

## A task force for investigating the ESARDA strategy on education, training and knowledge management

The suggested new strategy on ESARDA's education, training and knowledge management was successfully presented to the Steering Committee, in the TKM working group and in the TKM session at the ESARDA symposium 2015 in Manchester. As a next step, we were asked specifically how and what the task force to contribute with.

For more information on the new strategy, and a presentation of the educational modules, please read the strategy document which is available on the ESARDA TKM homepage.

### The task force – composition and assignment

We would like the task force to consist of one representative from each of the following eight working groups:

1. NA/NP
2. C&S
3. NDA
4. DA
5. EXP
6. VTM
7. IS
8. TKM

We would also like to have at least one (perhaps two) members selected by the ESARDA management who are part of this task force - not as working group members - but representing the whole organization. The reason is that we think it would be valuable because:

- I. it is important to have someone who has the best interest of (and knowledge about) the whole organization in mind, and only that of a particular WG,
- II. we need at least one member who is aware and can communicate to us any foreseen development of ESARDA (discussed, planned or decided by the ESARDA management), relevant information, strategic plans, etc so that we are able to take this into account in our work, and
- III. that enables us to directly communicate to the ESARDA management what the current status is of this of this "ESARDA WG-interdisciplinary" project.

This makes the task force consist of in total 9-10 people, which is already a quite big task force.

We would like to ask the ESARDA president (Jim Tuschingham) to contact the working groups and ask for volunteers, and also to nominate the two other candidates from the ESARDA management. It is not only important to find members to this task force, but to find the *right* candidates. In order to help locate these people, we have set up a wish list to consider:

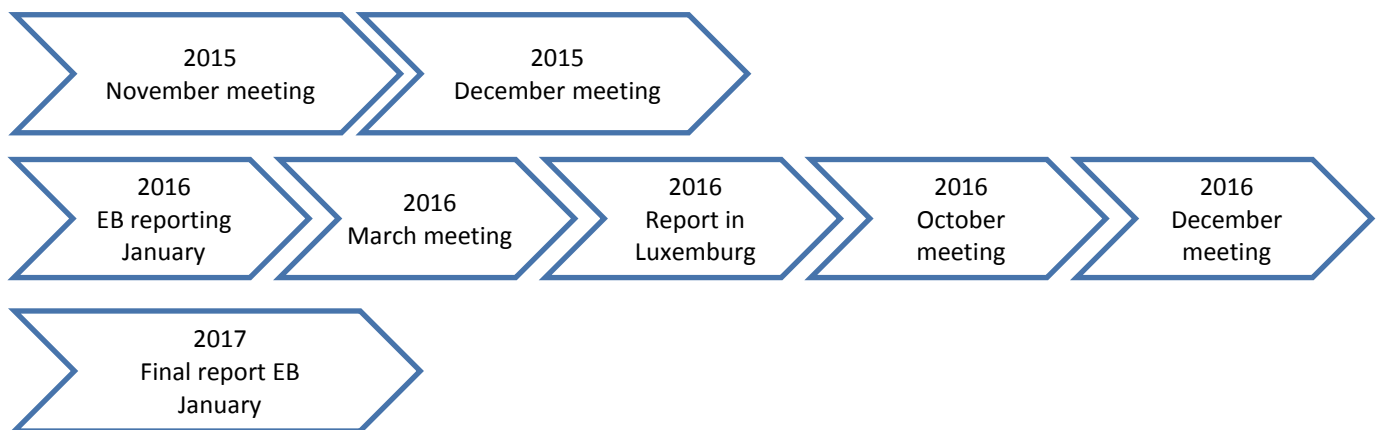
To have the best possible use of a task force and to reach as far as possible during the limited time available, the members should (preferably):

- have an interest in and experience of education and training
- be able to communicate to the task force the range of competences in his/her own WG

- actively contribute with new ideas and solutions to how we best develop the new strategy at monthly “meetings” (be they via NuSaSET, email, internet forums, teleconferences etc)
- be responsible for the communication between his/her own WG and the task force
- delegate any activities suggested by the task force to his/her WG members

In order to not scare possible volunteers away, we stress that no one should feel obliged to be able to address all the questions listed further down in the document. Our idea is that all WGs should contribute with knowledge via their WG representative, and together we may be able to address the full range of what the new strategy implicates. For this reason, we believe it would be desirable that the task force has members with different backgrounds representing industry, universities and research institutions.

The goal of the task force is to present a report with their findings to the Executive Board (EB) in January 2017. At that point the task force should cease to exist. A suggested preliminary plan of meetings and reporting is found in figure 1. We suggest that the task force should make their finding known to the EB in January 2016, to ESARDA as a whole in the annual meeting in Luxemburg in May 2016 and deliver the final report to the EB in January 2017.



*Figure 1. Schematic and preliminary description of the when the task force should be meet and report, over the years 2015-2017.*

## A more detailed description of identified questions for the task force

The task force should investigate the proposed strategy and its implementation (how, when etc) and collect their findings in a written report. We have already identified ten areas which should be addressed by the task force in order for ESARDA to be able to actually implement the strategy, given available resources. However, the task force is encouraged to identify and select other issues.

### 1. **Map external educational and training networks associated with the nuclear industry for possible future collaboration**

We should not reinvent the wheel, but make use of work done by other educational networks. Examples of open questions are:

- list what other educational and training networks exist (both in Europe and outside) and what type of education and training they offer.
- What do these other networks teach on,
- What are their target audience
- How they structure their E&T
- What material do they use
- Are there any contact persons we could keep in touch with

2. **Identify possible ways of implementing the suggested vision, taking available resources into account**

Before suggesting how to implement something, we must know what our resources is terms of e.g. people, time and money are. We should then to the largest extent possible give ideas and examples of how these resources are best utilized to strengthen education in nuclear safeguards. Examples of open questions are:

- What resources do we have within ESARDA for E&T?
- What tasks are required if we want to implement the strategy? Already now we know that we should construct educational modules and keep them alive, but listing more specifically what we want is better.
- What topics can and should we include in ESARDA's E&T?
- Technical and non-technical scope?
- Who is responsible for what? What does it mean to be responsible?
- Who should do the actual E&T and where and to what audience?
- Should we have a quality control system for the educational material and or the people doing the teaching?

3. **Identify ways to develop, maintain and structure the educational modules**

In order to be able to offer E&T in nuclear safeguards, we must have a relevant and updated material to offer those who do the actual teaching. How do we make this happen? Examples of open questions are:

- What should the educational modules contain?  
We have in our original idea suggested to only include material (scientific papers, videos, power points, books, texts) "as is" from the different WGs. Is this view shared by the task force? Or should we also develop different sets of academic course plans, suggest combinations of module material for different target audiences, construct "course packages" based on the contents of several different modules etc? This would require more work from us, how do we solve that?
- How do we best collect, store and make the material available? In what format?
- What is "sufficiently much material" and on what level of complexity should it be available on (who is the target audience)?
- How do we make sure the educational material is updated (how often should it be updated, by whom, in what context)? In our document on the new strategy, a revision board is proposed to update and review the educational material. Are there better alternatives?
- How can we be able to offer relevant and updated material – what is our level of ambition?

4. **Consider to what extent the available material should be open-source and to what degree, and using what resources, it should be quality controlled.**

Assume that we would like to structure our material on nuclear safeguards according to the suggested modules. Examples of open questions to discuss then are:

- To what degree should this material be considered open access (i.e. available to anyone)? For everyone? For only ESARDA members?
- What is our requirement for sharing the information?
- Should we (can we?) import and use material available through other partners as it is (INSEN, IAEA, INMM material etc). Should we use only a link to the material or the material itself?

5. **List what material that may already be available for inclusion in the modules**

Probably many of the ESARDA member institutions already have different material which is suitable for E&T available in some form. The material could be any material valuable for the education and training in nuclear safeguards: power points, texts, scientific papers, exercises, videos, text books, lab exercises etc. Examples of open questions to discuss are:

- Collect material from the already existing ESARDA course book, including presentations by the authors when the course is given, suggested further reading, references etc.
- What members have which type of material available already now? In what form? For whom? Can we use it in any way we like?
- We should collect names of people who are able and willing to share their material.
- We should also collect the material itself, together with a short summary of what the material contains so that we may categorize and tag it accordingly.
- We should collect information on how the material may be used and distributed.

6. **Engage the different WGs in the process**

In the document on the new strategy (Grape, Persson and Andersson Sundén, *Building a Strategy for ESARDA – Education, Training and Knowledge Management*, available on the ESARDA TKM homepage), we specifically say that it is important that all ESARDA WG are engaged in the new education strategy. It should not be the responsibility of only the TKM group to do this. Examples of open questions to address are:

- How do we best contribute to an environment where also all other WG are not only willing to, but happy to, contribute?
- We need the different WGs to contribute with material which is relevant for teaching. How can we help them identify what is relevant for E&T?
- How do we get the WGs to be involved in reviewing and updating the module material without seeing it as just an extra burden to cope with? How do we formalize the review process of the E&T material? What are the responsibilities of the reviewers?
- What do the WGs want in return for selecting, collecting and updating module material for E&T? Student participation in the WGs? Degree projects? Interns? Something else?
- ESARDA could offer those doing the actual teaching and those being educated, a “connection” to safeguards experts in ESARDA.
  - What do we mean by a “connection”?
  - What do we think that the teachers and the young professionals want?
  - What are we (ESARDA) able to contribute with: how do we find volunteering experts, what should our experts do, when should they do it, to what extent, for how long etc.

7. **Evaluate the need for and implications of train-the-trainer courses**

What is ESARDA’s level of ambition when it comes to the actual teaching? Are we aiming to just make the module material available for anyone to teach on, or should we actively control (select?) who does the teaching and how it is done? To what extent can and should we control this? Examples of open questions are:

Perhaps it is difficult and counter-productive to control how the material is used, as long as we make sure that the material we make available is of good quality? It would be resource demanding to arrange train-the-trainer courses for everyone who wants to use our material for E&T purposes. Also, we risk that they choose to not teach this subject at all, or that they use more easily available material of worse quality. But if we decide to go along the train-the-trainer path, we need to answer some questions:

- Should the train-the-trainer course be mandatory?
- How do we stimulate participation in the course?
- What should the course contain and how should it be organized and offered?
- What resources do we have for doing this?

**8. Identify ways to interact with universities, university teachers, students and young professionals**

A way forward for ESARDA to connect with students and soon-to-be young professionals is to have closer ties with universities. What can ESARDA offer to the universities, university teachers and students, and what does ESARDA want in return? Examples of open questions are:

One idea is that relevant teaching and research material collected in educational modules is something that we could offer the universities and specifically teachers within nuclear technology/nuclear physics. In this way, we would make it easier for teachers to include this topic into the academic curricula, since the teachers do not need to find the material themselves. Considering also that many university teachers probably are unaware of nuclear safeguards and non-proliferation, it is probably not likely that they would search for a good teaching material on their own.

- How would the task force propose to create stronger ties with universities, students and young professionals?
- What do they want from us?
- What do we want from them?

**9. Identify possible sources for funding for the proposed work**

We need to find funding for the implementation of the new strategy, since it will be resource demanding to get the “new system” in place (collect material, organize it in modules, construct a database, contact universities, motivate ESARDA experts to be available etc). Examples of open questions are:

- What are possible (immediate) sources for funding? ESARDA member organizations?
- How do we estimate the work (and cost) for the implementation?
- It is proposed that an application to Horizon2020 should be sent in if there is an appropriate call. Are there also other calls that are relevant for this work? Who should send in such an application?
- How can we proceed if the applications are not approved?

**10. To develop a time-plan and suggest responsible actors (persons or organizations) for the strategy implementation**

We need a plan for the possible implementation of the new strategy. We have in this document proposed a crude plan for the task force, but what is the plan after the annual meeting in 2016? Examples of open questions are:

- What could and should be done?
- When do we want the work done?
- Who should do the work?