



D7.5 Annual Report on Community Building, Event Management, Collaboration and Training

Document Identification			
Status	Final	Due Date	28/02/2022
Version	1.0	Submission Date	11/03/2022

Related WP	WP7	Document Reference	D7.5
Related Deliverable(s)	D7.1, D7.2, D7.3, D7.4, D7.6	Dissemination Level (*)	PU
Lead Participant	PLUS	Lead Author	Robert Elsässer
Contributors	DIA, HRLS	Reviewers	Iván Zaldivar Santamaria, (ATOS)
			Jan Velimsky (DIA)

Keywords:

Community building, dissemination, event management, training, collaboration

This document is issued within the frame and for the purpose of the HiDALGO project. This project has received funding from the European Union's Horizon2020 Framework Programme under Grant Agreement No. 824115. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the European Commission.

The dissemination of this document reflects only the author's view and the European Commission is not responsible for any use that may be made of the information it contains. **This deliverable is subject to final acceptance by the European Commission.**

This document and its content are the property of the HiDALGO Consortium. The content of all or parts of this document can be used and distributed provided that the HiDALGO project and the document are properly referenced.

Each HiDALGO Partner may use this document in conformity with the HiDALGO Consortium Grant Agreement provisions.

(*) Dissemination level: **PU**: Public, fully open, e.g. web; **CO**: Confidential, restricted under conditions set out in Model Grant Agreement; **CI**: Classified, **Int** = Internal Working Document, information as referred to in Commission Decision 2001/844/EC.

Document Information

List of Contributors	
Name	Partner
Robert Elsässer, Fabian Schwaiger, Elisabeth Riedl	PLUS
Lorenzo Zanon	USTUTT
Francisco Javier Nieto de Santos	ATOS
Ludger Benighaus	DIA

Document History			
Version	Date	Change editors	Changes
0.1	31/01/2022	Robert Elsässer (PLUS)	Very first draft
0.3	16/02/2022	Lorenzo Zanon (HLRS)	Update of training chapter
0.4	17/02/2022	Ludger Benighaus (DIA)	Update community building and events
0.7	18/02/2022	Robert Elsässer (PLUS)	Added additional dissemination events
0.9	07/03/2022	Robert Elsässer (PLUS)	Implemented reviewers' comments
1.0	11/03/2022	Francisco Javier Nieto de Santos (ATOS)	FINAL VERSION TO BE SUBMITTED

Quality Control		
Role	Who (Partner short name)	Approval Date
Deliverable leader	Robert Elsässer (PLUS)	07/03/2020
Quality manager	Marcin Lawenda (PSNC)	09/03/2020
Project Coordinator	Francisco Javier Nieto de Santos (ATOS)	11/03/2020

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	2 of 45
Reference:	D7.5	Dissemination:	PU
	Version:	1.0	Status: Final

Table of Contents

Document Information.....	2
Table of Contents.....	3
List of Tables.....	5
List of Figures.....	5
List of Acronyms.....	5
Executive Summary	7
1 Introduction.....	8
1.1 Purpose of the document.....	8
1.2 Relation to other project work.....	8
1.3 Structure of the document.....	8
1.4 Contributions.....	8
2 Progress on Key Performance Indicators.....	9
3 Strategy for external community building.....	12
3.1 Target groups for building a community around HiDALGO.....	12
3.2 Marketing and General Communication.....	13
3.2.1 Awareness creation.....	13
Web page.....	13
Twitter and other social media.....	18
Newsletters.....	18
Videos.....	18
Further dissemination material.....	18
3.2.2 Collaboration with other projects and stakeholders.....	19
Associate Partner Program.....	19
Collaborations with other initiatives.....	19
3.2.3 Dissemination and events.....	21
3.3 Training.....	22
3.3.1 Update of concept.....	22
3.3.2 Overview of HiDALGO training events.....	26
4 Internal community building.....	28

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	3 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

4.1	Introduction.....	28
4.2	Goals.....	28
4.3	Actions.....	28
4.4	Results.....	29
4.5	Community building in interdisciplinary projects.....	30
5	Conclusions.....	31
	References.....	32
	Annex I – Peer-reviewed publications.....	33
	Annex II – Events organized by HiDALGO.....	33
	Annex III – Events with HiDALGO presentations.....	37
	Annex IV – Training.....	40
	Innovation and training workshops.....	40
	Web-seminars, videos, and online activities.....	42
	Integrations to the partners’ training programs through HiDALGO-specific initiatives	43

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	4 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

List of Tables

Figure 1: Ga new vs returning users.....	14
Figure 2: GA channel acquisition metrics.....	15
Figure 3: Matomo channel acquisition.....	15
Figure 4: Matomo visits by location.....	16
Figure 5: GA sessions by location.....	16
Figure 6: Matomo top 5 downloaded pdfs.....	17
Figure 7: Matomo top pages.....	17
Figure 8: Twitter impressions and tweets, December 2020 through January 2022.....	18
Figure 9: Training needs of participants at HiDALGO training.....	25
Figure 10: Measures and actions for community building.....	29

List of Figures

Table 1: WP 7 KPI list.....	11
Table 2: Google Analytics December 2020 through February 2022.....	13
Table 3: Matomo December 2020 through February 2022.....	13
Table 4: Keyword usage on the website.....	14
Table 5: Associate partnership programme M25 till M39, status of collaboration.....	20
Table 6: Activities with Focus CoE and others M25 till M39, status of collaboration.....	20
Table 7: Overview of the events M25 – M39.....	21
Table 8: List of events organized, hosted and chaired M25 till M39, overview.....	22
Table 9: Summary of the HiDALGO training activities since December 2020.....	27

List of Acronyms

Abbreviation / acronym	Description
AI	Artificial intelligence
CSA	Coordination and Support Action
D2.2	“Intermediate Report on Exploitation and Sustainability Strategy”, WP2
D7.2, D7.4	Deliverables “Annual Report on Community Building, Event Management, and Collaboration” for year 1 and year 2, respectively (D7.4 also includes “Training”)

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	5 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Abbreviation / acronym	Description
D7.3	“Training Concept”, WP7
D5.6	“Second HiDALGO Portal Release and System Operation Report”, WP5
D4.2	“Implementation Report of the Pilot Applications”, WP4
EC	European Commission
GA	Google Analytics
GC	Global Challenges
GCS	Gauss Centre for Supercomputing
GW	Google Webmaster
MP	Migration Pilot
HPC	High performance computing
HPDA	High performance data analysis
ICB	Internal community building
SNA	Social Network Analysis
UAP	Urban Air Pollution
WP	Work Package

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	6 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Executive Summary

In this deliverable we report about our achievements and applied strategy for community building, training and all dissemination and communication activities. Furthermore, it also lists our internal activities we performed to strengthen collaboration among different scientific fields within the project.

With respect to external community building, we also rely on the offerings of the HiDALGO project, which was identified within WP2. We follow our strategy for marketing and collaborations, as well as for training activities. Our communication and dissemination activities can be divided into two major fields. On one hand side, we communicate our plans, results and achievements to the general public using our dissemination channels. On the other hand, we pursue several targeted communication activities towards our stakeholders and the members of the corresponding scientific community. Stakeholders include big companies as well as SMEs, policy makers and NGOs. In order to communicate our achievements to the scientific world, we published several high quality papers in journals and at top tier conferences.

Regarding communication to the general public, we rely on the HiDALGO webpage, our social media channels (Twitter, Facebook, YouTube and ResearchGate) as well as some dedicated material such as our Newsletter. Regarding the communication towards our stakeholders, we rely on our stakeholder survey described in Deliverable 7.4, dedicated discussions and speaking engagements at different events, as well as our associate partner program.

One of the main goals of HiDALGO's training task is to create a training curriculum for scientists and analysts to tackle global challenges from HPC and HPDA perspective. Due to the Covid-19 pandemic, our training events since March 2020 have mainly been virtual.

The internal community building is fostered by regular activities focussing on the management process, the scientific work, staff development and transfer of knowledge. Examples are: internal surveys, task forces (described in Deliverable 2.4 and 7.6), support on case studies and joint publications, internal training and Wiki.

According to our strategy for external community building, communication and dissemination has to take place at the events and conferences we attend. Unfortunately, due to the Covid-19 pandemic we have to deal with the situation that many scientific conferences have been cancelled or converted to virtual events. Although this development allows us to reach a wider audience, occasions for networking became rare. To overcome this situation, HiDALGO offers videos, seminars and interactive online workshops.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	7 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

1 Introduction

1.1 Purpose of the document

This deliverable reports about the progress towards community building, event management, collaboration and training throughout year three of the project's lifetime.

1.2 Relation to other project work

D7.5 updates D7.2 [4], D7.3 [5], and D7.4 [6]. WP7 is heavily connected to the other WPs, especially WP2 (Business model and Sustainability). Therefore, this document refers to the work of the other WPs when appropriate.

1.3 Structure of the document

This document is structured in 5 major chapters. below shows the KPIs. **below** presents the strategy for external community building, including training. In contrast, **below** addresses the *internal* community building. Finally, **below** concludes and lists the main achievements of WP7 during the project's lifetime.

1.4 Contributions

The main work in each of the tasks was done by the task leaders PLUS, DIA and USTUTT. All partners contributed to Task T 7.1 (led by PLUS) by providing content for the website and social media, as well as T 7.4 (led by PLUS) by disseminating their results (see also Annexes).

Several partners contributed to T 7.2 (led by DIA) by providing content for workshops or supporting the organisation (e.g. USTUTT, PLUS, ATOS, BUL, SZE, KNOW, PSNC) and by collaborating with other projects / organisations (e.g. BUL, ATOS, USTUTT, ECMWF, SZE).

Several partners contributed to T 7.3 by providing content for training workshops (e.g. BUL, SZE, PLUS, PSNC, USTUTT, ECMWF, ICCS, KNOW).

A close link to WP2 (Section 3.1) is held throughout the project lifetime between PLUS, DIA, HLRS, ATOS and KNOW.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	8 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

2 Progress on Key Performance Indicators

Table 1 shows the progress on selected WP7 KPIs. We also include the numbers referring to the whole lifetime of the project (39 months).

	Objectives of the WP	Measures – cf. Annex to GA (quantified – not generic)	Status	Comments
1.	Number of organized workshops	At least 2	7 workshops organized so far	
2	Number of trainings/webinars	At least 12	17 training events	Training workshops also appear in 1.
3.	Number of HiDALGO workshops with at least 50% external participants	At least 5	12 events had at least 50% external participants.	9 training events and 3 (co-)organized workshops.
4.	Number of workshop and conference presentations/posters	At least 15	More than 50	
5	Speaking engagements (commercial)	At least 2	Two major engagements at Forum Teratec; several others with our stakeholders	Most of the commercial speaking engagements were bilateral between the offering's main owner and the stakeholder (e.g. between migration pilot and Save the Children)
6.	Number of participants trained/educated	At least 150	405	
7	Satisfaction degree of participants	At least 70%	78.83% (evaluated)	Based on 12 events. Averaged ACSI score.
8	Percentage of participants outside the consortium at HiDALGO-trainings/workshops	At least 0,65	0,73	

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	9 of 45
Reference:	D7.5	Dissemination:	PU
		Version:	1.0
		Status:	Final

	Objectives of the WP	Measures – cf. Annex to GA (quantified – not generic)	Status	Comments
9	Website – average number of visits per month	At least 400	Currently we have approximately 435 visits per month	According to the GA, the target KPI was 4000 unique visitors in total and 12000 hits (page views). According to Matomo, we had over 8000 visitors and more than 25000 page views. As Matomo does not use cookies, the unique visitors are not captured by Matomo. Among the users who accepted cookies from Google Analytics, over 75% were new visitors.
10	Website – number of downloads per month	At least 50	In the reported period, we had approximately 57 downloads per month.	
11	Twitter – number of followers, tweets and tweet impressions per month	At least 150 followers, 1000 tweets in total, and at least 1500 impressions per month	The number of followers is currently 329 and we posted approximately 800 tweets. In the reported period, our tweets generated more than 4000 impressions	The total number of tweet impressions generated by our tweets during the project's lifetime is approximately 170.000

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	10 of 45
Reference:	D7.5	Dissemination:	PU
Version:	1.0	Status:	Final

	Objectives of the WP	Measures – cf. Annex to GA (quantified – not generic)	Status	Comments
			per month in average.	
12	Number of accepted peer-reviewed publications	At least 12	Currently, we have 24 accepted peer-reviewed publications (some of which will appear later this year).	All requirements (journal papers, impact factors) are met. Several papers appeared at the flagship conferences of their areas (A* according to ERA Core, see https://www.core.edu.au/conference-portal) with acceptance rates of partially less than 20%. Most conference papers are (or will shortly be) under review at highly ranked journals in Computer Science.

Table 1: WP 7 KPI list

The KPIs above are related to the KPI defined in Sec. 2.2.3 in the Annex to the GA as follows. No. 12 above relates to the first two KPIs in the Annex. 7 journal publications (4 with the required IF) have been accepted so far. All conferences where we published our papers are tier 1 or tier 2 according to ERA-Core, see list of publications on <https://hidalgo-project.eu/publications>. The third KPI in the GA is related to KPI 1 in the list above (number of organized workshops). Concerning the number of workshops we participated in, KPI no. 3 and KPI no. 11 in the GA are related to KPI no. 4 in the list above. The Newsletter is published regularly, see KPI no. 8 in the GA. The KPIs 6 and 7 in the GA are related to KPI no. 9 in the list above. Concerning KPI 11 (KPI no. 9 in the GA), we think that the tweet impressions are a good way to measure success on Twitter. Concerning KPI no. 13 and 14 in the GA, we have 21 videos published on YouTube, a whitepaper has been published, and a video for dissemination purposes will be finished soon.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	11 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0
				Status:	Final

3 Strategy for external community building

One of the main objectives in WP7 is to communicate the offerings developed in the project (WP2) to the general audience as well as to potential stakeholders. These communication activities are presented in this deliverable.

Another major goal of the communication activities is to make the plans, achievements and results of HiDALGO accessible and understandable to the general audience and public. The work performed in HiDALGO as well as the benefit for the society should be highlighted. HiDALGO's strategy for external community building includes:

- Target groups for building a community around HiDALGO.
- Communication to the general public.
- Training, concept and events.

3.1 Target groups for building a community around HiDALGO

Our consortium performed several actions to bring together communities from the area of Global Challenges with the HPC/HPDA/AI community (see Sections 3.2.2, 3.2.3 and 3.3). The interaction between these two communities enables us to provide solutions for several global challenges by developing methods, algorithms, and software, which heavily use the performance of large supercomputers. The identification of target groups is described in detail in the last deliverable of WP2 and is positioned around the offerings of HiDALGO. These offerings cover four different categories (consultancy, training, infrastructure and development). Most of our services are the result of a collaborative effort between several partners and a targeted contact to a potential customer is usually established by the main owner of a specific offering. Then, the potential stakeholder is invited for collaboration. Several entities use already parts of our offerings, such as "Save the Children" (Migration pilot), several hospitals across Europe (Covid-19 simulations), and various cities (Urban air pollution pilot). Also, the mass-media reported about our products (Covid-19 and social networks pilot).

Regarding training activities, HiDALGO focusses on the HPC / HPDA community, but also offers training for beginners who come from the Global Challenges community, in both academia and industry. Many training events on tools and specific software address the needs of internal staff of the consortium. At the same time, some of these events are of interest for members of other HPC-oriented CoEs.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	12 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

3.2 Marketing and General Communication

3.2.1 Awareness creation

HiDALGO uses several channels to create awareness, disseminate its achievements and communicate its offerings. This is the fundament for external community building.

Web page

As discussed in D7.2 [3] and D7.4 [6], the HiDALGO Webpage uses Google analytics (GA), as well as Matomo on our own internal servers to have an anonymous, no-cookie option that requires no opt-in. This should reduce the gap between actual users vs. users who accept tracking cookies required by GA. Even Matomo is not capturing all visitors, however, as users can block it using adblockers. The majority of the data is from December 2020 through mid-February 2022.

Firstly, we present some basic numbers from each sight for the period and observe a large discrepancy between GA and Matomo over the same period.

Metric	Total Amount
Users	1404
Sessions	2144
Pageviews	5534

Table 2: Google Analytics December 2020 through February 2022

Metric	Total Amount
Visits	6556
Pageviews	20903
Downloads	866

Table 3: Matomo December 2020 through February 2022

As seen in Table 2 and Table 3, GA recorded 1404 users, whereas Matomo registered 6556, more than 4,5 times as many. This can be observed across the rest of the statistics in the figures as well. Matomo has a higher bounce rate, at 53% whereas GA has just 34%. The bounce rate indicates how many users left the website without going to any other page or

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	13 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

performing any other action. The GA bounce rate of course can only track the bouncing behaviour of users who agree to the cookie accept banner.

Another source to check a particular section of this discrepancy is the google webmaster console (GW). This tool lets website owners ensure that their website is ranked well in search; it also includes some metrics to show impressions vs. clicks. As part of GA privacy attempts, GA generally does not receive the keywords used by users of Google Search; GW however does.

The best keywords are listed in Table 4. Of particular interest is the search for the coronavirus simulator.

Keyword	Clicks
hidalgo project	57
hidalgo	33
flu and coronavirus simulator	17
scientific goals	9
wp4	8

Table 4: Keyword usage on the website

The traffic is similar as seen in D7.2 [4] and D7.4 [6]. The returning visitor rate is 17.8%, see Figure 1.

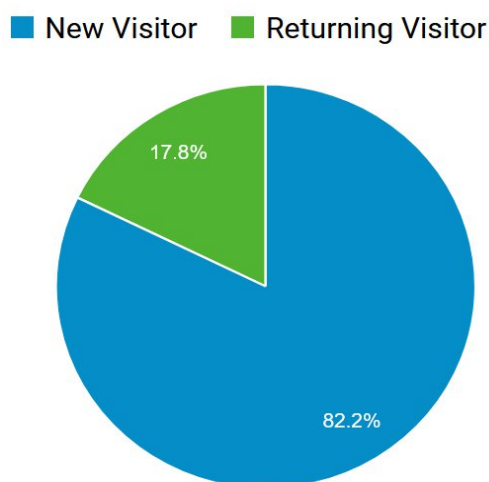


Figure 1: Ga new vs returning users

Channel acquisition between Matomo and GA show strong differences (Figure 2 and Figure 3), with GA recording the massive majority of traffic being Direct Entry, almost 66%, whereas Matomo only around 53% for Direct Entry. Both show social networks as relatively low, 2 – 4%, but GA has referral (websites) and organic search as essentially equal at around 11%,

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	14 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Matomo has organic search at more than double that, around 30%. Referrals and Social Media both seem to have lower bounce rates, which would make sense given the audience.

Default Channel Grouping	Acquisition			Behaviour	
	Users ? ↓	New Users ?	Sessions ?	Bounce Rate ?	Pages/Session ?
	1,417 % of Total: 100.00% (1,417)	1,407 % of Total: 100.00% (1,407)	2,151 % of Total: 100.00% (2,151)	23.25% Avg for View: 23.25% (0.00%)	2.58 Avg for View: 2.58 (0.00%)
1. Direct	997 (65.85%)	992 (70.50%)	1,332 (61.92%)	28.38%	2.59
2. Organic Search	448 (29.59%)	386 (27.43%)	626 (29.10%)	11.98%	2.37
3. Referral	57 (3.76%)	28 (1.99%)	108 (5.02%)	28.70%	2.49
4. Social	11 (0.73%)	1 (0.07%)	84 (3.91%)	17.86%	4.19
5. (Other)	1 (0.07%)	0 (0.00%)	1 (0.05%)	100.00%	1.00

Figure 2: GA channel acquisition metrics

CHANNEL TYPE	▼ VISITS	ACTIONS	ACTIONS PER VISIT	AVG. TIME ON WEBSITE	BOUNCE RATE
Direct Entry	3,399	10,989	3.2	2 min 6s	31%
⊕ Search Engines	2,575	8,857	3.4	2 min 12s	23%
⊕ Websites	457	2,037	4.5	3 min 9s	26%
⊕ Social Networks	118	688	5.8	4 min 1s	20%
⊕ Campaigns	7	12	1.7	2 min 51s	29%

Figure 3: Matomo channel acquisition

Geographically (Figure 4 and Figure 5) it seems most of the website visitors come from within the EU. Matomo has the US as the top location, but they have a 40% bounce rate which is not reflected by almost any other location. Otherwise, among the top 5 in both are Germany, Austria, UK and Spain, all being represented in HiDALGO with at least one partner institution. The average number of visited pages per visitor is larger than 2.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	15 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

Country

COUNTRY	▼ VISITS	ACTIONS	ACTIONS PER VISIT	AVG. TIME ON WEBSITE	BOUNCE RATE
United States	20.6% 1,350	2,507	1.9	28s	40%
Germany	13.8% 904	3,972	4.4	3 min 17s	25%
Austria	10.1% 662	4,236	6.4	4 min 43s	14%
United Kingdom	6.7% 440	1,465	3.3	2 min 18s	27%
Spain	5.1% 336	1,508	4.5	4 min 41s	19%
Hungary	3.1% 203	815	4	3 min 1s	18%
India	3% 195	529	2.7	1 min 14s	25%
France	2.9% 193	572	3	1 min 49s	32%
Netherlands	2.3% 154	417	2.7	1 min 2s	32%
China	2.2% 147	319	2.2	1 min 1s	39%

Figure 4: Matomo visits by location

Country ?	Acquisition			Behaviour	
	Users ? ↓	New Users ?	Sessions ?	Bounce Rate ?	Pages/Session ?
	1,417 % of Total: 100.00% (1,417)	1,407 % of Total: 100.00% (1,407)	2,151 % of Total: 100.00% (2,151)	23.25% Avg for View: 23.25% (0.00%)	2.58 Avg for View: 2.58 (0.00%)
1. Germany	200 (13.99%)	196 (13.93%)	378 (17.57%)	21.69%	2.98
2. Spain	89 (6.22%)	87 (6.18%)	127 (5.90%)	36.22%	2.38
3. United States	75 (5.24%)	74 (5.26%)	87 (4.04%)	14.94%	2.26
4. Austria	74 (5.17%)	71 (5.05%)	248 (11.53%)	27.42%	3.44
5. United Kingdom	60 (4.20%)	60 (4.26%)	78 (3.63%)	26.92%	2.42
6. India	42 (2.94%)	40 (2.84%)	54 (2.51%)	16.67%	2.13
7. Italy	42 (2.94%)	42 (2.99%)	56 (2.60%)	42.86%	2.68
8. Turkey	37 (2.59%)	37 (2.63%)	45 (2.09%)	8.89%	2.62
9. Brazil	35 (2.45%)	35 (2.49%)	46 (2.14%)	6.52%	2.50
10. France	35 (2.45%)	34 (2.42%)	43 (2.00%)	27.91%	2.05

Figure 5: GA sessions by location

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	16 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

Concerning the top pages (Figure 6), of course the first page on the list is the main landing page followed by the *about us* page. There are several hub pages (pages aggregate information and can send the user to a more specific page) that have stayed on the list, but of interest is that our Workshop invitation is on the top of the list.

Finally, Figure 7 shows the top pages according to Matomo. It is important to note that, as seen in the Google Webmaster console, direct URL access to pdfs on the server are not able to be tracked by Matomo, leaving the numbers most likely undercounted.

/sites/default/files/2021-06/HiDALGO_Workshop_July_2021_Invitation.pdf	53
/sites/default/files/2020-11/20201119_Newsletter_3_2.pdf	21
/sites/default/files/2019-04/HiDALGO_D3.1_Report_on_Benchmarking_and_Optimisation_v1.0.pdf	15
/sites/default/files/2019-04/HIDALGO_D4.1_Initial_Status_of_the_Pilot_Applications_v1.0.pdf	14
/sites/default/files/2019-03/HIDALGO_D7.1_Brand_and_Website_v1.0.pdf	11

Figure 6: Matomo top 5 downloaded pdfs

PAGE TITLE	▼ PAGEVIEWS	UNIQUE PAGEVIEWS	BOUNCE RATE	AVG. TIME ON PAGE	EXIT RATE	AVG. GENERATION TIME
HiDALGO HiDALGO	6,508	3,231	27%	00:00:23	68%	0.29s
About Us HiDALGO	1,303	634	32%	00:00:31	53%	0.17s
Core Partners HiDALGO	1,065	439	22%	00:00:22	41%	0.19s
Media HiDALGO	757	328	35%	00:00:34	50%	0.14s
Migration Pilot HiDALGO	564	297	33%	00:00:35	75%	0.34s
Urban Air Pollution Pilot HiDALGO	538	258	33%	00:00:49	69%	0.21s
Reports HiDALGO	445	181	41%	00:00:22	19%	0.1s
Graph Analyzer Tool HiDALGO	440	202	9%	00:00:03	97%	0.53s
Online workshop on "Tackling Global c...	440	177	5%	00:00:23	90%	-
Use Cases HiDALGO	436	198	48%	00:00:23	33%	0.19s

Figure 7: Matomo top pages

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	17 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

Twitter and other social media

The Twitter account has shared access with many representatives of HiDALGO, which has significantly increased its activity. There seems to be a correlation between the number of tweets and impressions. By now, our tweets generated almost 170,000 impressions. Of interest is also the increase in engagement rate in October/November 2022 (see Figure 8).

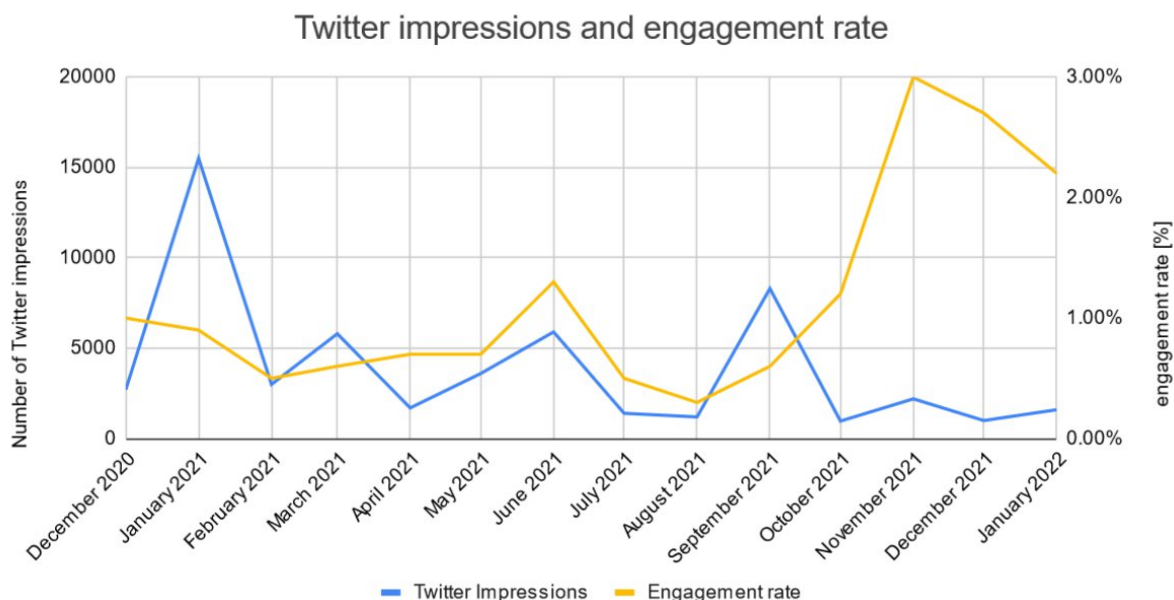


Figure 8: Twitter impressions and tweets, December 2020 through January 2022

HiDALGO also is present on other social media like Facebook, Research Gate and has its own YouTube channel.

Newsletters

HiDALGO regularly publishes newsletters about its goals and activities, in which we inform the internal and external community. Furthermore, past and future events are included into the newsletter, which are of interest for the HiDALGO consortium.

Videos

HiDALGO produced several videos during its lifetime with the aim to explain briefly what HiDALGO is and what it offers. Also, an image video of highest quality is produced till February 28.

Further dissemination material

HiDALGO has produced a package with dissemination material. It includes:

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	18 of 45
Reference:	D7.5	Dissemination:	PU
	Version:	1.0	Status: Final

- general HiDALGO flyers in English and German (updated in the light of new developments in the project),
- flyers describing the single case studies,
- marketing and technical posters.

3.2.2 Collaboration with other projects and stakeholders

Collaborations of HiDALGO with external stakeholders continued in M25 till M39 on an intense level, and covered the associate partnership program, success stories, collaboration with Focus CoE as well as other projects in the domain of HPC.

Associate Partner Program

The associate partnership program, established in the second year of HiDALGO, developed well with currently seven members. The activities consisted of networking, experience exchange on technical level, and close cooperation on joint workshops with several presentations from each side. Furthermore, soon HiDALGO will have three new associate partners (the institutions already agreed). “Save the children” as an NGO, has a long standing cooperation with BUL, and will continue working together on specific case studies on forced migration. The secondary school sponsored by Audi in Győr, Hungary, will also become an associate partner, as well as Bosch, with the branch in Hungary, will cooperate closer as an associate partner. The new associate partners were recruited by SZE and BUL (Table 5).

To make it beneficial for projects / institutes / companies etc. to collaborate, we offer them visibility on our website and information on HiDALGO events and newsletters.

The benefits for our associate partners are:

- Logo and a description of collaboration is presented on our homepage.
- Subscription to newsletters.
- Invitations to our workshops and trainings.
- Option to take over an active part in our online workshops.
- Exchange of free research results on a case study basis.

Collaborations with other initiatives

HiDALGO continued and intensified cooperation with other projects and centres of excellence in the domain of HPC and HPDA (Table 6). Here, we like to stress the fruitful work with Focus-CoE as an umbrella organisation for networking and experience exchange (see [4],[6]).

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	19 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

No	Associate partner	Activities
Existing		
1.	EXCELLERAT	First Joint Technical Workshop HiDALGO, CHEESE, EXCELLERAT Networking, invitations to workshops, trainings, webinars, exchange of experience
2.	ESIWACE	Joint workshop in July 2021: Tackling Global challenges with HPC, HPDA, and simulations Networking, invitations to workshops, trainings, webinars, exchange of experience
3.	VECMA	May 2021: Virtual VECMA All-Hands Meeting (AHM): “High Performance Data Analytics in HiDALGO” Networking, invitations to workshops, trainings, webinars, exchange of experience
4.	EOCOE	Cooperation at conference EUSEW in Oct 2021: HPC and Big Data as key enablers of the Clean Energy Transition Networking, invitations to workshops, trainings, webinars, exchange of experience
5.	IT-Flows	Networking, invitations to workshops, trainings, webinars, exchange of experience
6.	ODYCCEUS	Networking, invitations to workshops, trainings, webinars, exchange of experience
7.	Sodalite	Networking, invitations to workshops, trainings, webinars, exchange of experience
In preparation, partners agreed to join the programme		
8.	Save the children	Contact BUL and DIA Partner in case study on forced migration
9.	Secondary School of Audi, Győr, HU	Contact SZE and DIA Learning and teaching HPC in a secondary school
10.	Bosch	Contact SZE and DIA Topic of case study on urban air pollution

Table 5: Associate partnership programme M25 till M39, status of collaboration

No	Partner	Activities
1.	Focus-CoE	Intense networking, newsletters, collaboration with two success stories on case studies, related publication on webpages of HiDALGO and Focus CoE
2.	MaX	Cooperation at conference EUSEW in Oct 2021: HPC and Big Data as key enablers of the Clean Energy Transition
3.	CoE Council (HPC3)	Forum of networking and discussion with other HPC CoEs, channels to disseminate main project achievements
4.	Heterogeneity Alliance	Membership and networking
5.	EPEEC	Participation in some of their meetings, providing feedback (HiDALGO coordinator is external advisor). Analysis of their tools for HiDALGO.

Table 6: Activities with Focus CoE and others M25 till M39, status of collaboration

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	20 of 45
Reference:	D7.5	Dissemination:	PU
	Version:	1.0	Status: Final

3.2.3 Dissemination and events

In total, 24 peer reviewed articles in journals and conference proceedings have been published within the HiDALGO project so far. Additionally, some more papers are in preparation and will be submitted within the next two months. More than 50 presentations at conferences, symposia and workshops were given, and we issued several press releases, non-scientific publications and posters.

Between M25 and M39 the project partners contributed to several webinars, online workshops and conferences. In numbers, HiDALGO was involved 26 events, and reached out to approximately 720 participants (Table 7).

	Events HiDALGO organized, hosted and chaired	Other events with HiDALGO involvement	Total
Number of events	7	19	26
Number of participants	240	480	720

Table 7: Overview of the events M25 – M39

Out of these 26 events, HiDALGO organized, hosted and chaired 7 events, partly in close collaboration with other HPC-projects and initiatives (Table 8).

We highlight as an example one multi-day workshop which took place online at two consecutive days in July 2021. We provided a forum for people interested in global challenges, networking, and training. Other projects and institutes were invited to give talks.

No	Date	Type of Event	Event	Role	Partner(s) attending	Number of participants
1.	20/01/2021	Workshop Online	Workshop at HiPEAC'21 "Tackling global challenges with high performance computing"	Organizer, Participant	DIA, PLUS, USTUTT, BUL, KNOW, PSNC	35
2.	27-29/01/2021	Workshop Online	Joint Workshop: HiDALGO, CHEESE, EXCELLERAT	Co-organizer, presenter, participant	PLUS, USTUTT, ATOS, ICCS, and Excellerat	60

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	21 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

3.	22-24/06/2021	Workshop Online	Dedicated workshop at Forum TERATEC	Co-Organizer, host, presentations	ATOS, PLUS, USTUTT, BUL, KNOW, SZE, PSNC, DIA	25
4.	07-08/07/2021	Innovation workshop Online	Tackling Global challenges with HPC, HPDA, and simulations	Organizer, presenter	BUL, DIA, KNOW, PSNC, SZE USTUTT, and ESIWACE	33
5.	15-19/11/2021	Conference online	SC21 Super Computing Conference, joint HLRS-HiDALGO virtual booth	Virtual booth attendance, presentations	ATOS, DIA, PLUS, USTUTT, BUL, KNOW, SZE, PSNC, PLUS	45
6.	03/02/2022	Public lecture Hybrid, online and Stuttgart	HiDALGO – Computer Simulations on High Performance Computers	Co-host, presentation, interactive session with 3d-Visualisation	DIA, USTUTT	20
7.	23/02/2022	Workshop Online	Final HiDALGO workshop combined with Sustainability Board meeting	Host/chair and all presentations	HiDALGO, researchers from other CoEs, members of Sustainability Board	20

Table 8: List of events organized, hosted and chaired M25 till M39, overview

Further details on dissemination activities and events can be found in Annex II and Annex III.

3.3 Training

The purpose of this section is to sum up the activities of T7.3 (Training) by updating the outline presented in D7.4 (Section 3.4) [6] at the end of year 2. This section therefore focuses on the updated strategy and provides a concise overview of the activities in the third year, while a detailed list can be found in Annex IV.

3.3.1 Update of concept

One of the main goals within HiDALGO (Task 7.3) was to create a two-track training curriculum. The format and the characteristics of the two tracks have already been described in detail in D7.3 [5] and D7.4 [6]. On the one hand, a curriculum for HPC technology leaders detailed the Global Challenges (GC) needs, on the other hand a curriculum for GC scientists and analysts focused on HPC and HPDA modelling and simulation. As a result, the common

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	22 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

goal for the consortium was to acquire and provide tools to tackle GC from an intertwined HPC and HPDA perspective. For each of the training activities listed in Annex IV, the curriculum track is indicated:

- “Global Challenges” needs for HPC technology leaders,
- “HPC and HPDA modelling” for Global Challenges scientists and analysts,
- “Both” in case the event is of interest for both communities, e.g., it is a GC workshop with training on tools.

The two tracks target a different audience and should complement each other. Even so, overlapping is not excluded: Since the participants’ background in GC or HPC/HPDA is not uniform, they could in general have an interest into events belonging to both tracks. Moreover, purely “Global Challenges” events without a technical (HPC/HPDA) component mostly belong to dissemination events analysed in Section 3.2.3. For these reasons, the majority of training events are labelled as belonging to “both” tracks or to the technical “HPC and HPDA modelling” track.

The HiDALGO T7.3 two-track curriculum consists of activities focused on education. Among them, a number of HiDALGO-specific training sessions were integrated within the partners’ established curricula of workshops and courses. Another kind of event, the innovation workshop, is a fundamental part of the curriculum (see also D7.3 [5] and D7.4 [6]). Innovation workshops in the last year of the project allowed HiDALGO to spread knowledge about their pilots and the developed tools either at joint events or at the HiDALGO workshop “Tackling Global challenges with HPC, HPDA, and simulations” in July 2021. Since innovation workshops have further goals beyond training, such as dissemination and outreach, only those with some training characteristics (e.g., hands-on sessions or demos, available complementary material about tools) are included in the training list in Annex IV.

Moreover, T7.3 identified best practices for education and training. This was done e.g. at the ECMWF online computing training week (on May 17-21, 2021), which offered web-seminars on topics related to the ECMWF computing infrastructure, software and applications used in both operational production and non-operational environments ([10]). This yearly event is open to a large community, addressing topics selected from users’ requests sent e.g. through an online forum. In particular, during a session given by HiDALGO personnel, an overview was given on the Jupyter ecosystem, on using Jupyter Notebooks for training, documentation, collaboration, and open science.

T7.3 kept further track of best practices in training by collecting feedback from the community at both innovation workshops and training events. Such a feedback was, on the one hand, analysed to evaluate the quality KPIs (see Table 1) for internal purposes and discussions at project’s meetings. On the other hand, the complete feedback (with text suggestions etc.) was sent to the trainers for further improving their delivery. Such a procedure also allowed the consortium to identify relevant themes from both the HPC/HPDA

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	23 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

and the Global Challenges perspective. In particular, this was done through a question asked whenever the event was co-organised by HiDALGO. The diagram in Figure 9 summarises the (possibly multiple) answers by participants at all HiDALGO training activities to such a question: “HiDALGO can offer training in various domains. Which specific topics would be most interesting for you?” The provided options were:

- Introduction to Global System Sciences and its challenges.
- Introduction to HPC: A beginners’ guide.
- High-performance computing (HPC) vs. Cloud. When to use what?
- **Developing for HPC, using parallelisation techniques [HPC PAR].**
- **HPC Code optimisation for HPC [HPC OPT].**
- **Applying artificial intelligence to get new insights from my data [AI].**
- Introduction to specific application areas: Migration.
- Introduction to specific application areas: UAP.
- Introduction to specific application areas: SNA.

The three most voted options have been marked in bold in the list above. Lower interest in training on the project’s pilots (the last three options on the right in the diagram) can be justified with their much narrower and specific fields of application. The COVID-19 pilot had not been established yet when the survey was formulated.

Another mean to update the training curricula and to enable tailored training activities in GC has been the requirement analysis within the consortium. From this analysis, carried out during the first half of the project, the following requirements emerged (more details can be found in D7.3 [5]):

- Support for agent-based modelling paradigm [HPC_R1].
- Coupling with both static and streaming external data sources (integration of streaming data into HPC environments) [HPC_R2].
- Coupling simulations across data-centres [HPC_R3].
- Support for high-performance, general-purpose analytics runtime(s) [HPDA_R1].
- Support for and ability of coupling the aforementioned runtime(s) with high-performance datastores or distributed file systems [HPDA_R2].
- Support for Python and R [TOOLS_R1]
- Support for Apache Spark [TOOLS_R2]
- Training on scheduling or version control tools [TOOLS_R3]

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	24 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

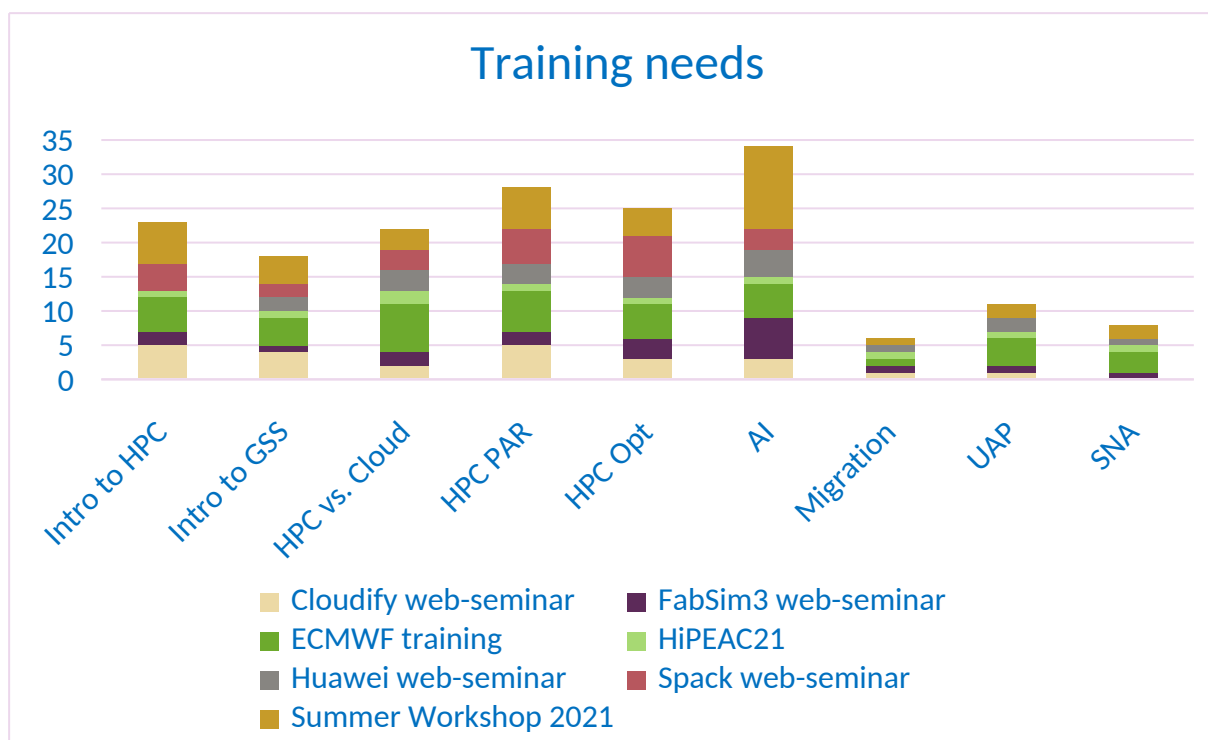


Figure 9: Training needs of participants at HiDALGO training

The relationship between each training activity and the collected needs and requirements is detailed in the training event summary (see the next section and Annex IV).

Finally, an online learning management system has been set up for HiDALGO [8], based on the customisable and open-source Moodle. While details have already been provided in D7.3 (below) [5], in short, Moodle allows to conduct blended-learning (e-)courses. In the case of HiDALGO, Moodle is mostly used as a repository to share recording and training material in a structured and interactive way. Training activities listed in Annex IV feature a Moodle URL, if available. In addition, some tutorials and overviews have been offered exclusively through Moodle, e.g., “HiDALGO and its services”, “HiDALGO training video series”, “HPC usage tutorial” (see the full list of courses at the webpage [9]).

Currently, 41 users have a Moodle login, 22 among them are also enrolled in a course. Moodle is linked from the project main website (“Training repository”) and integrated in the HiDALGO Portal (see <https://portal.hidalgo-project.eu>). It has also been announced to training participants, HiDALGO members, the CoE and EuroCC community, and through the Focus CoE Twitter and LinkedIn accounts. Such a dissemination activity could start no sooner than August 2021, after a needed update of the log-in procedure for security reasons.

Nevertheless, Moodle will be maintained also after the project’s end. In particular, the confidential deliverable D2.4 [2] details the exploitation strategy of HiDALGO including training (in Section 4.3 at “Training”) and makes a proposal for the training service after the

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	25 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

EU funding period (in Section 5.4). Even though a HiDALGO certification or assessment for training has not been foreseen according to the DoA, it is actually planned to pursue HiDALGO training in future as “certified training”.

3.3.2 Overview of HiDALGO training events

Details about each activity’s content, format and URL can be found in the tables in Annex IV. In there, events are clustered by:

- Innovation workshops with training contributions,
- Web-seminars, videos, and other online activities,
- Integrations to the partners’ training programs through HiDALGO-specific initiatives.

Details about participation (country, gender and stakeholder) are provided in those tables. Besides, for each activity, the learning outcomes are detailed, as well as the corresponding curriculum track (Global Challenges, HPC and HPDA modelling, both). The training requirements satisfied by each activity are also reported, among:

- the top-three ranking in Figure 9 (results of the training survey),
- the list of requirements in GC applications (HPC, HPDA, and tools: see the previous section).

The below summarises the 11 training activities hosted by HiDALGO in the reporting period (December 2020 – February 2022), each with their number of participants. For both the “Training by ECMWF” and the “EXCELLERAT Workshop”, we consider participants-day, since disjoint registration for different sessions was allowed. Moreover, the number of participants at the “ICCS Training” is not reported. In this special case, the audience was made of students at NTUA courses, and the total number would have been an “outlier” compared to the other activities. During the whole project, there have been 17 HiDALGO training events with 405 participants.

Innovation workshops with training characteristics (see the DoA and the previous section) are among the training events monitored by Task 7.3 reported in the table. Although uniquely considered in the KPIs (Section 2), some of these workshops are also reported by Task 7.2 (Event Management and Collaboration).

Name and year of the training	Number of participants
Training by ECMWF on weather and climate data access and manipulation, 2020	28
EXCELLERAT First Joint Technical Workshop, 2021	60
AI workshop at PSNC, 2021	12
USTUTT Training on Iterative Solvers, 2021	45
Reproducible Software Environments & Benchmarks with Ansible and Spack, 2021	21
Workshop on High-performance Data Analytics @ ENCCS/HiDALGO, 2021	26
Tackling Global challenges with HPC, HPDA, and simulations: Simulation of forced	22

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	26 of 45
Reference:	D7.5	Dissemination:	PU
	Version:	1.0	Status: Final

Name and year of the training	Number of participants
migration, 2021	
Tackling Global challenges with HPC, HPDA, and simulations: A short introduction to quantitative network analysis, 2021	11
USTUTT CFD with OpenFOAM®, 2021	26
USTUTT Parallel Programming Workshop, 2021	43
ICCS Training for university students, 2020-2021	--
Total activities: 11	Total: 294

Table 9: Summary of the HiDALGO training activities since December 2020.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	27 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

4 Internal community building

4.1 Introduction

In the HiDALGO Centre of Excellence, about 60 scientists from different disciplines worked together. A total of 13 partner institutions from seven countries were involved. One of the main challenges was to create a working environment where the different disciplines interact in an optimal and constructive way.

Consequently, an internal community-building process, addressing almost all scientists, management, working groups and tasks, was designed and successfully implemented. The process was implemented without interruption throughout the project's duration and adapted from time to time when needed. As a white paper has been developed recently, see D7.6 [7], which deals with internal community building in detail, we only report briefly on this topic in this deliverable.

4.2 Goals

Internal community building took place within the project and targeted all project partners and teams. A continuous internal process aimed at:

- achieving effective collaboration between researchers,
- finding good working conditions within the consortium,
- overcoming disciplinary barriers,
- creating opportunities for mutual exchange and learning, and
- finally developing shared knowledge and experiences.

These goals, set out at the beginning of the project, proved to be supportive to keeping the process on track.

4.3 Actions

From the beginning, the project focussed first on a smaller set of measures: workshops, surveys, interviews with project managers and dedicated task forces. In the course of the project, the team added specific actions that showed a promising area of support for collaboration, e.g. support for female researchers, internal training and the distribution of an internal newsletter as well as the creation of a Wiki to share and exchange knowledge. Following feedback from other team members, we examined further aspects that showed an impact on community building including cases studies and publications.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	28 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Management process	Research work	Staff development	Transfer
<ul style="list-style-type: none"> • Dedicated sessions and workshops • Internal surveys and reflection of results • Interviews with project managers • Task forces 	<ul style="list-style-type: none"> • Parallel programming • Case studies and pilots • Joint publications and presentations 	<ul style="list-style-type: none"> • Support for female researchers • Onboarding new staff 	<ul style="list-style-type: none"> • Training, webinars and online-learning • Internal newsletters • Internal Wiki for terms

Figure 10: Measures and actions for community building.

The following points summarise the experiences from the joint research activities and cooperation examining in total 11 measures (Figure 10). All measures were grouped into four areas. The *management process* consists of key elements that effectively supported the part of *research work*. *Staff development* concentrates on the people and the working environment, while *Transfer* is on information flow and learning.

4.4 Results

As a key summary, a whitepaper on the findings with respect to bringing together different communities within an interdisciplinary project was provided in month 38 as D7.6 'Final Report on HiDALGO Internal Community Integration' [7]. We discuss the results here briefly.

One of the greatest challenges, but also one of the greatest opportunities for promising results, lies in the complex content work. Researchers bring in their professional background and experience in a very specialised field to develop technical solutions. If it is possible to realise and organise good content-related work here, in which researchers can develop well with all their special knowledge, and at the same time learn something and develop further, a great deal has already been gained.

In technological projects, staff turnover can be unexpectedly high, and creating replacements for specialised staff is time-consuming and expensive. Finally, also characteristic of technical sectors, the proportion of women among staff and managers has been low for a long time. Good project work means creating awareness among managers and bringing about change again and again. Human resource development, which is often a

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	29 of 45		
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

key issue for larger companies, also applies to large interdisciplinary research projects such as HiDALGO.

Good internal transfer means: scientific and technological projects often last three or more years and consist of many scientists from several countries and cultures. The teams are also rarely geographically close to each other. Due to the Covid-19 crisis, face-to-face contact was replaced by online settings. Here it is important to prepare knowledge and new developments well and to spread them throughout the team. Learning should not be underestimated. People want and need to continue their education.

4.5 Community building in interdisciplinary projects

During the lifetime of HiDALGO, we saw that a community-building approach - flexible, well-planned, tailored to needs and responsive - had the potential to overcome typical challenges of large research projects and develop solutions of highest quality on a technical level.

The specific measures analysed led to a good climate for successful and close collaboration between researchers with different expertise. The software and tools we developed integrated different disciplines and led to several interdisciplinary publications.

Mutual understanding and internal cooperation improved from the beginning. The various measures to build an internal community supported to achieve the ambitious goals of the project.

5 Conclusions

In this deliverable, we described our activities for communication, dissemination and training during the period December 2020 - February 2022. Our website, the training repository Moodle, Twitter as well as other social media are continuously used for

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	30 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

communication. Material for interacting with our stakeholders has been produced and collaboration with other projects and initiatives is established. New stakeholders are sought jointly with the other work packages.

During the past two years, we had to deal with certain restrictions due to the Covid-19 pandemic. The acquisition of potential customers is always a challenge, especially under such limitations. Together with WP2 and the technical WPs 3 and 4, we make significant efforts to advertise our offerings. We mainly focus on the interface between HPD/HPDA/AI on one hand side and global challenges on the other hand side. In our targeted communication, our events and training, we concentrate on building bridges between these communities. Furthermore, we also address the general public using our website, the social media channels, as well as communication through the mass media. We think that apart from attracting possible stakeholders, it is also important to communicate the achievements as well as the success of HiDALGO to a broad audience.

A very important aspect of our project is the scientific value we produce. Several papers appeared already in journals and at top tier computer science conferences. Extended versions of the conference papers are submitted later to leading journals in their field, and we are confident that after the high quality review process they will attract a large number of citations and impact the scientific development in the future.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	31 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

References

- [1] HiDALGO D2.1 – Stakeholder Context and Initial Exploitation Assets
- [2] HiDALGO D2.4 – Final Report on Component Exploitation and Sustainability Strategy
- [3] HiDALGO D2.2 – Intermediate Report on Exploitation and Sustainability Strategy
- [4] HiDALGO D7.2 – Annual Report on Community Building, Event Management, and Collaboration
- [5] HiDALGO D7.3 – Training Concept
- [6] HiDALGO D7.4 – Annual Report on Community Building, Event Management, Collaboration and Training
- [7] HiDALGO D7.6 Final Report on HiDALGO Internal Community Integration (submitted Jan. 2022)
- [8] HiDALGO Moodle, [Online] <https://moodle.hidalgo-project.eu/> [Accessed 2022-02-21].
- [9] HiDALGO Moodle course list, [Online] <https://moodle.hidalgo-project.eu/course/index.php> [Accessed 2022-02-21].
- [10] Online computing training week at ECMWF, [Online] <https://events.ecmwf.int/event/210/> [Accessed 2022-02-21]
- [11] Horizon Europe (HORIZON) Programme Guide, [Online] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/programme-guide_horizon_en.pdf [Accessed 2022-02-21]

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training			Page:	32 of 45	
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

Annex I - Peer-reviewed publications

No.	Publication
1.	Gregor Bankhamer, Petra Berenbrink, Felix Biermeier, Robert Elsässer, Hamed Hosseinpour, Dominik Kaaser, and Peter Kling. <i>Fast consensus via the unconstrained undecided state dynamics</i> , Proc. ACM-SIAM Symposium on Discrete Algorithms (SODA'22), 2022.
2.	Christoph Schweimer, Christine Gfrerer, Florian Lugstein, David Pape, Jan Velimsky, Robert Elsässer, and Bernhard C. Geiger. <i>Generating simple directed social network graphs for information spreading</i> , Proc. ACM Web Conference (WWW'22), 2022.
3.	Mario Lovrić, Mario Antunović, Iva Šunić, Matej Vuković, Simonas Kecorius, Mark Kröll, Ivan Bešlić, Iva Šimić, and Gordana Pehcec. <i>Insignificant changes in particulate matter concentrations during the COVID-19 lockdown</i> , Proc. Intl. Conference on Environmental Pollution, Treatment and Protection (ICEPT'22), 2022.
4.	Sophie Steger, Bernhard C. Geiger, and Marek Smieja. <i>Semi-supervised clustering via information-theoretic Markov chain aggregation</i> , Proc. ACM Symp. on Applied Computing (SAC'22), 2022.
5.	Francisco Javier Nieto, Unai Aguilera, and Diego López-de-Ipiña. <i>Analyzing particularities of sensor datasets for supporting data understanding and preparation sensors</i> , Sensors 2021.
6.	Christoph Schweimer, Bernhard C. Geiger, Meizhu Wang, Sergiy Gogolenko, Imran Mahmood, Alireza Jahani, Diana Suleimenovab, and Derek Groen. <i>A route pruning algorithm for an automated geographic location graph construction</i> , Scientific Reports 11: 11547, 2021.
7.	Bernhard C. Geiger and Ali Al-Bashabsheh. <i>On functions of Markov random fields</i> , Proc. IEEE Information Theory Workshop (ITW'20), 316-320, 2021.
8.	Bernhard C. Geiger. <i>On minimum spanning trees and the inference of message cascades</i> , Proc. Intl. Conference on Complex Networks & Their Applications, 2021.
9.	Alireza Jahani, Hamid Arabnejad, Diana Suleimanova, Milana Vuckovic, Imran Mahmood, and Derek Groen. <i>Towards a coupled migration and weather simulation: South Sudan conflict</i> , Proc. Intl. Conference on Computational Science (ICCS'21), 2021.

Annex II - Events organized by HiDALGO

1	HiPEAC January 2021 workshop "Tackling global challenges with high performance computing"
Type / format	Interactive workshop
Aim	<ul style="list-style-type: none"> Dissemination of HiDALGO results Support the creation of a community around HPC / HPDA / AI and GC
Venue & date	20 January 2021, virtual
Target group	Academia, HPC, Industry, Tool builders, Computer architects
Content	Introduction to the Project HiDALGO, its Services and its Portal Simulating the Spread of Covid-19 in Urban Areas Preparing European Weather and Climate Models for Exascale Resilient Cities: Following the Path Towards Sustainable Development Goals

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	33 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

1	HiPEAC January 2021 workshop “Tackling global challenges with high performance computing”
	Route Pruning Algorithm for Location Graph Construction Round table: How can we solve Global Challenges through HPC / HPDA / AI?
No participants	35
Partners	DIA, PLUS, USTUTT, BUL, KNOW, PSNC

2	First Joint Technical Workshop HiDALGO, CHEESE, EXCELLERAT
Type / format	Workshop online
Aim	Discuss and reflect results from various research activities
Venue & date	27-29/01/2021 Online
Target group	CoEs, HPC researchers and relating domains
Content	Sessions: Load balancing In situ and remote visualisation Co-design GPU Porting Presentations: PLUS, On Discrete Load Balancing with Diffusion Type Algorithms" HLRS, Web-based Visualisation of Air Pollution Simulation with COVISE" ICCS, Benchmarking of Current Architectures for Improvements"
No participants	60
Partners	PLUS, USTUTT, ATOS, ICCS

3	Dedicated workshop at Forum TERATEC
Type / format	Workshop
Aim	Present and discuss research results in recent developments of HPC, data analytics and relating domains
Venue & date	22-24/06/2021 Online
Target group	HPC community
Content	The three-days workshop will bring together researchers and industry from the HPC area to exchange views and to learn more about how high performance computing (HPC) can be used to support dealing with issues of today’s world, e.g. climate change, energy, migration, air pollution, social media. All sessions are designed as practical presentations, training, hands-on experience, demonstrations, and plenary sessions
No participants	25
Partners	ATOS, PLUS, USTUTT, BUL, KNOW, SZE, PSNC, DIA

4	Tackling Global challenges with HPC, HPDA, and simulations
Type / format	Workshop
Aim	Present and discuss research results in recent developments of HPC, data analytics and

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	34 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

4	Tackling Global challenges with HPC, HPDA, and simulations relating domains
Venue & date	07-08/07/2021 Online
Target group	HPC community
Content	High Performance Computing and Data Analytics in the HiDALGO project – introduction and specific implementations A Short Introduction to Quantitative Network Analysis Opportunities and challenges for HPC and HPDA in Earth System modelling ESIWACE
No participants	33
Partners	BUL, DIA, KNOW, PSNC, SZE USTUTT cooperation with Associate partner ESIWACE

5	SC21 Virtual Booth: HiDALGO: Addressing Global Challenges with HPC and Big Data Technologies
Type / format	Presentation and Q&A Session
Aim	<ul style="list-style-type: none"> • Dissemination of HiDALGO results • discuss with HPC community key results of HiDALGO
Venue & date	15-19/11/ 2021 virtual booth
Target group	Visitors of SC20 Super Computer Conference
Content	As a society, we are facing several global challenges in fields such as economy, sociology, or ecology; challenges range from predicting and analysing migration flows over urban air quality assessments to social network analytics. These challenges require massive amounts of data to be collected, aggregated, (pre-)processed, and coupled to yield reasonable results for prediction and to discover hidden insights. HiDALGO, a European research project, leverages supercomputing to address these challenges. In this talk, we will highlight the advancements made by HiDALGO, as well as introduce a case study conducted by the Brunel University London to mitigate the effects of COVID-19 and pandemics in general; the computer simulation predicted an inevitable second wave of the COVID-19 pandemic. (announcement of virtual booth)
No participants	45
Partners	ATOS, DIA, PLUS, USTUTT, BUL, KNOW, SZE, PSNC, PLUS

6	Public lecture: Project HiDALGO – Computer Simulations on High Performance Computers
Type / format	Face-to-face-lecture, interactive format, 3D-Presentation Hybrid Online and Stuttgart Germany
Aim	Discuss simulations and visualisations with public audience
Venue & date	City Library Max-Bense-Forum, Stuttgart, Germany Thursday, 3rd February 2022 A cooperation Dialogik gGmbH, HLRS High Performance Computing Centre Stuttgart, project World of Simulation, hosted and chaired by City Library Stuttgart
Target group	Public, visitors of city library

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	35 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

6	Public lecture: Project HiDALGO – Computer Simulations on High Performance Computers
Content	<p>The world of simulation</p> <p>Case studies from practice</p> <ul style="list-style-type: none"> - Covid-19 - Forced migration - Messages on Twitter - Air pollution in cities <p>Virtual visit to the CAVE at the HLRS "Fresh Air in Stuttgart (3D-Modell)</p> <p>Models and simulations in science and science communication</p>
No participants	20
Partners	DIA, USTUTT

7	Final HiDALGO workshop combined with Sustainability board
Type / format	Workshop and collection of feedback
Aim	present and discuss selected results from case studies and pilots, software and application solutions as well as approaches of the business model.
Venue & date	<p>Online workshop (via Zoom)</p> <p>Date: 23. Feb 2022, 10.00am till 1.00pm</p>
Target group	<p>HiDALGO researchers</p> <p>Members of Sustainability Board</p> <p>External partners, e.g. CoEs, associate partners</p>
Content	<p>Exascale HPC and applications</p> <p>Pilot studies: Covid-19, Forced Migration, Social media: Twitter, Simulation Urban Air Pollution</p> <p>Using the Business Model Canvas to Define and Analyze Offerings of the HiDALGO Center of Excellence</p> <p>Demo and Plattform</p>
No participants	20
Partners	PLUS and DIA as hosts, all HiDALGO partners

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	36 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Annex III - Events with HiDALGO presentations

No	Date	Type of Event ¹	Event	Role	Partner (s) attending	Number of participants
1.	12/01/2021	Conference Online	American meteorological society meeting 2021, HiDALGO—Facing Global Challenges by Enabling Complex Earth Science Workflows across Clouds and HPC Environments	Poster	ECMWF	10
2.	14/01/2021	Conference Online	American meteorological society meeting 2021, Aviso: Bridging HPC and Cloud with High-Throughput Notification System for NWP Data Availability	Talk	ECMWF	10
3.	20./01/2021	Workshop Online	Workshop at HiPEAC'21 The HPC CoE services and applications	Talks	ATOS	20
4.	23/03/2021	Conference Online	EHPCSW: "HPC and Big Data Technologies for Global System"	Talks	ATOS	20
5.	11-15/04_2021	Workshop Online	IEEE Information Theory Workshop, ITW Topic: On Functions of Markov Random Fields	Talk	Know	10
6.	25/05/2021	Seminar online	Graz Combinatorics and Optimization Seminar	Talks	KNOW	10
7.	20/05/2021	Workshop Online	Virtual VECMA All-Hands Meeting (AHM): "High Performance Data Analytics in HiDALGO"	Talk	ICCS, BUL In collaboration with VECMA	20
8.	24/06/2021	Webinar	Lecture by SZE, Smart	Host	SZE, ATOS	40

¹ Please Indicate: Conference, Workshop, Exhibition, Training, Brokerage, Pitch, Trade fair, Other

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	37 of 45
Reference:	D7.5	Dissemination:	PU
	Version:	1.0	Status: Final

No	Date	Type of Event1	Event	Role	Partner (s) attending	Number of participants
			City solution for traffic management			
9.	16-18/06_2021	Conference Krakow	ICCS 2021 Presentation. Towards a Coupled Migration and Weather Simulation: South Sudan Conflict	Talk	BUL, ECMWF	20
10.	05/07 2021	Workshop Online	Expert exchange with German Ministry of Science and Research		HiDALGO representative	20
11.	21/07/2021	Workshop Online	UKCOMES summer workshop	Talk	BUL	83
12.	24/09/2021	Workshop Online	Flee Workshop	Organizer and 4 talks	BUL, ECMWF, KNOW	35
13.	11/10/2021	Webinar	EUSEW Online Webinar, contribution to the topic with case study urban air pollution	Talk	ATOS, DIA Cooperation with HiDALGO Associate partner EoCOE	20
14.	17/11/2021	Seminar London	Intelligent Data Analysis Seminar Series	Talk	BUL	20
15.	22/11/2021	Webinar	Webinar SZE on Case study "Urban Air pollution"	Organizer, talk	SZE, PSNC, DIA	85
16.	29/11/2021	Conference	European Big Data Value Forum (EBDVF) 2021	Talk in booth	ATOS	10
17.	30/11-02/12/2021	Hybrid	Complex Networks Presentation On Minimum Spanning Trees and the Inference of Message Cascades	Talk	KNOW	10
18.	09-	Conference	SODA 22	Talk	PLUS	20

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	38 of 45
Reference:	D7.5	Dissemination:	PU
	Version:	1.0	Status: Final

No	Date	Type of Event1	Event	Role	Partner (s) attending	Number of participants
	12/01/2022	Virtual	Talk on "Fast Consensus via the Unconstrained Undecided State Dynamics"			
19.	16/12/2021	Conference New Orleans, Louisiana	American Geophysical Union Fall meeting 2021, Forecasting Heatwave Health Hazards	Poster	ECMWF	10
20.	09/02/2022	Online-Meeting	Meeting with Focus CoE and other EU-Funded projects		DIA	20

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training				Page:	39 of 45
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status: Final

Annex IV - Training

The following tables report the HiDALGO training events since December 2020, as specified in Section 3.3.2. We indicate with “EU+” the ensemble of EU and EU-associated countries [11]. The abbreviations used for the training requirements are as follows (cf. Section 3.3.1):

- Developing for HPC, using parallelisation techniques [HPC PAR]
- HPC Code optimisation for HPC [HPC OPT]
- Applying artificial intelligence to get new insights from my data [AI]
- Support for agent-based modelling paradigm [HPC_R1]
- Coupling with both static and streaming external data sources (integration of streaming data into HPC environments) [HPC_R2]
- Coupling simulations across data-centres [HPC_R3]
- Support for high-performance, general-purpose analytics runtime(s) [HPDA_R1]
- Support for and ability of coupling the aforementioned runtime(s) with high-performance datastores or distributed file systems [HPDA_R2]
- Support for Python and R [TOOLS_R1]
- Support for Apache Spark [TOOLS_R2]
- Training on scheduling or version control tools [TOOLS_R3]

Innovation and training workshops

EXCELLERAT First Joint Technical Workshop	
Curriculum Track	HPC and HPDA modelling
Type / format	Online workshop, Moodle material
Venue & date	USTUTT (online), 27-29 Jan 2021.
Aim	Bring together different CoEs to share and delve into topics of common interest.
Training requirements addressed	No HiDALGO-specific requirement addressed (event organised together with other CoEs).
Participation	<ul style="list-style-type: none"> ■ 60 participants-day / 7 female. ■ Academia and industry (7) representatives, within the HiDALGO consortium and from other CoEs (EXCELLERAT, ChEESE, CompBioMed). ■ Country: Participants from EU+ institutions.
Learning skills	HiDALGO contributed to this workshop together with EXCELLERAT, ChEESE, and a few guest speakers, in particular in the following sessions: load balancing (PLUS), in-situ visualisation (UAP by SZE and USTUTT), co-design (ICCS and PSNC). The format of the workshop allowed for exchange and interaction among CoEs experts on these topics. Some of the recorded material of the workshop has been used for the HiDALGO training video series in the Moodle.
URL	https://services.excellerat.eu/viewevent/10 https://hidalgo-project.eu/coes-joint-technical-workshop HiDALGO Moodle: https://moodle.hidalgo-project.eu/course/view.php?id=9

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	40 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Workshop on High-performance Data Analytics @ ENCCS/HiDALGO	
Curriculum Track	Both
Type / format	Online training workshop, Moodle material
Venue & date	ENCCS (online), 27 April 2021.
Aim	Provide training to the consortium members and externals.
Training requirements addressed	AI, HPC_R3, TOOLS_R1
Participation	<ul style="list-style-type: none"> • 26 participants / 8 female. • Equally academia and industry representatives, mostly outside the HiDALGO consortium (24). • Country: Participants from EU+ institutions, 1 US participant.
Learning skills	<ul style="list-style-type: none"> • Overview of high-performance data analytics (HPDA) from the HiDALGO perspective : The main concepts and tools, information about benchmarks the consortium has done (as a source of information about their scalability), applications within HiDALGO. • HPC and HPDA technologies applied to the Urban Air Pollution (UAP) use-case. The UAP application is a software framework for modelling the air pollution emitted by vehicular traffic and its dispersion at very high resolution by using geometry inputs (Open Street Map), coupled weather data (ECMWF) and traffic simulation (SUMO), computational fluid dynamics (CFD) tools running on HPC infrastructures (OpenFOAM), and evaluation with HPDA methods. • Introduction to the data available at ECMWF and Copernicus, and the APIs for retrieving the data, followed by practical sessions on data exploration and manipulation. • The hands-on sessions were carried out using the PSNC training cluster.
URL	https://enccs.se/events/2021/04/enccshidalgo-workshop-on-high-performance-data-analytics/ HiDALGO Moodle: https://moodle.hidalgo-project.eu/course/view.php?id=12

Tackling Global challenges with HPC, HPDA, and simulations: Simulation of forced migration	
Curriculum Track	Both
Type / format	Online training workshop, Moodle material
Venue & date	Online, 7 July 2021.
Aim	Bring together researchers and industry from the HPC/HPDA areas to exchange views and to learn more about how HPC/HPDA support dealing with global challenges.
Training requirements addressed	HPC_R1
Participation	<ul style="list-style-type: none"> • 22 participants / 5 female. • Academia (19) and industry (3) representatives, 11 outside the HiDALGO consortium. • Country: Participants from EU+ institutions.
Learning skills	The session taught by BUL demonstrated how to download and install Flee via GitHub to construct forced migration simulation instances. The instructors followed the Flee documentation and tutorials developed at BUL.
URL	https://hidalgo-project.eu/media/workshop-on-tackling-global-challenges

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	41 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

	Tackling Global challenges with HPC, HPDA, and simulations: Simulation of forced migration
	HiDALGO Moodle: https://moodle.hidalgo-project.eu/course/view.php?id=6

	Tackling Global challenges with HPC, HPDA, and simulations: A short introduction to quantitative network analysis
Curriculum Track	HPC and HPDA modelling
Type / format	Online training workshop, Moodle material
Venue & date	Online, 8 July 2021.
Aim	Bring together researchers and industry from the HPC/HPDA areas to exchange views and to learn more about how HPC/HPDA support dealing with global challenges.
Training requirements addressed	HPDA_R1
Participation	<ul style="list-style-type: none"> • 11 participants / 1 female. • Academia (8) and industry (3) representatives, 6 outside the HiDALGO consortium. • Country: Participants from EU+ institutions.
Learning skills	<p>In this tutorial, KNOW introduced the concept of a network (or graph) in its most common incarnations with practical examples. In the hands-on part of the tutorial on Jupyter Notebooks, participants constructed graph objects from raw data, visualized them, and computed graph properties using existing libraries. Thus, at the end of the tutorial the participants obtained:</p> <ul style="list-style-type: none"> • a basic understanding of the concept of a graph, • knowledge of available quantitative measures for network analysis, • capabilities to visualize graphs, • capabilities to transform a graph into equivalent representations and vice versa, as well as a basic understanding of Python libraries for network analysis.
URL	https://hidalgo-project.eu/media/workshop-on-tackling-global-challenges HiDALGO Moodle: https://moodle.hidalgo-project.eu/course/view.php?id=13

Web-seminars, videos, and online activities

	AI workshop at PSNC
Curriculum Track	HPC and HPDA modelling
Type / format	Web-seminar, Moodle material
Venue & date	PSNC (online), March 4 2021.
Aim	Train PSNC personnel in using Huawei nodes for AI simulations.
Training requirements addressed	HPC OPT, HPDA_R2
Participation	<ul style="list-style-type: none"> • 12 participants. • All PSNC participants, 5 outside the HiDALGO consortium.
Learning skills	PSNC organised an AI workshop hosted by Huawei engineers following the PSNC acquisition of two Huawei Atlas 800 Model 3000 nodes for testing purposes.
URL	HiDALGO Moodle: https://moodle.hidalgo-project.eu/course/view.php?id=10

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	42 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Reproducible Software Environments & Benchmarks with Ansible and Spack	
Curriculum Track	HPC and HPDA modelling
Type / format	Web-seminar, Moodle material
Venue & date	USTUTT (online), April 14 2021.
Aim	Teach basics of configuring and using Spack for end-users of HPC systems, as well as to introduce an Ansible+Spack solution for automated installation on clusters.
Training requirements addressed	HPC_R3
Participation	<ul style="list-style-type: none"> • 21 participants / 5 female. • Academia and industry (5) representatives, 12 outside the HiDALGO consortium. • Country: Participants from EU+ institutions.
Learning skills	The seminar hosted by USTUTT is about simplifying user software installation on versatile clusters/testbeds, as well as creating reproducible software environments and benchmarks with Spack and Ansible. It is relevant for any teams involved in software installation and benchmarking.
URL	HiDALGO Moodle: https://moodle.hidalgo-project.eu/course/view.php?id=11

Integrations to the partners' training programs through HiDALGO-specific initiatives

Training by ECMWF on weather and climate data access and manipulation	
Curriculum Track	Both
Type / format	Online training, Moodle material
Venue & date	ECMWF (online), 9-10 December 2020.
Aim	Provide training to the consortium members and externals.
Training requirements addressed	AI, HPC_R3, TOOLS_R1
Participation	<ul style="list-style-type: none"> • 28 participants-day / 3 female / 2 other. • Academia and industry representatives, within the consortium (23 participants-day), 5 participants-day from other CoEs/projects (CoEC, E-CAM, EXCELLERAT, SODALITE). • Country: Participants from EU+ institutions.
Learning skills	<p>ECMWF provided a training on using and understanding ECMWF data, as well as on the use of the ECMWF REST APIs for obtaining data (the Weather and Climate Data API - WCDA, the Copernicus Climate Data Store API, and Atmospheric Data Store API). This training has been provided to HiDALGO partners working on the Migration (BUL) and UAP (SZE) Pilots, as well as to partners working on integrating HiDALGO workflows within the HiDALGO framework (PSNC, USTUTT, and ATOS).</p> <p>The training consisted of 2 one-hour training sessions:</p> <ol style="list-style-type: none"> 1. Introduction to weather, climate and environmental data - what data is available and where to find it. 2. Manipulating and visualising weather, climate and environmental data. <p>ECMWF have been developing a set of tutorial Jupyter Notebooks on obtaining, manipulating and visualising weather, climate, hydrological, and air quality data, aimed at users beyond the meteorological community. These Notebooks together with a presentation are available on Moodle.</p>

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	43 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

Training by ECMWF on weather and climate data access and manipulation	
URL	HiDALGO Moodle (joint material with the ENCCS workshop, see https://moodle.hidalgo-project.eu/course/view.php?id=12)

USTUTT Training on Iterative Solvers	
Curriculum Track	HPC and HPDA modelling
Type / format	Online training
Venue & date	USTUTT (online), March 8-10 2021.
Aim	Provide training to the consortium members and externals.
Training requirements addressed	HPC PAR, HPDA_R1
Participation	<ul style="list-style-type: none"> • 45 participants / 6 female. • 44 participants from academia, 1 participant from industry. All participants outside the HiDALGO consortium. • Country: Participants from EU+ institutions.
Learned skills	HiDALGO integrated an original contribution in the HLRS course Iterative Linear Solvers for Linear Systems: A lecture was given by Robert Elsässer (PLUS) on computing eigenvalue histograms (i.e., eigenvalue estimators) for graph Laplacians and other LA apps that rely on iterative solvers (e.g. in PETCs). This method is applied to large scale networks in the SNA pilot.
URL	https://www.hlrs.de/training/2021/ITER-S

USTUTT CFD with OpenFOAM®	
Curriculum Track	Both
Type / format	Online training
Venue & date	USTUTT (online), 20-24 September 2021.
Aim	Provide training to the consortium members and externals.
Training requirements addressed	HPC_R3
Participation	<ul style="list-style-type: none"> • 26 participants / 5 female. • Academia (22) and industry (4) representatives, all participants outside the HiDALGO consortium. • Country: Participants from EU+ institutions.
Learned skills	This five-day workshop on OpenFOAM® applied to CFD phenomena hosted a brief presentation of the digital twin for urban air pollution and the workflow for UAP modelling, in particular the results obtained with OpenFOAM®. The audience was then referred to the UAP HiDALGO spokespersons for further information and details.
URL	https://www.hlrs.de/training/2021/OF1

USTUTT Parallel Programming Workshop	
Curriculum Track	HPC and HPDA modelling
Type / format	On-site training
Venue & date	USTUTT (online), 11-15 October 2021.
Aim	Provide training to the consortium members and externals.

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	44 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final

USTUTT Parallel Programming Workshop	
Training requirement addressed	HPC PAR, TOOLS_R1
Participation	<ul style="list-style-type: none"> • 43 participants / 20 female. • All participants from academia, all participants outside the HiDALGO consortium. • Country: Participants from EU+ institutions.
Learned skills	<p>USTUTT (Rolf Rabenseifner at HLRS) developed a comprehensive MPI-3.1/4.0 course with slides and a large set of exercises including solutions. The slides and exercises show the C, Fortran and, since summer 2021, also the Python (mpi4py) interfaces. HiDALGO provided the first input and an initial contribution to such a project. The goal has been to bring the participants closer to some packages extensively used within HiDALGO (MPI for Python, Dask distributed). USTUTT and VSC (TU Vienna) completed the Python implementation of the exercises and provided additional hints on the Python bindings.</p>
URL	<p>https://www.hlrs.de/training/2021/PAR,</p> <p>HiDALGO News: https://hidalgo-project.eu/index.php/node/263</p>

ICCS Training for university students	
Curriculum Track	HPC and HPDA modelling
Type / format	On-site and online training
Venue & date	Q4 2020 and Q4 2021, (partly online at the) School of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Greece
Aim	Provide training to undergraduate and postgraduate students.
Training requirements addressed	HPC PAR, HPC OPT, AI, HPDA_R2, TOOLS_R1, TOOLS_R2
Participation	<ul style="list-style-type: none"> • 75 participants per course (est. average) / 23 female per course (est. average). • All NTUA students, all outside the HiDALGO consortium.
Learned skills	<p>ICCS researchers gave the following contributions to NTUA courses through HiDALGO effort:</p> <ul style="list-style-type: none"> • 6 lectures on HPDA and cloud computing in the context of the undergraduate course "Information Systems" • 4 lectures on HPDA & Spark in the context of the undergraduate course "Advanced Database Systems" • 2 lectures on Performance optimizations in the context of the undergraduate course "Parallel Systems" • 1 lecture on Performance optimizations in the context of the postgraduate course "Parallel Architectures for Machine Learning" • 6 lectures on HPDA and cloud computing in the context of the undergraduate course "Information Systems" • 4 lectures on HPDA & Spark in the context of the undergraduate course "Advanced Database Systems" • 2 lectures on Performance optimizations in the context of the undergraduate course "Parallel Systems" • 1 lecture on Performance optimizations in the context of the postgraduate course "Parallel Architectures for Machine Learning"

Document name:	D7.5 Annual Report on Community Building, Event Management, Collaboration and Training	Page:	45 of 45				
Reference:	D7.5	Dissemination:	PU	Version:	1.0	Status:	Final