

LDT4SSC Project Methodology

Step 2: VALIDATE (Specifications)

Workshop: Co-Creating Effective Visualisation Dashboards: Translating User Needs into Functional Requirements, Indicators and Visual Prototypes

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Document History

Date	Version	Edited by	Description
May 2026	v1	Marine Le Gall, Laura Riou, Sophie Houzet	First version adapted from the CAPACities program.

Workshop Overview

Title	Co-Creating Effective Visualisation Dashboards: Translating User Needs into Functional Requirements, Indicators and Visual Prototypes
Methodological step	Step 2: VALIDATE (Specifications)
Duration	3 hours
Number of Facilitators	1 for each group of 4 to 5 people
Equipment Needed	- One big sheet of paper (1m/2m) or a large (digital) whiteboard - Pens and markers (blue, green, red)
Expected outputs	- Identified user personas for the LDT. Functional requirement for the LDT List of indicators for the visualisations. Dashboards and visualisation mock-ups. A summary note produced after the workshop, outlining key findings and next steps.

Copyright Message

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1. Context and objectives

The **Co-Creating Effective Visualisation Dashboards** workshop is part of the **VALIDATE step (specification)** which bridges the gap between the project's initial idea and its practical implementation. It translates the use cases into **technical and functional requirements**, while accounting for real-world constraints such as interoperability, data, architecture, security, and putting the user's needs at the center.

More information on the objectives, prerequisites and stakeholders to involve in the EXPLORE step can be found on the LDT4SSC Knowledge Hub¹.

The workshop is designed to achieve the following objectives:

- **Define end-user personas**, detailing their roles, constraints and decision-making contexts.
- **Identify functional requirements** for the LDT based on end-user needs.
- Translate the functional requirements into **indicators** and **visualisations** for dashboards.
- Design dashboards and ensure they are **tailored** to different personas.

NB: Actual end users of the LDT can be invited to this workshop.

2. Workshop

2.1. Workshop phases overview

<i>Time spent</i>	<i>Phase</i>	<i>Description</i>
15 mins	0. Framing and Icebreaker	Participants revisit the selected use case and project objectives to keep discussions grounded.
20 mins	1. Identifying the personæ	Participants define one to three representative personas and their key characteristics.
30 mins	2. Identifying functional requirement	Participants list the key functional requirements for each persona.
30 mins	3. Choosing suitable Indicators and metrics	Participants identify potential indicators and metrics their persona would need to visualise.
1 hour	3. Designing Indicators and Visualising Dashboards	Participants specify the indicator requirements in order to design an initial mock-up of the dashboard.
25 mins	0. Framing and Icebreaker	Participants revisit the selected use case and project objectives to keep discussions grounded.

¹ https://knowledgehub.ldt4ssc.eu/resources_content/methodology/

2.2. Workshop step by step guide

Phase 0: Framing and Icebreaker (recommended allocated time: 15 mins)

The facilitator orients the participants **towards the selected use case** and the overarching project objectives. They list all **relevant project factors** such as: goals, stakeholders, budget. This initial phase ensures that the subsequent discussions remain grounded in a **clear and concrete context**. It also serves to **align all stakeholders** on the purpose, scope, and expected outcomes of the workshop, fostering a shared understanding before diving into deeper phases.

The facilitator also **organises an icebreaker** designed to foster mental and creative engagement by encouraging participants to adopt a playful, and open mindset. This initial interactive, game-like activity, stimulates imaginative thinking, reduces initial social tension, and prepares participants to engage fully in subsequent workshop phases.

Phase 1: Identifying the personas (recommended allocated time: 20 mins)

To ensure a **user-centred approach**, participants will **define detailed end users personas**, representing key end-users whose needs will shape the visualisations and dashboards creation.

The number of personas to define depends on the number of participants. One persona should be selected and defined for each group of 4-5 people. The facilitators should guide participants in **selecting the distinct personas**. For instance, one with an **operational role** and another with a **decision-making mandate**.

Each persona should be characterised by **specific attributes**, including:

- What is their **level of technical proficiency**;
- **How frequently do they use and engage with the LDT**;
- What **information or responses do they require** from the LDT, and;
- What **decisions** will they make thanks to the LDT.

These characteristics should be added in a table.

The workshop then proceeds in **sub-groups**, with each group assigned a specific persona and a **distinct colour of post-it notes** to represent their contributions. Participants are instructed to **embody these personas** throughout the workshop.

Example of persona

Potential personas for this exercise may include, but are not limited to:

- The Mayor
- The elected official responsible for digital issues
- The elected official responsible for a public policy or the environment

- The General Director of Services
- The DGA 'Environment'
- The director
- The head of department
- The operational staff

Phase 2: Identifying functional requirement (recommended allocated time: 30 mins)

Participants are asked to explore their persona daily challenges and requirements in detail. They will **sketch out on paper the day-to-day activities** of their assigned persona, focusing on:

- The **tasks they must perform** and the **decisions they need to make** in relation to the LDT.
- The **current gaps in tools or resources** that hinder their efficiency or effectiveness.

The goal is to articulate **what functionalities, tools, or improvements** would enable the persona to perform their role more effectively.

As the **storyboard of the persona's day** unfolds, the facilitator a designed note-tacker **documents the proposed functionalities** in a structured format:

- **Column 1:** Existing tools functionalities (including those that may no longer be relevant and should be **deprecated**).
- **Column 2:** New functionalities required to address identified gaps.

Participants are encouraged to think broadly, as the functional scope may extend beyond data to include **equipment, human interactions, contractual frameworks, or process improvements**.

To enrich the analysis, **all workshop participants** are invited to contribute additional insights—such as **examples of features from other projects**— that could enhance the persona's experience but may not have been initially considered.

Phase 3: Choosing suitable Indicators and metrics (recommended allocated time: 1 hour 30 mins)

For each **identified functionality and requirement** associated with a given persona, **a few closely related indicators and metrics to further be visualised are selected and defined**. It is essential that the persona fully comprehends how the indicator(s) are constructed, that they align with their operational requirements as well as the overarching objectives of the LDT project.

To guide this selection, participants should consider the following questions within the **context of the use case**:

Example of questions within the context of the use case

What are the **precise objectives** of our project, and how do they translate into measurable outcomes?

- What are the **core tasks** of the services or departments involved, and what aspects of their performance require monitoring?
- What **specific elements** do we aim to showcase or track through these indicators?
- In which **areas** do we anticipate performance improvements, and what **concrete metrics** will enable us to quantify progress?
- Which of these metrics hold the **highest priority** in assessing success?
- Will the selected indicators allow us to measure both **effectiveness** (the degree to which objectives are achieved) and **efficiency** (the ratio of results to resources invested)?
- Do these indicators adequately capture **benefits for all stakeholders**, including the community, end-users, and businesses?

Phase 4: Designing Indicators and Visualising Dashboards (recommended allocated time: 45 mins)

In this phase, each group selects the one or two most relevant indicators/metrics for their persona. Once the indicators have been selected, the focus shifts to **identifying the data sources, technical and legal requirements, and operational phases** necessary for their visualisation.

Participants will systematically assess:

Elements to be assessed

- **Data Sources and Availability:**
 - What **types of data** (business, geographical, real-time, etc.) are required to construct the indicator?
 - Are these data sources **currently available**, and if so, in what format and from what source (e.g., software, sensors, GIS)?
 - Are there **quality issues with the data**, and if any, how might these issues be addressed?
 - What **historical data** is necessary (e.g., 1 year, 3 years) to ensure meaningful analysis?

- **Technical and Legal Considerations:**
 - Is **expert input** required to ensure the **scientific robustness** of the indicator's calculation?
 - What **software, APIs, or technical infrastructure** is needed to produce and maintain the indicator?
 - Are there **legal or contractual constraints** (e.g., data ownership, access rights) that must be addressed, particularly with publishers or sensor suppliers?
 - Does the existing contract **permit access to raw data**, or are there restrictions that need to be negotiated?
- **Alerts and Visualisation:**
 - Are **automated alerts** required, and if so, under what **rules and frequency** (e.g., real-time, hourly, daily)?
 - What is the **preferred format** for consulting the indicator (e.g., computer, mobile, tablet)?
 - How should the data be **visually represented** (e.g., graphs, maps, 3D models) to best suit the persona's needs?
- **Sustainability and Adaptability:**
 - How can the indicator be **updated regularly and cost-effectively**?
 - Can the indicator be **adapted** if project requirements evolve?
 - Is there a need to **budget for API development** or additional data collection tools?

Participants will **develop a mock-up of the dashboard**, carefully tailored to meet the **specific needs of the designated personas**. This helps illustrate how each indicator will be **visually represented** to facilitate intuitive understanding and decision-making.

Phase 5: Synthesising and Defining Next Phases (recommended allocated time: 25 mins)

The facilitator **summarises the workshop's key insights**, ensuring that all participants gain **clarity on the indicators and visualisation developed**. Any remaining questions are addressed to **align the group on next phases / steps**, fostering a shared understanding of how these indicators will drive decision-making and accountability moving forward.

2.3. Recommendations for Workshop facilitation

Prepare the workshop material

The facilitator can prepare in advance, digitally or physically, the following table for participants to fill in at each phase of the workshop.

Persona	Functional Requirements	Indicators	Visualisation/ Dashboard																																				
<table><tr><th colspan="2">Persona 1 (Role + Name)</th></tr><tr><td>technical proficiency</td><td></td></tr><tr><td>use and engagement with the LDT</td><td></td></tr><tr><td>information or responses required</td><td></td></tr><tr><td>decision-making</td><td></td></tr><tr><td colspan="2">...</td></tr></table>	Persona 1 (Role + Name)		technical proficiency		use and engagement with the LDT		information or responses required		decision-making		...		<table><tr><th colspan="2">Persona 1</th></tr><tr><th>Current</th><th>New</th></tr><tr><td>- Existing functionality</td><td>- New functionality</td></tr><tr><td>- Functionality to depreciate</td><td></td></tr><tr><td>- ...</td><td></td></tr></table>	Persona 1		Current	New	- Existing functionality	- New functionality	- Functionality to depreciate		- ...		Persona 1: - Indicator 1 - Indicator 2 - Indicator 3 - ... <table><tr><th colspan="2">Indicator 1</th></tr><tr><td>Calculations</td><td></td></tr><tr><td>Data Sources and Availability</td><td></td></tr><tr><td>Technical considerations</td><td></td></tr><tr><td>Legal Considerations</td><td></td></tr><tr><td>Sustainability and Updates</td><td></td></tr><tr><td>...</td><td></td></tr></table>	Indicator 1		Calculations		Data Sources and Availability		Technical considerations		Legal Considerations		Sustainability and Updates		...		Mock-up of user interface
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3. Next Steps

The following workshops for the VALIDATE step are:

- *2.2.1 Understanding Data Governance and Setting the Goal: From Vision to a First Actionable Roadmap*
- *2.2.2 Mapping Stakeholders' Legitimacy and Authority to act in Data Governance: Understand Roles, Responsibilities, and Hierarchical Influence*
- *2.2.3 Designing your Data Governance Roadmap: From Data Officer Mission Statement to Action*
- *2.2.4 Complementing your Data Governance Roadmap with a Legal Framework: From Mapping Legal Phases to Action*
- *2.2.5 Refining your Legal Framework for Data Governance: Deep dive into legal and contractual requirements*
- *2.3 Inventorying your LDT Project Data: Unlocking Interoperability, Listing and committing to share data among partners*
- *2.4 Identifying Levers, Obstacles and Objectives for Interoperability: From Awareness to Actionable Strategies for LDT Projects*
- *Bonus: Lego® Serious Play: A Transversal Tool to Address and Overcome Data Governance Challenges*

NB: The *Bonus: Lego® Serious Play* workshop is a workshop aimed at unwrapping bottlenecks via the use of Legos, so it can be paired with any and all workshops in the VALIDATE step.

Next Methodology steps:

- *Done: Complete the EXPLORE workshops*
- *Ongoing: Complete the VALIDATE workshops*
- *Complete the DEFINE workshops*
- *Complete the IMPLEMENT workshops*

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