

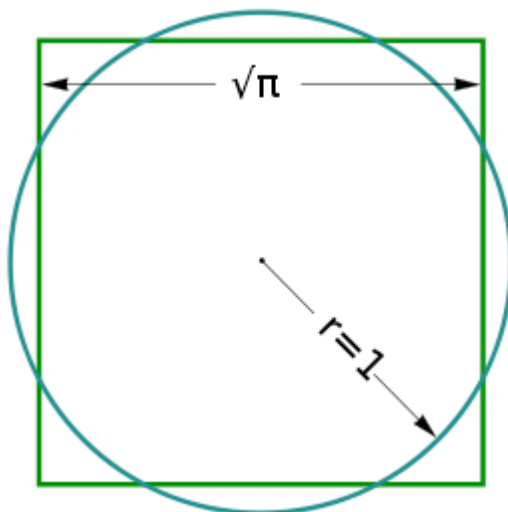
Safety, Dose Optimisation and Security: the Quadrature of the Circle

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- Introduction
 - ALARA culture, Safety Culture, Security Culture
- Synergies between these cultures
- Characteristics not in line
- Some practical examples
- Conclusions to come to a coherent management of safety and security



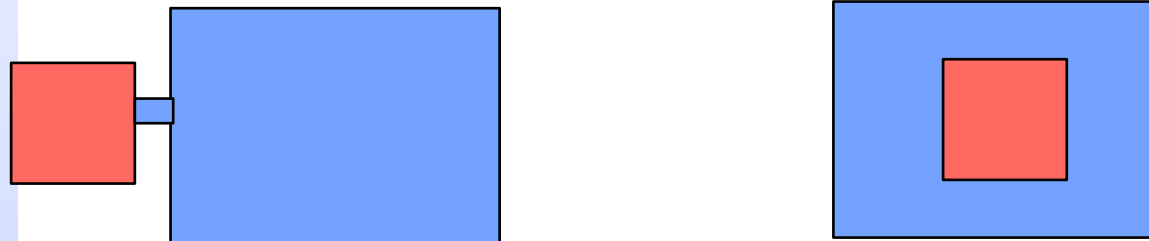
- **Safety Culture: INSAG 4**
*Safety culture is defined as “that assembly of **characteristics and attitudes** in **organizations and individuals** which establishes that, **as an overriding priority, protection and safety** issues receive the **attention warranted by their significance**”*
- **Security Culture, STI/PUB/1347**
*The assembly of **characteristics, attitudes and behaviour** of **individuals, organizations and institutions** which serves as a means to support and enhance nuclear security. An appropriate nuclear security culture aims to ensure that the implementation of **nuclear security** measures receives the **attention warranted by their significance***

	SAFETY	ALARA	SECURITY
Individual dimension	Questioning attitude, responsible behaviour		
Organisational dimension	Adequate organization, learning culture		
Final objective	Avoid harm to people (workers, population), environment and facilities		
Technical component	Technical tools supporting the policy to be implemented		

But many characteristics are not in line

	SAFETY	ALARA	SECURITY
Nature of risk	Driven by tasks and products Staff aims at reduction of risk TRUST		External dimension Malicious intent DISTRUST
Probabilistic aspects	Very low probability, high consequence	Daily operations High probability Low / moderate consequence	Probability??? Consequence???
Acceptability	Mitigation efforts get large support		Poor acceptability (cameras, fences,...)
Time dependence	Ruled by in-house planning and operations		External threat evolves globally
Reason	Significance	ALARA	Significance? Reason?

- Hypothetical case: a storage place for nuclear or radioactive materials
 - ALARA: increase distance
 - Criticality safety: put it somewhere remote
 - Fire safety: remote, easy access
 - Security: difficult access, if possible within a facility



- ALARA, Safety, Safeguards: adequate inventories
- Security: inventory = guidance for attack
- Labelling of sources
 - ALARA: labelling = good practice
 - Security: labelling is mandatory for High Active Sealed Sources, and useful in case of theft, loss,...
 - Security: labelling may lead to extra dose
 - Security: labelling may lead to orient terrorists

- Security policy is not always in line with safety policy and/or radiation protection policy
- This is enhanced by the different legislations, authorities, in-house services dealing with them
- But the workforce has to cope with all of them!!!

There is need for a **holistic approach**
not optimising just one of the policies
or stimulating just one of the cultures

both at the level of

Regulators

and

in-house safety and security actors:

**ASSARA: as safe and secure as
reasonably achievable**

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