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Advanced Modular Reactor Knowledge Capture

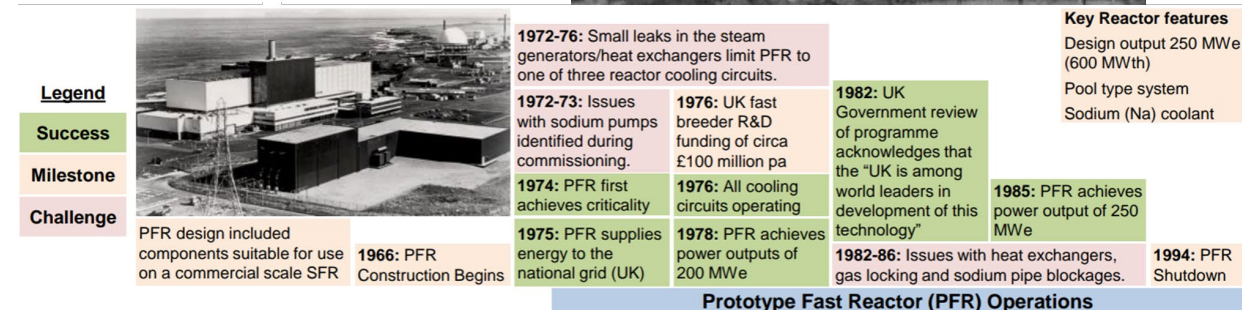
Project Update

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Historic Context

The UK has a strong history of conducting research, and operating reactors whose modern equivalents are termed “Advanced Nuclear Technologies”

- High Temperature Gas-cooled Reactors (HTGRs)
- **Dragon 1965-1976**
- Liquid Metal-cooled Fast Reactors (LMFRs)
- **Dounreay Fast Reactor 1955-1977**
- **Prototype Fast Reactor 1974-1994**
- Molten Salt Reactors (MSRs)



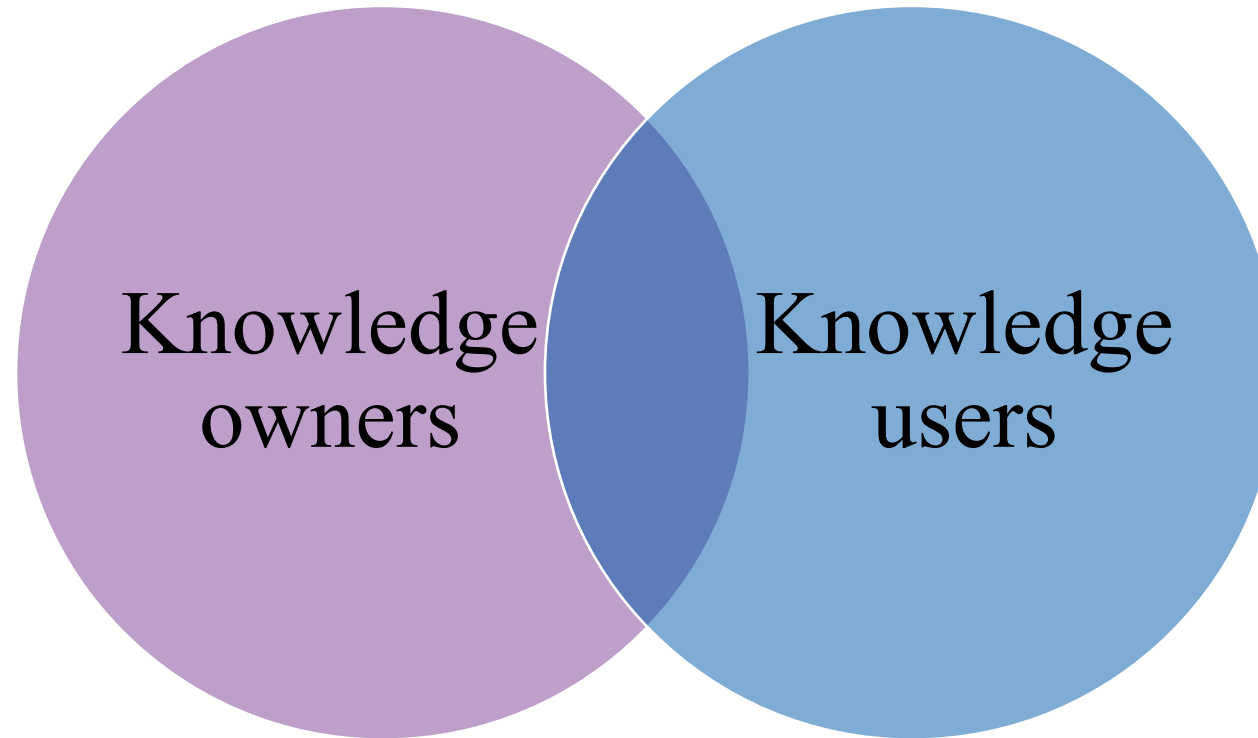
Cessation of various programmes/funding, and subsequent re-organisations have led to the knowledge residing across multiple organisations...

Aims & Objectives

- Support the development and deployment of Advanced Modular Reactors in the UK
- Facilitate knowledge capture and dissemination to reduce the time, risk, and cost of AMR RD&D programme delivery
- Explore how to facilitate further knowledge sharing across the nuclear industry in the area of ANT
- Provide UK organisations with valuable knowledge to leverage against international funding

Phase 1 - Summary

Phase 1 overview



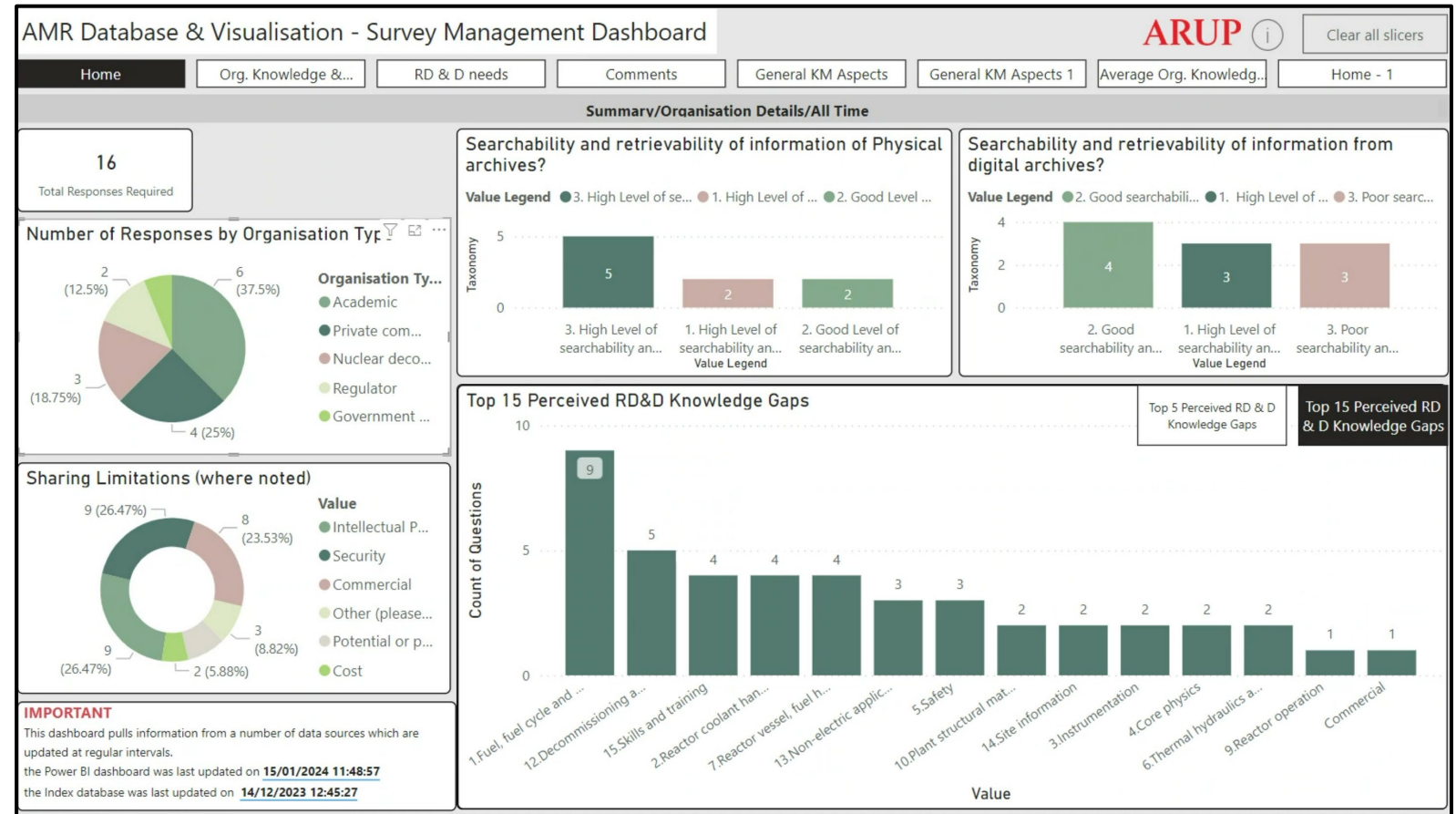
- Phase 1 needed to build information about information
- We started by mapping the industry and its respective organisations and parties
- A common taxonomy was also needed



Scoping survey outputs

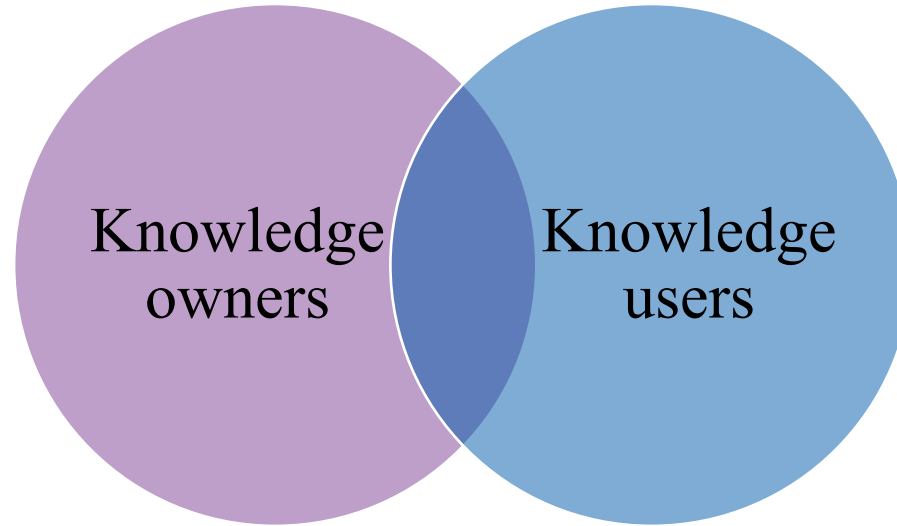
Live dashboard showing:

- Survey responses across the taxonomy
- Understanding of areas of developed knowledge within the sector
- Areas of perceived RD&D Needs
- Organisation types and the degree of their knowledge



Scoping Survey Power BI Dashboard

Phase 1 – Key findings



The aim is to connect the information owners to the information users in a way that is transparent and accessible for the whole industry.

- 1) Identified the need for a searchable and accessible database of where all the information that is of value can be sourced.
- 2) The use of metadata (data about data) to populate a database is a way of overcoming issues such as intellectual property, commercial positions, security restrictions, etc.
- 3) Identified a prioritised list of topics, themes and information for populating the database.
- 4) Identified three routes for populating the database – the Archives (national & nuclear), tacit knowledge capture, topics.
- 5) Identified the scope of the works required to fulfil the objectives of the project – three projects for Phase 2a.
- 6) Identified several international programmes which could provide leverage for UK programmes

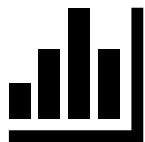
Phase 2 - Summary

Projects for Phase 2a

Overview of projects being delivered in Phase 2a

Project 1: Searchable archive/database of record metadata

Produce a searchable platform that directs users requiring AMR knowledge to organisations that hold relevant AMR information.



Project 2: Facilitate access to existing information

Enable the digital availability of archived and historic information, particularly on research and reports on high temperature reactors and fast reactors.



Project 3: Digitisation & searchability

Indexing and digitization of existing information on graphite from physical media into metadata.



The searchable platform

- We are completing the final stages of the specifications of the platform, however the general principles are that the platform:
 - i) Is likely to be hosted on a web portal (i.e. online).
 - ii) Is likely to have access requirements (i.e. a login & password) to users.
 - iii) Will have search functionality, for example using keywords, date ranges, titles, authors, etc.
 - iv) Will show results of your search and, most importantly, which organisation holds this information.
 - v) Will generate search results which will also show related information (i.e. linked or similar reports).
- Note that the platform will NOT host the information directly or provide any direct access to files (e.g. a download of the file/s).



Our ask of you for Phase 2

- We would appreciate your support to Phase 2 by continuing our discussions on knowledge and information opportunities, to find opportunities between the topics we would like to include in the platform and your information & experts This includes identifying data that can be added to the database (for Project 3).
- We are **NOT** asking for you to give the project team, our organisations or the database your information, documents, records – your information remains with you, and only the metadata of the information would be included in the platform.
- Get involved by emailing: AMRKnowledgeCapture@arup.com



Next steps

- Development of the searchable platform
 - Generation of metadata from information held by NNL
 - (Hopefully) continuing conversations with you all on further metadata generation
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- Get involved by emailing: AMRKnowledgeCapture@arup.com

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