

HERCA Workshop Education & Training  
Implementation of Radiation Protection Expert and Officer  
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## **RP QUALIFICATION AND FUNCTIONS IN A CHANGING EUROPEAN LANDSCAPE**

### **Education and Training in Germany vis-à-vis the transposition of the new EURATOM BSS**

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# RP in Germany

**Federal Ministry (BMUB)**  
Legislation, standards

**State Ministry (~25)**  
Lic./insp. Nuclear

**State Authority**  
(~60)  
Lic./insp.  
Medical &  
Industrial

**State Body**  
(~50)  
Recognition  
of courses/  
qualifications



- ~ 100 licenses Nuclear
- 1000 licenses accelerators
- 12k licenses rad. Sources
- 22k licenses X-ray
- 150k registrations X-ray



# RP Functions in Germany

- Strahlenschutzverantwortlicher (**SSV**), “*RP Executive*”
  - Owner/director/board member of undertaking
  - Accountable for all legal duties of undertaking
- Strahlenschutzbeauftragter (**SSB**), “*RP Supervisor*”
  - Designated by SSV, number as required
  - Responsible for implementation of RP
  - Personal legal duties (for area of designation)
- Preconditions for designation of SSB
  1. Personal Professional **Integrity**
  2. **Competences** within undertaking to perform duties
  3. “Requisite **Expertise** in RP”
- NB. translations to EN may vary (non-standardized)







# Requisite expertise in RP

## Procedures

- Consideration of qualification from outside Germany
  - well-established
  - case-by-case base
  - supplementary: language and legal system requirements
- Expertise has to be updated every 5 years

## Examples

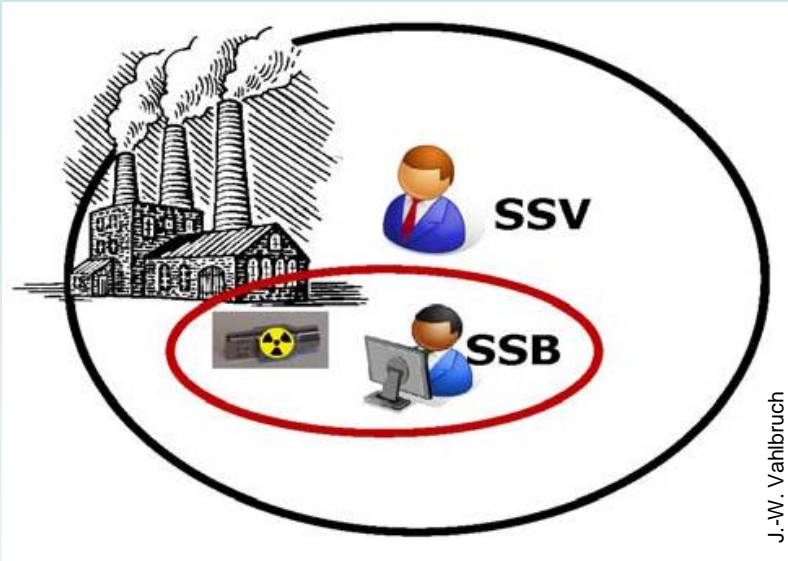
- NPP: Bachelor Sc/Eng, 160 hrs course, 2 yrs training  

- MPE: Master MedPhys, 72 hrs courses, 2 yrs experience  

- HASS: Professional Ed, 40 hrs course, 1 yr exp
- Type approved X-ray: 8 hrs course only  




# DE system of Responsibilities



## Advantages of DE system

- Responsibilities very clearly assigned
- Accountable person available in undertaking
- Person with expertise available „in-house“

## Limitations of training (graded approach)

- Level of qualification dependant on risk of practice
- Recognition only valid within limits of qualification
- For low-risk practices only limited training is feasible





# Technical Experts

## In addition to the functions within an undertaking, Technical Experts are employed in several roles (overview only)

Specially appointed technical experts:

- Recognized by competent authority
- Substantial requirements on education, training, experience, equipment, independence, integrity

### Have to be contracted

- upon registration of X-ray devices
- X-ray devices in operation: every 5 yrs
- Accelerators, Afterloading devices in operation: yearly
- Irradiators, Radiography devices in operation: every 1...3 yrs

Report of a Technical Expert

**usually requested** from applicant

- for licensing of x-ray devices, accelerators, brachytherapy, irradiators
- common to use specially appointed technical experts for this purpose

### Can be consulted

- by competent authority
- any time in licensing procedures or for inspection purposes
- very commonly employed in nuclear field, less often in other areas
- Important in case of significant events or incidents





# RPE and RPO in the new BSS

Personal qualifications **strengthened** in 2013 BSS: framework for E&T and recognition – focus here on two “new” functions

## Radiation Protection Expert

- “having the knowledge, training and experience needed to give advice”
- “**competence recognised** by the comp. authority”
- “may be assigned tasks”
- ➔ undertaking **required** “to seek advice from RPE”

## Radiation Protection Officer

- “technically competent”, has to “supervise or perform the implementation”
- “undertakings [...provide...] with the **means necessary**”
- may be carried out by RPE
- ➔ new function, **optional for** implementation by **MS**







# RPE in BSS: Facts and Fiction

Concepts of RPE/RPO had been used in other contexts  
⇒ some confusion what BSS do (not) require or prescribe

RPE works full-time in RP  
(RPO may work part-time) ❌

RPE not responsible  
for implementation of tasks ~

RPE must be  
independent from undertaking ❌

RPO duties may be  
assigned to RPE ✅

RPE practically  
identical to „qualified expert“ from 96 BSS ✅

RPE is in EQF level 6/7/8  
EQF/ECVET NOT applicable in the scope of Euratom! ❌

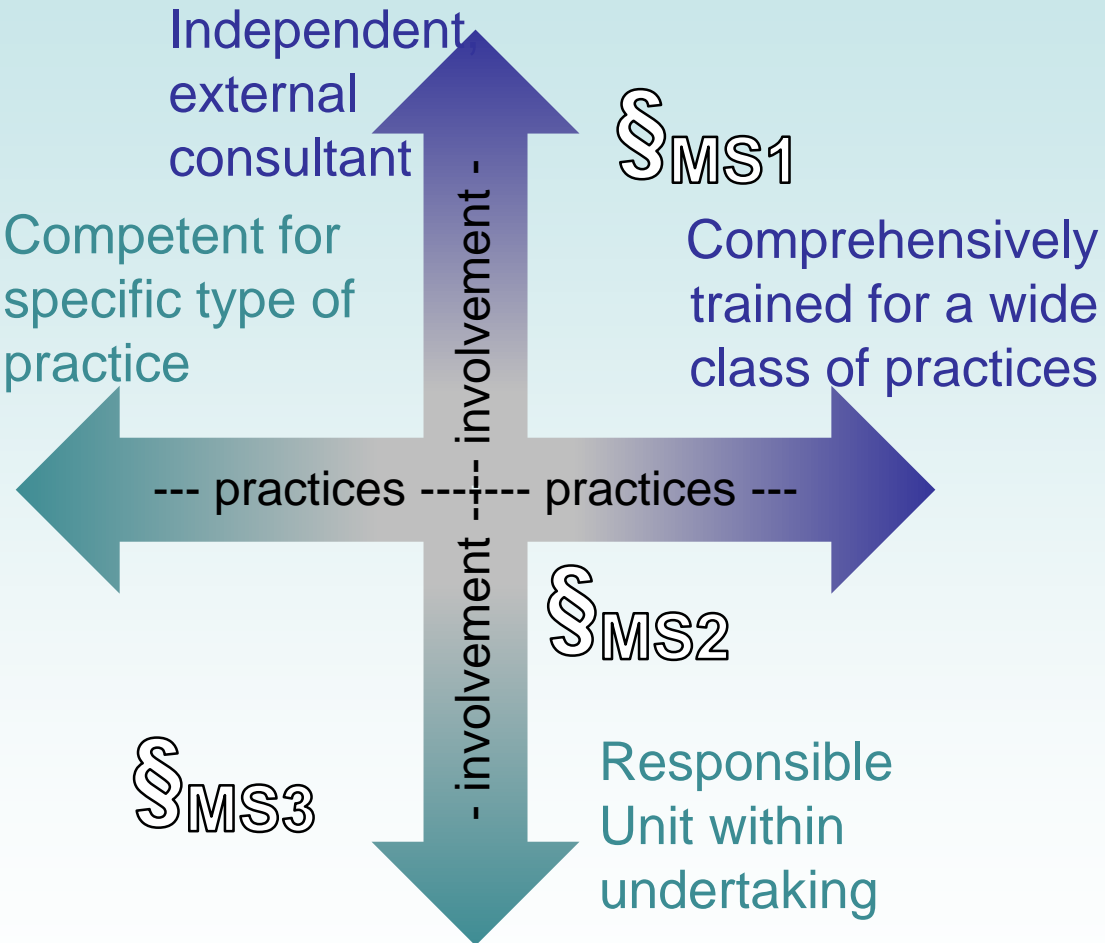
RPE must have  
university degree ❌





# Implementing the RPE

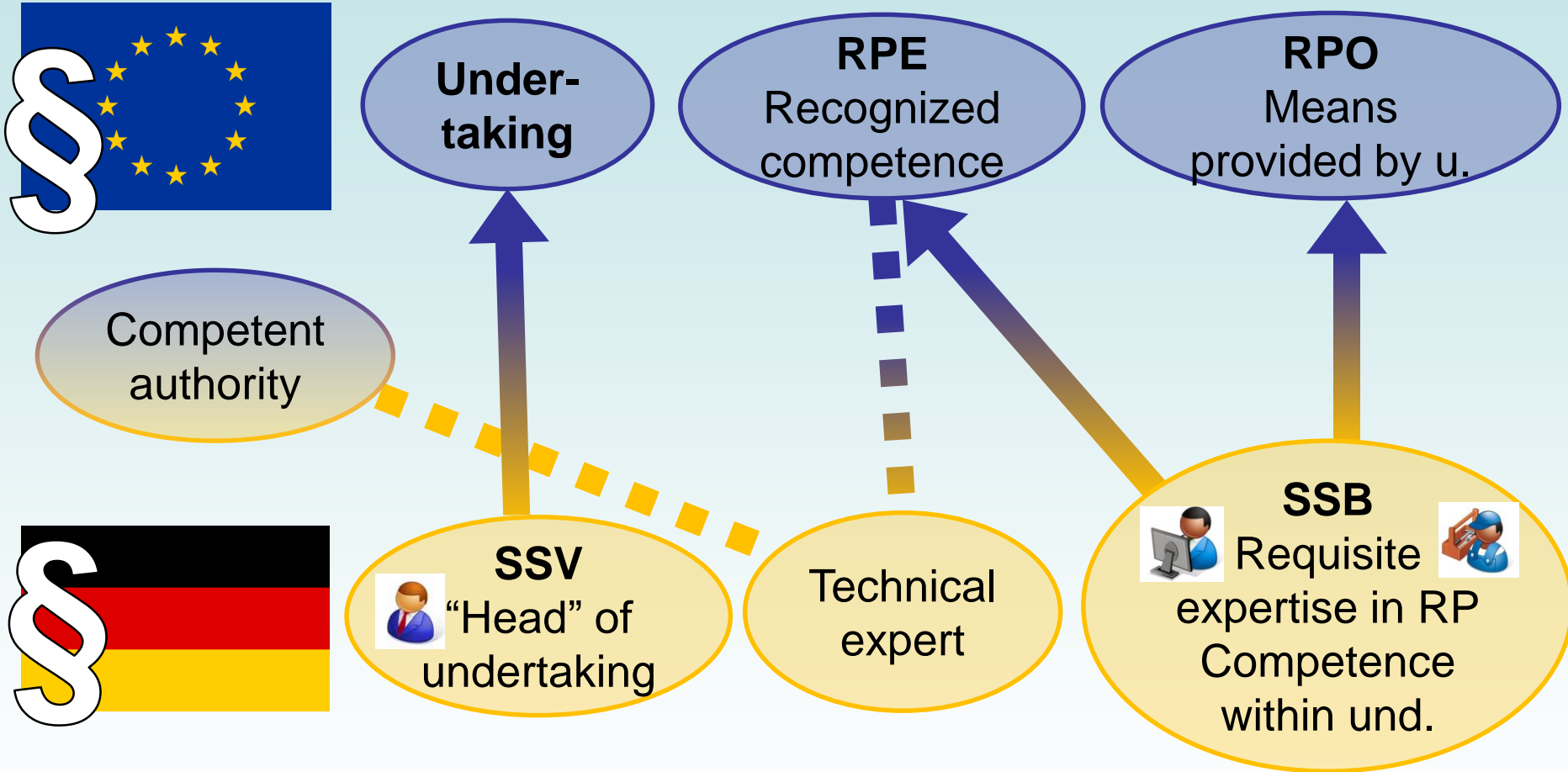
## Choice for MS:



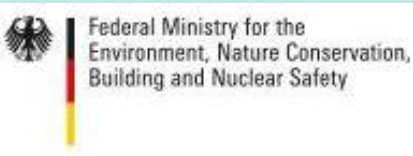
- No requirements on organisational structure of undertaking in BSS
- Assignment of legal duties / responsibilities: National competence
- ➔ **Not one, but 28 (systems of) RPE**
- Personal prediction: Diversity will be **larger** than for 96 BSS



# Correspondence DE – EU



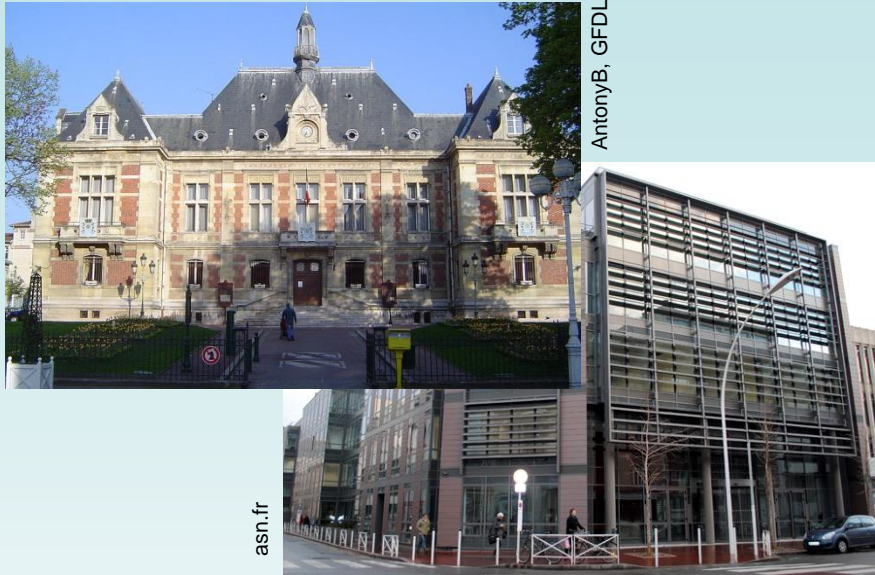
# RPO/RPE in new German legislation



- Political Goal: **Modernise RP law**
  - ➔ propose **new** (parliamentary) **RP act** (currently 2 ordinances)
- Change of E&T system only viable if RP is improved
- **Profound changes in E&T not foreseen** for most practices
- New concepts for low-risk practices? – work in progress
- After transposition: Rework guidelines, significantly reduce groups of expertise



# For discussion: E&T Challenges ...

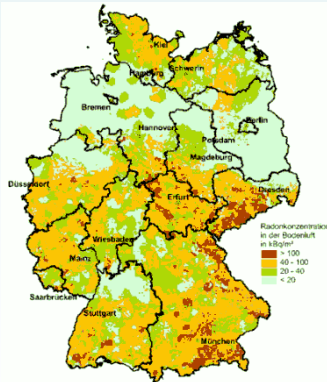


- Information and Training of **workers** (less international work done so far?)
- Relevance of E&T for **physical protection of sources**

- RPE/RPO in **transport of radioactive material**
- “**New**” practices: RPE for occupational protection in
  - NORM at workplaces
  - flightcrew (spacecrew)
- E&T for **Radon at Workplaces**



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Report to Parliament 2009



- **BSS** offers a multitude of options for implementation
  - Successful **guidance** will **respect diversity**
  - **No mandate for harmonisation** in European primary law or HERCA
- ➔ Base discussion on content of BSS only

## Suggestions for way forward:

1. Broaden work to **full picture of options fo RPE (&RPO?)**, graded approach to requirements
2. Develop methods for cross-border **acceptance when requirements are diverse**
3. Base any contact to **EQF** on **thorough analysis** of legal & technical & factual foundation



# Thank you for your attention



Soyuz capsule mockup @ esa European Astronaut Center Cologne. Photo: Jörg Junkerfeld

... take Radiation Protection off to new horizons!

