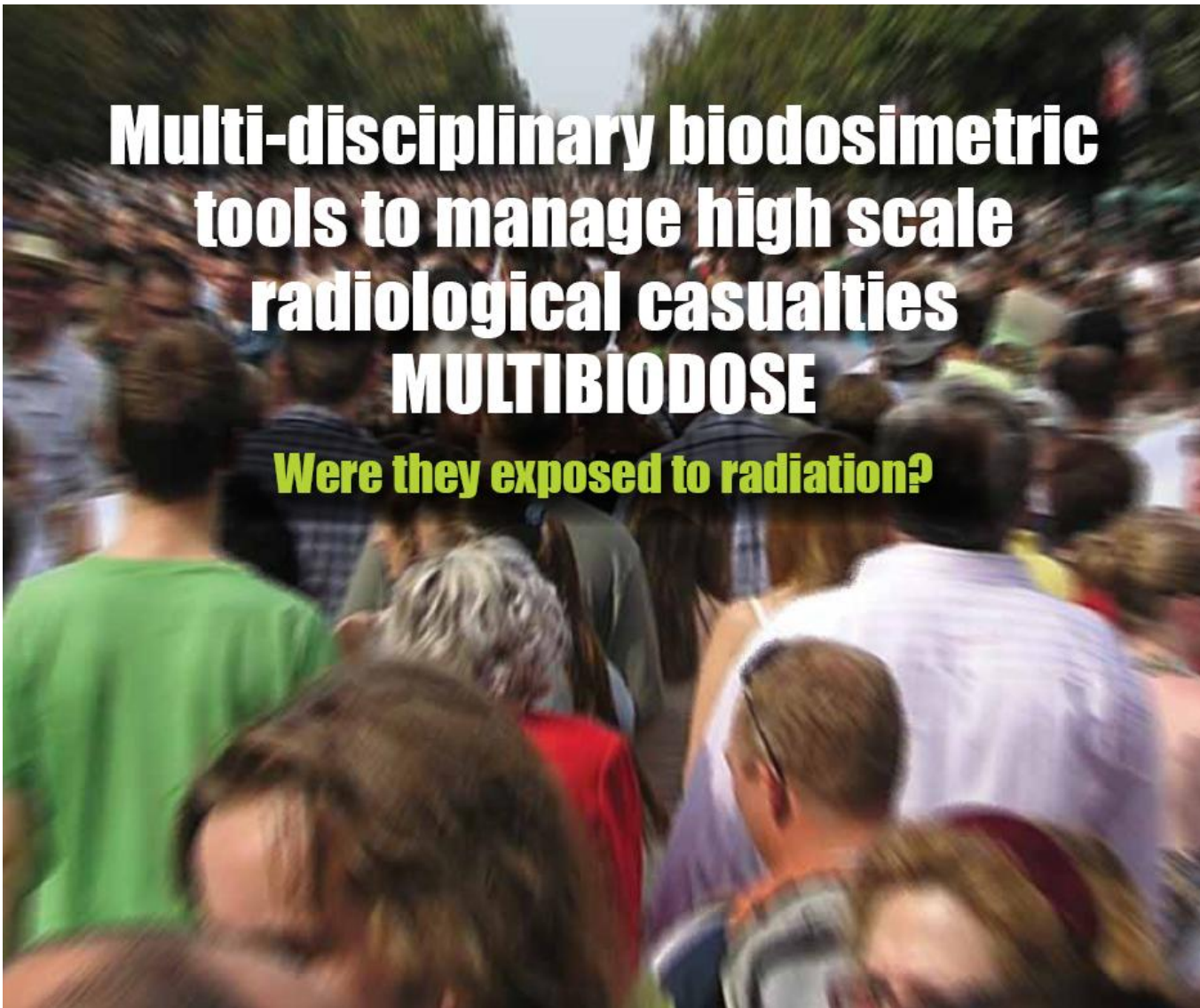




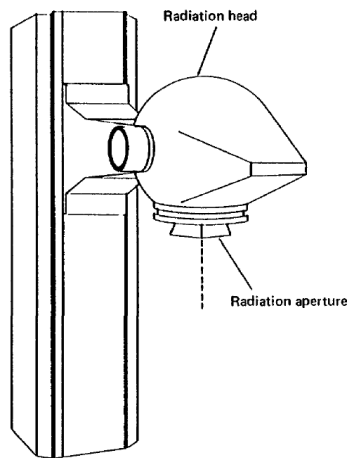
multibiodose

Multi-disciplinary biodosimetric tools to manage high scale radiological casualties MULTIBIODOSE

Were they exposed to radiation?



The Goiania radiological accident 1987...



The ^{137}Cs radiotherapy device



The Instituto Goiano de Radioterapia (IGR)



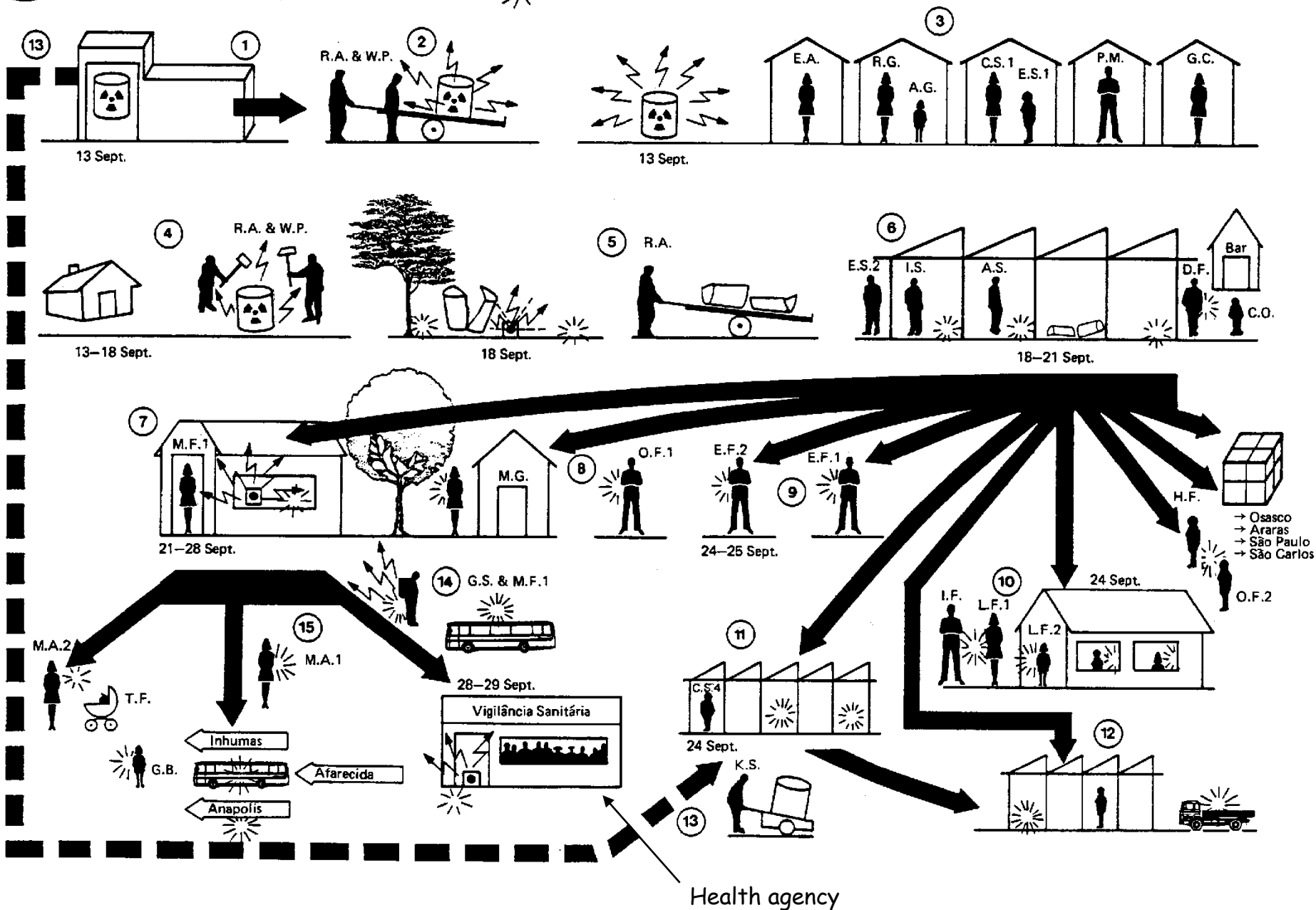
Source assembly



Source capsule



Contamination with caesium from source



**120 000 people were whole-body counted.
249 were found to be contaminated.
4 people died.**



Accidents resulting from malevolent use of radiation sources

Source: Nenot, 2009

- 1970–2004** Few cases of exposing individuals to high activity sources motivated by desire for revenge
- 2006** Assassination of Alexander Litvinenko with the use of ^{210}Po
100 people identified as contaminated, 17 received doses higher than 6 mSv

Sources of radioactive material that can be used in a malevolent act

- Civilian nuclear power
- Research reactors
- Use of radioactive materials in medicine, industry and research
- Military applications - nuclear submarines, and the construction of nuclear weapons

These applications involve

- | | | |
|--|--|---|
| <ul style="list-style-type: none">● Production● Transport● Storage | | of nuclear material that can be stolen
or set free by detonation |
|--|--|---|

How will the next radiation event look like?

Impossible to predict!

Think of the ^{210}Po poisoning of Alexander Litvinenko in November 2006...



Terrorist event scenarios

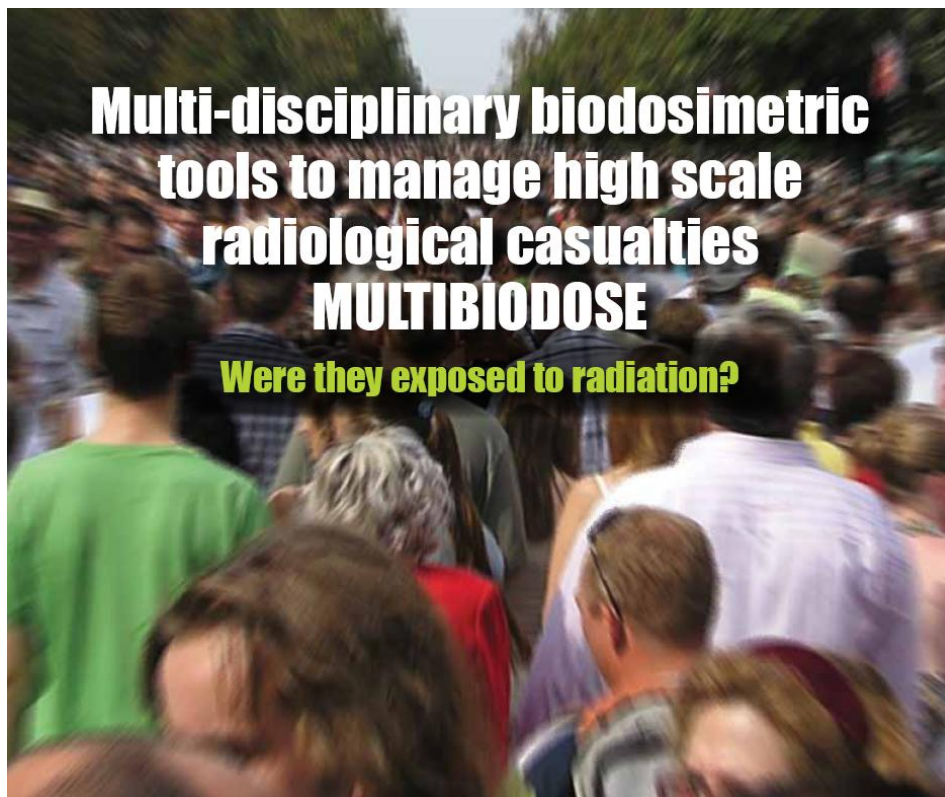
- **Radiological exposure device**
Hidden radiation source that will typically irradiate people externally
- **Radiological dispersal device**
Device for spreading radioactive material with the aim of contaminating people and the environment (dirty bomb)
- **Attack on transport of radioactive material**
Aim: to disperse or steal radioactive material
- **Contamination of food and water supplies**
Aim: to contaminate people and the environment
- **Attack on a nuclear installation or an installation containing radioactive material**
Aim: to disperse or steal radioactive material
- **Improvised nuclear device**
A home-made nuclear bomb

We must be prepared to quickly measure absorbed doses in thousands of people...



The aim of MULTIBIODOSE

To analyse a variety of biodosimetric tools and adapt them to different mass casualty scenarios.





CONTACT INFO

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Consortium Member institutions:

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	Universiteit Gent (UGent), Belgium
	Health Protection Agency (HPA), United Kingdom
	Institut de Radioprotection et de Sécurité Nucléaire (IRSN), France
	Istituto Superiore di Sanità (ISS), Italy
	Norwegian Radiation Protection Authority (NRPA), Norway
	Radiation and Nuclear Safety Authority (STUK), Finland
	Westlakes Scientific Consulting (WSC), United Kingdom*
	Universitat Autònoma de Barcelona (UAB), Spain
	Institute of Nuclear Chemistry and Technology (INCT), Poland
	Helmholtz Zentrum München (HMGU), Germany
	Bundeswehr Institut für Radiobiologie in Verbindung mit der Universität Ulm (BfR), Germany
	Gray Institute for Radiation Oncology and Biology, University of Oxford (UOXF), United Kingdom
	European Radiation Dosimetry Group (EURADOS), European network registered in Germany

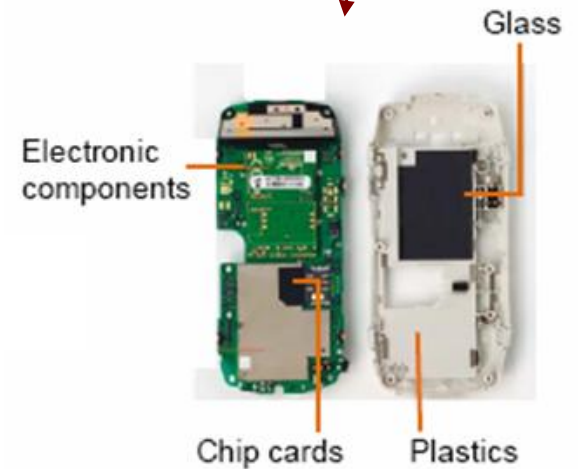
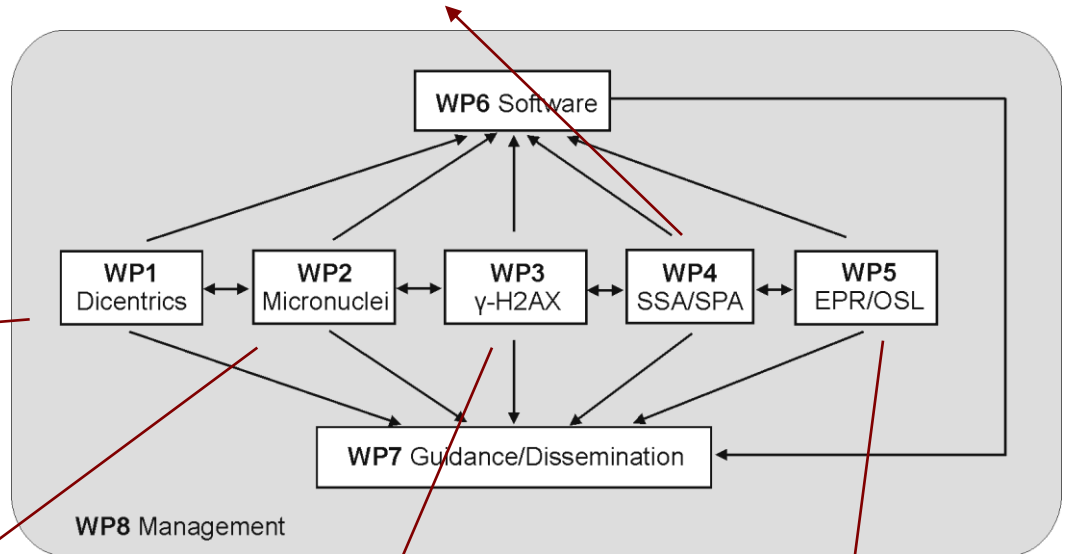
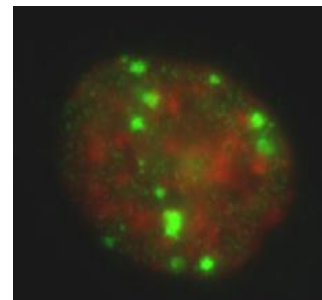
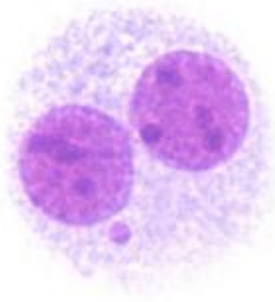
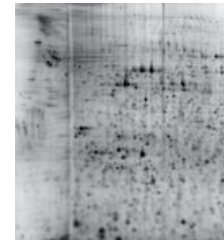
*) Former member. In August 2010 the Westlakes Research Institute ceased to exist and, consequently, left the consortium.

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The partners

www.multibiodose.eu

The work packages



Retrospective road map to

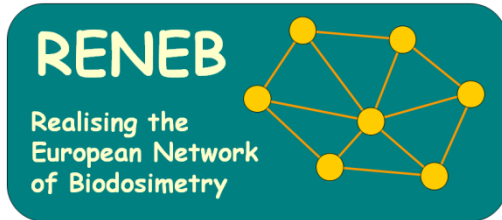


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- ➡ July 2007: Negotiations with EURATOM to launch a call
EURATOM suggests to move the funding to SECURITY
- ➡ September 23rd 2008: call published
- ➡ December 4th 2008: deadline for submission
- ➡ March 9th 2009: evaluation summary report – 14/15 points
- ➡ July 10th 2009: invitation for negotiation
- ➡ May 1st 2010: start of MULTIBIODOSE
- ➡ April 30th 2013: end of MULTIBIODOSE

MULTIBIODOSE would not have been possible without the assistance of
FORSKNINGSSERVICE (SU)
and
Gavin Thomson from HELIX (UK)

What next?



Start: January 2012
Coordination Action (CSA-CA)
4 years



- **Call identifier:** FP7-SEC-2012-1
- **Date of publication:** 20/July/2011
- **Deadline:** 23/November/2011 at 17.00.00, Brussels local time ¹
- **Indicative budget:** Total call budget EUR 241.7 million ²

Aim: to develop
simple and rapid devices
with focus on contamination

Area: 10.4.4 CBRN Response	SEC-2012.4.4-1 Development of mobile laboratories, structures and functions to support rapid assessment of CBRN events with a cross-border or international impact	CSA
	SEC-2012.4.4-2 Means of decontamination of large groups, urban/wide areas and large, complex and/or sensitive object	CP-FP
	SEC-2012.4.4-3 Tools for detection, traceability, triage and individual monitoring of victims after a mass contamination	CP-IP

Thank you for your attention

