

“Do it once and share it many times” Data Sharing Working Group Annual Report 2024-2025

In brief

The Digital Twin Hub Data Sharing Working Group (DSWG) brings together data sharing practitioners across industry, government and academia to collaborate on emerging data sharing best practice.

Over 2022-25, DSWG has grown into a cross-sector practical working level group where members share data sharing experiences, challenges and approaches to overcoming those challenges. In 2024, the snapshot report, [Cross-Sector UK Data Sharing Infrastructure - Digital Twin Hub](#), was published by Connected Places Catapult, setting out a framework for talking about data sharing infrastructure based on discussions that took place at the DSWG.

DSWG collaboration and learning has laid the foundations for a Data Sharing Infrastructure Hub to support the development of data sharing infrastructure.

Introduction

Data sharing can create huge benefits across and within organisations in the public sector, the private sector and for research purposes. Access to data is a key enabler of AI and so safe and secure data sharing can drive growth across the whole economy. But sharing data in the wrong way can create risks for everyone.

To develop Data Sharing Infrastructure (DSI), public, private and research sectors need to address the barriers to sharing data that are common across domains; this cannot be ignored if the government is to address the missions set out in its Plan for Change¹.

The Data Sharing Working Group has been set up to discuss and share how people are actively addressing these barriers. This report sets out the background and provides an annual report for DSWG activities in 2024-25.

Background 2022-2024

Much is happening in the data sharing space that is uncoordinated and unshared. A Data Sharing Discussion Group (DSDG) was set up to create a safe space for open discussion across sectors and disciplines that explores and disseminates best practice in data sharing. Launched in mid-2022, the group has been convened on a voluntary basis by Sarah Hayes as the Chair. The DSDG brings together experts across the data sharing space from different sectors, including: energy, water, transport, built environment, construction, manufacturing and more. The meetings have been held online.

Originally the group discussed and documented different data sharing architectures, looking at centralised and distributed approaches to sharing data. The group then socialised these

¹ [Plan for Change – Milestones for mission-led government](#)

architectures through the DT Hub². In 2023, the DSDG hosted many presentation discussions by its members, including discussions from the DT Hub Standards and Interoperability Working Group in preparation for the Connected Digital Twin Summit in June 2023.

The DSDG also turned its attention to discussing the need for an energy data sharing infrastructure as a starting point for supporting development of a data sharing infrastructure connecting different sectors such as transport, healthcare and logistics. During 2023, the DSDG pulled together information on different data sharing initiatives into an internal group spreadsheet. With the support of Zuhlke Engineering, Steven Steer - a member of the DSDG - created a website with internal and public domain pages for sharing information about the DSDG weekly discussions.

DSDG and the Digital Twin (DT) Hub

At the beginning of 2024, following discussions between the DSDG, the DT Hub Standards and Interoperability Working Group and the Connected Places Catapult Digital Twin Hub (DT Hub), members of the DSDG agreed to operate as a formal working group of the DT Hub and to rebrand as the DT Hub Data Sharing Working Group with the terms of reference set out in the Appendix.

Over the course of 2024, membership of the Data Sharing Working Group has grown to over 100 members across industry, government and academia. Members continue to contribute to content on a shared Mural board hosted by the Energy Systems Catapult and the Data Sharing Working Group website.

Objectives for 2024-2025

The DSWG's objectives for 2024-2025 are outlined in the terms of reference, discussed by members prior to the beginning of the year. The terms of reference sets out, "For 2024, an objective of The Group will contribute to the development of an overview of the Data Sharing Landscape, including:

- identifying and sign-posting different data sharing initiatives and projects
- defining criteria to describe data sharing initiatives
- documenting at a high level the scope of identified initiatives
- identifying gaps and overlaps between initiatives
- identifying opportunities for further development of data sharing capabilities
- publishing this information into the public domain
- presenting and disseminating this information to the wider community of stakeholders."

This objective has shaped the nature of DSWG sessions over the year and has focused activities on describing data sharing infrastructure and how initiatives worked on across the group fit into an emerging economy-wide data sharing infrastructure.

² [Guest blog: Data sharing between digital twins – can we show this in a simple way? by Sarah Hayes, CReDo - Digital Twin Hub](#)

Sessions 2024-2025

The following table sets out DSWG sessions convened over 2024-25.

Table 1: Summary of DSWG meetings 2024-25

Topic	Presenter/lead	Date
Metaverse ontology	Jess Symons, Visioning Lab	24/4/24
ODI Policy Manifesto	Josh D'Addario, The Open Data Institute	1/5/24
How to describe DSI	Steven Steer, Zuhlke Engineering	8/5/24
DSI Categories – how to describe DSI	Steven Steer, Zuhlke Engineering	14/5/24
DSI Categories – how to describe DSI	Steven Steer, Zuhlke Engineering	20/5/24
DSI Categories and diagrams	Steven Steer, Zuhlke Engineering	29/5/24
Perseus	Gavin Starks, Icebreaker One	5/6/24
OBASHI Methodology	Fergus Cloughley, International Data Flows	12/6/24
In-person DSWG meeting	Steven Steer/Sarah Hayes	19/6/24
Post in-person DSWG reflections	Sarah Hayes, Chair	26/6/24
DSI discussions	Sarah Hayes, Chair	3/7/24
Interoperability Flagship Project	Hassan Mahmud, Digital Catapult	17/7/24
Earth Observation Data Hub	Liz Scott, Satellite Applications Catapult	28/8/24
Stream	Melissa Tallack and Elysia Moore	4/9/24
Energy Data Sharing Infrastructure governance consultation	Sarah Hayes, Chair	11/9/24
EU Data spaces and building blocks	Sarah Hayes, Chair	18/9/24
Updates and DSI	Sarah Hayes, Chair	2/10/24
Joining up DSI initiatives	Sarah Hayes, Chair	9/10/24
DSI snapshot report input	Sarah Hayes, Chair	23/10/24
DSI snapshot report input	Sarah Hayes, Chair	30/10/24
Industrial Strategy data discussion	Sarah Hayes, Chair	13/11/24
Industrial Strategy data discussion	Sarah Hayes, Chair	20/11/24
Gemini Framework Reference Architecture	Daniel Block, DT Hub	27/11/24
DSI snapshot report	Sarah Hayes, Chair	4/12/24
Ontology maker	Jess Symons, Visioning Lab	11/12/24
Data standards landscape	Steven Steer, Zuhlke Engineering	18/12/24
Data standards landscape	Steven Steer, Zuhlke Engineering	8/1/25
DSI Hub Activities and critical success factors	Sarah Hayes, Chair	14/1/25
Foundation Data Model	Jonathan Eyre, Advanced Manufacturing Research Centre	22/1/25

Topic	Presenter/lead	Date
Flexibility Data Standards	Ankit Patel, Arup	19/2/25
DSI Principles	Sarah Hayes, Chair	24/2/25
Smart meter data and synthetic data	Amber Woodward, Centre for Net Zero	5/3/25
DSI Principles	Sarah Hayes, Chair	12/3/25
Energy digital twins	Brian Bishop, Data People Connected	26/3/25

June 2024 in-person meeting

The DSWG met in person on 19 June 2024 at the Connected Places Catapult office. During the meeting the DSWG divided into different groups, each tasked with setting out a framework to describe data sharing infrastructure using detailed level components which had been discussed at previous meetings (metadata, authentication, data standards, data contracts, to name a few). The DSWG also discussed future priorities and topics for the group. Suggestions made on sticky notes are set out below:

Table 2: Summary of DSWG suggestions for future sessions

DSI priorities	Consideration in DSWG 2024-25
Investigate roles and responsibilities	Not directly
Articulate how the diagrams link together / build out all diagrams into a valuable set of pictures	Yes, through components diagram and snapshot report
Form a persona view of users	Not directly
What are the tools that deliver the capabilities (of the detailed components of DSI)?	Yes, some through member presentations
Investigate framework options	Yes, through components diagram and snapshot report
Consider the need to “share data or to use data to answer specific questions”	For discussion
How do sectors share between each other?	Yes, through discussion and member presentations
Agree on what it would be valuable to standardise eg common value frameworks, common risk framework	Initial discussions
New topics	Consideration in DSWG 2024-25
Create guidelines and principles, eg help people not over centralise	Initial discussions on DSI principles
Understand and be able to answer questions of new Government	Discussion of Industrial Strategy
Understand what is happening in Europe, eg MIMs	Initial discussions
Focus on Comprehensive Spending Review – support a bid?	Contribution to DSI Hub activities and critical success factors
Skills	Ongoing discussions
Create digestible content for normies	Snapshot report is a starting point

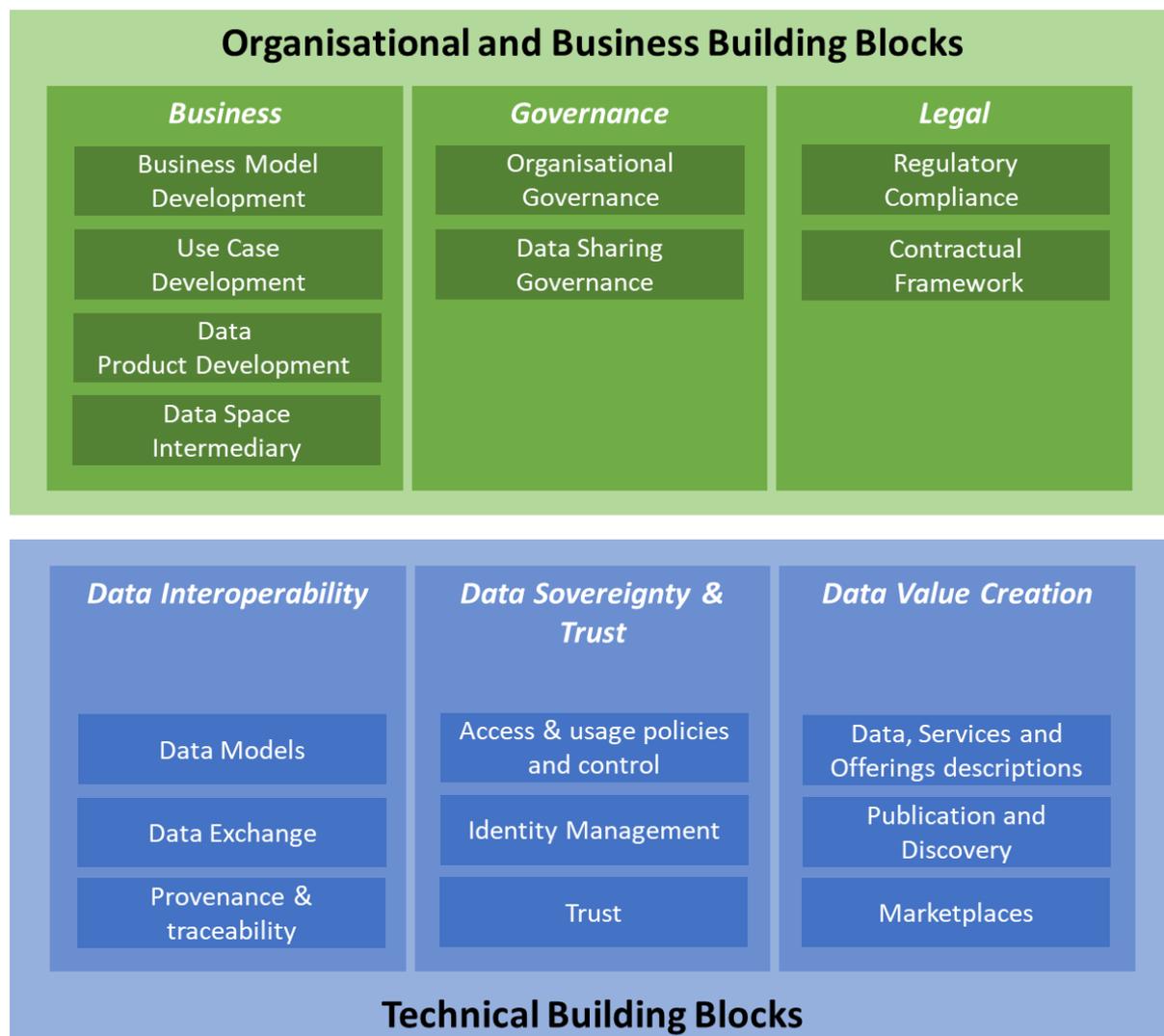
Identify what data sharing projects are ongoing	Snapshot report identifies some projects and set up a link through CPC
Catalogue use cases and examples	Examples included in Mural board but require cataloguing
Consider policy and regulatory angle	Discussion of Industrial Strategy
Develop stakeholder map and publish it	No
Understand what international players are doing	Some discussions
Set out DSWG roadmap	No

Data Sharing Infrastructure

As presented in the summary table (table 2), much of the DSWG discussion over 2024-25 focused on how to describe data sharing infrastructure. These activities built upon the initial work in that was carried out in 2023, to understand the different areas of data sharing that DSWG members were working on.

Members of DSWG have discussed at length the need for common terminology to describe data sharing challenges and solutions to promote sharing and reuse of approach. DSWG members looked at a number of frameworks that could be used to describe data sharing infrastructure, and trialled some of these frameworks during an in-person exercise at the Connected Places Catapult office. Members discussed the EU Data spaces framework set out below.

Figure 1 Data spaces described by the EU Data Spaces Support Centre



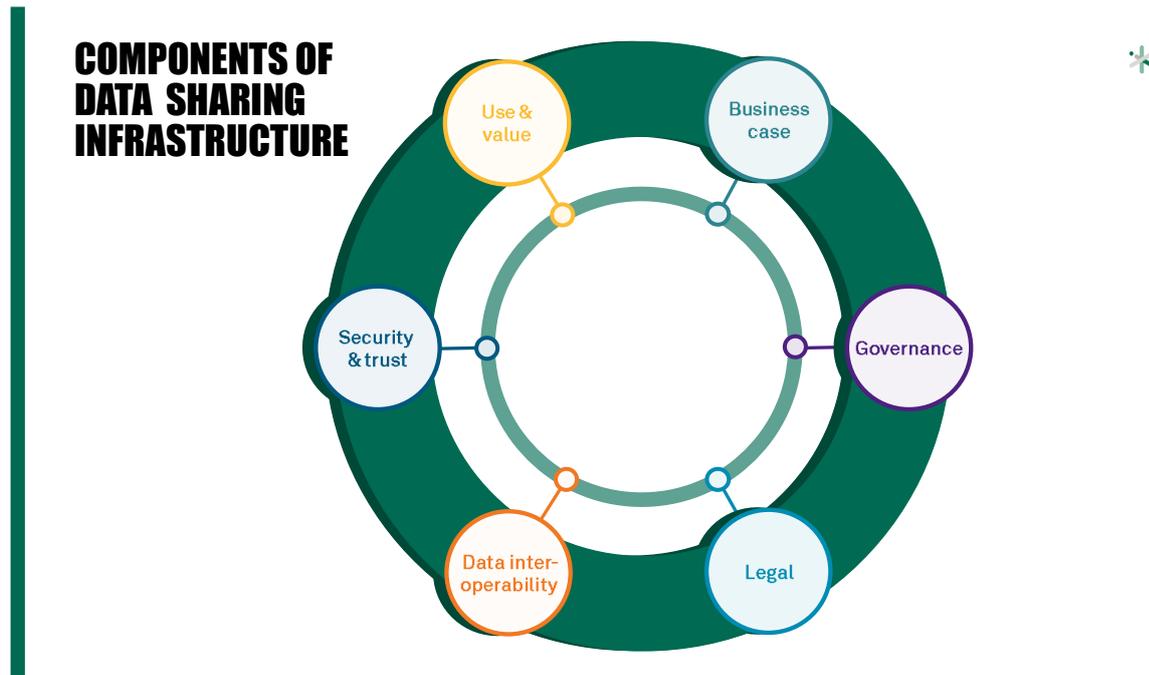
Over September and October 2024, Connected Places Catapult supported the production of a Data Sharing Infrastructure high-level data sharing initiative landscape review resulting in the publication of a snapshot report [Cross-Sector UK Data Sharing Infrastructure - Digital Twin Hub](#).

This report presents the culmination of the DSWG’s discussions during this period. The report sets out the six key components of data sharing infrastructure as discussed by the DSWG. These six components are aligned with the technical and non-technical building blocks presented by the EU data spaces programme above. They include:

- **Business case.** The starting point, as previous studies have demonstrated is often with the use case and business case where a clear purpose and vision for data sharing is required.
- **Governance.** Initiatives need to have some form of organisational governance and data governance (rules for sharing the data).
- **Legal.** Initiatives need some form of a data licence and to adhere to relevant legislation.

- **Data Interoperability.** Initiatives need to consider the use of a data model and the appropriate data structure to ensure the data is ready and able to be shared. This component is relevant to data preparation nodes and data sharing mechanisms³.
- **Security and trust.** Building trust across data sharing participants is essential as putting the appropriate security arrangements in place.
- **Use and value.** Users will be able to share and use the data to derive value.

Figure 2: Components of Data Sharing Infrastructure



The DSWG has discussed how these components should not be considered as sequential but as important to consider simultaneously from the start of the data sharing process.

When setting out a data sharing initiative or project, it's essential to have a clear use case for sharing the data which would be set out in a business case.

Each presentation at the DSWG begins by setting out the exact use case for data sharing under discussion. The business case could be very high level or more detailed depending on the resource required to initiate the data sharing.

The DSWG has discussed the need for governance at project level and on how the data is shared and used at the sector and national levels. DSWG members have presented on the governance they incorporate, and have also discussed the need for governance at a sector level, for example, energy data sharing infrastructure governance.

³ [Digital Spine Feasibility Study | Arup, Energy Systems Catapult, University of Bath](#)

DSWG members have shared experiences in developing and using data licences and the need for common templates to reduce workload and duplication. Members have also discussed a need for and use of standards and a foundational ontology to promote data interoperability.

The group has covered the unserved requirement for semantic and syntactic interoperability. Many topics have also focused on security and trust, with a building recognition that this component represents a cornerstone of DSI.

DSWG presentations have focused on demonstrating how value is being derived from the sharing of data in a multiplicity of ways.

A common theme that has emerged and has been set out in the snapshot report is that there is a huge opportunity for join-up across governance, legal, data interoperability, security and trust, domains of data sharing. Users may have very different use cases and value from data sharing but for common elements –governance, legal, data interoperability, security and trust–it would be of benefit to develop and share best practice rather than to continually reinvent the wheel.

Communication

Communication is the essential ingredient to join-up. If people can't or don't communicate, then joining up across these components of Data Sharing Infrastructure is not possible.

The DSWG is focussed on promoting communication across members and wider communities. Through discussion in the group, it has been possible to set out diagrams which help to communicate technical concepts to non-technical audiences. Increasing understanding of the nuts and bolts of sharing data is part of building data sharing infrastructure.

Enabling data to be shared seamlessly and securely across organisations, Data Sharing Infrastructure will be a real piece of people-based, software-based and hardware-based infrastructure, a socio-technical infrastructure.

The group has sought to discuss and clarify terms where possible, noting the need for common glossaries and taxonomies to increase this understanding. Communicating concepts using a commonly adopted vocabulary is a key part of building data sharing infrastructure and a core objective of the DSWG. Communication helps to connect data sharing infrastructure.

DSWG stakeholder base

The DSWG consists of representatives involved in data sharing across industry, academia and government. Many are expert in their area, be it data interoperability or governance, and all are learning from each other.

Membership from government departments has increased over 2024-25 as the awareness of the need for data sharing infrastructure has increased and departments work to address their own data sharing requirements. Academics participate to share the results of their research and to progress their work through discussion. Industry practitioners participate and share what has and hasn't worked for them and crucially to link up with other data sharing initiatives. The DSWG initiative also enables a networking opportunity among members to "learn by doing and progress by sharing".

Data Sharing Infrastructure Hub (DSI Hub)

The concept of a DSI Hub to join up across the governance, legal, data interoperability, security and trust, domains of data sharing has been discussed by the DSWG and has been formally proposed by the Catapult Network to the Department for Science, Innovation and Technology and incorporated into a Spending Review bid to HM Treasury for the 2026-2029 period. Such a DSI Hub could build upon the foundations of the Data Sharing Working Group to convene, connect and coordinate across wider stakeholder communities involved in data sharing.

Plans for 2025-2026

The year 2025-2026 presents a significant opportunity for the DSWG to continue to build momentum and support for a collaborative approach to data sharing and data sharing infrastructure. This would continue laying foundations for a DSI Hub to launch from 2026.

The DSWG's agile approach to discussing different areas of data sharing has allowed members to raise and share what is important to them including the impact of trending topics such as AI on data sharing approaches. Now that the DSWG has set out a framework for DSI, it will be possible to use that framework to structure discussions over the coming year. DSWG members can propose presentations and discussions under any of the components:

- **Business case**
- **Governance**
- **Legal**
- **Data interoperability**
- **Security and trust**
- **Use and value**

If members propose relevant topics that do not fall under these categories, it will provide an opportunity for the group to re-evaluate and refine the categories.

At the end of this current year, members have discussed the need to agree principles for data sharing infrastructure building upon the Gemini Principles.

The DSWG is an unfunded group and is open to funding opportunities for 2025-26.

Conclusion

The DSWG can continue to be a safe and productive space for data sharing discussions across industry, academia and government and benefit the UK interests for a digital future.

The DSI components framework is not designed to be one framework to rule them all, it is intended to be a flexible and adaptable framework that structures description and discussion of data sharing activities for DSWG members and the wider community.

A shared vision for data sharing infrastructure as enabling the safe, secure and seamless sharing of data for all types of stakeholder is valuable for guiding the progress of the group. Within this vision, different forms of trialling and implementation can take place.

The need to create common and reusable approaches and solutions to data sharing across all parts of the economy cannot be ignored if the government is to address the missions set out in the Plan for Change. To develop DSI, public, private and research sectors need to address the barriers to sharing data which are common across these domains. Many of the solutions and approaches that one domain or sector develops, for example, from energy or research will be applicable and reusable in part or in full to other user groups.

Sharing best practice not only accelerates learning, but also promotes interoperability of data sharing between initiatives from different domains. The Data Sharing Infrastructure Hub can be a coordinating hub in a landscape of multiple hubs working together to improve data sharing and access and sharing learnings across sector-based data sharing infrastructures like the energy DSI⁴ and Stream⁵. These hubs need to work together on data interoperability, governance, legal, security and trust.

We don't expect to get to the best solution first time, but we can iterate and share successes and failures as learnings. Once we establish a way that works well, we need to share it. In a cost-conscious environment, where we need to get more from less, "do it (well) once and share it many times".

⁴ [NESO to coordinate the delivery of energy data sharing infrastructure | Ofgem](#)

⁵ [About Stream](#)

Appendix – Terms of Reference

Terms of Reference: Data Sharing Working Group, “The Group”

Vision and guiding north star: to achieve data sharing infrastructure for public good across multiple organisations and sectors whilst ensuring data privacy and security.

Our motto is “Do it once and share it many times”.

The purpose of The Group is to bring people together to discuss and develop data sharing best practice in a collaborative way that builds upon existing work and avoids duplication.

Role of The Group

The role of The Group is:

- to collaboratively share, curate and promote data sharing infrastructure across people, organisations and sectors
- to help identify who is doing what in the data sharing landscape and to enable connections between different parts of the landscape
- share and coordinate with other communities, such as DT Hub Working Groups
- not to designate who is doing what but to describe who is doing what and enable collaboration.
- to provide a safe and supportive space for discussion and learning
- to produce outputs that can be shared with the wider community of stakeholders

The Group will adopt best practice with its use of the data that it creates through its work, such as meetings and content creation. For example, The Group will adopt a stance of treating its data as ‘presumed open’ in accordance with [Ofgem’s Data Best Practice Guidance](#); it will do this pragmatically, giving consideration to the funding and voluntary resourcing that is available to The Group. Members may choose to share their work and outputs of the Group through Creative Commons licensing ([About CC Licenses - Creative Commons](#)).

Membership

The Group membership is cross-sectoral, this is to maximise learning and promotion of data sharing best practice across sectors.

Attendance to the Group is open to all and is voluntary, with the following caveats:

- Members are invited to make presentations at meetings and share documents. Where documents are shared, it is understood that these documents do not necessarily represent the views of all members of the group.
- Attendees are expected to adhere to the spirit of the [“Seven Principles of Public Life”](#) at all times.
- The Chair of the Group reserves the right to restrict attendance where appropriate, such as through attendees using behaviour that does not meet the expectations of the Seven Principles of Public Life.

- Invites to meetings and Group updates are sent by email. Email addresses of Members are shared transparently within the Group for the invites and update emails unless Members request to the Chair not to share their email address within the Group.
- The Chair reserves the right to restrict attendance / participation in meetings where, for example, large numbers of voluntary members seek to attend and this leads to practical challenges running meetings.

For situations where the Chair is unavailable to conduct their duties, the Chair will appoint a temporary Chair for the period of their absence.

Attendees may choose to become Registered Members. Anyone is welcome to become a Registered Member, providing they adhere to the spirit of the "[Seven Principles of Public Life](#)". Registered members are listed on the public area of the Group website.

Meetings and Activities

Normally meetings are weekly on a Wednesday from 2-3pm via MS Teams. Occasionally additional meetings may be called by the Chair either online or in person.

The format of meetings is flexible, but typically take this format:

1. New attendees introductions and updates across the Group (10 mins)
2. Topic for presentation by one or more attendees (up to 20 mins)
3. Discussion (25 mins)
4. AOB and closing (5 mins)

For presentations, Attendees typically speak to the Group for up to 20 minutes and invite questions during or following the presentation. Presentation topics are agreed with the Chair in advance of the meeting. Any attendee may propose a topic or speaker. If there is no planned topic or speaker for the meeting, members will be invited to discuss updates and future topics and workplans for the Group.

From time-to-time Attendees to The Group may agree additional voluntary work among themselves, which – with the Chair’s approval – The Group may choose to track the progress of and to include among the shared documentation / public website.

Document Sharing

The Group has a website available for members to use. Presenters are encouraged to agree to having their presentations shared via this website. Where documents are shared, it is understood that these documents do not necessarily represent the views of all members of the group.

Registered Members are encouraged to record notes and links into the shared documentation space for future use on ongoing sharing.

It is the responsibility of Registered Members to indicate cases where they are choosing to add documents/information to the shared documentation space that cannot be shared externally (with non-Registered Members) via the public website.

Registered Members may, with their agreement, be appointed by the Chair to take responsibility for making shared documentation publicly available on The Group’s website. These Registered

Members must take responsibility for not publishing any content into the public domain that has been marked as being unsuitable for sharing publicly.

If the cost of providing shared documents to Registered Members becomes unmanageable by The Group, The Group reserves the right to charge Registered Members for this access, sufficient to recover the associated costs of doing so.

Outcomes

The scope of potential outcomes from The Group's work is broad. For 2024, an objective of The Group will contribute to the development of an overview of the Data Sharing Landscape, including:

- identifying and sign-posting different data sharing initiatives and projects
- defining criteria to describe data sharing initiatives.
- documenting at a high level the scope of identified initiatives
- identifying gaps and overlaps between initiatives
- identifying opportunities for further development of data sharing capabilities
- publishing this information into the public domain
- presenting and disseminating this information to the wider community of stakeholders

Other topics to focus on will be identified through engagement with attendees at The Group's meetings.