



Overview of the IGD-TP Strategic Research Agenda (SRA)

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Working Group on RD&D TSO's needs : the view of Sitex

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What is a Technology Platform (TP)?

“aims to bring together R&D-relevant stakeholders with various backgrounds who would develop a long-term R&D strategy in areas of interest to Europe”

“industry lead is important to gain commitment and momentum”.



http://cordis.europa.eu/technology-platforms/home_en.html



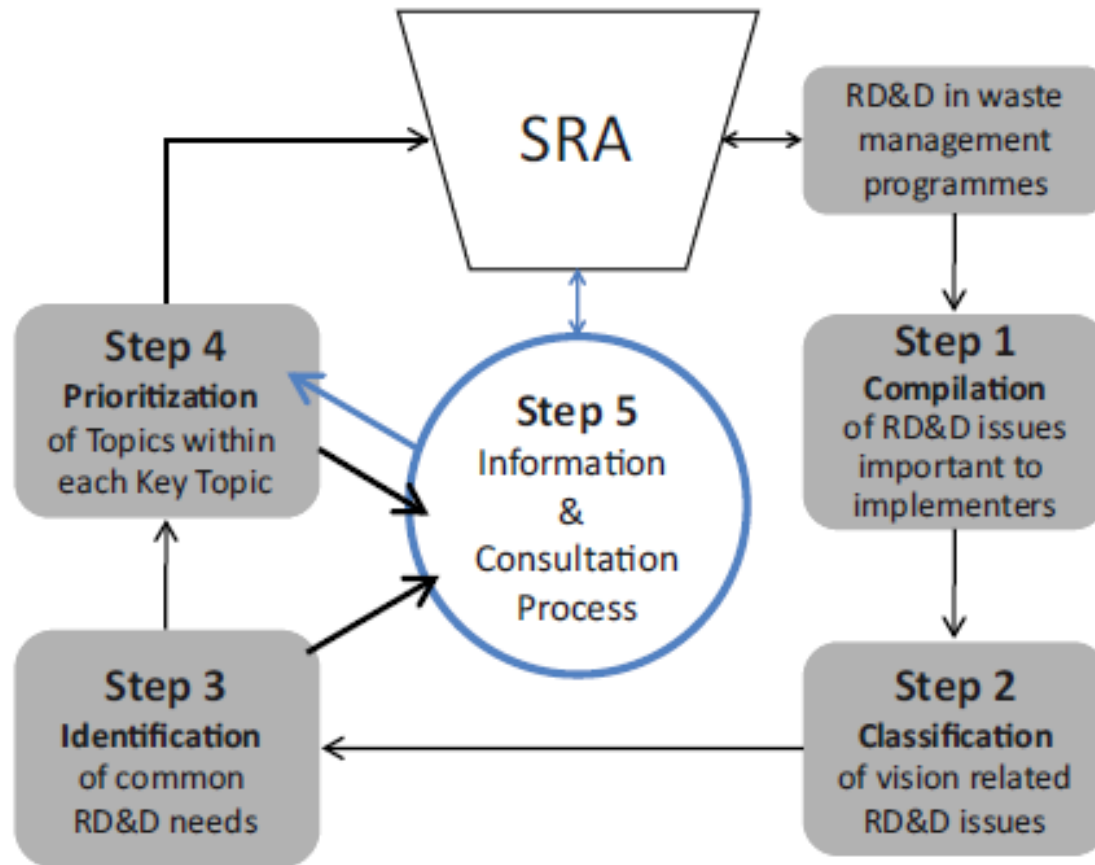
IGD-TP SRA work process (2010-2011)

- A FP7 support action project proposal for an IGD-TP Secretariat (SecIGD) was submitted in 2009
- An Interim Executive Group (IEG) was formed
- SRA working group formed comprising of WMO representatives

Stakeholders **define a Strategic Research Agenda** setting out the necessary medium- to long-term objectives for the technology.

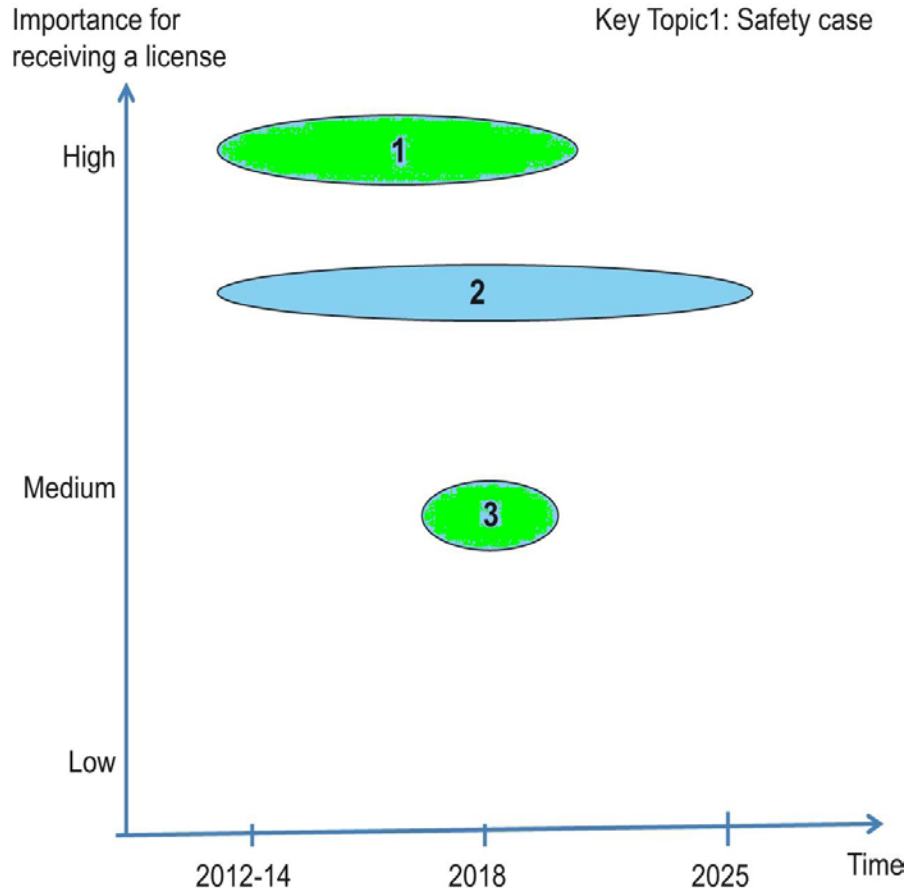


Systematic and structured approach to developing the SRA







Key Topic 1: Safety case

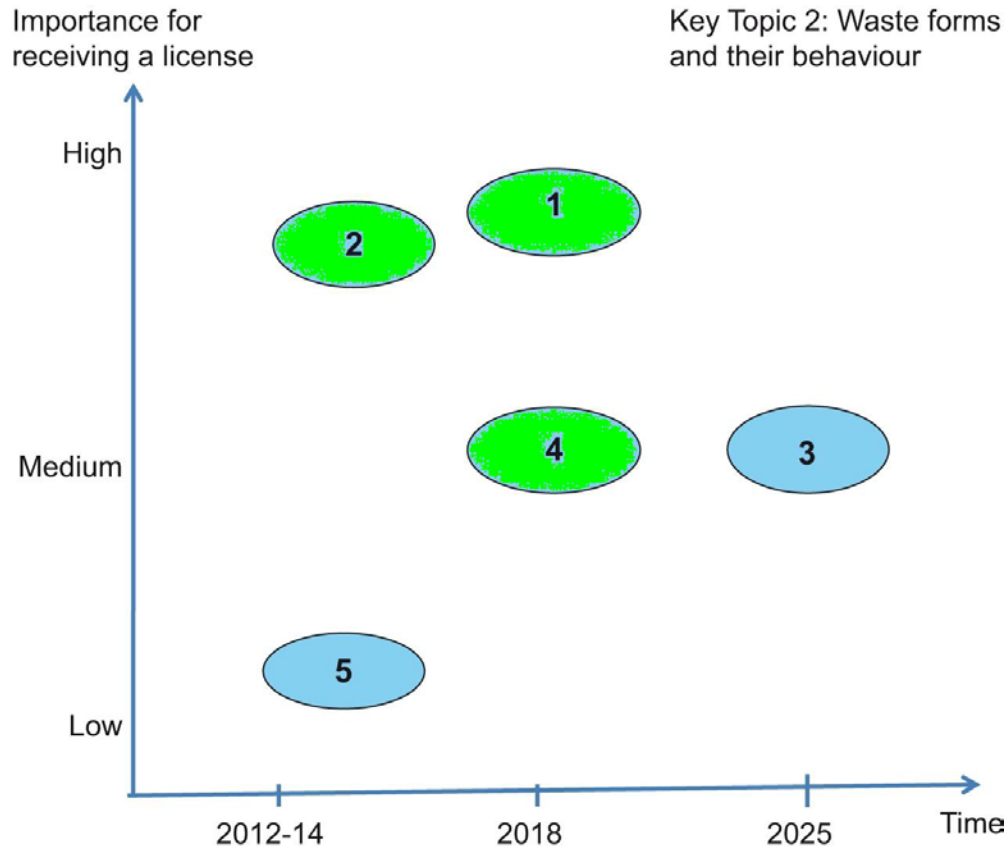


1. Increase confidence in, and testing and further refinement of the tools (concepts, definition of scenarios and computer codes) used in safety assessments.
2. Improve safety case communication.
3. Increase confidence in and further refinement of methods to make sensitivity and uncertainty analyses.

-  Active
-  Non-active



Key Topic 2: Waste forms and their behaviour



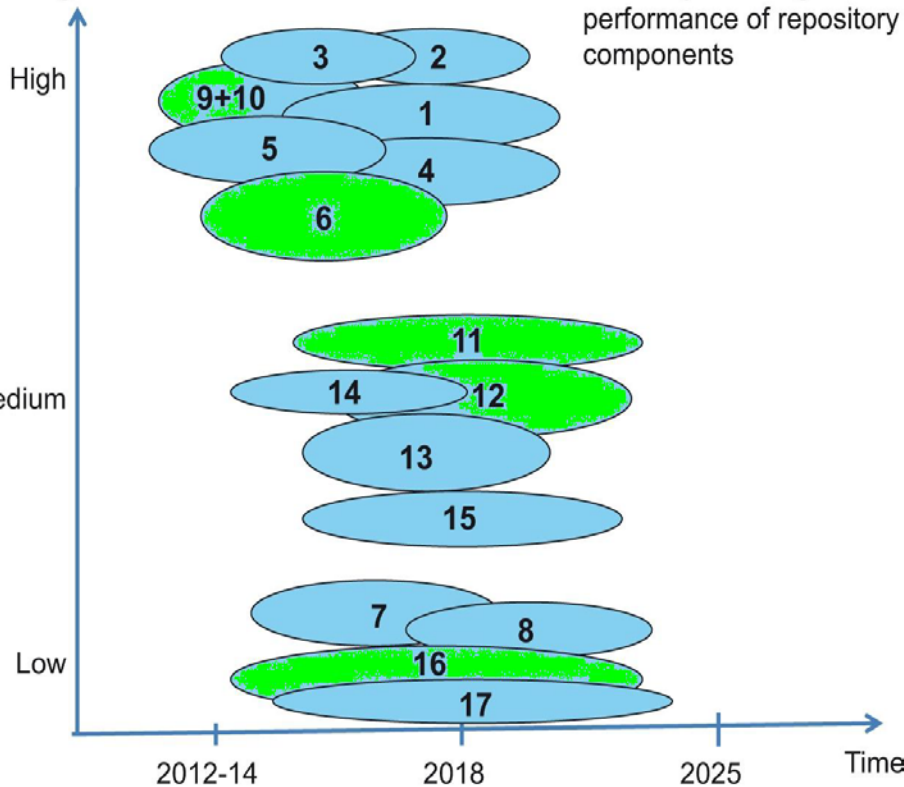
1. Improved data for the rapid release fraction for spent uranium oxide fuel and improved understanding of its dissolution behaviour.
2. Improved data and understanding of the release of radionuclides and chemical species from various long-lived ILW.
3. Improved data and understanding of the behaviour of spent MOX fuel.
4. Further development of burn-up credit methodology and its application for fuels with higher enrichment that allow higher burn-up.
5. Improved data and understanding of the performance of vitrified high level waste.



Key Topic 3: Technical feasibility and long-term performance of repository components

Importance for receiving a license

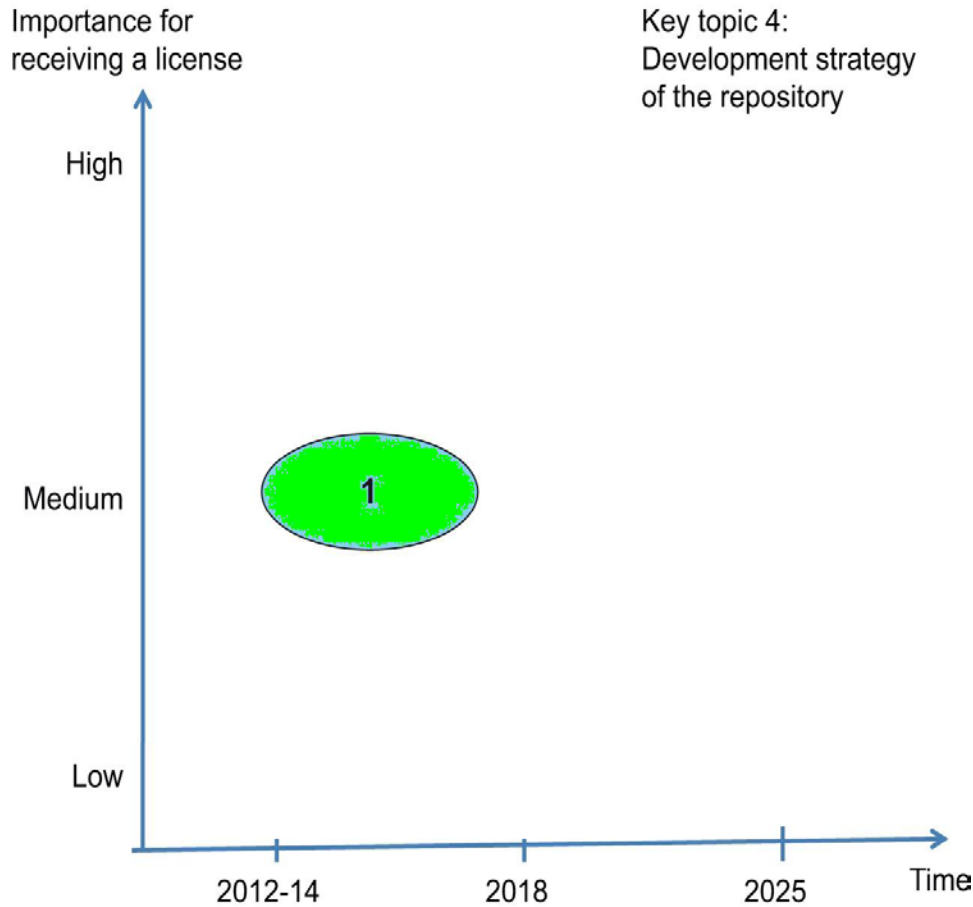
Key topic 3: Technical feasibility and long-term performance of repository components



1. Demonstrations of full-scale operations of HLW disposal containers.
2. Demonstrations of the industrial scale operations for buffer and backfill.
3. Construction of main underground facilities: Confirmation of rock properties for final detailed design.
4. Repository layout design including operational safety studies and reversibility/retrievability.
5. Pilot demonstrations of repository operations.
6. Full-scale demonstrations of plugging and sealing.
7. Knowledge compilation on non destructive testing (NDT).
8. Knowledge preservation related to retrievability.
9. Improved understanding of the impact of hydrogeochemical evolution on the long-term performance of bentonite buffer in specific disposal concepts developed for crystalline host rocks.
10. Description of seals and plugs systems and modelling of their long-term behaviour.
11. Understanding of the evolution of cement-based seals.
12. The interaction of cement-based sealing and construction materials with clay-based buffer and seals.
13. Continued development of low pH concrete.
14. Laboratory and modelling work on salt backfill to study its long-term behaviour.
15. Investigation of the effects of the iron-bentonite interaction and elevated temperatures (above 100°C) on bentonite buffer material evolution.
16. Sharing of knowledge on container materials behaviour.
17. The emplacement methodology of bentonite directly around waste containers to optimise thermal effects.



Key Topic 4: Development strategy of the repository

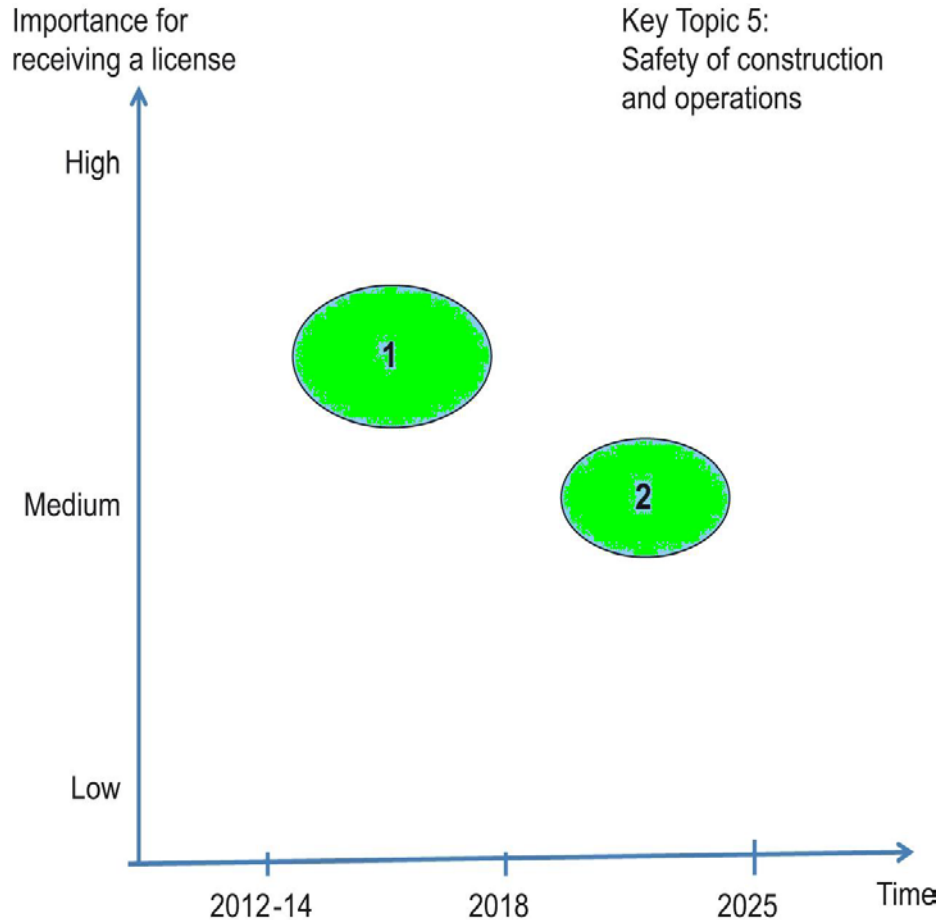


Key topic 4:
Development strategy
of the repository

1. Improved methodologies for developing strategies and approaches for adaptation and optimisation.



Key Topic 5: Safety of construction and operations



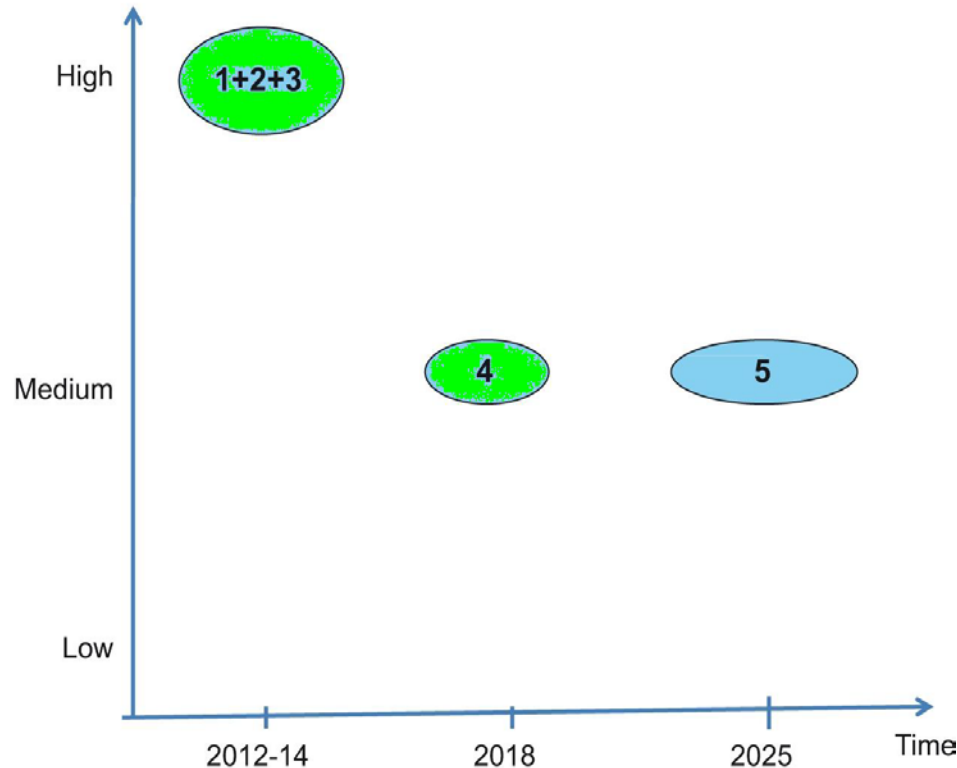
1. Improved methodology, approaches and documentation on safety of construction and operations.
2. Strategies to evaluate the impacts of construction and operational issues on the disposal system.



Key Topic 6: Monitoring

Importance for receiving a license

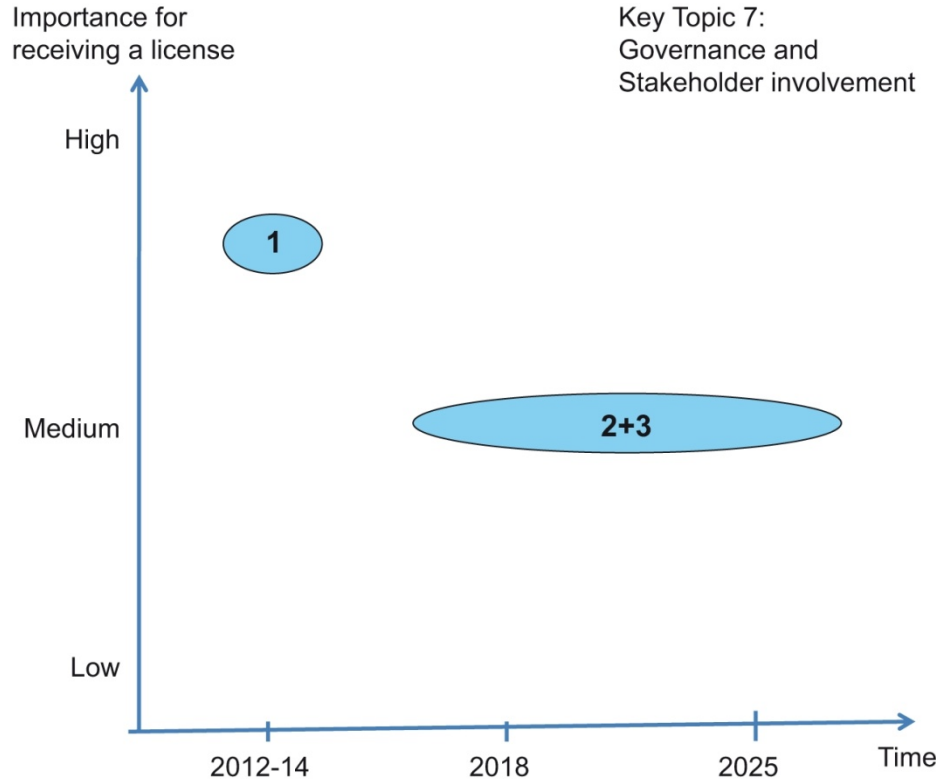
Key Topic6: Monitoring



1. Monitoring strategies and programmes for performance confirmation of the repository.
2. Availability of monitoring technologies and techniques.
3. Monitoring of the environmental reference state.
4. Monitoring of engineered barrier systems (EBS) during operations.
5. Post-closure monitoring.



Key Topic 7: Governance and Stakeholder involvement



1. Governance of decision-making processes.
2. Use of RD&D results to have open and transparent dialogue with stakeholders.
3. Involvement of stakeholders.



Summary of the SRA

- The SRA aims to set out some priority areas where
 - enhanced cooperation could support the vision;
 - practical achievements may be possible; and
 - programmes implementing both in ~2025 and much later will benefit.
- The SRA group is aware of many ongoing relevant activities and has tried to avoid giving priority to topics already well served by other fora
- The SRA will need continuing consideration and revision as programmes progress