European data space
for smart communities

Deliverable 2.3

Checks and guidance by Governance & Ethical board

WP 2 – Set-up phase

Authors: Niek Verschure (Municipality of 's-Hertogenbosch)
Reviewers: Corné Helmons (Rotterdam), Anni Joela (Tampere), Margriet Visscher (Future Insight)
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Niek Verschure	Municipality of 's-Hertogenbosch	23-6-2026
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Abbreviations

Abbreviation	Definition	Abbreviation	Definition
DS4SSCC	European data space for smart communities (DS4SSCC)	DT-aCoGo	Digital Twinning as Common Good
OASC	Open & Agile Smart Cities & Communities	OUP	Open Urban Platform
WP	Work Package	PC	Pilot Coordinator
BIM	Building Information Modeling	WFS	Web Feature Service
OGC	Open Geospatial Consortium	ETL	Extract, Transform, Load
LOD	Level of Detail	UMG	Unreal Motion Graphics
PPB	Purple Polar Bear (company)	FI	Future Insight (Company)

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Executive Summary

This deliverable does a comparison between the 9 'member' components of the 'Governance building block' (Blueprint 2.3) and the actual organisation of the OUP (Open Urban Platform) as we have been using in DTaCoGo.

- Regarding 'Governance Authority' all aspects described in blueprint are included in the OUP governance, with the big difference that we have spit them between a Governance Board (incl. ethics) and a 'Market master'.
- Most 'Use Case Orchestrators' aspects are included in the DTaCoGo project, but the 'monitoring of Usecase performance' and 'Template contracts tailored to the use case' are aspects that have not been implemented.
- The 'Orchestrator / Coordinating Entity' role is executed in the project, but not by one single entity. Some tasks are assigned to Governance Board, others to Market master and the Project Mangers of the participating cities also has some tasks assigned.
- Both role of 'Intermediaries and Operators' are included in DTaCoGo.
- Although 'Training' is included in the project, it is not institutionalized as a separate body. This seems valid looking at the scale of the dataspace..
- 'Working groups' have been established, but since they are focusing on realizing the project goals, it is unclear if and how they will continue after the formal project closure of DTaCoGo.
- No 'Technical and Non-technical committees' were created. Nor is there a DS4SSCC Participants Representative Committee. All do not seem valid looking at current Dataspace scope.

Finally we have asked the Governance Board some reflecting questions / guidance regarding the way forward and concluded that answering these is very hard for the Governance board and requires an extra meeting, which can not be planned in time for the deadline of this deliverable.

The biggest conclusion is that a lot of components are available in the OUP, and therefor the Governance is at a solid basic level, ready to serve more participants and scale.
The overall question is 'if' and 'how' partners can/will continue the use of the dataspace after this project. All have the desire to continue, but hard promises cannot be done because of current level of cost and the possible differences in future vison.

1 Introduction

This deliverable includes a set of two activities we have conducted regarding the DTaCoGo dataspace governance and ethics.

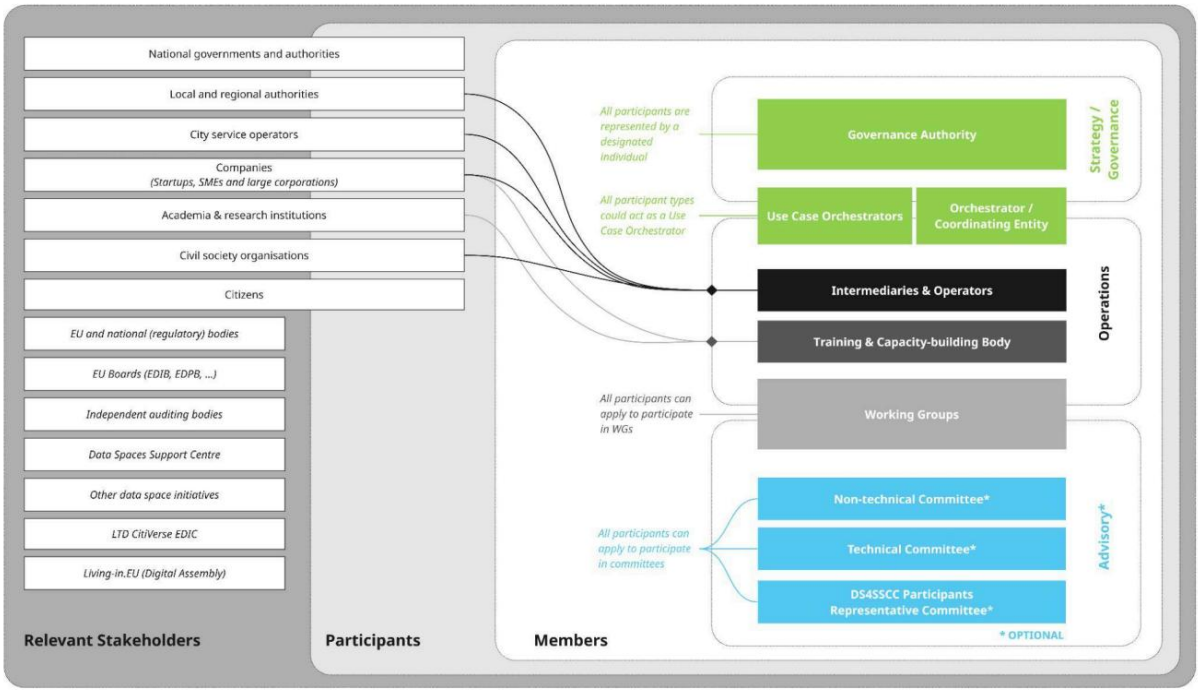
First and for most we have done a reflection of the Governance building block of DS4SSCC Blueprint 2.3, so comparing this with our actual Dataspace implementation & organisation up until so far.

Second we also shared with the Governance Board some reflecting questions / guidance regarding the way forward. Creating an inside view on how to continue and evolve the dataspace in future in a way that is fair to new participants, but also to the ones that have invested heavily already and rely on a certain course.

Last but not least it is important to mention that we believe in the importance of Governance and we stive to be a full blown dataspace at the end of this project. The focus of our project (and proposal) is on the other hand almost fully on the 'Technical building block', specially the 'Data Interoperability' part, so therefore the level of detail in this deliverables may not be the same as you are used to.

2 Comparison Blueprint 2.3 Governance, with DTaCoGo Governance

In order to reflect on the Governance building block, it is important to start with the formal current Governance Structure that is in the D2.3 Blueprint provided for DS4SSCC:



Focus in this reflection will be on the 'members' part, so te right side of the figure.

First of all because this is the core of the dataspace, this is where the members are working together to create support & actually use the dataspace.

Second because during the project we did not actively include participants and relevant stakeholders during the project phases up until now. This because of all the focus needed on the technical part.

In this chapter the 9 components of the 'Members' part are al discussed in separate paragraphs.

2.1 Governance Authority

Below a summary of info in the 2.3 Blueprint

The body of a particular data space, consisting of participants that is committed to the governance framework for the data space, and is responsible for developing, maintaining, operating and enforcing the governance framework. The data space governance authority does not replace the role of public regulation and enforcement authorities.

Initiate and carry out the formalization of the data space initiative;

- Establish and maintain the governance framework;
- Establish and monitor compliance to DS4SSCC processes (constitutive/ contractual processes);
- Request providers to correct/add relevant metadata;
- Ensure & monitor responsible and fair use of data;
- Decide on technology and data standards for data space & ensure convergence of solutions;
- Define strategic direction of the data space;
- Resolve conflicts;
- Manage change and continuity of data space (e.g. decide new rules/ edit rules);
- Make decisions in a transparent manner;
- Communicate with data space participants.

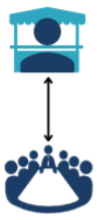
The governance authority should be

- representative of the data space's participants & participatory roles;
- Decision making mechanisms;
- Mechanisms to remove datasets if needed;
- When possible, automatization of governance processes;
- Legal and technical expertise.

DTaCoGo Implementation

In DTaCoGo the Governance Body is split into two separate functions: The governance board and the market master.

The Governance Board (incl ethics) ensures that the values framework remains up-to-date and is complied with. This includes in DTaCoGo currently: security statement, privacy protocol, SLA, connection requirements, terms & conditions, ethics for the DT-aCoGo dataspace.



The Market Master monitors compliance with all agreements and principles that arise from the values framework. The Market Master is accountable to, and escalates issues to, the Governance Board. The Market Master is a role and, contrary to what the title suggests, does not have to be filled by one person. Certain tasks of the Market Master can also be organized technologically.

- The Market Master has an operational role and is responsible for day-to-day affairs, such as monitoring the rules of the game, on the OUP and has the authority to correct deviant (non-compliant) behavior.

- In addition, it is an internal supervisor who ensures that the operator Future Insight complies with the requirements of the Agreement with the municipality of Rotterdam. The Open Urban Platform takes into account the various authorizations that are necessary for the Market Master to perform their work properly.

Governance board more in detail

Governance board Members

- Representation of the municipality of Rotterdam
- Representation of the municipality of Tampere is in debate
- Representation of Future Insight
- Representation of education (academic/HBO/MBO/LBO)
- Representation of the business community
- Citizen representation

Tasks of the Governance Board

On Governance

- Reviewing the quarterly report
- Reviewing the risk annual report
- Making decisions on ethical issues
- Requesting advice from the Algorithm Advisory Council
- Obtaining legal advice, external and independent
- Evaluating and establishing the values framework
- Evaluating successes and bottlenecks
- Giving permission for additional services from the operator if it affects the values framework
- Requesting unforeseen "extra" audits if desired

On Strategy

- Keeping the values framework up to date
- Testing the roadmap against the values framework
- Proactively providing input to the operator for the strategic course

On Improvement

- Proactively identifying improvements for compliance and implementation
- Reviewing and approving or rejecting change proposals for conditions, functionalities and architecture

On Operation

- Contact person for the Market Master with questions
- Ombuds role: when you are removed as a user or when your data or application is removed by the Market Master, you can contact the Governance Board. The Governance Board can review the decision of the Market Master and decide otherwise.

Powers of the Governance Board

- The Governance Board must give prior approval (right of consent) with regard to the following matters:
    - a change of existing functionality of the Open Urban Platform when it affects the values framework (standard and normal changes, such as bug fixes, patches, etcetera, are excluded in advance)
    - a change in the technical architecture of the Open Urban Platform when it affects the values framework;

    - a change in the conditions under which the Data providers and Data consumers can use the Open Urban Platform;
    - offering additional services by Operator, or based on data from Data providers, with the aim of ensuring a level playing field with the Data consumers.
- Operator is obliged to inform the Governance Board about intended changes with which the Governance Board must expressly agree.
- The Governance Board can also, both requested (at the request of the Market Master or one of the users) and unrequested, make decisions about the aspects of the Open Urban Platform over which they have authority. Users and the Market Master are obliged to implement decisions of the Governance Board.
- Before the Governance Board makes a decision regarding algorithmic applications (such as artificial intelligence), the Governance Board first makes a request to the Rotterdam Algorithm Advisory Council to advise them on this. The Governance Board may only deviate from an advice from the Rotterdam Algorithm Advisory Council with good reason ("comply or explain").
- If the Governance Board has to make a ruling on legal issues, it can seek external and independent advice, for which resources are available that are named in the internal regulations.
- Decisions of the Governance Board, which imply a deviation from the Agreement, are only legally valid after they have been signed in writing by legal representatives of the Municipality and Operator.
- The Governance Board can overrule a decision of the Market Master regarding, for example, the removal of a user, dataset or application.

Responsibilities of the Governance Board

At its core, the Governance Board has the following responsibilities:

- Supervision and Control: Monitoring the progress and compliance with agreements, related to the values framework and legislation and regulations.
- Risk management: Identifying and evaluating risks to ensure the value and stability of the OUP.
- Accountability and Transparency: Accounting for decisions and results, and ensuring transparent communication with stakeholders.
- Decision-making: Making ethical decisions in line with the values framework.

Market master more in detail

Composition

The role of the Market Master is currently assigned to Future Insight and is accountable to the Governance Board. This is the practical short term solution that's fits the current status. On the long term an independent organization/authority might be desired to be assigned for this role. This is currently out of scope due to our focus on other aspects of the Blueprint.

Tasks of the Market Master

The following tasks are provided for the Market Master

Governance

- Preparing quarterly report;
- Preparing risk annual report;
- Submitting ethical issues;
- Reviewing audit reports;
- Preparing change proposals for architecture and processes;

Improvement

- Providing input for keeping the various documents up to date; (security statement, privacy protocol, SLA, Terms and Conditions and connection requirements);

- Testing new functionalities of the OUP for accessibility.

Operation

- Managing authorizations for Admins;
- Managing authorizations within a Hub;
- Creating a professional Hub;
- Quality control on listings of datasets/applications;
- Sample checks on compliance with conditions from (security statement, privacy protocol, SLA, Terms and Conditions and connection requirements);
- Handling user questions about Governance & Ethics;
- Point of contact for Admins.

Powers of the Market Master

The Market Master operates independently and is authorized to conduct extensive research. This allows the Market Master to ensure that the OUP is used correctly by all participants.

- The Market Master can escalate matters to the Governance Board and request the Governance Board to make decisions on matters over which the Governance Board has authority.
- The Market Master may remove users, data and applications from the Open Urban Platform.
- The Market Master will verify that there is no cross-pollination between the various products of the operator.
- For the proper performance of the role, the Market Master has access and insight into all parts of the Open Urban Platform.

Responsibilities of the Market Master

At its core, the Market Master has the following responsibilities:

Supervision and enforcement

The Market Master monitors compliance with legislation and regulations and the values framework and enforces this.

Escalation

In case of ambiguity, questions or conflicts, the Market Master will escalate to the Governance Board if necessary.

Preparation

The Market Master is responsible for the correct and timely preparation of documents that must go to the Governance Board.

Matches and differences

Below we have combined both is a summarized way, showing which role in DTaCoGo is doing what item of the Building block. In short all items are addressed, but we have split them between two separate roles: ‘Governance board’ and ‘Market Master’.

- Establish and maintain the governance framework; *Governance Board*
- Establish and monitor compliance to DS4SSCC processes (constitutive/ contractual processes); *Market Master*
- Request providers to correct/add relevant metadata; *Market Master*
- Ensure & monitor responsible and fair use of data; *Market Master*
- Decide on technology and data standards for data space & ensure convergence of solutions; *Governance Board*
- Define strategic direction of the data space; *Governance Board*

- Resolve conflicts; *Market Master although not specifically mentioned*
- Manage change and continuity of data space (e.g. decide new rules/ edit rules); *Governance Board*
- Make decisions in a transparent manner; *Both Governance Board and Market Master*
- Communicate with data space participants. *Market Master*

The governance authority should be

- representative of the data space's participants & participatory roles; *The Governance Board has diverse representation*
- Decision making mechanisms; *Market Master has this, approved by Governance Board*
- Mechanisms to remove datasets if needed; *Market Master can do this*
- When possible, automatization of governance processes; *Not in scope yet*
- Legal and technical expertise. *Governance Board has or hires this*

In general all items mentioned in the Blueprint Building Block are included in the Governance of DTaCoGo, but the biggest 'difference' is that they are split between two separate roles: Governance board and Market master.

2.2 Use Case Orchestrators

Below a summary of info in the 2.3 Blueprint

1. *Owns and leads the use case within the data space governance framework;*
2. *Sets business rules and participation conditions*
3. *Coordinates all use case participants and roles;*
4. *Defines and manages value-sharing mechanisms;*
5. *Ensures compliance with legal, ethical, and technical standards.*

6. *Mechanism to validate compliance with business and governance rules;*
7. *Monitoring system for tracking use case performance (e.g. KPIs, data flows, service uptime);*
8. *Tools to manage and document value-sharing models and agreements;*
9. *Template contracts or data-sharing agreements tailored to the use case;*
10. *Mechanism for participant feedback and iterative improvement.*

DTaCoGo Implementation

1. In general each city has 3 use cases of its own, all based on urban plans cities have and the desire to investigate what the impact of climate will be on the 3 area's of: Flooding resilience, Heat stress and Traffic (jam's).
   Now practically each city owns and leads their own 3 use cases. But by using a replicable recipe / the solution that is first tested by Rotterdam, should be easily implemented by the other cities.

   Because all cities are using same models, and same connections, the cities have agreed upon some business rules and participation conditions, like minimum data to be provided and the use of International open standards. The model providers also have agreed to publish results using international open standards. Using international open standards make this interoperable, so data can be used, via the OUP, in different applications like the Unreal viewer.

2. Each city has one project manager which is responsible for the coordination of all city use cases and the role that each team member has within the city.

3. The actual value of all these calculation models in the interpretation of the outcomes. As all Urban development area's and plans are different, there is no real value-sharing on the content side.

   But there is value sharing looking at it from a technical perspective since all partners have combined resources and implemented the Purple Polar Bear solution which makes it possible to translate all city datasets into one Common datamodel. From that Common Datamodel, all Model suppliers are provided with datasets that are specified to their needs, making it possible to run the models for all cities in the same way, decreasing the amount of time to setup a model substantially.

4. Each municipality has agreed upon the terms and conditions of the OUP, and therefor commits to all legal, ethical and technical standards that are in the terms and conditions of the OUP.

5. Within DTaCoGo the Market Master is assigned to check whether all participants are indeed in compliance, as described in 2.1

6. We currently have no real monitoring in place for tracking usecase performance. Main focus is on two sides: first making sure the data that is used as input, is of good quality. This is a big focus point for all 3 cities. Second the focus is on the correct setup of each models, making sure that the models will deliver the desired outcomes (assuming input data is valid).

7. No central tool is implemented to manage the agreements all cities and model providers have. These are all stored in the Document Management cities of each participant itself locally. This seems logical as agreements between partners can differ. Also in case of legal issues each partner has the obligation to have their own file complete.

   The OUP however is indeed used to manage the actual access to datasets in a trusted and sovereign. Not just 'input' datasets from cities, but the results of model calculations (output datasets) as well. **All sorts of datasets can be registered by Sub-Hub owners, and during the registration several options are given to share data public, of narrow the access to only 1 user for a short period of time with (written) restrictions on where it can be used for.**

8. In DTaCoGo the suppliers of calculation models have created offers for each city, with the same content and same requirements. These offers have been accepted and that is the 'agreement' we currently have regarding data sharing. So no Template contracts or (paper) data-sharing agreements tailored to the use case. Please note that the main focus of DTaCoGo is to create interoperability between OUP, datasets and models, less of the contract / legal part of data sharing.

9. The current mechanism for participant feedback and iterative improvement is done by 2 weekly calls, both hosted by Rotterdam (linking pin).

   a. One is a technical call in which the model providers, Future insight (supplier of OUP) and Purple Polar bear (conversion of data to end from Common datamodel) are all attending. Focus in this call is on all technical aspects, mostly about connections and interoperability.
   b. The second weekly call is with project managers of all cities, hosted by Rotterdam. This call focusses on alignment regarding the datasets and the attributes that are needed for to setup the models.
   c. After project phase, the OUP has a feedback function all participants can use.

Matches and differences

A lot of use case orchestrators aspects are included in the DTaCoGo project, but the 'monitoring of Usecase performance' and 'Template contracts tailored to the use case' are aspects that have not been implemented.

2.3 Orchestrator / Coordinating Entity

Below a summary of info in the 2.3 Blueprint

1. *Take care of onboarding new participants;*
2. *Inform all actors about the guidelines/rules/negotiations;*
3. *Find new stakeholders and connect participants working on similar use-cases;*
4. *Maintain a common catalogue;*
5. *Manage communication channels;*
6. *Organize meetings, events, etc to increase awareness in the ecosystem and interactions frequency;*
7. *Manage change and continuity of data space;*
8. *Coordinate support bodies with data space participants.*
9. *Mechanism to check if participants, in particular data providers, are still active;*
10. *Provide a regular overview of developed data products with used data;*
11. *When possible, embedding process to know data usage (API Key) for monitoring purposes;*
12. *Mechanism to ensure that knowledge and best practices flow and that technical solutions converge, part of onboarding is to identify relevant existing use-cases, solutions and partners;*
13. *Match-making system;*
14. *Feedback loops.*

DTaCoGo Implementation

Within DTaCoGo this role is partly executed by the Exploiter of the OUP upon request.

1. Onboarding is done by Exploiter upon request of Users,
2. The Open Urban Platform is open without any boundary to look around and check datasets and digital twins that are openly accessible. When starting using paid data or closed data or apps, the user has to sign up. By signing up you agree on the terms and conditions and the value framework. Further all terms and agreements are available on the OUP without signing in.
3. Participants using OUP are responsible for finding new stakeholders and connecting participants if they feel that this helps their use case(s). Further, there is a shared interest by users and the exploitant of the OUP to work together in building the digital ecosystem.
4. Maintain a common catalogue is done by Exploiter;
5. Within the OUP an community page is available. This gives users of a certain hub the option to communicate about an dataset or digital twin with other users of that hub. These communication channels within the OUP are managed by the hub owner (admin), besides that the Marketmaster is also responsible that the communication fits within the value framework.
6. Organizing meetings, events etc is done by the DTaCoGo consortium and its partners during the project phase. Both the city of Rotterdam and Future Insight have been doing this also before the start of the project, as they already where working on the creation and scaling of the OUP.
   It is presumed that after DTaCoGo has ended, all partners continue to use the OUP and also continue to organize meetings and events to improve and increase the use of OUP.
7. The users, like the municipalities involved in the Dt-aCoGo data space are responsible for maintaining the data space as an organisation. So if other municipalities wants to join that is up to them. The technical maintainnance of the Data Space (software) is up to the Exploiter.

Looking at changes in usecases and therefor in Sub Hubs, this is where the project manager of that sub-hub is in charge.

8. It is the role of the project manager of each use case to coordinate support bodies with data space participants.
9. There is currently no mechanism to check if data providers are active. The data provider shares the data via streaming data. If data providers want to withdraw their data they first have to inform the data user before they may withdraw.
10. At the home page of the OUP there is this overview of datasets that are openly available regardless if is a new or existing data product.
11. embedding process to know data usage (API Key) for monitoring purposes is done by exploiter;
12. Mechanism to ensure that knowledge and best practices flow and that technical solutions converge, part of onboarding is to identify relevant existing use-cases, solutions and partners. This is done by Municipalities and Exploiter (both partly)
13. Match-making is only partly available in the OUP. Partly in the OUP. One can define tags for data and for apps one can define where the application is relevant for.
14. On the homepage of the OUP there is this option available to give feedback. This feedback will be received by the Exploiter of the OUP. Depending on the feedback a follow up action will be set up. Futher, in the community page of a hub/data space it is also possible to start conversations with others within the data space to share thoughts and ideas.

Matches and differences

The mentioned aspect are almost all implemented in DTaCoGo, they are mostly assigned to Governance Board, Market master and the Project Mangers of the participating cities.
There is currently no mechanism to actively check if data providers are active, we rely on a signal from the partner that uses the data to give a sign.

2.4 Intermediaries & Operators

Below a summary of info in the 2.3 Blueprint

A data space intermediary is a service provider who provides an enabling service or services in a data space. In common usage interchangeable with 'operator'. Note that based on Article 10 of the DGA, some intermediaries may be subject to the conditions laid down in Article 12 of the DGA.

DTaCoGo Implementation

Purple Polar Bear is an Intermediary within DTaCoGo. It handles the conversion of all city data into 1 generic data model. It also serves all model providers with separate / specific datasets based upon their desires. But these datasets are derived from the generic data model.

This makes the Dataspace extremely scalable and consistent. Looking at it from 2 points of view:

- If 10 cities were to join, they can all share their data in their own way, as long as we map the received data to the Common Data model (once in a lifetime). Once that is done, the data is in line with alle existing partners.
- If a new model provider were to participate, we only have to decide which data from the Common Data Model, in what format, is to be shared with them (based on their

requirements). Once that is decided and the dataset connector is provided all cities that have their dataset available, can at once be connected to the new model and start calculation. His of course only after their approval and after discussing terms and conditions (like payments)
One note is that cities must have their data available, and the quality of that data must be sufficient for running that specific model.

The People group, with its Unreal viewer, is seen as an operator as it provides the tooling in which all datasets and model-output can be viewed and analyzed. A user of the Unreal viewer is capable of doing basic model setup of a calculation model. After that it can also start the model and (after short processing time) view the outcome of the model.

Matches and differences

Both role of Intermediaries and Operators are included in DTaCoGo.

2.5 Training & Capacity-building body

Below a summary of info in the 2.3 Blueprint

Organizations with relevant training expertise. Upskilling, training, and capacity building of data space participants.

DTaCoGo Implementation

Within DTaCoGo several suppliers provide several specific training and expertise:

- Regarding the Dataspace itself, the OUP, Future Insight is leading training and expertise.
- For the model each model provider itself is also responsible for delivering training and expertise.
- Regarding the Unreal Viewer The People group is in the lead for training.
- Now although the Purple Polar Bear (PPB) solution does not have a real ‘front end’ and it requires no user login, a basic training on what is done and how, is desirable. This is performed by PPB

Matches and differences

Although Training is included in the project, it is not institutionalized as a separate body. This seems valid looking at the scale of the dataspace and the fact that all suppliers have included these aspects in their offers. When the scale and use of the dataspace increase, this point of view may change as it could then be more effective to centralize training.

2.6 Working groups

Below a summary of info in the 2.3 Blueprint

- Different types of working groups (e.g., technical, legal, governance, business etc) consisting of data space participants working on similar use-cases and/or with similar technology.
- Identify best practices and state-of-the-art technologies through peer-learning.

- Provide insights to the governance authority (or to the advisory committees, if these exist).

DTaCoGo Implementation

Within DTaCoGo we have the following working groups:

- TRACK 1: Data collection: this group focusses on the retrieval and publishing (as a service) of the datasets that are required by the model providers. Also the data needed for Unreal viewer is gathered in this working group. In this working group each city is represented by 1 person that has knowledge over geospatial data.
- TRACK 2: For the technical connection between models, viewer and OUP there is a technical working group. In here are all technical specialist of all suppliers working together on creating the needed connections and the authorization that is an important part of these connections. Besides the technical specialist of suppliers, the partner Future Insight is also heavily involved and in fact leading this track. Last but not least Rotterdam is involved as they have the best view on desired future situation and road to follow.

Matches and differences

There are working groups, they are focusing on data and technique, but are also mainly set up for the duration of the project. It is unclear whether these will (need to) continue after project ending, specially if some partners continue to keep using the dataspace as it is.

2.7 Non technical Committee*

Below a summary of info in the 2.3 Blueprint

Individual experts and DS4SSCC representatives.
Advise governance authority on business and organizational matters, e.g., governance, privacy, ethics etc). Recommend best practices.

DTaCoGo Implementation

Although a small group of people has been working on organizational matters like legal and governance, this group has a temporary character and focusses on delivering all mandatory reports for the DTaCoGo project. Therefore this is mentioned as a ‘working group’ and not a ‘Non technical committee’. So currently there are no ‘Non technical’ committee’s.

2.8 Technical Committee*

Below a summary of info in the 2.3 Blueprint

- Individual experts and DS4SSCC representatives.
- Advise Governance Authority on technology, standards, etc. Recommend/certify technologies/standards.

DTaCoGo Implementation

There is currently no technical Committee, the Working group that is earlier mentioned is temporary, therefore it is not seen as a Committee.

2.9 DS4SSCC Participants Representatives Committee*

This optional component is not included in the DTaCoGo dataspace and we could not find detailed information on this item.

3 Reflecting questions for Governance (and ethics) board

Below you can find the set of questions that were shared with members of the Governance board. Added at the end of each question is the provisional answer / reflection of one of the governance board members. The next Governance meeting is unfortunately planned for September, so not in time for including the outcomes of that formal meeting in this deliverable.

1. During DTaCoGo we are, using EU and partners money, connecting several suppliers to the OUP (Open Urban Platform). How do make sure that we keep this a level playing field, as we cannot financially support other potential suppliers / keep on financially supporting other suppliers?

Answer: We agreed on ground rules upfront regarding how a level playing field can be created (including open API connection protocols with clear documentation), based on the knowledge at that time.

This is therefore a snapshot. In practice, it may occur that (one of) the parties does not adhere to these agreements. In that case, this can be noted by the Market Regulator or brought before the Governance Board by the party(ies) claiming to have been aggrieved.
The Governance Board can review the case and subsequently issue a (binding) ruling. Potential escalation procedures are also described.

It is also possible that the established rules need to be updated due to evolving insights. In this regard, too, the Governance Board (whether or not at the request of others) is responsible for establishing adjusted rules. We deliberately chose a body so that we can adapt over time to (currently unforeseen) developments, rather than 'chiselling' these agreements in concrete upfront as rigid frameworks.

2. Before starting DTaCoGo, Rotterdam has been investing (alone) in the OUP solution and were therefore able to make decisions on their own. During DTaCoGo we have been invested as a group, but upfront we agreed upon what was to be build (including Rotterdam). If after DTaCoGo the OUP keeps on growing, how do we make sure developments are in line with all DTaCoGo partners? Especially relevant to Rotterdam as they have been investing for quit some years now..

Answer: Fundamentally, the authority of the Governance Board, as set up before the start of DTaCoGo, does not extend beyond the municipal boundaries of Rotterdam. We feel that every ecosystem should at the end organize its own governance (board). In this regard, the Rotterdam model can serve as an example of how to set up a public-private governance structure. This may change in the long term if multiple Governance Board (at multiple—overlapping—scale levels) are active. One could then consider regulating this at a higher level.

On 'www.digitaalecosysteem.nl' there is a FAQ where the following is stated: The Open Urban Platform is being developed generically and can be purchased by any government agency. You can then configure your own Open Urban Platform according to what you do and do not want to use. In this way, it becomes possible to share data across government boundaries and, for example, create shared OUPs. You can also choose to configure your own Open Urban Platform entirely and not share or use anything from others. We can organize this because the Open Urban Platform is built modularly with organization-specific layers within it.

3. We notice that technology is advancing faster than the organization. In DTaCoGo, for example, we are already using the billing and subscriptions modules of the OUP, but organizationally, we as a city of Rotterdam cannot yet do anything with them. To what extent can the parties involved urge the municipality(s) to enable this functionality? This requires coordination with procurement and IT management, among others.

Answer: As the Municipal Council, we do not have direct authority over the deployment or activities of the municipality itself. The Municipal Council can, however, advise the municipality on whether or not to do certain things, but ultimately the municipality makes the final decision. If it concerns functionalities directly linked to the OUP, the Municipal Council can urge the individual parties involved to do so. This is the case in the example mentioned. However, in this instance, it is not the municipality that is in charge, but the operator. If the municipality is the party 'on the other side' in this matter, it can also be held accountable.

4. How to handle the use of the OUP by private parties? For instance, collaboration is becoming increasingly important as the use case is broadened to Area Development / Grid Congestion. We are essentially making the infrastructure mandatory in this regard, but must these parties then also purchase the OUP? For example, Stedin / Eneco will be sharing information that is secured. They require their own professional hub for this, in order to share their data with the municipality under certain conditions.

Anwer: Every organization (public or private) is responsible for making its data accessible in a manner suitable for all parties. We believe that a potential investment in this regard is worthwhile, as connection also brings numerous benefits. Even in a situation without an OUP, organizations will need to set up services to share data (securely) with others. The final decision is, of course, up to the parties themselves.

5. By equipping the OUP with a Dataspace connector, it becomes possible for us to connect to other dataspaces within the EU context and also to share our data with other ecosystems. This is something we strongly pursue within the framework of the principles of interoperability and which reinforces our leading position (inter)nationally. At present, these dataspace connectors are not yet fully operational and do not support the 100% exchange of the OUP configuration. To what extent can we make use of them in the meantime?

Answer: Since the operator behind OUP is also one of the DTaCoGo project, we at Governance Board assume that these functionalities will also become available within the Rotterdam ecosystem. It is up to the operator (and the municipality) to ensure this. It is currently impossible for Governance Board to foresee what it entails to exchange data with other ecosystems based on configurations that are not entirely compatible.

The extent to which data and service exchange between ecosystems is a good idea from a compliance perspective cannot be assessed by the GB in advance without a substantive case study. In the case of DT a CoGo (climate issue, no privacy and/or security sensitive data), we see no particular issues in this regard.

6. With the continued scaling up of the OUP ecosystem, it is likely that private parties (established outside Rotterdam, for example Heijmans) will soon become active in the ecosystem at other municipalities (for example Leeuwarden / Groningen). How do we then safeguard cohesion, alignment of interests, and the governance of our governance board?..

Everyone is free to be a member of multiple ecosystems. In doing so, the rules regarding governance may differ per ecosystem, although we naturally try to avoid this as much as possible.

Additionally, a user group will be established regarding the (further) development of the technical and functional aspects of the OUP. Essentially, anyone can become a member of this user group. In doing so, we naturally strive for as much standardization of functionalities as possible. However, in this area too, it is possible that differences may arise over time as a result of different governance models.

4 Looking ahead

Looking at the mapping of all 9 aspects and the reflecting questions, we can conclude that the far majority of the aspect of the Governance structure of DS4SSCC are in place. therefore, the Governance is at a solid basic level, ready to serve more participants and scale.

The biggest question is if and how partners will continue after this project. All have the desire to continue and the technical solutions and Governance that is available.

In September 2026 the municipality of Rotterdam and Tampere, Future Insight and other organisations will start with the project TWINE (TWIN-BASED WEB INTEROPERABLE NETWORK FOR ENGAGEMENT). We will further build on interoperability. The principles, like International Open Standards, data at the sources are the underlying principles which are anchored in the OUP.

But there are some aspects that still form a risk for scaling:

- The costs are still perceived high which requires tuning and forms a barrier for new and even current participants.

A lot of the Governance is already figured out by the municipality of Rotterdam together with Future Insight. This can serve as a basis for other data spaces as well. We also do see that refinement at some level is needed. It would be great to do that in other (European) projects as well.
On the other hand, the solutions provided by this project are used as a showcase and several other cities have shown interest. Therefor the actual scaling is perceived as promising.

About the European Data Space for Smart Communities

The European Data Space for Smart Communities (DS4SSCC-DEP) initiative is a pivotal deployment following the preparatory action for a Data Space for Sustainable and Smart Cities and Communities (DS4SSCC). Emphasising sustainability aspects and diversity in communities, DS4SSCC developed a multi-stakeholder data governance scheme, created a blueprint for the European DS4SSCC, delivered priority datasets, and developed a roadmap towards a mature DS4SSCC.

DS4SSCC-DEP's vision revolves around creating a well-governed federated territorial, place-based data space for smart communities available for developers and infrastructure providers, aligning with the prospects outlined in Europe's Digital Decade objectives. This approach distinguishes itself from sectoral data spaces by encompassing diverse domains, and underpinning governance across all levels of society. The key objectives of the project are:

- **Objective 1: Establishing a Federated and Innovative Data Space**. This phase focuses on creating a large-scale data space controlled by public data holders, ensuring alignment with the Smart Middleware Platform and broader data space ecosystems. It also aims to offer middleware service solutions facilitating data sharing and management while refining the blueprint based on gained experience.
- **Objective 2: Pilots and Refinement of the Data Space Blueprint**. Through 10-12 cross-sectoral data pilots in various EU communities, this objective aims to validate and refine the data space blueprint. Using common high-value data sets, it seeks to create added value by combining data from various domains, contributing to the sustainability plan, and minimising infrastructure investment.
- **Objective 3: Fostering Innovation and Ecosystem Alignment**. Engaging stakeholders, compliance with sector-specific legislation, establishing links with Horizon Europe missions, creating services available via trusted application catalogues, and enhancing ethical considerations and AI-enabled local solutions constitute the focus of this objective.

DS4SSCC-DEP, building upon established European networks, aims to significantly contribute to the sustainability goals of European citizens. It emphasises co-creation, standardisation, business models, strategies for data spaces, and envisions a federated platform.

DS4SSCC-DEP consortium includes the following partners: