



# LINKS

Strengthening links between technologies and society  
for European disaster resilience

## D7.4 FINAL DEMONSTRATOR OF THE LINKS COMMUNITY CENTER

Website

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## EXECUTIVE SUMMARY

### About the project

LINKS “Strengthening links between technologies and society for European disaster resilience” is a comprehensive study on disaster governance in Europe. In recent years, social media and crowdsourcing (SMCS) have been integrated into crisis management for improved information gathering and collaboration across European communities. The effectiveness of SMCS on European disaster resilience, however, remains unclear, the use of SMCS in disasters in different ways and under diverse conditions. In this context, the overall objective of LINKS is to strengthen links between technologies and society for improved European disaster resilience, by producing sustainable advanced learning on the use of SMCS in disasters. This is done across three complementary knowledge domains:

- Disaster Risk Perception and Vulnerability (DRPV)
- Disaster Management Processes (DMP)
- Disaster Community Technologies (DCT)

Bringing together 15 partners and 2 associated partners across Europe (Belgium, Denmark, Germany, Italy, Luxembourg, the Netherlands) and beyond (Bosnia & Herzegovina, Japan), the project will develop a framework to understand, measure and govern SMCS for disasters. The LINKS Framework consolidates knowledge and experiences on the uses of SMCS into useful products for relevant stakeholders. It will be developed and evaluated through five practitioner-driven European cases, representing different disaster scenarios (earthquakes, flooding, industrial hazards, terrorism, drought), cutting across disaster management phases and diverse socioeconomic and cultural settings in four countries (Denmark, Germany, Italy, the Netherlands). Furthermore, LINKS sets out to create the LINKS Community, which brings together a wide variety of stakeholders, including first-responders, public authorities, civil society organisations, business communities, citizens, and researchers across Europe, dedicated to improving European disaster resilience through the use of SMCS.

### About this deliverable

The LINKS Community Center (LCC) is a web-based platform for the LINKS Community, enabling the Community to exchange information and experiences and to access, discuss and assess products developed by the project and contained within the LINKS Framework. This document showcases the current state of the implementation of the LCC based on a user story. It is preceded by deliverable 7.1 (D7.1), which elaborated the needs and potentials for the LCC, deliverable 7.2 (D7.2), which described the concept and architecture of the LCC and deliverable 7.3 (D7.3) which was the first demonstrator of the LCC.

All functionality of the LCC is available online and can be accessed by all stakeholders. Since D7.3, the homepage and the Social Media and Crowdsourcing Technologies library (previously called

Disaster Community Technologies), consisting of the overview page and a profile page, were completely redesigned for a better user experience. This includes the addition of new features available for filtering and listing technologies and a completely new profile page showcasing the main aspects of each technology. Further improvements, such as mobile usability and accessibility, were also implemented.

All developments were evaluated and improved using testing with internal and external stakeholders, i.e. in LINKS Community Workshops (LCWs) and LINKS Advisory Committee (LAC) Meetings. The results of this evaluations have already influenced the state of the LCC presented in this document.

The next steps in the development of the LCC will be the inclusion of additional content and the refinement of content already available. The evaluation and continuous improvement will continue, and results will be presented in D7.5 (November 2022). Further evaluation will commence in the context of the second case-based assessment, starting from November 2022.

The LCC can be accessed online at <https://links.communitycenter.eu/>

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## LIST OF ACRONYMS

Abbreviation / Acronym	Description
D	Deliverable
DCT	Disaster Community Technology
DMP	Disaster Management Process
DRPV	Disaster Risk Perception and Vulnerability
LAC	LINKS Advisory Committee
LCC	LINKS Community Center
LCW	LINKS Community Workshop
SMCS	Social Media and Crowdsourcing
WP	Work Package

## DEFINITION OF KEY TERMS<sup>1</sup>

Term	Definition
Case-based assessments	The case-based assessments (or case assessments) are joint efforts between WP2-4 and investigate the specific knowledge domains across different contexts while exploring interacting themes. The cross-based assessments are thus both an attempt to explore domain-specific questions through a comparative lens and an attempt to explore the interdependent questions cutting across knowledge domains.
Crowdsourcing	Describes a distributed problem-solving model where the task of solving a challenge or developing an idea get “outsourced” to a cloud. It implies tapping into “the wisdom of the crowd” (LINKS Glossary, builds on Howe, 2006).
LINKS Community	Community of multidisciplinary stakeholders working collaboratively hand in hand with the LINKS Consortium, learning and benefiting from the project development and results, and in turn providing their knowledge and expertise for the improvement of LINKS research and the validation of project’s results.
LINKS Community Center	The LCC brings together different stakeholders (LINKS Community) in one user-friendly and flexible web-based platform and enables them to exchange knowledge and experiences and to access, discuss and assess learning materials on the usage of SMCS in disasters.
LINKS Framework	The LINKS Framework consolidates knowledge and experiences on the uses of social media and crowdsourcing in disasters, into products for relevant stakeholders. The Framework is accessible online through the LCC, and can be used by stakeholders to openly explore knowledge, or as a strategic planning tool for guiding disaster management organizations in their planning for using social media and crowdsourcing in disasters.
LINKS Knowledge Bases	The outputs and knowledge obtained from the assessments of the three knowledge domains. The knowledge is used to develop the LINKS Framework.
Social Media	A group of Internet-based applications that build on the ideological and technological foundations of the Web 2.0 and that allow the creation and exchange of user-generated content. Forms of media that allow people to communicate and share information using the internet or mobile phones. Web 2.0 is the Internet we are familiar with today in which people are not just consumers of information but producers of knowledge through social

<sup>1</sup> Definitions are retrieved from the LINKS Glossary at <http://links-project.eu/glossary/>.





	networking sites and services like Facebook, Twitter, and Instagram (LINKS Glossary, builds on Kaplan & Haenlein, 2010).
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## 1. INTRODUCTION

A key objective of the LINKS project is to build a sustainable, multidisciplinary stakeholder community consisting of different actors from various countries, professions and schools of thought. It is intended that this LINKS Community, learn and benefit from the project development and outcomes while providing their knowledge and expertise to improve LINKS research. An important tool for this purpose is the LINKS Community Center (LCC) as it will be the gathering place for the online community.

The LCC brings together different stakeholders (LINKS Community) in one user-friendly and flexible web-based platform and enables them to exchange knowledge and experiences and to access, discuss and assess learning materials on the usage of social media and crowdsourcing (SMCS) in disasters. (LINKS Glossary)

Through the LCC, stakeholders are able to access products included in the LINKS Framework (developed in WP5), such as a library on SMCS technologies and a handbook on including citizens. The evaluation and practical application of the LINKS Framework are carried out through case-based assessments (WP6). The LCC therefore plays a vital role in creating and fostering a lively community around the LINKS project and its results. Furthermore, the LCC can be a valuable tool for establishing and sustaining the LINKS Community beyond the duration of the LINKS project.

The LCC directly contributes to the LINKS project objectives by:

- **Sustainable advanced learning on SMCS in disasters (O1):** Integrating the LINKS Framework in an online environment in a dynamic way which enables stakeholders to access, learn and refine the LINKS Framework.
- **Achieve a consolidated understanding of SMCS in disasters (O2):** Supporting the LINKS case-based assessments of the Framework.
- **Govern the diversity of SMCS in disasters (O3):** Providing visibility of the Framework and project results and supporting the ongoing validation and evolution of the Framework by the LINKS Community.
- **Bring multidisciplinary SMCS stakeholders together (O4):** Providing an online interface for diverse stakeholders to learn through discussions, collaborations, and the exchange of knowledge.

The needs and potentials of the LCC were described in Deliverable 7.1 (Kiehl, et al., 2021), the architecture of the LCC was elaborated in Deliverable 7.2 (Kiehl, Tappe, Werner, Habig, & Marterer, 2021) and the first demonstrator of the LCC was presented in Deliverable 7.3 (Kiehl, Habig, & Marterer, 2021). In contrast to other types of deliverables (e.g. reports), Deliverable 7.4 is a website that can be accessed online at <https://links.communitycenter.eu/>. This document is a supplemental

material documenting the current state of the website. It explores the LCC through a user story, showcasing various features and providing accompanying explanations. It also provides a brief outlook on the future work for the implementation of the LCC.

While D7.3 provided the basic technical architecture and a proof of concept for various features, the focus for D7.4 has been on the content and visual design of the LCC. Virtually every workflow and page has been adjusted to provide a comfortable and enjoyable user experience. This process of continuous improvement has been enabled by the conduction of workshops and meetings with project-internal and external stakeholders of the LCC. The developments described in this deliverable are based on the first results of this continuous improvement process. The continuous improvement process also involves close collaboration with WP5 (the LINKS Framework), WP6 (the case-based assessments) and WP8 (the LINKS Community).

## 2. A USER STORY ON THE LCC

This chapter will provide a walk through the LINKS Community Center (LCC) from the perspective of a practitioner, through a user story.

### 2.1 Background

Jordan works in the fire brigade (1000 personnel) of a medium-sized German city. Recently, several large-scale disasters such as the Ahrtal flooding occurred nearby, and climate-change increases the probability of similar large-scale disasters in the future. Recent experiences have also shown that the population is often unprepared to cope with major disasters without significant external help. To help the population better cope with the coming disasters, the fire brigade wants to improve the disaster preparedness of the citizens living in their area. The fire brigade also wants to set up communication structures to better cooperate with the population during the response to a disaster. Jordan works in the communications team and therefore approaches the overall goal using Social Media and Crowdsourcing (SMCS). He is tasked with creating a suitable strategy for his fire brigade. Jordan has participated in a LINKS Community Workshop (LCW) organized by the local LINKS partner SIC and therefore knows that the LINKS Community Center can be a valuable resource for him. He visits the LINKS Community Center at <http://links.communitycenter.eu>

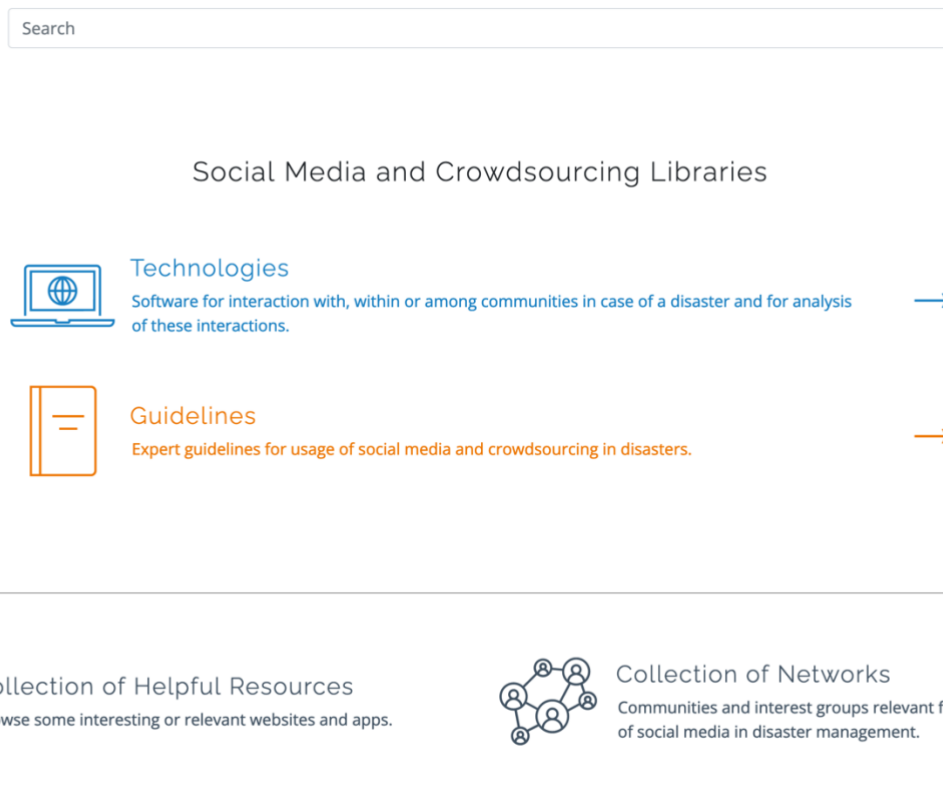
### 2.2 Homepage

Upon opening the LCC, Jordan is greeted by a header briefly introducing the LCC (Figure 1). As he has already received an introduction to the LCC during the LINKS Community Workshop, he scrolls past the “Get Started” button and is presented the main menu (Figure 2). The main menu consists of three possible entry points into the content provided by the LCC: Search, Explore and Plan strategically (not shown below, see Section 3.3). Jordan does not have a specific term in mind to search for, therefore he does not use the search function. He would like to find a guideline to help him implement SMCS in his organization, therefore he accesses the Guidelines Library.

**Figure 1: The header of the homepage**



**Figure 2: The main menu on the homepage**



## 2.3 SMCS Guidelines Library

Jordan immediately sees a long list of guidelines but doesn't know which one could be most helpful for him. He therefore uses the provided filter functionality to narrow down the selection of guidelines. As he is a practitioner, he selects this target audience and as he wants to help citizens during the preparedness and recovery phases, he selects these phases. Jordan has also heard of colleagues successfully using Virtual Operation Support Teams (VOSTs), so he also filters the guidelines by this thematic (Figure 3). Only three guidelines remain, and Jordan manually identifies the "EmerGent - Guidelines to increase the benefit of social media in emergencies" (Figure 4) guideline as the most suitable guideline for him. As Jordan reads the guideline, he learns that technologies can be used to support the monitoring and analysis of social media. This could be really helpful to improve the situational awareness during a disaster. As his department is chronically understaffed, Jordan also likes the prospect of using supporting technologies to reduce the amount of personnel required to implement his strategy. Jordan therefore visits the Technologies Library in the LCC.

**Figure 3: The guideline overview page**

<b>Target Audience</b>	<input type="checkbox"/> Citizens	<input type="checkbox"/> Industry	<input type="checkbox"/> Policy Makers	<input type="checkbox"/> Practitioners	<input type="checkbox"/> Researchers
<b>Phase</b>	<input type="checkbox"/> Preparedness	<input type="checkbox"/> Prevention	<input type="checkbox"/> Recovery	<input type="checkbox"/> Response	
<b>Covers Thematic</b>	<input type="checkbox"/> Crowdsourcing	<input type="checkbox"/> Social Media	<input type="checkbox"/> Technologies	<input type="checkbox"/> VOST	<input type="checkbox"/> Vulnerability
<b>Language</b>	<input type="checkbox"/> English	<input type="checkbox"/> German			

Name	Target Audience	Phase	Covers Thematic	Language
<a href="#">A guide to using social media</a>	Practitioners	Prevention	Social Media	<a href="#">German</a>
<a href="#">CDC Social Media Tools, Guidelines &amp; Best Practices</a>	Citizens Practitioners		Social Media	<a href="#">English</a>
<a href="#">Citizens' participation and crowdsourcing</a>	Policy Makers Practitioners	Preparedness	Crowdsourcing	<a href="#">English</a>
<a href="#">Civil Protection: Social Media</a>	Policy Makers Practitioners	Response		<a href="#">German</a>
<a href="#">Crisis Mapping and Crowdsourcing in Flood Management</a>	Policy Makers Practitioners Researchers	Recovery Response	Crowdsourcing Technologies	<a href="#">English</a>

**Figure 4: The profile of a specific guideline**  
 EmerGent - Guidelines to increase the benefit of social media in emergencies

Primary Target Country	
Publishing Organisation	EmerGent FP7 Project
Language	<a href="#">English</a>
Year Published	2017
Target Audience	Practitioners, Policy Makers, Researchers
Status	Published
Disaster Management Phase	Prevention, Preparedness, Response, Recovery
Covers Thematic	Social Media, VOST
Audience Experience Level	Intermediate
Source Website	<a href="http://www.fp7-emergent.eu/wp-content/uploads/2017/09/20170529_D7.3_Guidelines_to_increase_the_benefit_of_social_media_EmerGent.pdf#">http://www.fp7-emergent.eu/wp-content/uploads/2017/09/20170529_D7.3_Guidelines_to_increase_the_benefit_of_social_media_EmerGent.pdf#</a>
Abstract	<p>Comprehensive advice for Citizens <a href="https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_tips%20for%20citizens_extract_level1.pdf">https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_tips%20for%20citizens_extract_level1.pdf</a></p> <p>Key words for emergency services &amp; authorities <a href="https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_tips%20for%20authorities_extract_level2.pdf">https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_tips%20for%20authorities_extract_level2.pdf</a></p> <p>Comprehensive advice for emergency services &amp; authorities <a href="https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_tips%20for%20authorities_extract%20level1.pdf">https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_tips%20for%20authorities_extract%20level1.pdf</a></p> <p>Key words Data Protection <a href="https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_data%20protection_extract_level2.pdf">https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_data%20protection_extract_level2.pdf</a></p> <p>Comprehensive advice Data Protection <a href="https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_data%20protection_extract_level1.pdf">https://safetyinnovationcenter.sharepoint.com/:b:/r/sites/LINKS_shared/Freigegebene%20Dokumente/WP4/Guidelines/Guideline%20Documents/Working%20documents/Action%20cards/G01_data%20protection_extract_level1.pdf</a></p>
Is Archived	No

A set of guidelines for emergency services & public authorities how to communicate in social media and help to decrease the uncertainty with this new, changing and maybe unfamiliar medium.

[Start Discussion](#)

0 replies

## 2.4 SMCS Technologies Library

Upon visiting the Technologies Library, Jordan is presented with an overview of technologies that can support social media and crowdsourcing activities (Figure 5). His fire brigade already has accounts on Facebook, Twitter and Instagram, so he filters the overview to only include technologies that can support these platforms. As the page also offers to filter the technologies by their functions, Jordan thinks about what he wants the technology to help him with. The guideline he read mentioned using technologies for monitoring and analysis, so Jordan additionally selects “Search & Monitor” and “Analysis”. The LCC presents Jordan with some potential technologies, so he visits the individual profiles of each technology (Figure 6) to better understand what each technology offers. The profiles show basic information about each technology, such as a short description and the provider. Jordan is most interested in the “Functions” section, which highlights all the different functions supported by a specific technology. The functions are grouped into categories and help Jordan select a technology tailored to his needs. Jordan does not know what some of the functions

mean but discovers that clicking them shows a small help text describing each function. After reading the different profiles, he selects 3 technologies that could be potentially helpful for him. He will need to check with the finance department on which tool he can buy.

After having drafted a preliminary strategy based on the guideline he selected and the technologies he identified, Jordan goes back to the homepage of the LCC to see what else he can find that might help him refine his strategy.

**Figure 5: The technologies overview page**

Functions

[SELECT ALL](#) | [Deselect ALL](#)

Search & Monitor   
  Post & Schedule   
  Analysis   
  Metrics   
  Report  
 Collaboration   
  Interoperability   
  Meta

Supported Platforms

[SELECT ALL](#) | [Deselect ALL](#)

General

Crowd   
  Web

Platforms

Facebook   
  Twitter   
  Instagram   
  YouTube

More platforms

Flickr   
  Google My Business   
  LinkedIn   
  Ok   
  Pinterest  
 Reddit   
  Telegram   
  TikTok   
  Tumblr   
  VK  
 Vimeo   
  WhatsApp   
  XING


Name	Functions	Supported Platforms
Agorapulse		
ArcGIS		
Awario		
Brandwatch		



Figure 6: The profile of a specific technology

## Agorapulse

Created: 2022-04-01  
Reviewed: 2022-04-01

<p><b>agorapulse</b> <a href="#">Website</a></p> <p>Stay organized, save time, and easily manage your social media with Agorapulse's inbox, publishing, reporting, monitoring, and team collaboration tools.</p>	<p><b>Provider</b> Agorapulse SAS France</p>
<p><b>Functions</b></p> <ul style="list-style-type: none"> <li><b>Search &amp; Monitor</b> <ul style="list-style-type: none"> <li>Advanced search features</li> <li>Keyword search</li> <li>Hashtag search</li> <li>Keyword monitoring</li> </ul> </li> <li><b>Post &amp; Schedule</b> <ul style="list-style-type: none"> <li>Posting content</li> </ul> </li> <li><b>Analysis</b> <ul style="list-style-type: none"> <li>Trend</li> </ul> </li> <li><b>Metrics</b> <ul style="list-style-type: none"> <li>Post metrics</li> <li>Profile/Site metrics</li> <li>Network metrics</li> <li>Follower metrics</li> <li>Audience metrics</li> <li>Competitor metrics</li> </ul> </li> <li><b>Report</b> <ul style="list-style-type: none"> <li>Filtering, sorting &amp; searching</li> <li>Visualization options</li> <li>PDF export</li> </ul> </li> <li><b>Collaboration</b> <ul style="list-style-type: none"> <li>Multuser</li> <li>Permission management</li> <li>Inbox workflow</li> <li>Approval workflows</li> </ul> </li> <li><b>Interoperability</b> <ul style="list-style-type: none"> <li>Data export</li> </ul> </li> <li><b>Meta</b> <ul style="list-style-type: none"> <li>GDPR-compliant</li> <li>Multiple accounts per platform</li> <li>User interface languages: English</li> </ul> </li> </ul>	<p><b>Supported Platforms</b></p>  <p><b>Crisis Communication Matrix</b> A2C, C2A</p> <p><b>Disaster Management Phase</b> Prevention, Preparedness</p>
<p><b>See Related</b> Guidelines Scenarios</p>	<p><a href="#">Start Discussion</a> <span style="float: right;">0 replies</span></p>

## 2.5 Timeline

On the homepage, Jordan scrolls past the header and the main menu and sees the Timeline (Figure 7). The Timeline shows the most recent activity by the Community inside the LCC. Jordan notices that there seems to be an active community inside the LCC, working on providing content and discussing various issues. He is intrigued and wonders whether this community could help him improve his draft strategy. Therefore, Jordan visits the discussions forum linked in the timeline.

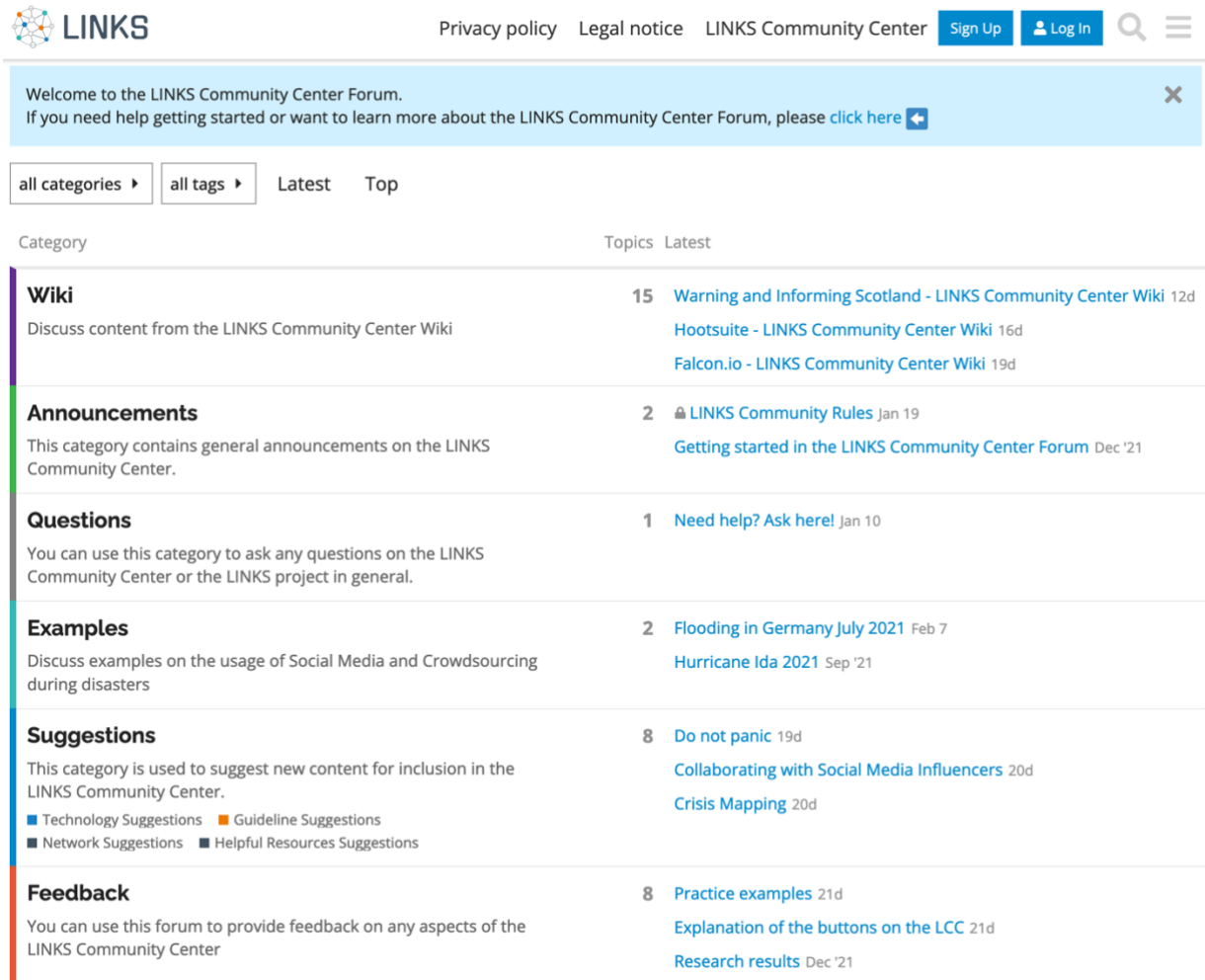
Figure 7: The timeline showing recent community activity

Latest Discussions	News and Activities
<p><a href="#">Dev:TestDCT - LINKS Community Center Wiki</a> system Created 29 days ago</p>	<p><a href="#">International networks of policy and decision makers</a> Dinu Modified 1 day ago</p>
<p><a href="#">Fanpage Karma - LINKS Community Center Wiki</a> system Created about 1 month ago</p>	<p><a href="#">International networks of citizens</a> Dinu Modified 1 day ago</p>
<p><a href="#">Falcon.io - LINKS Community Center Wiki</a> system Created about 1 month ago</p>	<p><a href="#">Media Associations</a> Dinu Modified 4 days ago</p>
<p><a href="#">SwT:Grid - LINKS Community Center Wiki</a> system Created about 1 month ago</p>	<p><a href="#">Dutch networks of policy and decision makers</a> Dinu Modified 4 days ago</p>
<p><a href="#">Obi4wan - LINKS Community Center Wiki</a> system Created 2 months ago</p>	<p><a href="#">Buffer</a> Cschwentker Modified 4 days ago</p>

## 2.6 Discussions

When opening the discussions forum, Jordan sees an overview of the available sections and the active topics (Figure 8). He still has to select one of the three technologies suitable for his needs and has been given the OK by the finance department to buy the one he sees as most fitting. Therefore, Jordan wants to ask the community on their experiences with the three technologies to help with the selection. He goes to the “Questions” section and wants to create a topic. However, he has to register before he can post to the discussions forum. He clicks the signup button and is redirected to the login page (Figure 9). Jordan is a bit annoyed because he does not want to register for yet another website. However, he discovers that he can directly login with his Google account without having to go through a registration procedure. He logs in with his Google account and can immediately post to the forum. Jordan posts his question to the discussions forum (Figure 10) and continues working on his strategy.

**Figure 8: The discussions forum overview page**

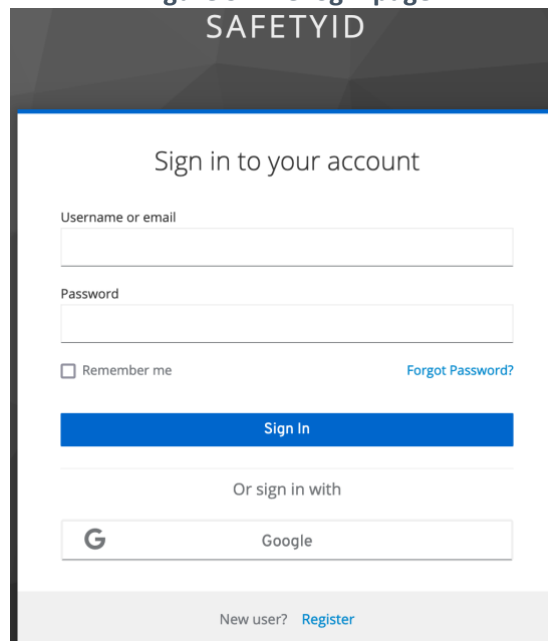


Welcome to the LINKS Community Center Forum.  
If you need help getting started or want to learn more about the LINKS Community Center Forum, please [click here](#)

all categories ▾ all tags ▾ Latest Top

Category	Topics	Latest
<b>Wiki</b> Discuss content from the LINKS Community Center Wiki	15	<a href="#">Warning and Informing Scotland - LINKS Community Center Wiki</a> 12d <a href="#">Hootsuite - LINKS Community Center Wiki</a> 16d <a href="#">Falcon.io - LINKS Community Center Wiki</a> 19d
<b>Announcements</b> This category contains general announcements on the LINKS Community Center.	2	<a href="#">LINKS Community Rules</a> Jan 19 <a href="#">Getting started in the LINKS Community Center Forum</a> Dec '21
<b>Questions</b> You can use this category to ask any questions on the LINKS Community Center or the LINKS project in general.	1	<a href="#">Need help? Ask here!</a> Jan 10
<b>Examples</b> Discuss examples on the usage of Social Media and Crowdsourcing during disasters	2	<a href="#">Flooding in Germany July 2021</a> Feb 7 <a href="#">Hurricane Ida 2021</a> Sep '21
<b>Suggestions</b> This category is used to suggest new content for inclusion in the LINKS Community Center. ■ Technology Suggestions ■ Guideline Suggestions ■ Network Suggestions ■ Helpful Resources Suggestions	8	<a href="#">Do not panic</a> 19d <a href="#">Collaborating with Social Media Influencers</a> 20d <a href="#">Crisis Mapping</a> 20d
<b>Feedback</b> You can use this forum to provide feedback on any aspects of the LINKS Community Center	8	<a href="#">Practice examples</a> 21d <a href="#">Explanation of the buttons on the LCC</a> 21d <a href="#">Research results</a> Dec '21

**Figure 9: The login page**



**SAFETYID**

Sign in to your account


Username or email

Password

Remember me [Forgot Password?](#)

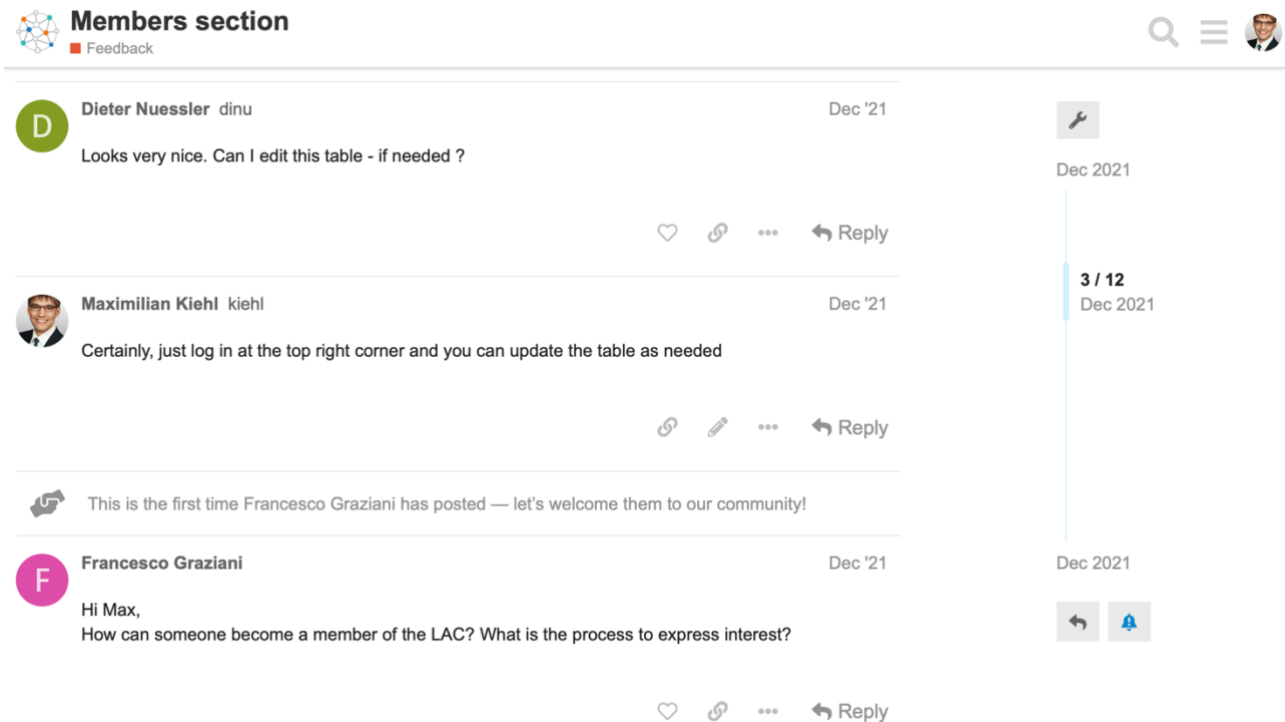
**Sign In**

Or sign in with

 Google

New user? [Register](#)

**Figure 10: Reading a topic in the discussions forum**



**Members section** Feedback

**Dieter Nuessler** dinu Dec '21  
Looks very nice. Can I edit this table - if needed ?

**Maximilian Kiehl** kiehl Dec '21  
Certainly, just log in at the top right corner and you can update the table as needed

This is the first time Francesco Graziani has posted — let's welcome them to our community!

**Francesco Graziani** Dec '21  
Hi Max,  
How can someone become a member of the LAC? What is the process to express interest?

3 / 12  
Dec 2021

## 2.7 Search and Collection of Helpful Resources

While Jordan refines his strategy, he noticed that he didn't include yet a crucial detail. He has a teenage son who only uses social media platforms that Jordan has never heard of. The Facebook, Twitter and Instagram accounts by the fire brigade may not be sufficient to reach citizens like his son. He therefore wonders how to reach more demographics in this community. As this question is not directly related to a specific guideline or a technology, he turns back to the search function he has seen on the homepage and searches for "age social media" (Figure 11). He finds a page listing many different resources that could be helpful for him (Figure 12). Among them is a website that breaks down the usage of various social media platforms by age. Based on the website, he decided to include TikTok in his strategy to also reach young people.

In the meantime, a community member has answered Jordan's question on the discussions forum and shared positive experiences with one of the technologies Jordan identified. This last piece of information helps Jordan finalize his strategy.

Figure 11: Using the search function and displaying search results  
Search results

✕
Search

Results 1 – 4 of 4

Content pages
Multimedia
Everything
Advanced

Crisis communication and reputation management in the digital age: A guide to best practice for the aviation industry

| Covers Thematic=Social **Media** | Audience Experience  
Level=Intermediate ... and manufacturers in dealing with the news **media** after an aviation accident ...

Helpful resources

== **Social Media** == Search Engines == ;[https://www.social-searcher.com **Social** Searcher ] : **Social** Searcher ...

Italian networks of citizens

basis with for the exclusive pursuit of **social** solidarity, is the inclusion ... | Anziani e Non Solo is a NGO working since 2004 in the field of social ...

German networks of citizens

to describe pictures/Photos/drawings in **social media** posts (https://www ... and, as far as possible, healthy aging in **social** security. It promotes a differentiated ...

Figure 12: The helpful resources page

## Knowledge Base

### PreventionWeb

PreventionWeb is a collaborative knowledge sharing platform on disaster risk reduction (DRR), managed by the UN Office for Disaster Risk Reduction (UNDRR). The site offers a range of knowledge products and services to facilitate the work of DRR professionals.

### Emergency Events Database (EM-DAT)

The main objective of the database is to serve the purposes of humanitarian action at national and international levels. The initiative aims to rationalise decision making for disaster preparedness, as well as provide an objective base for vulnerability assessment and priority setting. EM-DAT contains essential core data on the occurrence and effects of over 22,000 mass disasters in the world from 1900 to the present day. The database is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies.

## Social Media

### Search Engines

#### Social Searcher

Social Searcher is a free social media search engine, also available for iOS devices at the [App Store](#) 

### Demographics

#### Favourite Social Media Platforms / Gender and Age

#### Global Social Media Stats

#### The 2021 Social Media Demographics Guide

## 2.8 Collection of Networks

As Jordan has put a lot of effort into the strategy and is proud of the result, he wants to share it with like-minded practitioners in Germany. While exploring the LCC, he finds the Collection of Networks page (Figure 13). As he wants to share his strategy with other local practitioners, this page seems to be just right for him. He navigates the page to display practitioner networks in Germany that focus

on disaster management (Figure 14). There, he finds a German practitioner network that focuses on the usage of social media and technology in civil protection. As this is exactly the kind of network he was looking for, he shares his now finished strategy with the network using the provided contact information.

**Figure 13: The overview of networks**

### Networks of practitioners

- [International networks of practitioners](#)
- [Danish networks of practitioners](#)
- [Dutch networks of practitioners](#)
- [German networks of practitioners](#)
- [Italian networks of practitioners](#)

### Networks of researchers

- [International networks of researchers](#)
- [Danish networks of researchers](#)
- [Dutch networks of researchers](#)
- [German networks of researchers](#)
- [Italian networks of researchers](#)

### Networks of policy- & decision-makers

- [International networks of policy and decision makers](#)
- [Danish networks of policy and decision makers](#)
- [Dutch networks of policy and decision makers](#)
- [German networks of policy and decision makers](#)
- [Italian networks of policy and decision makers](#)

### Networks of civil society (citizens)

- [International networks of citizens](#)
- [Danish networks of citizens](#)
- [Dutch networks of citizens](#)
- [German networks of citizens](#)
- [Italian networks of citizens](#)

**Figure 14: The networks of practitioners in Germany (excerpt)**

#### Fire & Rescue Services

Network	Description	Website	Facebook	Twitter
DFV	Deutscher Feuerwehrverband (German Fire Service Association) is the umbrella organisation and represents the interests of the German fire service at national, European and international level and supports the protection against and prevention of hazards. The DFV works for sustainable framework conditions to ensure a reliable system of rapid and competent assistance in Germany. As a national umbrella organisation, it forms a network in which it bundles and communicates the competences of its members.	<a href="#">Website</a>	<a href="#">Facebook</a>	<a href="#">Twitter</a>
AGBF Bund	Arbeitsgemeinschaft der Leiter der Berufsfeuerwehren (Association of Chief Fire Officers of Professional Fire & Rescue Service in the Federal Republic of Germany) is the association of all professional fire services. The AGBF is a self-supporting association within the German Association of Cities (DST) and has branches in all German federal states (Länder)	<a href="#">Website</a>		
Netzwerk Berufsfeuerwehr	Netzwerk Berufsfeuerwehr offers current information for all full-time fire service colleagues in Germany and other German-speaking countries. "From colleagues for colleagues".		<a href="#">Facebook</a>	
vfdB	Vereinigung zur Förderung des Deutschen Brandschutzes (German Fire Protection association) is a network of different type of stakeholders (practitioners, researchers, insurance companies, fire safety industry, authorities, trade union, press).	<a href="#">Website</a>	<a href="#">Facebook</a>	<a href="#">Twitter</a>

### 3. ADDITIONAL ASPECTS OF THE LCC

This section will describe additional aspects of the LCC that were not explicitly included in the user story.

#### 3.1 Mobile optimizations

The LCC is developed using a mobile-first approach. This means that all features are developed in a responsive way and can dynamically be resized to fit the different screen sizes and pixel densities of smartphone, tablets, laptops, and desktop computers. Tables are resized, elements are reordered, and images are scaled to avoid users having to scroll horizontally on mobile devices.

The mobile-first approach allows users who do not have or are not comfortable with a classical computer to access and use the LCC, leading to the creation of a more inclusive community. To achieve this, the LCC is developed on various laptops, using the developer tools of web browsers to test different screen sizes. The development is then tested by accessing the LCC using different operating systems, browsers, smartphones, and tablets.

#### 3.2 Accessibility

Making the LCC accessible for as many people as possible is paramount for its success. Therefore, relevant technical specifications (e.g. the Web Content Accessibility Guidelines (W3C, 2022)) and guidelines for writing on the web are being employed. A key input for guiding this process is the Accessibility Guideline of the Europa Web Guide (European Commission, 2022). Important aspects in this regard are the inclusion of proper alternative texts for images so that they can be accessed by visually impaired users via screen readers and using standardized HTML elements (e.g. h-tags for headlines) wherever possible. Additional accessibility is achieved by providing guidance to users in the form of short introductory texts and explanations. These texts are written avoiding LINKS-specific jargon so that they can be understood by practitioners without any prior knowledge of LINKS.

The accessibility of the LCC is verified using the Lighthouse<sup>2</sup> tool provided by Google. This tool checks websites for common usability issues and gives recommendations for improvements. Additional accessibility evaluation is performed using the web accessible evaluation tool<sup>3</sup>. As the improvement of accessibility is an ongoing process and accessibility also needs to be ensured for new content, continuous monitoring of the accessibility will be part of the quality assurance methodology (see Section 4.4).

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<sup>2</sup> <https://chrome.google.com/webstore/detail/lighthouse/blipmdconlcpinefehnmmfjpmphik?hl=de>

<sup>3</sup> <https://wave.webaim.org>

### 3.3 LINKS Framework & Plan strategically entry point

As described in D7.2, the LINKS Framework is envisaged to provide the base data model for the LCC. It can be seen as a home for the results produced by LINKS, making sure that they interrelate and are structured in a similar fashion. The LINKS results/products are contained in the Framework and the Framework is integrated into the LCC. The first version of the LINKS Framework, Deliverable 5.3 (Fonio, et al., 2022), is released in parallel to this document. D5.3 describes three main entry points into the results produced by LINKS. The entry points allow access to the same underlying data but provide different means to access this data:


- **Explore:** This entry point allows the user to directly access the products produced by LINKS.
- **Search:** This entry point allows a full-text search for all content contained within the LINKS products.
- **Plan strategically:** This entry point (currently visualized by a compass) is planned to provide guided access by presenting content from the LINKS products based on specific themes, sub-themes and questions.

The Explore and Search entry points are already implemented in the LCC and were featured in the user story in Section 2. The Plan strategically entry point is currently under development within the LINKS Framework (see D5.3) and is planned to be implemented in the LCC once it has reached a maturity level where a technical demonstrator can be implemented. A visualisation of how the menu on the homepage of the LCC might look like once the Plan strategically entry point is implemented is shown in Figure 15. A visualisation of how a first implementation of the compass inside the LCC could look like is shown in Figure 16. It allows users to access questions and corresponding answers according to the themes and sub-themes defined in the LINKS Framework.





**Figure 15: The potential homepage after the implementation of the compass**

### Social Media and Crowdsourcing Libraries




**Technologies**  
Software for interaction with, within or among communities in case of a disaster and for analysis of these interactions.







**Guidelines**  
Expert guidelines for usage of social media and crowdsourcing in disasters.



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**Collection of Helpful Resources**  
Browse some interesting or relevant websites and apps.



**Collection of Networks**  
Communities and interest groups relevant for the context of social media in disaster management.

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Want to be guided?

Try the compass!

**Figure 16: The potential implementation of the compass**



## Engaging With Citizens

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### Mobilising Citizens

- How can I reach young people? +
  - Young people increasingly use TikTok.
  - You can use the following technologies to interact with TikTok and to measure your impact: [Buffer](#), [Fanpage Karma](#), [Hootsuite](#), [Keyhole](#), [Later](#), [Pulsar](#).
  - You can read more information on how to interact with young people in this guideline: [EmerGent - Guidelines to increase the benefit of social media in emergencies](#).
- <Question 2>

### Collecting & Analyzing Information

- <Question 1>
- <Question 2>

### Mobilising Volunteers

- <Question 1>
- <Question 2>

## Improving Communication

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### Targeting Communication

- <Question 1>
- <Question 2>

### Ensuring the Quality of Information

- <Question 1>
- <Question 2>

### Making Information Accessible

- <Question 1>
- <Question 2>

## 3.4 Translation

Practitioners have requested to increase the usefulness of the LCC by making content available in their native language. Therefore, several automatic translation processes have been evaluated. Currently, Google Translate is implemented as a basic translation software supporting all major languages. In the future, Google Translate might be replaced by automated translations via DeepL as they seem to be of higher overall quality. First tests have shown that especially domain-specific terms seem to translate well using DeepL. The updated translation routine could feature a button on each page that triggers an automatic translation process of the content. Alternative approaches, such as manual reviews and corrections of automated translations, are also being considered but could lead to a large organisational overhead and the risk of different language versions of the same content diverging from each other. Fully automated translation is therefore preferred.

Additional support for non-English languages is contained within the products included in the LCC. The Guidelines library lists the language in which the guidelines are available, and the Technology

library will provide information on the languages supported by a specific technology. This allows users to select the guidelines and technologies which support their native language.

## 4. FUTURE PLANS

This section will provide a brief overview of the future plans on the implementation of the LCC. Although D7.4 is called the “final version of the LCC”, development of the LCC continues as new content becomes available for integration into the LCC and as the continuous update process identifies potentials for improvement.

### 4.1 Integration and improvement of content

This section will provide a brief overview on the future plans regarding some content produced by LINKS. Note that this is only a selection and a complete and more detailed explanation is provided in D5.3.

#### 4.1.1 LINKS Framework

As mentioned in Section 3.3, development of the LINKS Framework is currently ongoing. New content provided by the LINKS Framework (such as the plan strategically entry point or new and improved products) will be continuously integrated into the LCC once the maturity level is sufficient for technical implementation.

#### 4.1.2 Technologies Library

The Technologies Library provides an overview of technologies that can be used to support social media and crowdsourcing activities. It was presented in Section 2.4 and is the most polished product currently implemented in the LCC as it was available earliest and is considered a key result of the project. Future updates will consist mostly of new categories being added to the categorization schema and of new technologies being added to the list.

#### 4.1.3 Guidelines Library

The Guidelines Library provides an overview of guidelines that can be used to support social media and crowdsourcing activities. It was presented in Section 2.3 and is currently implemented in a draft state in the LCC. The content of the Guidelines Library is currently undergoing a major overhaul by WP3, WP4 and the LINKS partner FEU. The implementation in the LCC will be updated (especially in terms of visual presentation) once this overhaul is completed.

#### 4.1.4 Examples Library

The Examples library (previously called practice examples and disaster reports) will provide examples on how to use social media and crowdsourcing in disaster management. This library is currently under active development within WP6 and will be implemented in the LCC once a first version is available.

#### 4.1.5 Including Citizens Handbook

The Including Citizens Handbook will provide disaster management organisations with guidance on how to include citizens using social media and crowdsourcing. It is currently under active development within WP2 and will be included in the LCC once a first version is available.

#### 4.1.6 Educational Toolkit

The Educational Toolkit provides online learning materials on disasters tailored for children. It is currently being developed by LINKS partner SCIT as an external website and will be linked to once a first version is available.

### 4.2 Continuous updates

Although the development of the LCC consists of two major milestones (D7.3 published in September 2021 and D7.4 published in June 2022), updates are being continuously implemented. This process follows the agile development approach described in D7.2 and enables the gathering of immediate feedback from users and fast design cycles. The basis for the development approach are user stories, which are documented on the platform GitHub and subsequently implemented.

The incremental updates have proven to be a valuable tool for assisting the development of products within LINKS, as they enable the product developers to visualize how a concrete implementation of their product in a web platform might look like. Therefore, the incremental update process will continue in the future as new products are implemented in the LCC. Furthermore, the presentation of existing products such as the Collection of Helpful Resources and the Collection of Networks will be continuously polished and improved.

### 4.3 Sustainability and integration and linking with other platforms

Although the LCC currently works as a stand-alone tool, the potential integration with other platforms has been a key factor for architectural decisions. This will allow the LCC to become sustainable by linking or integrating with existing platforms or initiatives. Possible future integrations include CMINE, the Union Civil Protection Knowledge Network or the Disaster Risk Management Knowledge Centre. An integration within new or existing research projects is also an option being explored.

All development of the LCC is based on non-proprietary, open-source solutions which can be integrated or migrated into other systems without any licensing costs or barriers. Data stored inside the LCC uses standardised data formats such as RDF<sup>4</sup> and can be accessed using open interfaces<sup>5</sup>. This open-by-design approach allows the LCC to be integrated into all tools supporting the data

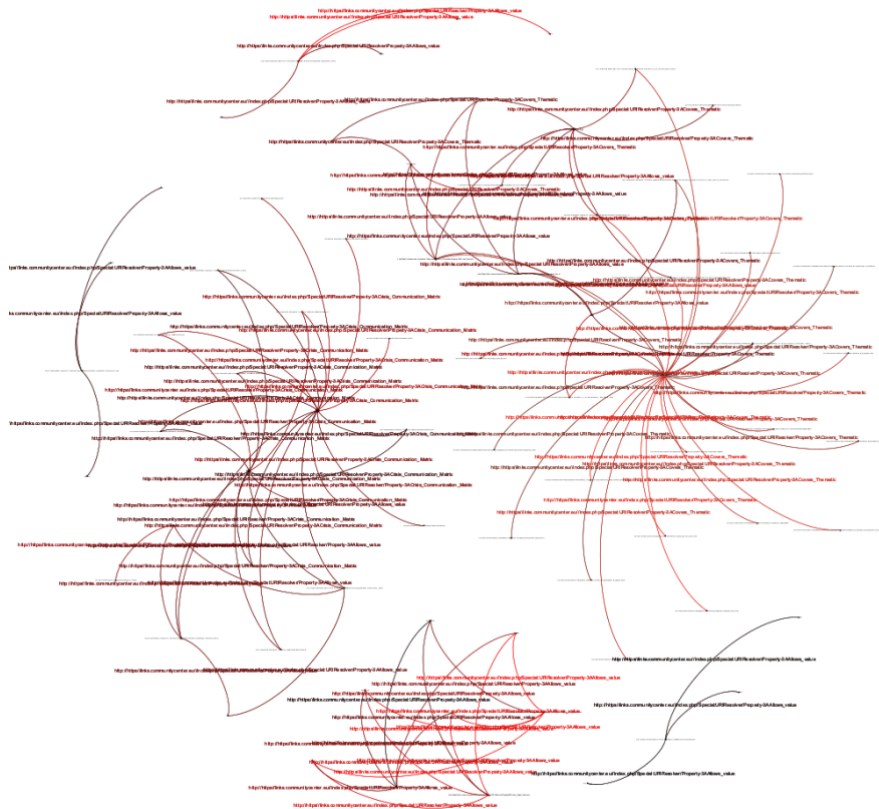
---

<sup>4</sup> [https://www.semantic-mediawiki.org/wiki/Help:RDF\\_export](https://www.semantic-mediawiki.org/wiki/Help:RDF_export)

<sup>5</sup> <https://www.semantic-mediawiki.org/wiki/Help:API:ask>

formats and interfaces. As a proof-of-concept, all knowledge contained within the LCC was exported and then visualised as a knowledge graph using the open-source tool Gephi. The result of this trial is shown in Figure 17.

Figure 17: The data inside the LCC visualised using the open-source tool Gephi



#### 4.4 Quality assurance

Ensuring a high quality is vital for the LCC's success and an overall quality assurance concept will be described in detail in D7.5 (November 2022). Besides automated processes (i.e. tools to check the accessibility of the LCC, meetings and workshops are conducted to evaluate the functionality of the LCC. The meetings and workshops conducted so far are:

- A workshop on the Guidelines Library with the LINKS practitioners was organized by WP3 und WP4 in January 2022 using the LCC. The practitioners suggested several new categories for guidelines, which were timely implemented in the LCC.
- The second LINKS Advisory Committee meeting was conducted in February of 2022 and focused in large parts on how to structure content within the LCC. The participants provided feedback on which features they found helpful, and which might need improvement. They additionally brainstormed how activity could be fostered inside the

LCC and which additional information might be useful for them. The detailed report on this meeting can be found in D8.5 (November 2022).

- A LINKS Community Workshop was conducted with local practitioners from Germany in April of 2022 to identify information that is most relevant for the practitioners and should therefore be displayed more prominently inside the LCC. The detailed report on this workshop can be found in D8.5 (November 2022).
- A hands-on workshop with project-internal and external practitioners will be conducted at the LINKS annual meeting in June 2022. The practitioners will be asked to perform practical tasks inside the LCC using their own laptops (e.g. searching for a technology and posting on the forum). Additionally, they will be asked practical questions (i.e. “Which of these two alternatives do you like better?”). The feedback will be extremely valuable to improve the LCC and the products contained within from a practitioner’s perspective.

Furthermore, the LCC will be used within the LINKS case-based assessment once the relevant products are available and can be implemented in the LCC. This will enable the gathering of practical feedback from LINKS stakeholders and local and broader EU level and ensure the further improvement of the LCC. Additionally, this increasing community engagement is expected to lead to more community activity inside the LCC, contributing to its sustainability.

## 5. CONCLUSION

The current demonstrator of the LCC is based on the needs and potentials presented in D7.1, the architecture described in D7.2 and the first demonstrator shown in D7.3. It was iteratively improved using the feedback from workshops and meetings with internal and external stakeholders (i.e. LCWs, LAC Meeting, Review Meeting). The focus for this version has been on the improvement of the user experience and the addition and improvement of content. The homepage was completely redesigned to highlight a starting point for new users, the entry points into the LINKS Framework and the community aspect of the LCC. The Technologies library was completely overhauled to display information that is most relevant for the users of the LCC (i.e. on the functions of a technology) while minimizing confusing or irrelevant terminology. Furthermore, the library also features a completely new design that is intended to improve the user experience and bring joy to the users of the LCC while still keeping the focus on the content. Other improvements, such as a focus on mobile usability and accessibility, were included throughout the LCC.

The next steps in the development will be the inclusion and refinement of more content as the products become available from their respective work packages. A key focus will be the Guidelines library, the Examples library, and the overall LINKS Framework. Based on this ever-increasing amount of content available, the LCC will be evaluated through various means. The series of evaluations already started based on LCWs and the LAC meetings will continue to contribute to the LCC's continuous improvement. This will be further augmented by user testing of the LINKS products available through the LCC in the second round of case assessments. The overall quality assurance methodology as well as first results on the quality assurance and the community management will be provided in D7.5 (November 2022).



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