ERICA
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DELIVERABLE D7h:
Summary of the EUG Tool Testing Day
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ERICA (Environmental Risk from Ionising Contaminants: Assessment and Management) will provide an integrated approach to scientific, managerial and societal issues concerned with the environmental effects of contaminants emitting ionising radiation, with emphasis on biota and ecosystems. The project started in March 2004 and is to end by February 2007.

Erica tetralix L.

Contract No: **FI6R-CT-2004-508847**
Project Coordinator: **Swedish Radiation Protection Authority**

Contractors:

Swedish Radiation Protection Authority	SSI
Swedish Nuclear Fuel and Waste Management Company	SKB
Facilia AB	Facilia
Södertörn University College	SUC
Norwegian Radiation Protection Authority	NRPA
Research Centre in Energy, Environment and Technology	CIEMAT
Environment Agency	EA
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Norwegian University of Life Sciences (previously NLH)	UMB
Electricité de France	EDF

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Executive Summary

A one-day workshop dedicated to testing the ERICA integrated approach, i.e. the ERICA assessment tool prototype and the draft deliverable D-ERICA, was held. Seven EUG members attended and six ERICA Consortium participants.

EUG members were asked to provide feedback on use of the tool and its guidance. As a result, a list was collated containing comments, improvements and software bugs. It was agreed that the "Urgent" items would be solved by the beginning of the week 11-15 December 2006. A final version of the prototype would then be released. All other items will be addressed by the 17th January 2007.

A number of issues were identified which may be implemented once the ERICA project is completed.

As a result, D-ERICA will be revisited and modified. D-ERICA will focus more on the overall principles, as the in-built help guidance provides more information on reasoning and assumptions related to the use of the ERICA assessment tool.

Note that all EUG actions identified above will be implemented within the tool, except for the future improvements.

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Participants

EUG and IAEA Biota Working Group (BWG)* members:

Marrianne Calvez	Commissariat à l'Energie Atomique, CEA, France
Christine Willrodt	German Federal Office for Radiation Protection, BFS, Germany
John Ferris	Australian Radiation Protection and Nuclear Safety Agency, ANSTO, Australia
Ari Ikonen	Posiva OY, Finland
Geert Olyslaegers *	Belgium Nuclear Laboratory SCK-CEN, Belgium
Sunita Kambjo *	Argonne National Laboratory, ANL, USA
Vitold Filistovic *	Institute of Physics, Lithuania

Apologies:

Paul Dale (SEPA, UK), Tamara Yankovicht (AECL, Canada) and Valerie Moulin (CEA, France)

Consortium members:

Justin Brown	NRPA
Boris Alfonso de los Santos	Facilia
David Copplestone	EA
Nick Beresford	NERC
Deborah Oughton	UMB
Irene Zinger	SSI

Purpose of the EUG Tool testing Day

A one-day workshop dedicated to testing the ERICA integrated approach, i.e. the ERICA assessment tool prototype and the draft deliverable D-ERICA, was held as it was concluded during the September Consortium workshop that:

- EUG memebers find it difficult to squeeze in time for testing the ERICA Assessment Tool in their normal working environment; and

- the prototype tool, as provided since June 2006, did not have in-built guidance in the form of help files, making it difficult to use fully.

Consortium and targeted EUG members would spend the day testing and providing comments on the ERICA Assessment Tool and the draft Deliverable D-ERICA using two scenarios. People from the IAEA EMRAS biota Working Group (BWG) were also approached due to their known technical expertise in tool testing.

On the day, all EUG members were asked to use the scenarios as examples and to:

- navigate through the tool

- refer to D-ERICA for further guidance

- Make use of the FREDERICA database if needed

- report bugs as they went along

- provide feedback on use of the tool and accompanying guidance.

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Agenda

Time	Item
09:00	Introduction and welcome (IZ)
	Brief overview of D-ERICA (IZ)
	Demonstration of the tool (BA)
	Introduction to marine scenario (JB)
10.00-13:00	Using data from a hypothetical marine scenario

> a step by step run through the assessment tool which progressively moves through the tiers (1, 2 and 3);
>
> use of probabilistic risk assessment;
>
> > link to FREDERICA tool and it's use;
> >
> > using effects data to derive benchmarks.

Time	Item
13:00-14:00	Lunch and discussion
14:00-16:00	Introduction to terrestrial scenario (NAB)
	Using data from Chernobyl to focus on strategies for:

> dealing with organisms which inhabit more than one ecosystem;
>
> > dealing with different life stages;
> >
> > different sized organisms;
> >
> > different quantities of available data.

Time	Item
16:00-17.00	Wrap up and discussion session

> Interactive review of the issues and problems identified during the testing;
>
> Sorting and ranking of issues into those for guidance, those for the tool;
>
> Identification of methods to resolve guidance based issues that have arisen during the day (i.e. missing guidance – what should it be?)

Actions

The collated comments, suggestions for improvement and identified bugs and are listed below without order of priority. It was agreed that the "Urgent" items would be solved by the beginning of the week 11-15 December 2006. Note the 'Urgent' list are not necessarily the most important but those which could be rectified in a short turn-around time. A final version of the prototype will then be released. Facilia would then spend the remaining time, i.e. until the 17th January 2007 (when comments from WP4 case study applications will be received and responded to) to fix all other items listed below and test fully the tool.

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The 'urgent' list

Issues
• The REPORT shows SRS-19 data assumed to be used but not the actual entered data
• SRS 19 shore/sea issue – need to check what SRS19 is doing – <u>short-term answer</u> is to remove the shore button
• T2 – input data – freeze initial columns
• Occupancy allowing >1 to "next" if changed in the database
• T2 – entered text in record decision is not saved and kept after pressing finish
• Organism density still allows silly numbers (default values for back-calculating)
• Scale on graphs (make graphs "disappear")
• Stakeholder info not going from T2 to T3 + problem formulation
• Created org CR's lost T2 -> T3
• Radioecological parameters Kds – not reading distributions from database (exp)and GUIDANCE
• Mean and SD not MU and Sigma
• Bug: problem to save the project if you are on some screens before the radioecological one in T3
• can't save the comment for a value
• Report does not work in T3 (a html is generated with no T3 results)
• Need units in probability plots
• T3 – if you put in your own Kd as distributions then move forward to input and enter data then move back to Kds information has disappeared
• Custom value dose rates new screen – should not have the possibility to change the dose rate for each organism – REMOVE the screen T1
• When you add an organism you must also be able to allocate it to a standard FREDERICA wildlife group
• Change exit to save then ask to exit

'To fix' list

Issues
• Add comment box in the SRS-19 model screen when you input data - so can record decisions taken
• COPY/PASTE does not work always
• delete decay constant graph
• T2 – help aquatic (freshwater + marine)
• T2 – the Figures for input data are not needed
• Help hyperlink from add organism geometry not working
• Tier 2 retains SRS parameters from T1 even if not used
• T3 Am-mammal aquatic – check the CR codes -> brings up a value from the default dataset which includes a log-normal distribution but this is a guidance value
• Comment text is not being blanked where a default distribution is being changed
• Radioecological CR not pulling through user-defined organisms CR values (same as above)
• Hint on % DMIs contradictory (says % moisture)
• Do we need 2 screens for "value" and "distribution" – easier to keep track of entries if just one screen where you can enter in either a single value or as a distribution (same comment as below)?

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Issues

- Input data – way of showing deterministic value plus pdf on same screen
  ○ Value ☐   ● distribution ☐
- Do not use colour for lines on distributions
- Problem navigating Frederica over internet – can not return to start screen (comment fromVitold)
- T3 delete output tables dose rates etc (currently listed as n/a)
- Database list what is "old-dcc"
- File not saved
- Option for log-plots or set your own scale
- Need to remove the java icon in the help window
- If then you move forward to inputs again information appears to have gone but if you click on cells the data appear but not all data is the same as before
- Add a drop-down arrow beside "stakeholder type" and other such lists
- Tier 1 needs the RQ's for all the Ref Org -> list all in the output tables
- Occupancy factors – be consistent. At moment you have % when you enter new org data and fraction for the others. Use % throughout
- If enter custom value for screening value, should be asked for a comment
- Link p.25 to p.35 in D-ERICA
- Provide an idea of where we are in the assessment – like a tree with colours
- Functionality of the report needs to be addressed: export, print options
- Better formatting of the report for presentation purposes
- Can't read from database "exponential" when the distribution function is exponential – same as above
- whenever there is a drop down box – write select as a default,
- When you have the select option as default – write select as a default if time allows you can have a check so that if you have not entered information a prompt comes out to mention it – if no time add it to the Future list
- Replace the "window" menu item with "report" and then have in that new menu show, print, save, export…
- Final output to have scenarios

For 'guidance/help' list

Issues

- SRS-19 => specify more clearly- distance to receptor point
- General information: tool is designed for the screen dimension: …X …
- Comment box when inputting site-specific data maybe help file – to record which best estimates were chosen + why
- When are files saved
- Restore default files option
- add to guidance – simulations limited to 10,000 and difficult to run with a lot of parameters – tool will advise when may be a problem
- explain bin count rule not just present equations – but do the different options have any point or is the user defined option enough?
- Double click browser window (add to help)
- Drag on plots to reset / select smaller area - just add explanation in the help
- Add soil/sediment dw to the help function

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Issues
• Add organism – vegetation does not extrapolate and therefore does not work – remove option?
• need ref org weight, length width depth in the help but also if you add an organism you need to check your new organism dimensions

• When we used D-ERICA, FREDERICA and effects data when you analyse T3 results Need to provide more guidance:
    o Search for FREDERICA first for effect
    o Review literature
    o Summarise this information and review information with expert stakeholders
    o Need to collectively have discussion to derive an a priori screening number

• In the Frog scenario we ran, T3 distributions were outside T2 prediction – WP4 to explore
• Add in the help – you need to let people know that when running two scenarios (aquatic and terrestrial) they have to add the results and check whether the summed risk quotient is less than one.
• How do you share and keep created organisms.
• How do you do Tier 3 when dealing with two ecosystems, as we can not integrate results?
• Ask a statistician: - if you take 95%iles from different environments and add them, is this always greater than the overall 95%ile.

Reports

A whole page dedicated to the formatting of the reports was also provided by an EUG member. It was agreed to provide all participants in December 2006 an improved formatted report and ask for comments.

Future improvements

A number of issues were found which could be implemented once the ERICA project is completed. These included:

- add comment box when you are inputting numbers so you can specify the choices made;
- single value entry on distribution screen do not need to flip between screens and make notes;
- retain data T2 -> T3 – suggest to add a button to offer option to pull data;
- combine ecosystem results.

Conclusion

The day was very successful for the Consortium, as it provided valuable inputs into the process of using the ERICA assessment tool and its guidance. **Note** that all EUG actions identified above will be implemented within the tool, except for the future improvements.

It became clear during the day that people prefer to use the in-built help guidance, rather than the D-ERICA. As a result, D-ERICA will be revisited and modified. D-ERICA will focus more on the overall principles, while the in-built help guidance will provide more information on reasoning and assumptions related to the use of the ERICA assessment tool.

A small editorial group will meet in January to finalise D-ERICA following interaction with the consortium to take on board this modification of emphasis.

The ERICA Consortium would like to thank all participants for their active inputs during the meeting.

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