

BACKGROUND & MOTIVATION

- The concepts of tolerability and reasonableness (T&R) are central to the three fundamental principles of radiological protection (i.e., justification, optimisation of protection, application of dose limits).
- Over the years, ICRP publications have used these terms both in a general sense (e.g., “it is reasonable to assume...”) and in principle-specific contexts (e.g., “ALARA”), and it is well-recognized that greater specificity as to the intent and meaning behind these concepts is warranted.
- Relying on the ethical foundations of the ICRP system, TG 114 is engaged in a critical reflection on the history, definitions, roles, scope, and application of “tolerability” and “reasonableness” in the context of RP.

The TG 114 reflection is intended to provide improved clarity and consistency in the application of the ICRP’s recommendations

WORKING DESCRIPTIONS

Tolerability of Risk

- Risk that is bearable in a specific context based on the current values of society and of qualitative judgement with due consideration for individual & societal risk.
- Construction of the detriment (ICRP Pub 152) is an important component, with a prudent approach for low dose exposures and the inclusion of weighting factor for severity.
- Includes the level of the risk along with considerations on potential risk, risk comparison and multi-hazards.
- Not a numerical demarcation between safe and unsafe.

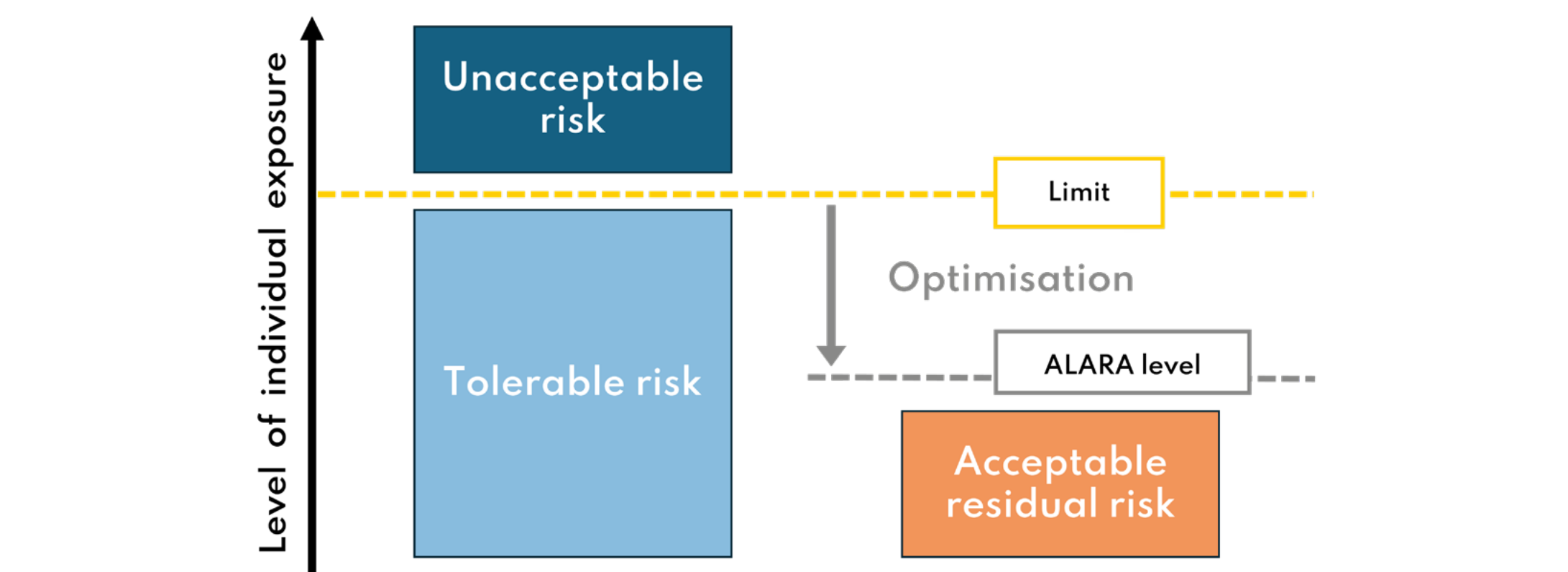
There is no universal value of individual risk to define the demarcation between tolerable and not-tolerable risk.

Reasonableness

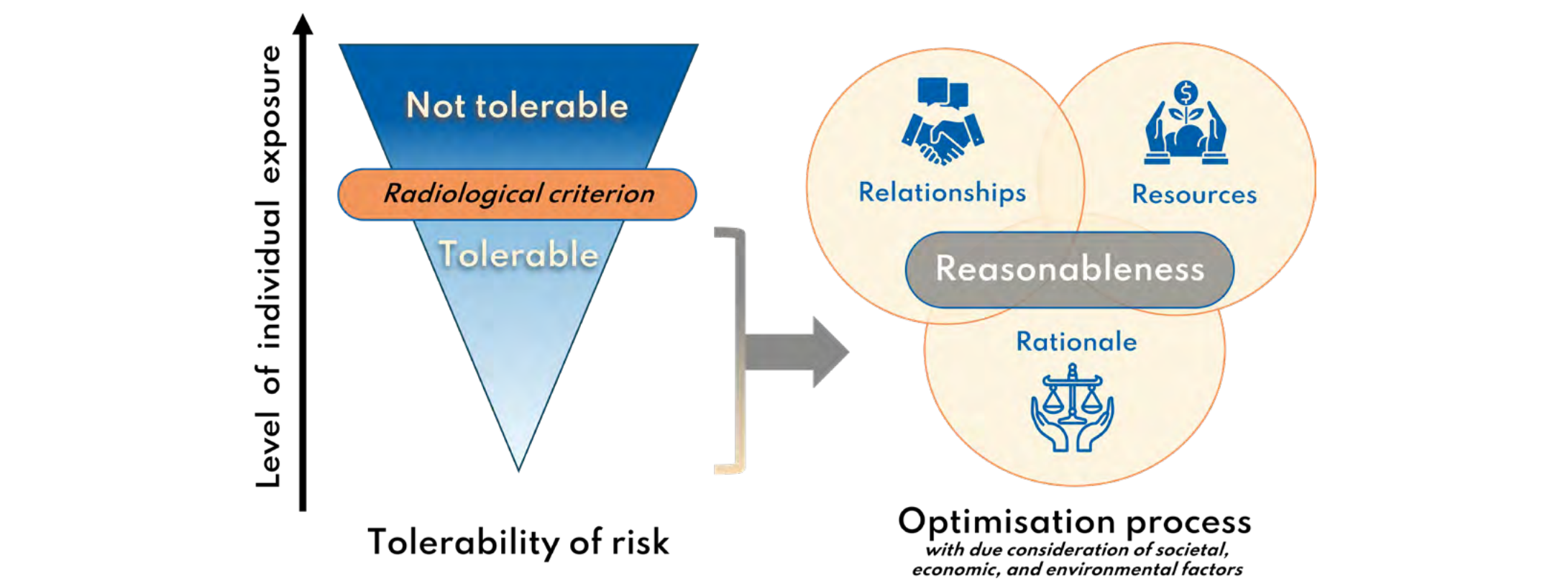
- Optimisation refers to a deliberative process involving stakeholders to achieve a workable approach, integrating economic, societal, environmental, and ethical considerations (see 3Rs).
- Values highlighted in ICRP Pub 101b remain crucial for reasonableness, e.g., equity, ability to control, sustainability, intergenerational considerations, individual/societal benefit, knowledge held by those exposed, social trust.
- Evaluation of what level of exposure is ALARA in each circumstance should include “rational, informed, and impartial decisions that respect other views, goals, and conflicting interests.” (ICRP Pub 138).

Reasonableness refers to good judgement, fairness, practicability, proportionality, and appropriateness.

ICRP PUBLICATION 60 (1991) FRAMEWORK



REVISED FRAMEWORK



EXAMPLE CONSIDERATIONS IN APPLICATION

Medical

- Based on the generic concept of quality in healthcare, tolerability and reasonableness for RP in medical exposure of patients could rely on:
 - Appropriateness / Justification
 - Radiation safety of patient / Optimisation
 - Patient-centredness

Emergency & Recovery

- RP objective is to prevent harmful effects while considering health & well-being of all those affected, decent working conditions for responders, quality of life of affected communities, and biodiversity in affected areas.
- Depending on phase of the accident, application of T&R should differ and the relevant specific factors & issues to be considered may vary.

Environment

- Both intrinsic and utilitarian value of the environment should be considered. Example considerations of the 3Rs:
 - Relationships: understanding environmental justice issues through engaging with stakeholders
 - Rationale: include risks to animals and the surrounding environment
 - Resources: consider impact to ecosystem services

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Poster ID 232

