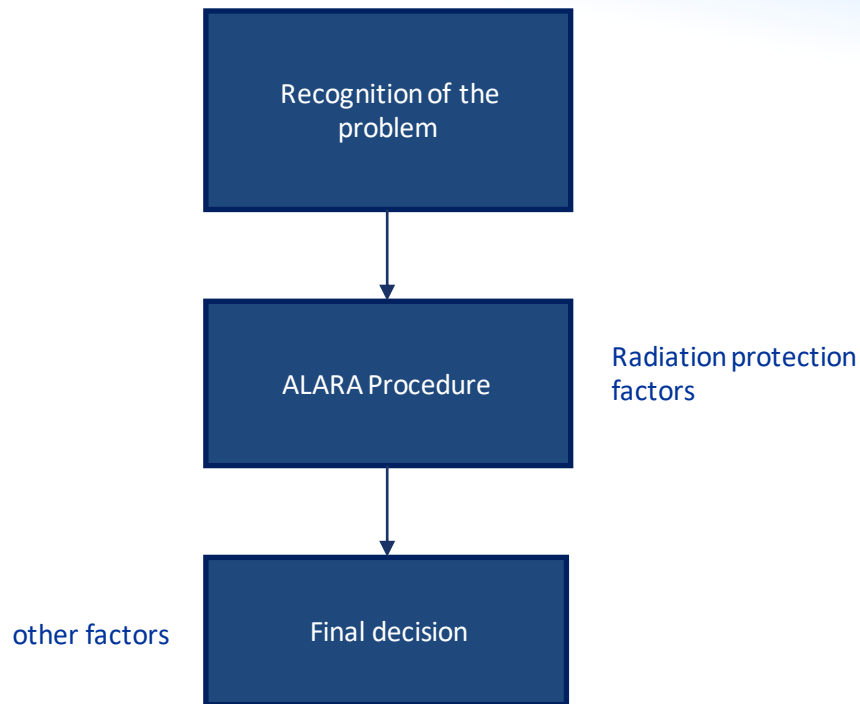


3.2 The Optimization procedure: steps and scheme

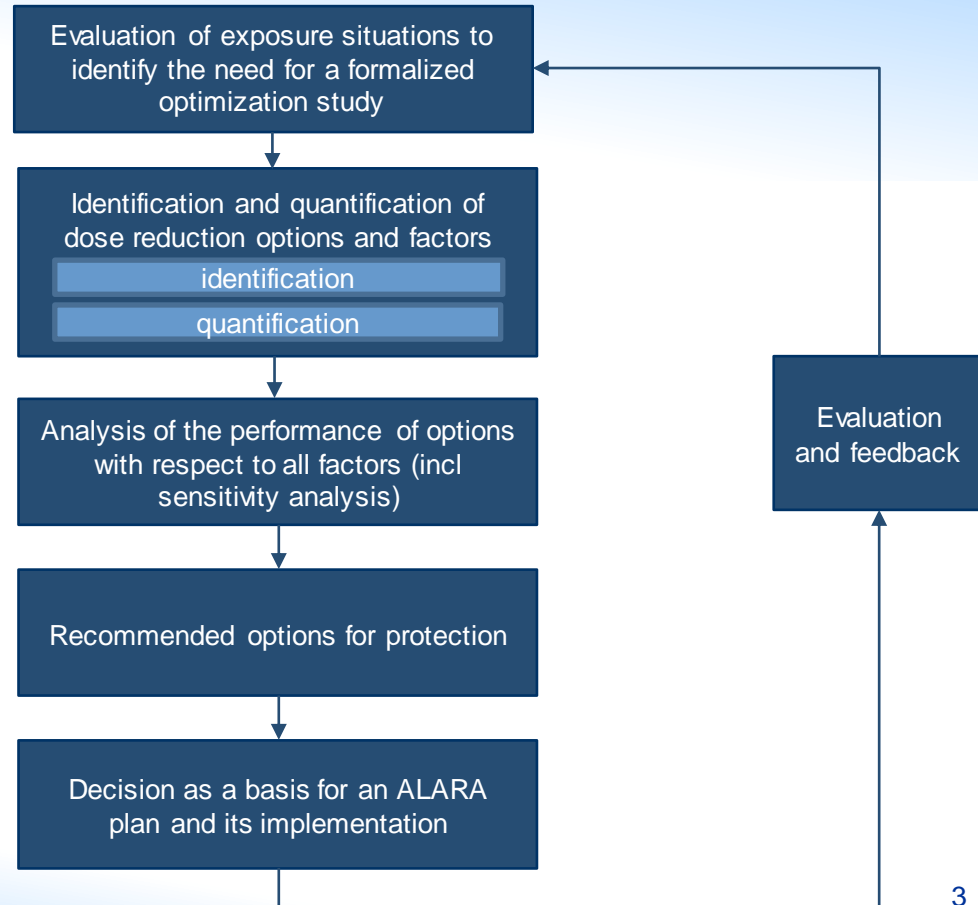


The radiation protection optimization approach



The radiation protection optimization Procedure

The procedure is a simple checklist of 5 steps and sub-steps that structure the approach to any problem or decision in radiation protection.



Step 1: Evaluation of the exposure situation i.e. Definition of the problem



What is the system to be optimized ?

What are the stakes?

Who? Where? When?

To identify the need for a formalized optimization study and eventually determine adequate resources to be affected to such a study

Step 2 part 1: Identification of reduction actions and other factors

What are the possible actions on the source, distance, time and organization?

What are the quantitative factors to be taken into account both in terms of radiological protection and other domains?

What are the qualitative factors to be taken into account in the evaluation process?

Step 2 Part 2: Quantification of reduction actions and other factors

Where can we find adequate data ?

How can we estimate what we do not have?

What are the hypothesis we can make?

Step 3 Analysis part 1: Comparison of reduction actions and selection of options



How do we compare actions ?

What can be considered as reasonable?

Are they methods and tools to help ?

STEP 3 Analysis Part 2: Sensitivity analysis



What if the hypothesis vary?

Are the reasonable actions still reasonable?

Are they more actions reasonable?

STEP 4 : Recommended Options

How do we present the results of the analysis?

How do we document the previous analysis?

What are the in house possible references for being reasonable?

STEP 5 : Decision and implementation plan



Who will take the decision according to the actual stakes?

Who will follow the implementation ?

How will feedback be collected?

Implementing the Radiation Protection Optimization procedure...

Will lead to optimized dose objectives in terms of collective dose, and eventually individual doses

They have to be checked against reality,

- to point out gaps,
- To keep track of actual new data, for improving situation on the spot and often...

... making feedback analysis to prepare the next operations, making use again of the radiological protection optimization procedure

... Within a global ALARA approach following the operational phases of any activity

