



EUROPEAN
COMMISSION

Community research

The European Technology Platform Nanomedicine

Gert von Bally

**Center for Biomedical Optics and Photonics,
University of Muenster, Germany**

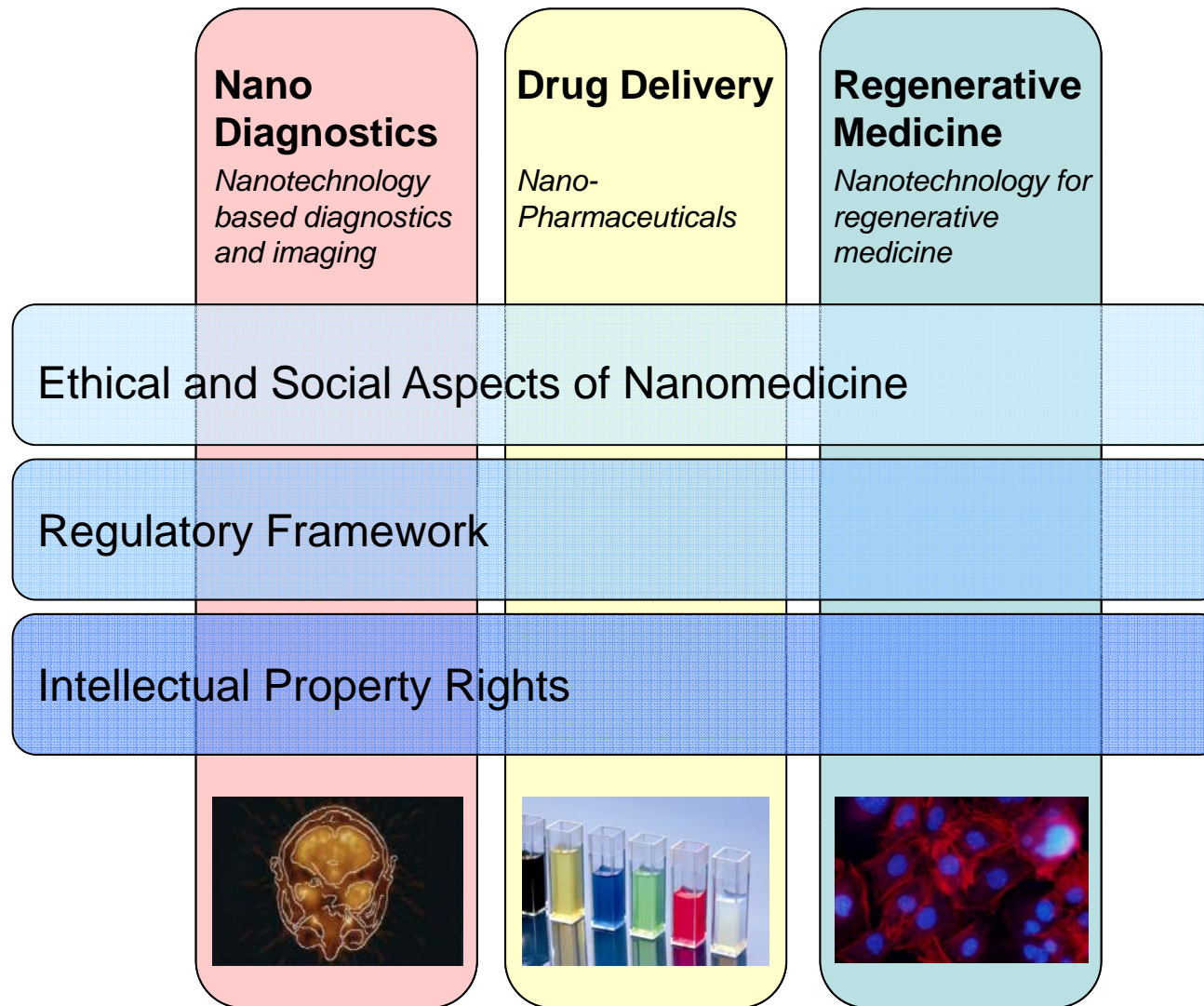
Contact person to the ETP: Photonics²¹

Disclaimer: Note that this presentation is not legally binding and does not represent any commitment on behalf of the European Commission

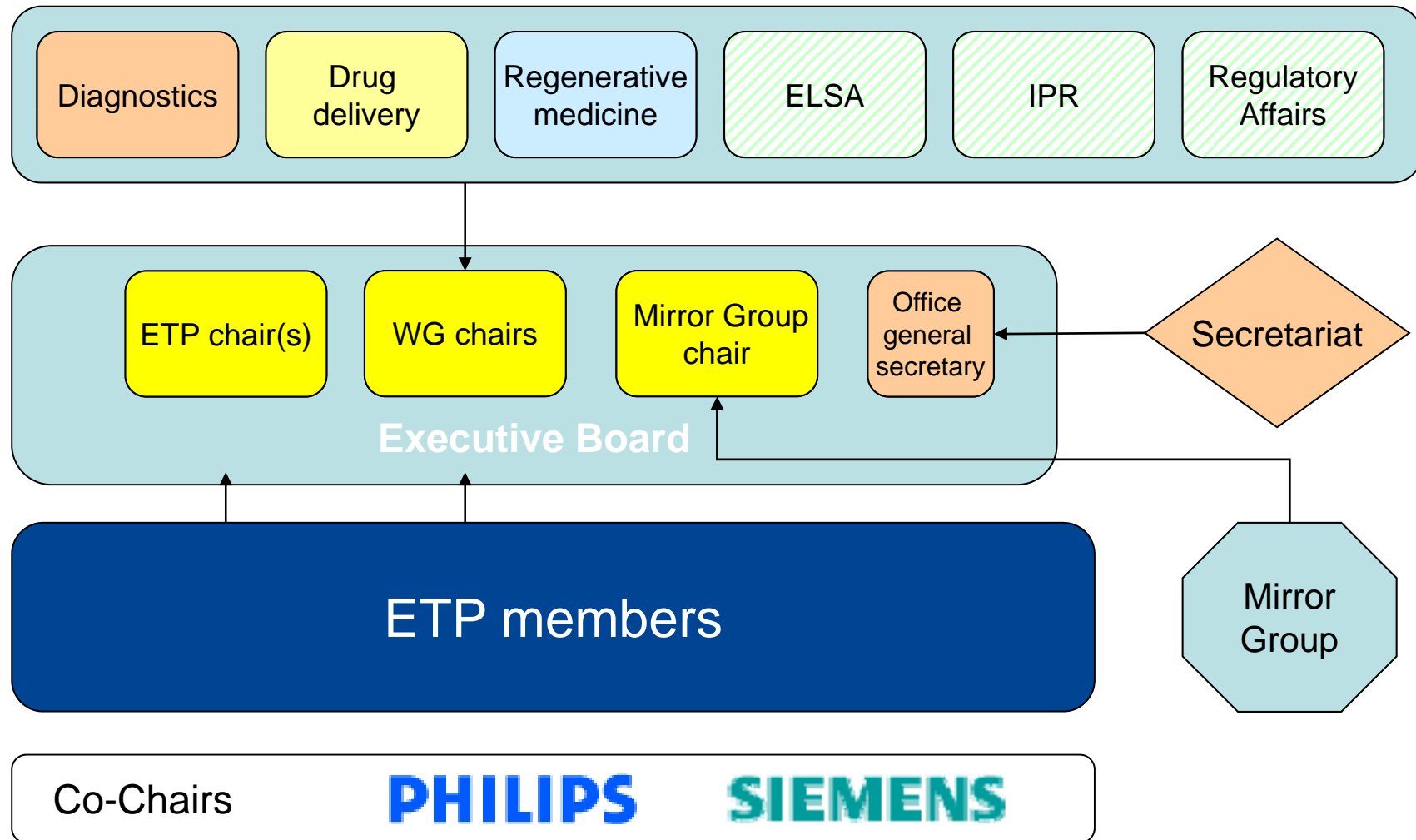


SEVENTH FRAMEWORK
PROGRAMME

Three technical / three horizontal working groups



The organisational structure of the ETP



ETP Nanomedicine Roadmap Report 2009

Publication date:

- End of October 2009

Content:

- General Discussion on critical issues in Nanomedicine
- Indication on industrially relevant roadmaps & topics in
 - **Diagnostics**
 - **Drug Delivery**
 - **Regenerative Medicine**



The (Nano)medicine value chain

- Patient needs
- Basic Research
- Applied Research
- Industrial Implementation
(Qualified products & services)
- Clinical Translation
- Regulatory Issues
- Reimbursement



Some Recommendations... (Excerpt III)

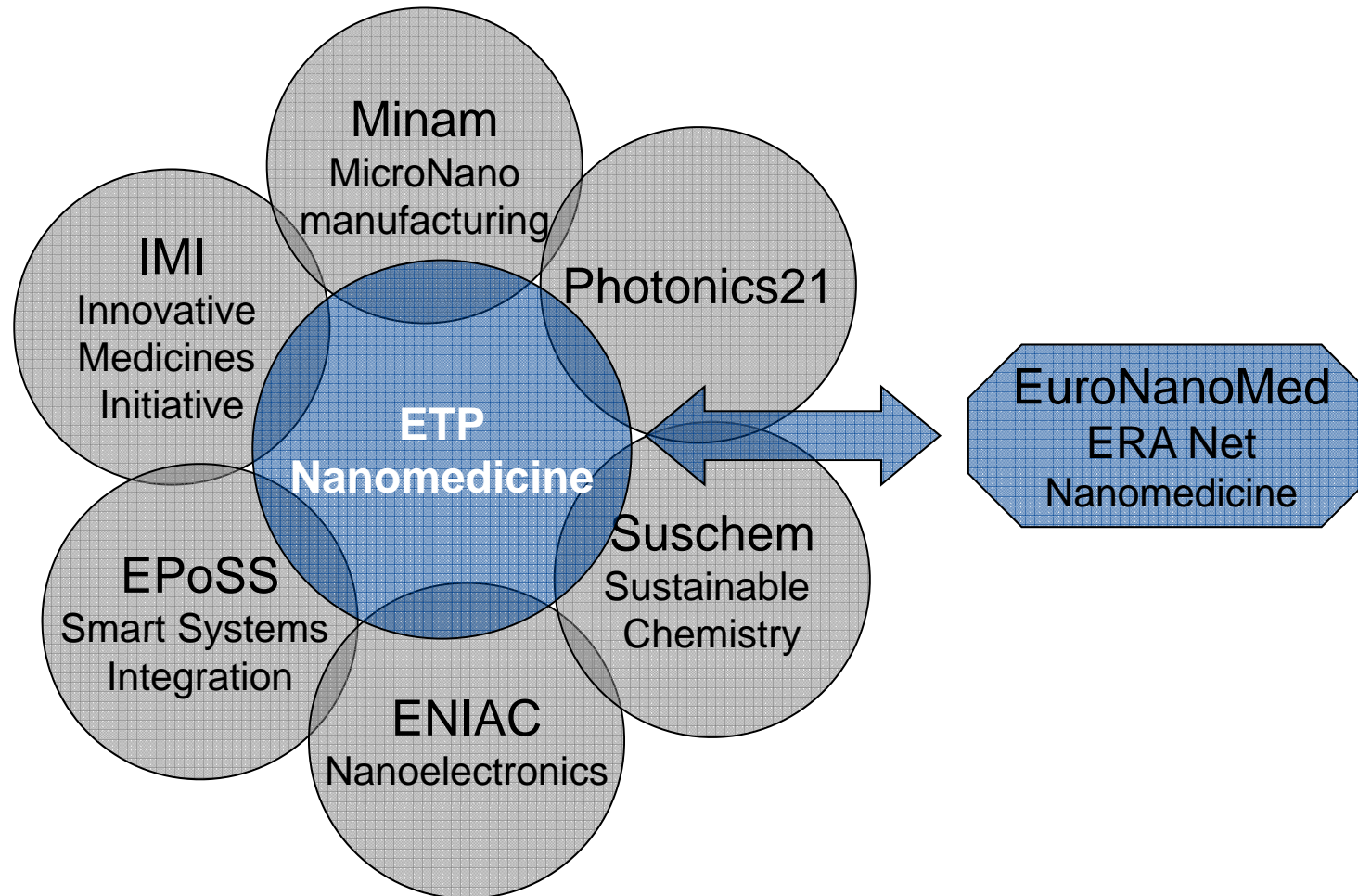
Public Authorities:

- Improve industrial peer review of applied research proposals
- Strengthen IP protection issues by implementing policies and guidelines that facilitate the interests of both industrial and research partners
- Commitment of the EC towards translational research

→ For further reading GET THE REPORT



ETPN – surrounded by partners



Medicine/Health related landscape around the ETP Nanomedicine

Nano Diagnostics

- In Vivo Diagnostics
 - In vivo imaging: PET, MRI, SPECT, CT
 - Nanotechnology could possibly improve performance, sensitivity, specificity and costs
 - Implantable sensors employing nanotechnology
- In Vitro Diagnostics
 - PoC, lab analytics, ...
 - Nanotechnology to miniaturise, speed up and multiplex analysis



Nano Diagnostics

Specific Roadmaps/Applications and R&D challenges – In vivo imaging

Roadmaps/Targeted Applications	Key R&D Priorities	Technologies	Challenges	Targeted Diseases
Molecular Optical Imaging (e.g. Molecular Fluorescence Imaging)	<ul style="list-style-type: none"> •Nanotechnology-based Optical Imaging Contrast Agents •Optical Image Processing •Optical Imaging Systems Development •Clinical Trials Phase I&II 	<ul style="list-style-type: none"> •Laser, LED, Optical Fiber Catheters •Nanoparticles with Optical Properties (e.g. Fluorescence Properties) •Optical Image Processing Software & Hardware 	<ul style="list-style-type: none"> •Increase Sensitivity and Specificity •Molecular Structural Imaging •Molecular Functional Imaging •Molecular Monitoring of the Response to Therapy •Non Invasive Imaging •Minimally Invasive Imaging 	<ul style="list-style-type: none"> •Cardiovascular •Cancer •CNS •Inflammatory •Infectious

Nano Diagnostics

Specific Roadmaps/Applications and R&D challenges – In vitro imaging

Roadmaps/Targeted Applications	Key R&D Priorities	Technologies	Challenges	Targeted Diseases
(Quantitative) Biopsies	<ul style="list-style-type: none"> • Analysis and characterisation of tissue (potentially on the cellular level) 	<ul style="list-style-type: none"> • Single Cell PCR • 3D Imaging • 3D Tissue Mapping • Optical, Luminescence 	<ul style="list-style-type: none"> • Automation (sample prep, imaging and identification) • Molecular single cell imaging and tomography • Single cell molecule extraction • Multianalyte extraction (DANN, RNA, Protein, metabolites... all in the same few cells) 	<ul style="list-style-type: none"> • Oncology • Wound management

For more information visit:
www.etp-nanomedicine.eu

or contact
secretariat@etp-nanomedicine.eu

or
Gert von Bally
ce.bop@uni-muenster.de

Thank you very much!

