

RENEB - REALISING THE EUROPEAN NETWORK IN BIOLOGICAL DOSIMETRY

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Introduction

Over the last years, the risk of a large scale radiological event has markedly increased. This includes possible accidents in nuclear facilities but also potential terrorist attacks against key facilities or civil targets. In both contexts, biological dosimetry is an essential tool to estimate an actual absorbed dose, as the physical dosimetry is usually not available and clinical dosimetry i.e. observing the changes in blood counts is not accurate due to individual variations and/ or other confounding factors. Thus, individuals, who need extensive medical care due to severe irradiation can be identified among people who have not received high doses of ionizing radiation. In such large-scale radiological scenarios the capacity of individual or few biodosimetry laboratories will be overwhelmed. As a consequence biodosimetry networking has been recognized as a sensible and important element of emergency response strategy. Now a European Network of Biodosimetry is on the way to being realized.

Objectives

RENEB will establish a sustainable European network in biological dosimetry. A total of 23 organisations (listed in the heading) from 16 European countries will cooperate to guarantee the highest efficiency in the processing and scoring of biological samples for fast, reliable results implemented in the EU emergency management. RENEB will be based upon 5 pillars.

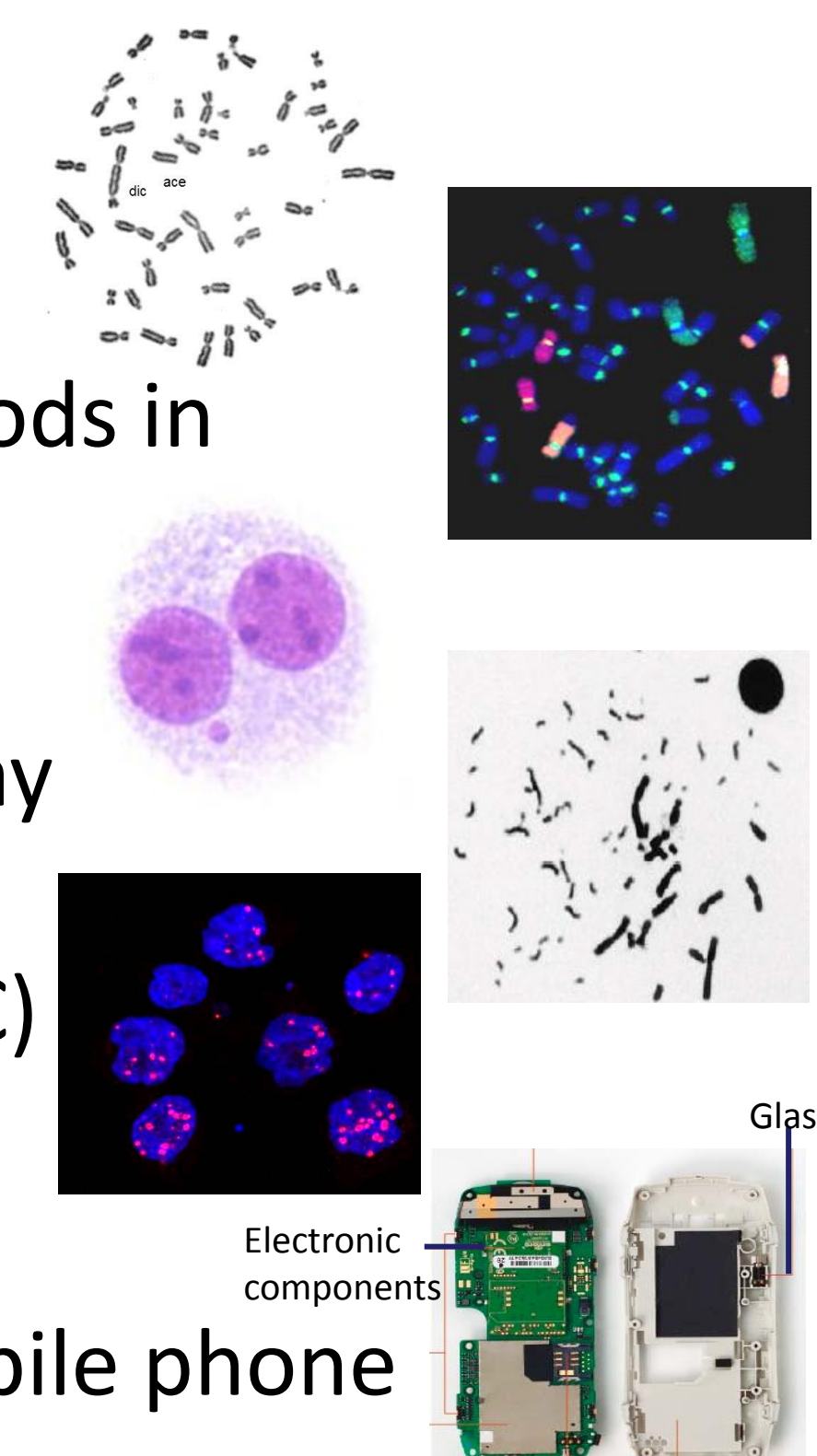


Implementation

1 Operational Basis

„Stand by mode” of reliable and proven methods in biological and retrospective dosimetry:

- Dicentric Assay
- Fluorescence *in situ* hybridisation (FISH-Assay)
- Micronucleus Assay
- Premature Chromosome Condensation (PCC)
- γ -H2AX foci
- Electron Paramagnetic Resonance/Optically Stimulated Luminescence (EPR/OSL) on mobile phone



2 Basis for Developing the Network

Horizon scanning for new techniques and partners:

- Identification, validation and inclusion of new assays
- Identification, qualification and integration of new partners

3 Quality, Education and Training

Assurance of efficient and reliable dose estimation:

- Harmonisation of biodosimetry procedures
- Establishing an education program (members & non-members)
- Setting up a quality assurance & management program
- Development of a long-term training program based on regular training exercises according to international standards

4 Sustainability of the Network

Assurance of legal certainty and establishing of funding strategies:

- Establishing a legal framework
- Harmonisation of infrastructure
- Linking RENEB to research platforms (e.g. MELODI, ERA)

5 Dissemination

Strengthening the awareness of RENEB:

- Connecting RENEB to the European and international radiation emergency preparedness and response system
- Spreading the information of RENEB via modern communication