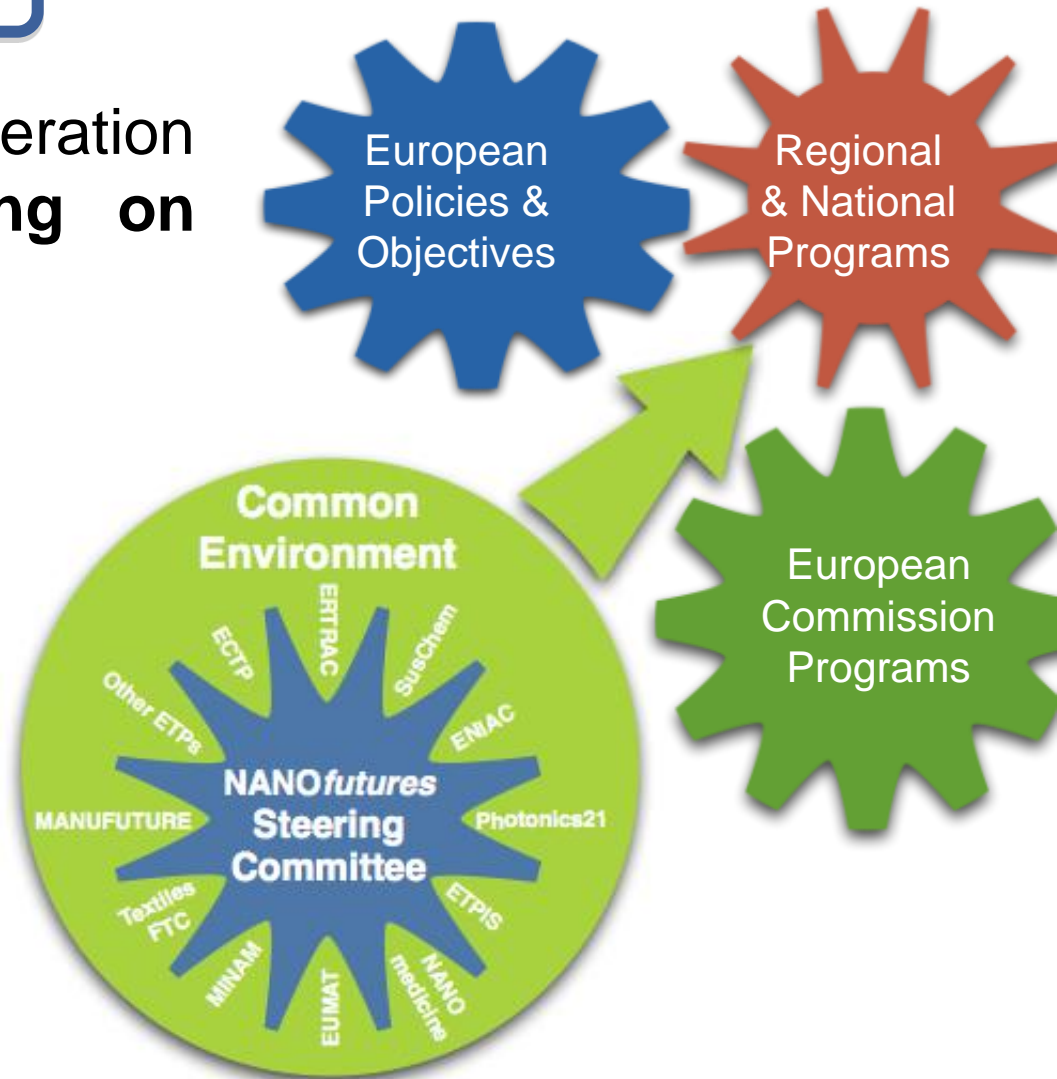
COST Action TD1105 Meeting
Rome, December 5th 2012



NANO*future*s at a glance

NANO*future*s is a new generation cluster of ETPs operating on NANOTECHNOLOGY.

- It addresses **cross-sectorial needs**, joining the efforts of all the stakeholders;
- It aims at **reducing fragmentation, aligning research and innovation efforts** for the competitiveness of European nanotechnology
- it aims at **meeting grand societal and economical challenges** through fostering the development of sustainable nano-enabled products



NANO*utures* Structure

NANO*utures* Steering Committee

- **Chair:** Paolo Matteazzi (MBN Nanomaterialia SpA, IT)
- **Co-chairs:** Prof. Kiparissides (CERTH, GR) and Peter Krüger (Bayer Material Science, DE)
- **10 Horizontal working groups chairs**
- **11 ETP representatives**, appointed by the ETPs



RESEARCH and TECHNOLOGY

INDUSTRIALIZATION

COMMUNICATION

SAFETY RESEARCH

INDUSTRIAL SAFETY

STANDARDIZATION

REGULATION

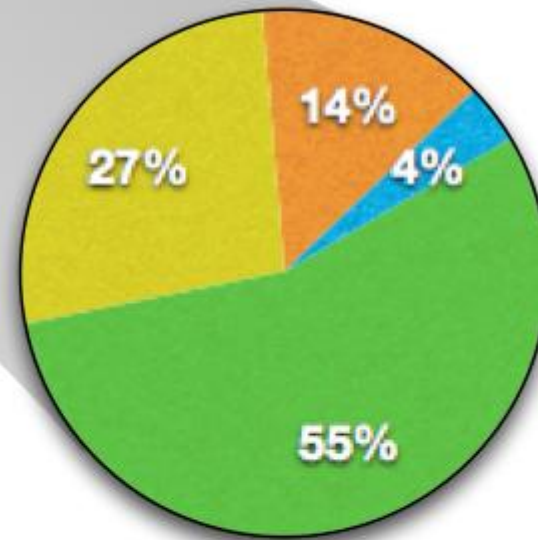
Tech.Transfer and Innovation Financing

NETWORKING

SKILLS AND EDUCATION

NANO*utures* history

In four years **NANO*utures*** has grown from the idea to share common industrial/scientific experiences in the nanotechnology field within an **European Technology Integrating Platform**



The NANO*utures* community has reached more than **760 members**, composed by industry 27%, research 55%, EU commission/ministry 4%, Network/acciciate/other 14%



NANO*future*s History

- a strong **link** with sectorial **ETPs** has been established
- a **collaborative environment** open to all the hundreds of members where a wide exchange of experience and ideas were possible:
 - Large Working Groups for Horizontal issues
 - Selected Expert groups for Key Nodes
- a **roadmap** for EU nanotechnology has been released
- a **method** to analyze the needs from several industrial environments has been provided with openness and transparency



Roadmap Overview

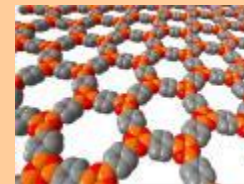
Industrial sectors



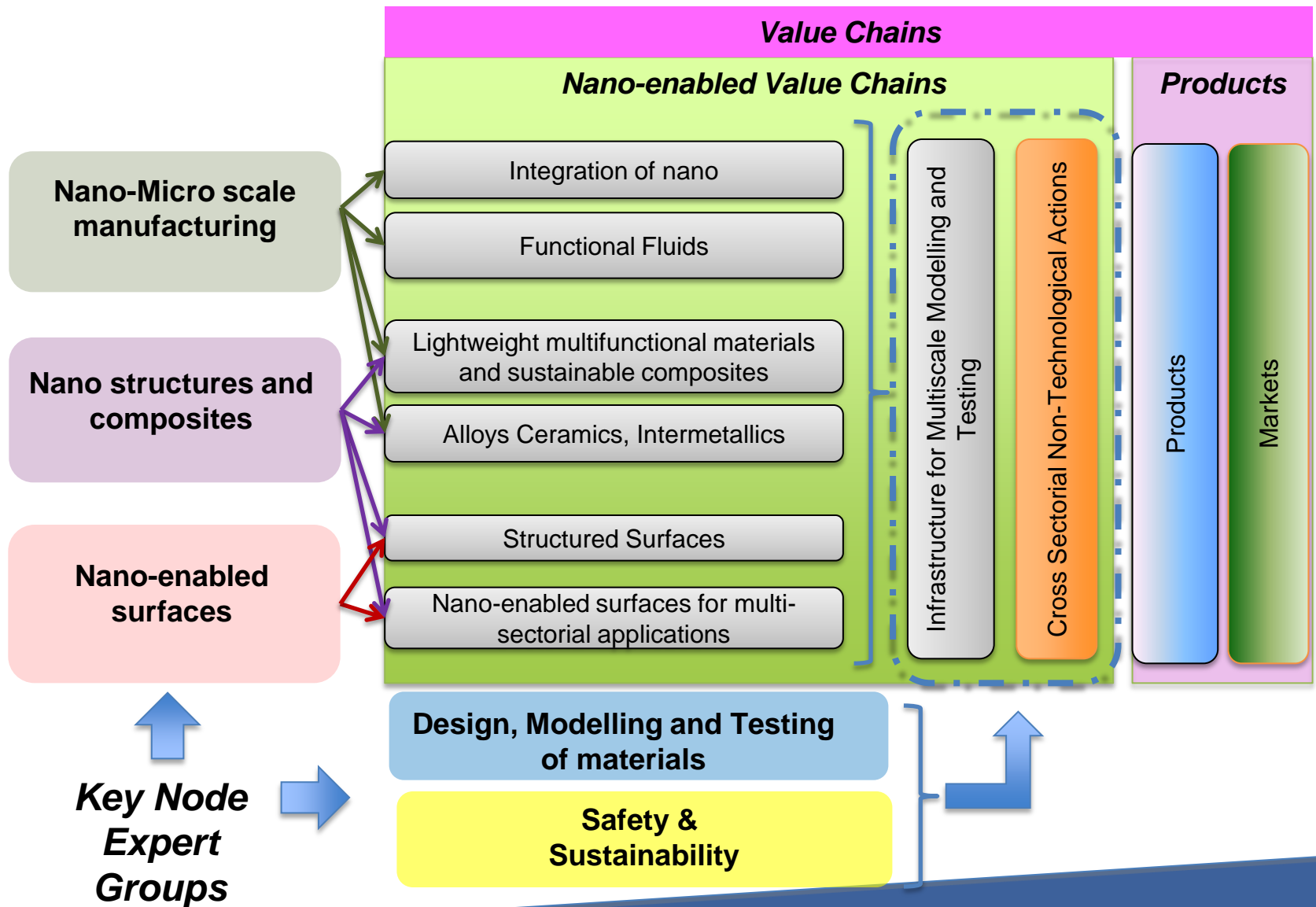
Grand Challenges

- ✓ *Health, demographic change and wellbeing;* 
- ✓ *Food security, sustainable agriculture, marine and maritime research and the bio-economy;* 
- ✓ *Secure, clean and efficient energy;*
- ✓ *Smart, green and integrated transport;*
- ✓ *Climate action, resource efficiency and raw materials;* 
- ✓ *Inclusive, innovative and secure societies.*

Research and technology providers

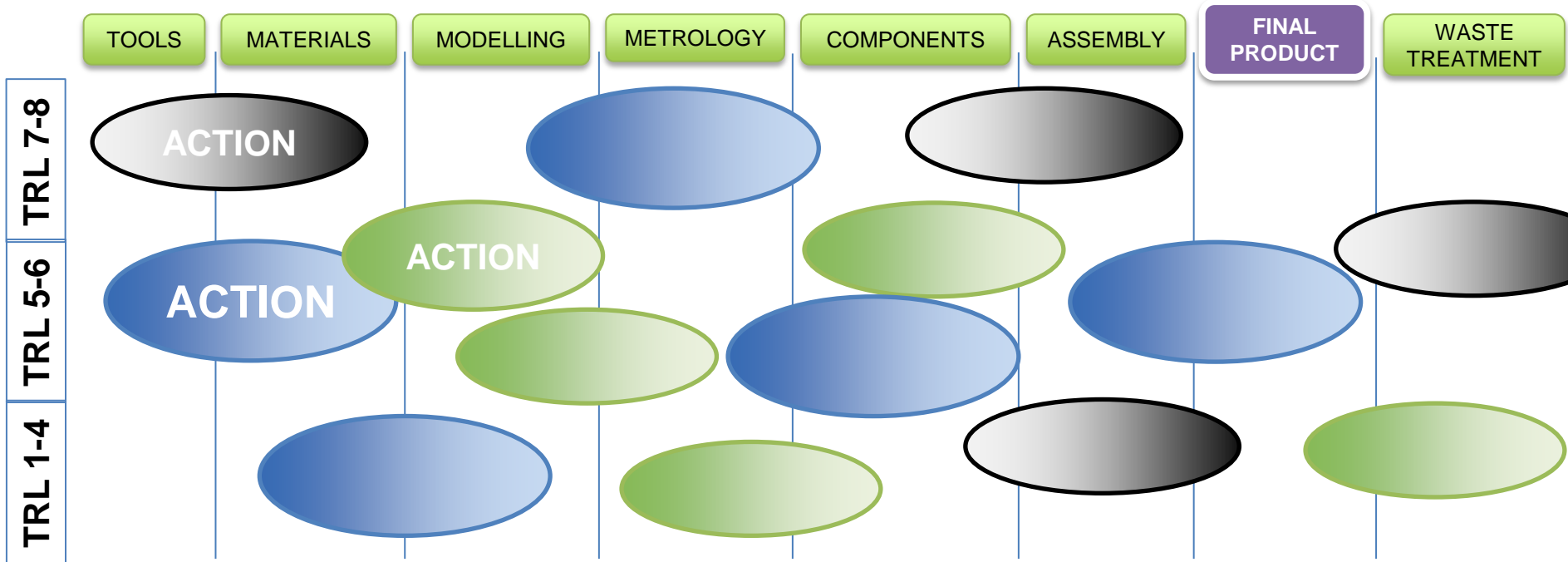


Roadmap Overview



Roadmap Overview

MARKET DEFINITION



NON-TECH ACTIONS
to complete the
definition of the market

NON-TECH
ACTIONS

NON-TECH
ACTIONS

NON-TECH
ACTIONS

LEGENDA:

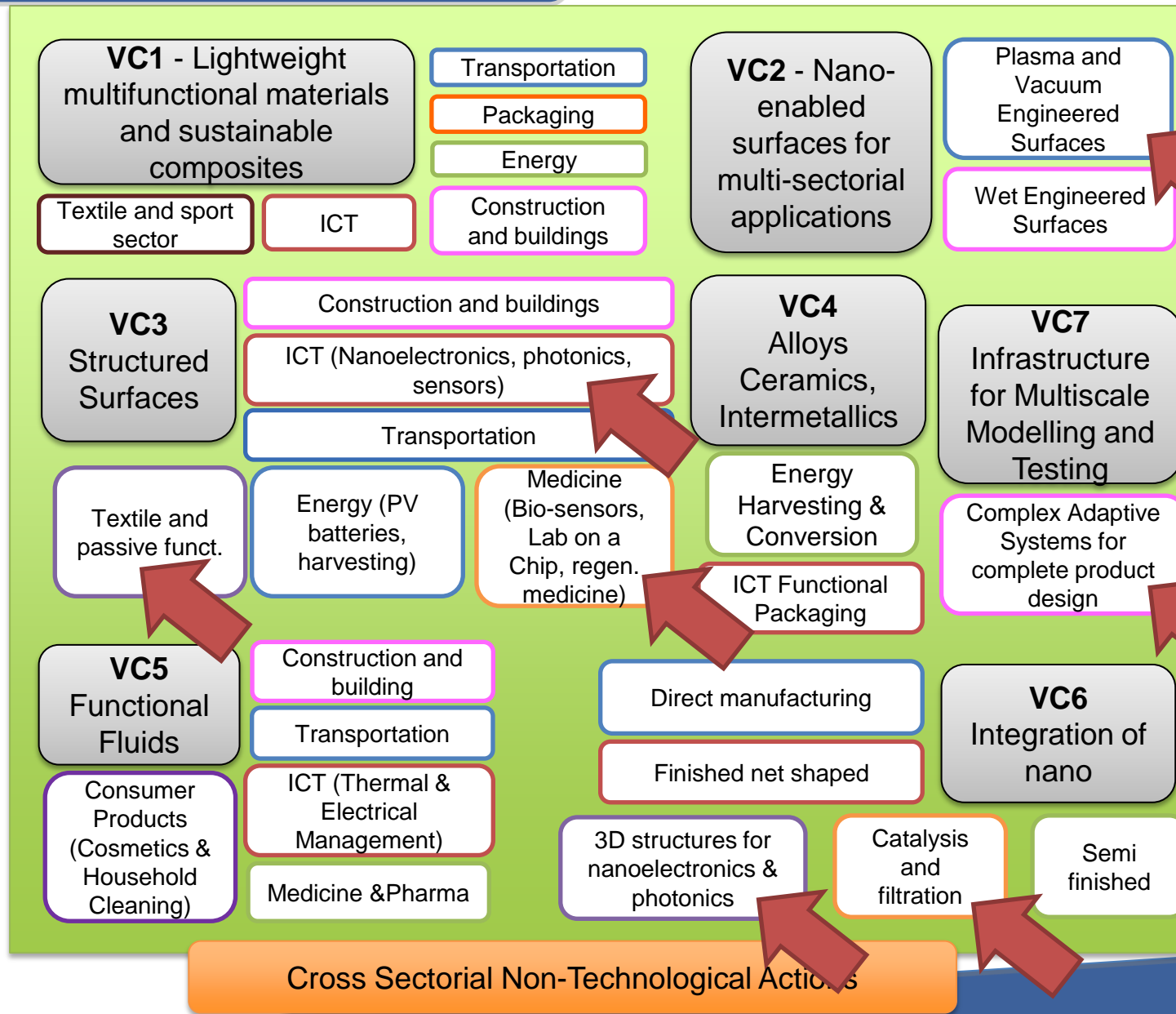
SHORT TERM

MEDIUM TERM

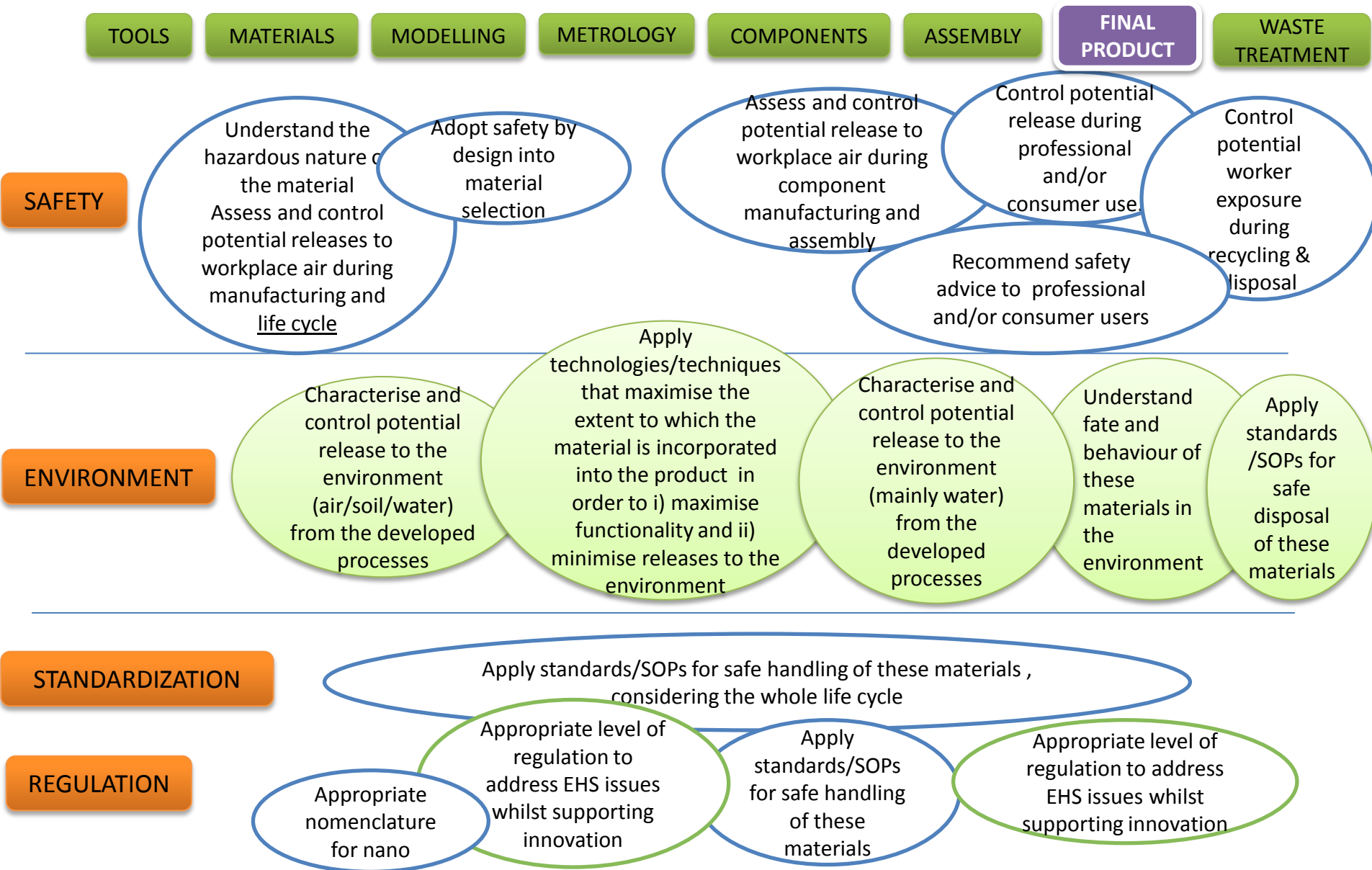
LONG TERM



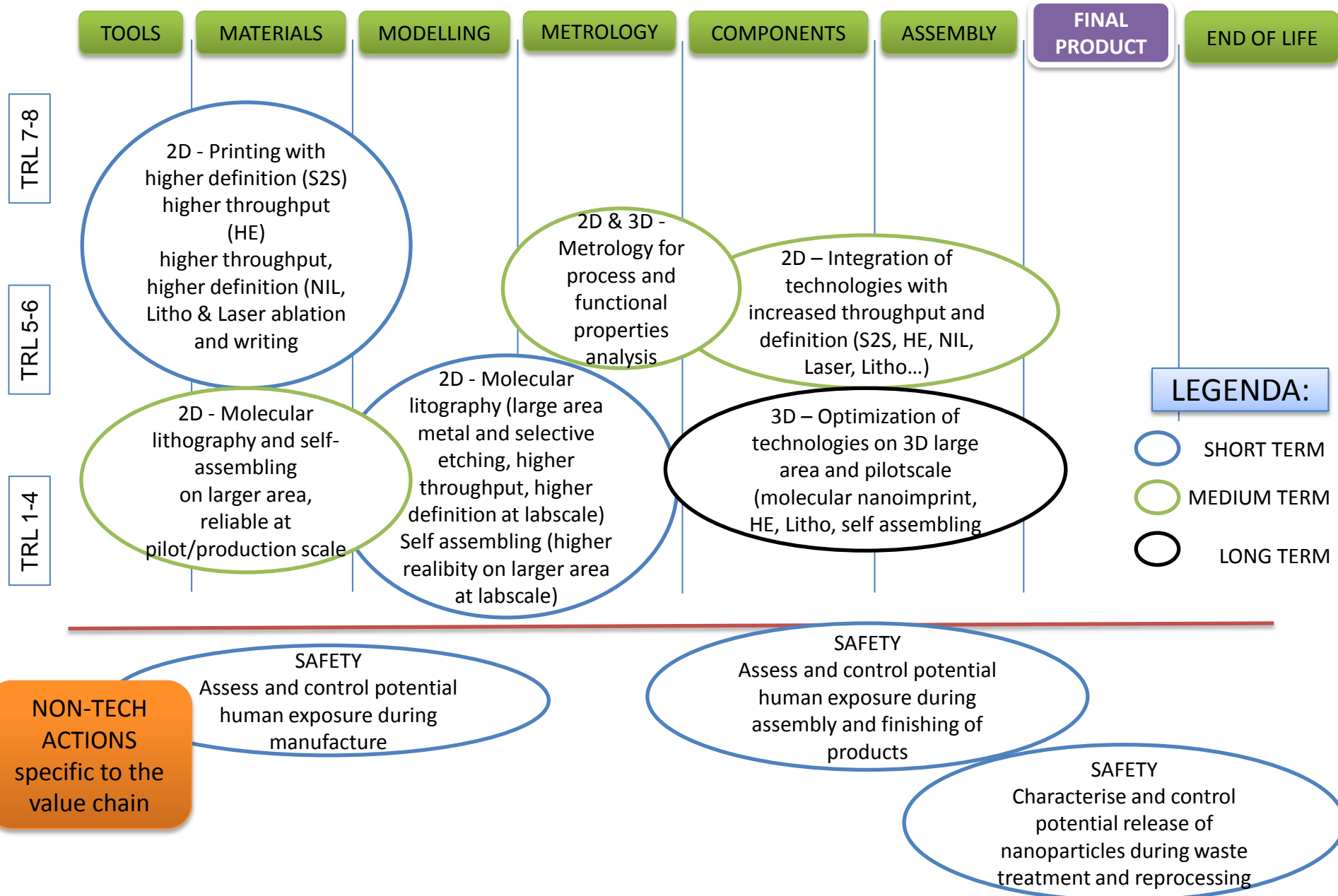
Roadmap Overview



NON-TECHNOLOGICAL CROSS-CUTTING ACTIONS: DETAILS/1



VC3b - STRUCTURED SURFACES for ICT (Nanoelectronics, Photonics; Sensors)



Roadmap Overview

CONSTRUCTION & BUILDINGS



High durability & high productivity infrastructure

Self-cleaning/Anti-microbial/solar reflective paints for building envelopes or indoor environment (e.g. HVAC)



Advanced insulating systems for new and existing building envelopes

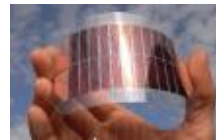


Green high performance concrete (CO2 trapping) & recycled building composites

Smart integration of technologies (incl. Sensors) at building level



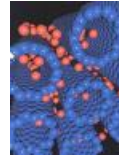
ENERGY



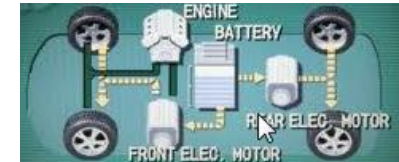
Advanced Solar cells



solid state lighting



Efficient catalysis & carbon capture and storage

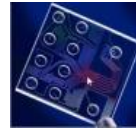
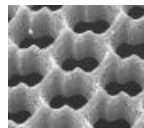


Storage technologies (hybrid batteries, gas, hydrogen).

MEDICINE & PHARMA



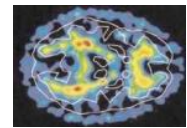
Scaffolds and coatings for regenerative medicine (implants, engineered cartilage, vessels, bone)



biosensors, like lab-on-chip and micro-TAS, smart pills



Nano-pharmaceuticals, biomarkers and contrast agents for theranostics



Diagnostic tools (CT, NMR, PET, optical), portable point-of-care devices and nano-imaging

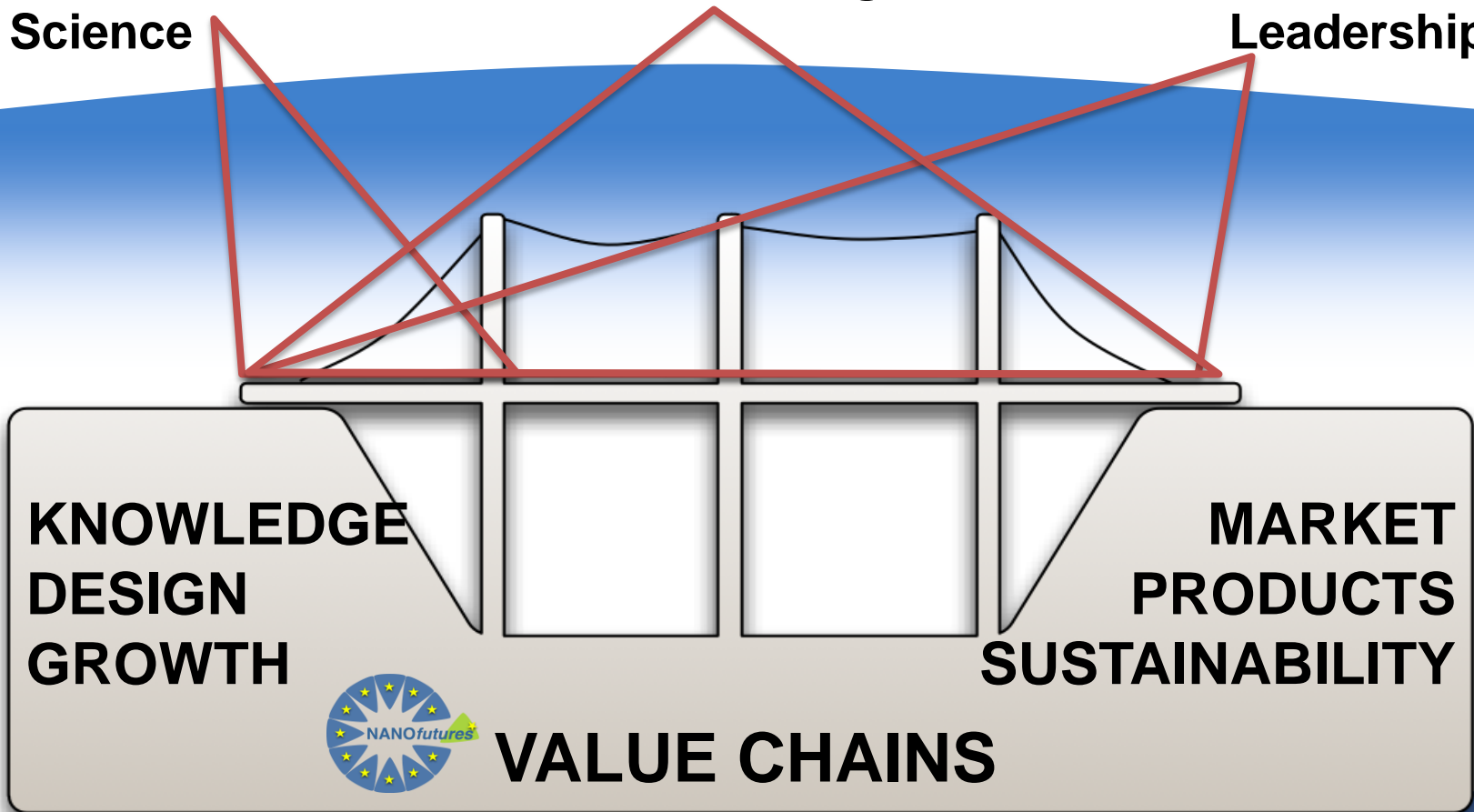
Nf and Horizon 2020

Value chain actions are aligned with Horizon 2020 structure
The cross sectorial structure of the NANO*futures* roadmap touches many areas outlined in the Horixon2020

**Excellent
Science**

Societal Challenges

**Industrial
Leadership**



Conclusion & Acknowledgments

- NANO*utures* roadmap was released in July 2012 and it is available online at www.nanofutures.eu. The roadmap public consultation ended in November 2012.
- The roadmapping activity, and related working group meetings, has been funded by FP7 NANO*utures* CSA (2010-2012), Grant n. 266789.
- Revision of the Roadmap is foreseen in the first quarter of 2013.
- The NANO*utures* Initiative is going on:
 - Revision of the Roadmap is foreseen in the first quarter of 2013.
 - Educational activities are ongoing (NANO*EIS* CSA project)

