

Final report on delivery of the HBP Engagement Strategy highlighting activities and impact of the Communication, Partnering, Media Relations, Exploitation, and Education & Outreach teams in SGA3 (D8.4 - SGA3)

Capitalizing on the HBP achievements to build a strong EBRAINS RI for the scientific community

**“One Team EBRAINS” interactive workshop
Brussels, January 2023**



Figure 1: Images from the ‘One Team EBRAINS’ interactive workshop in Brussels (Jan 2023)

Project Number:	945539	Project Title:	HBP SGA3
Document Title:	Final report on delivery of the HBP Engagement Strategy highlighting activities and impact of the Communication, Partnering, Media Relations, Exploitation, and Education & Outreach teams in SGA3		
Document Filename:	D8.4 (D74) SGA3 M42 RESUBMITTED 231206		
Deliverable Number:	SGA3 D8.4		
Deliverable Type:	Report		
Dissemination Level:	PU		
Planned Delivery Date:	SGA3 M42 / 18 AUG 2023		
Actual Delivery Date:	SGA3 M42 / 04 SEP 2023 (resubmitted 06 Dec 2023)		
Author(s):	France NIVELLE, EBRAINS (P1)		
Compiled by:	Christine BAUQUIS, EBRAINS (P1)		
Contributor(s):	France NIVELLE, EBRAINS (P1), contributed to section 3 Tina KOKAN, MUI (P42), contributed to Section 2 Judith KATHREIN, MUI (P42), contributed to Section 2 and 3 Marie-Elisabeth BÉNÉDICTE COLIN, EBRAINS (P1), contributed to Section 2 Peter ZEKERT, JUELICH (P20), contributed to Section 2 Lisa VINCENZ-DONNELLY, JUELICH (P20), contributed to Section 2 Evan HANCOCK, EBRAINS (P1), contributed to Section 2 and 3 Bárbara GASSET, UPM (P68), contributed to Section 2 Guillermo VELASCO, UPM (P68), contributed to Section 2		
WP QC Review:	Marie-Elisabeth BÉNÉDICTE COLIN, EBRAINS (P1)		
WP Leader / Deputy Leader Sign Off:	Christine BAUQUIS, EBRAINS (P1)		
T7.4 QC Review:	Only formatted: Annemieke MICHELS, EBRAINS (P1)		
Description in GA:	Final report on delivery of the HBP Engagement Strategy highlighting activities and impact of the Communication, Partnering, Media Relations, Exploitation, and Education & Outreach teams in SGA3.		
Abstract:	This report details the delivery of the HBP Engagement Strategy highlighting activities and impact of the Communication, Partnering, Media Relations, Exploitation, and Education & Outreach teams in SGA3.		
Keywords:	Communication, Partnering, Media Relations, Exploitation, Education, Outreach		
Target Users/Readers:	Funders, general public, neuroscientific community, neuroscientists, platform users, policymakers, researchers, scientific community, students		

Table of Contents

1. Introduction.....	5
2. Highlighting the scientific impact and achievements of the Human Brain Project	5
2.1 Dissemination and communication.....	5
2.1.1 Creation of a scientific communication taskforce	5
2.1.2 Broader press outreach and coverage	6
2.1.3 Webinars for science dissemination to a wider audience.....	9
2.1.4 Young researchers to the fore	10
2.1.5 Video communication	10
2.1.6 A new podcast program	11
2.2 Outreach and events	11
2.2.1 Ensuring HBP presence at key scientific events.....	11
2.2.2 Coordination of the organisation of HBP Summit 2021 and 2023.....	13
2.3 HBP Education Programme	14
2.3.1 Student community building and social media	14
2.3.2 HBP Education Programme E-Library and Online Curriculum Courses	15
2.3.3 EBRAINS Infrastructure Training Events	15
2.3.4 EBRAINS Workshops	17
2.3.5 Young Researchers Events & HBP Student Conferences	17
2.3.6 HBP Tea & Slides webinar series for early-career researchers	18
2.4 Coordinating and managing collaborations: HBP Partnering Projects.....	18
2.4.1 Communication and engagement with Partnering Projects members.....	19
2.4.2 Opportunities for Partnering Projects to present their research and discuss future post-HBP collaborations.....	20
2.5 Innovation and exploitation	21
2.5.1 Exploitation of HBP service and tools.....	21
2.5.2 Support of HBP members on the design of exploitation plans	21
2.5.3 Competitive landscape scanning and analysis	22
2.5.4 Matching HBP mature results with market needs.....	22
2.5.5 Matching start-up initiatives with funding actors and investors.....	23
2.5.6 Raising awareness on Innovation and exploitation	23
2.5.7 Training and capacity building.....	23
2.5.8 Communication and innovation outreach	24
3. EBRAINS as a major player in the brain research community	25
3.1 Laying the foundation.....	25
3.1.1 A first manifesto “Discover EBRAINS”.....	25
3.1.2 A clear visual identity	26
3.1.3 Introduction of EBRAINS to the European press.....	26
3.1.4 Getting onto the ESFRI 2021 roadmap.....	27
3.2 Building visibility and awareness.....	27
3.2.1 Press outreach to cover the organisational growth and major milestones of EBRAINS	27
3.2.2 A strong social media presence	27
3.2.3 Outreach to new collaboration partners and presentation of EBRAINS at more than 60 events	28
3.2.4 EBRAINS with a strong footprint in the RI landscape	29
3.2.5 EBRAINS as an advocate for brain research on the international scene.....	29
3.3 Training of users	30
3.4 A user-centric approach	30
3.5 Result and impact: a dynamic community expanding beyond the HBP	30
3. Looking Forward	31

Table of Tables

Table 1: Human Brain Project website statistics	7
Table 2: Social media channels managed by Work Package 8	8
Table 3: Online channels managed by other Work Packages	8
Table 4: “Brain Matters webinar Young researchers	10
Table 5: Dissemination & communication activities during SGA3 M1-M42, by type*	11
Table 6: Estimated cumulative audience reached, by audience type, SGA3 M1-M42.....	12
Table 7: HBP presence at high-level events	13
Table 8: Post-event news items on the official project website	14
Table 9: EBRAINS Infrastructure Training Events in SGA3	16
Table 10: EBRAINS Workshops during SGA3	17
Table 11: Student Conferences and Young Researchers Events in SGA3	18
Table 12: EBRAINS website statistics	28
Table 13: Active projects in August 2023 where EBRAINS is coordinator	30
Table 14: Active projects in August 2023 where EBRAINS is partner	31

Table of Figures

Figure 1: Images from the ‘One Team EBRAINS’ interactive workshop in Brussels (January 2023).....	1
Figure 2: Mockup of the two brochures on HBP scientific results.....	5
Figure 3: Revamped HBP website homepage - July 2022.....	7
Figure 4: Post performance on HBP LinkedIn Page	7
Figure 5 : Screenshots of successful HBP social media posts	8
Figure 6: Screenshot of an edition of the Human Brain Project newsletter.....	9
Figure 7: Screen shot of the first edition of the “Brain Matters” webinars	9
Figure 8: HBP Summit in Marseille - shot of recap video with Summit participants on the stage	10
Figure 9: Human Brain Project podcast graphic	11
Figure 10: HBP Partnering Project timeline since the onset of the Partnering programme.	19
Figure 11: European Partners involved in HBP Partnering projects.....	19
Figure 12: Pictures of the Partnering Projects meeting in Nijmegen	20
Figure 13: From left to right, Dr. Kim, Prof. Haraldsen, PPs booth at the 2023 HBP Summit.....	21
Figure 14: cover of the “Discover EBRAINS” manifesto.....	25
Figure 15: Extract from EBRAINS visual brand book.....	26
Figure 16: Screen shot of the event organised in collaboration with Politico	26
Figure 17: Social media posts developed for the promotion of EBRAINS data services.....	27
Figure 18: overview of the EBRAINS digital presence	28

1. Introduction

This deliverable synthesizes the impact of the engagement strategy developed by Work Package 8 dissemination, communication, outreach, education and exploitation activities conducted during SGA3, as well as how they involved key stakeholder groups.

The deliverable is divided into two main parts: 1) How the WP8 activities contributed to highlight the scientific achievements and outcomes of the Human Brain Project, and to reach out to and engage the science community and 2) How the WP8 teams supported the building of EBRAINS as an open research infrastructure, highlighting the value of its tools and services for the wider research community, and reaching out to users to have them continue to co-develop the RI and make the best use of it to advance their own science.

The document also highlights what elements of the WP8 activities will be pursued in the future through EBRAINS and as HBP legacy.

2. Highlighting the scientific impact and achievements of the Human Brain Project

2.1 Dissemination and communication

2.1.1 *Creation of a scientific communication taskforce*

With more than 2500 scientific publications, the Human Brain Project (HBP) was a key contributor to science. To make the content of these publications more accessible to a lay public and to ensure more visibility of the project’s achievements, a specific scientific communication taskforce was put in place in SGA3. The task force focused on the following activities:

- Discuss the main scientific publications and content to be “translated” into layman language by the scientific writers. This led to more than 112 stories being written and published on the HBP website and social channels, attracting quite a large number of views. Some were also used as press release materials (see below).
- Define the content of nicely laid-out brochures to explain the scientific results of the HBP.

[Two such brochures](https://www.humanbrainproject.eu/en/science-development/scientific-achievements/brochures/)¹ were printed and published, one shorter one in 2022 (updated in 2023) and one longer more comprehensive one in 2023 (see Fig. 2). The texts were written by the scientific writers and validated by the scientific leads. The brochures proved very handy during conferences, workshops and summits and were also used (and appreciated) as press background materials.

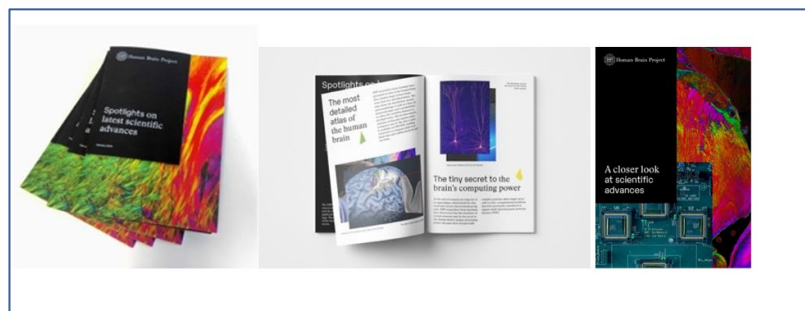


Figure 2: Mock-up of the two brochures on HBP scientific results

¹ <https://www.humanbrainproject.eu/en/science-development/scientific-achievements/brochures/>

2.1.2 Broader press outreach and coverage

The efforts engaged to disseminate the results of the HBP and make them accessible to lay audiences also translated into reinforced media outreach activities. Next to the Eurekalert platform targeting the scientific press, another platform, called CISION, was added giving the team access to very large and well-organized data bases of journalists and allowing it to reach out more easily to the international general press.

Science-related press releases about new results and announcements about EBRAINS organisational growth were also significantly increased in frequency, quality and impact over the course of SGA3. (see also 3.2.1)

Press activities under the responsibility of Task 8.7 included:

- 68 press releases in M23-37 (+ ~100% vs. M1-22) were sent through these platforms and through channels of local partners involved, leading to more prominent HBP and EBRAINS coverage and visibility in quality outlets (see Table 1).
- Several TV programs also resulted from the team's outreach efforts (see Table 1)

The 2 Summits organized during SGA3 also attracted press interest and led to wide media coverage (see Table 1):

- 8 science journalists attended online sessions during the 2021 Virtual HBP Summit and European Brain Summit (during COVID period)
- 10 accredited journalists attended at the Summit in Marseille in 2023 onsite, 4 journalists covered the Summit remotely and a 1-hour press conference was organised to highlight the results of the scientific Work Packages. Around 20 individual interviews were facilitated with print, radio and video journalists on-site or remotely. Briefing and media training were organized for the scientists who took part in media interviews and press conferences.

Critical coverage initially spiked in SGA3 due to the release of the *in silico* documentary in 2020. Intensified achievement-focused media work then led to a marked improvement in how the project was covered. In the second half of SGA3 the assessment of the project significantly improved, with the majority of reports giving ample room to the achievements.

Leveraging digital channels to share HBP achievements:

The large number of scientific publications in SGA3 and the generation of new content by the Science Communication taskforce (see above) expanded the capacity for HBP social media channel to reflect the wealth of the scientific outcomes and supported the growth of HBP's digital presence and followership.

2.1.2.1 HBP Website

To respond to a request made by the reviewers and the HBP Science Director, the HBP website went through an important transformation (see Fig. 3). The goal was to simplify the content structure and to better highlight the scientific focus areas and accomplishments of the HBP. Such an effort had not been planned in SGA3 and significant internal resources had to be mobilized and re-focused to make this happen. On average, the redesigned HBP website received about 10311 users per month, a 5% growth versus the prior version.

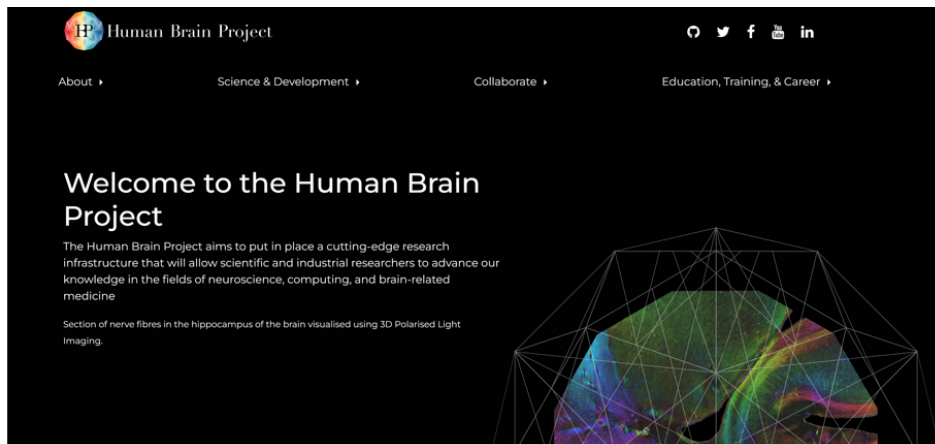


Figure 3: Revamped HBP website homepage - July 2022

To anticipate the post-HBP period, and to make sure all audiences with interest in the HBP could still get access to the valuable information relating to the project after September 2023, plans have been made to turn the website into a legacy one (to be released on 2nd October 2023). Plans and budget have also been foreseen to upload the final documents (deliverables) onto the site up to six months after the review and to keep a static website accessible to all for 3 years and a half after the close of the project.

Table 1: Human Brain Project website statistics

Human Brain Project	PR1	PR2
Avg. monthly users	16,199	10,275
Avg. monthly page views	47,874	26,691

The drop in users and page views from PR1 to PR2 is most likely explained by the introduction of the new cookie tool near the end of PR1. The cookie tool allowed visitors to opt out of being tracked.

2.1.2.2 Social media: HBP LinkedIn and Twitter accounts

The HBP LinkedIn (67 997 followers) and Twitter (39 520 followers) accounts reach a wide range of audiences from neuroscientists and neuro-informatics experts to students, post-doc researchers, general public, and press. Constant flow of more formed, science-focused and reader-optimised content has driven markedly increased engagement on social media (see Fig. 4 and Fig. 5).

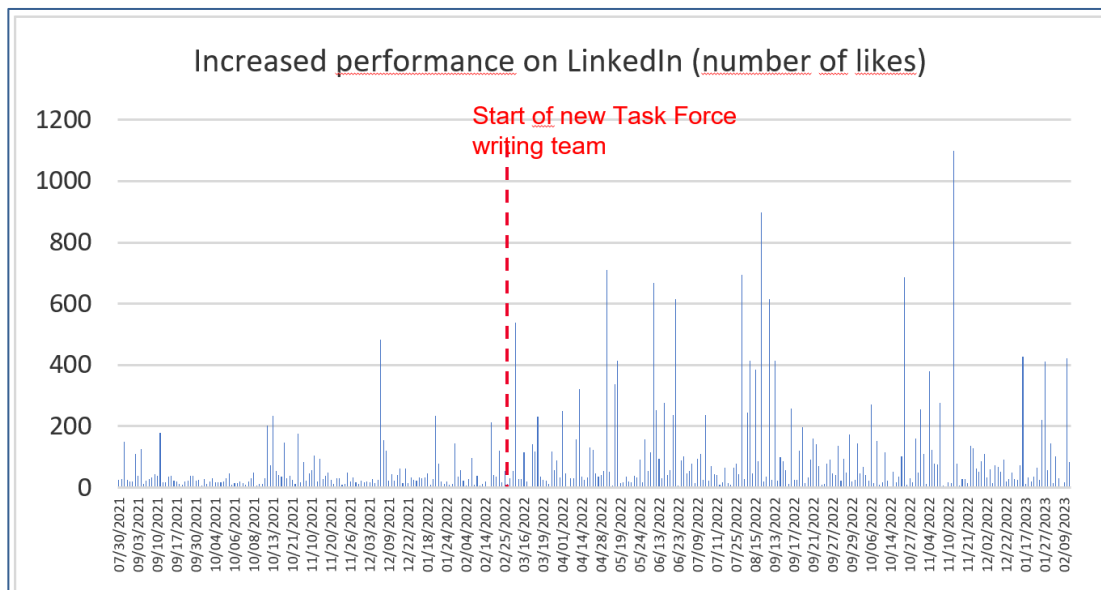


Figure 4: Post performance on HBP LinkedIn Page

The spike in November 2022, for example, represents a high number of likes on a LinkedIn post about the Human Brain Project's human brain atlas.

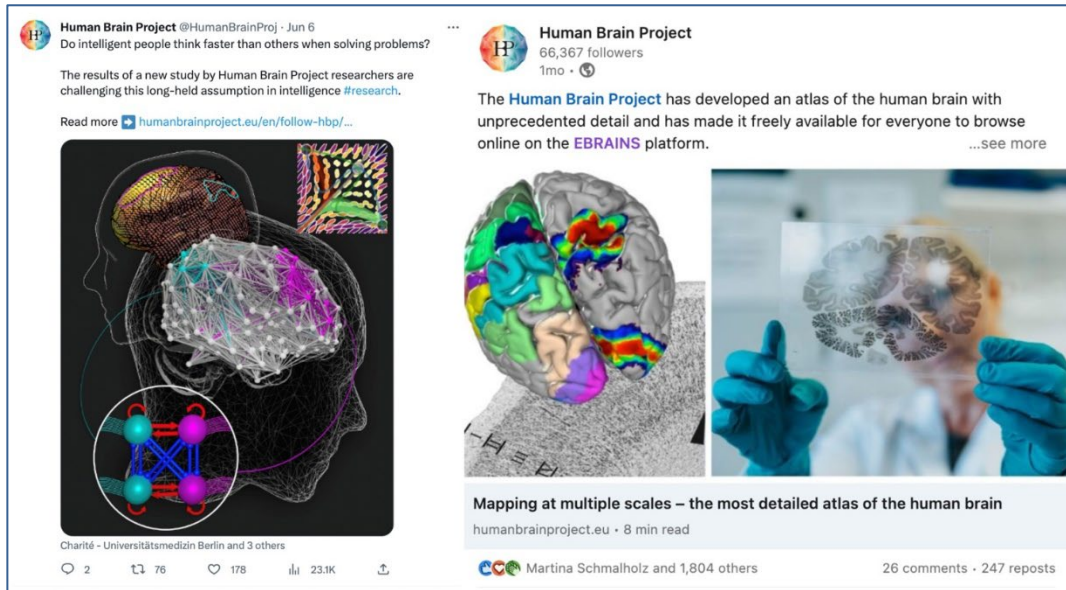


Figure 5 : Screenshots of successful HBP social media posts

Left-hand side picture features a tweet² about a study³ led by Petra Ritter. Right-hand side picture features a LinkedIn post⁴ on the human brain atlas produced by the HBP (text based on the brochure published by the science communication task force).

After the final project review the HBP social media accounts will remain (for reference) but will no longer be populated with new content and the tens of thousands of followers of these accounts will be invited to stay connected by joining the EBRAINS channels (see section 3 below).

Table 2: Social media channels managed by Work Package 8

Channel	Followers
Human Brain Project Twitter	39,715
Human Brain Project Facebook	27,198
Human Brain Project LinkedIn	70,480
Human Brain Project YouTube	10,118
HBP Education Twitter	2,815
HBP Education LinkedIn	9,485
EBRAINS Twitter	46,10
EBRAINS LinkedIn	8,641

Table 3: Online channels managed by other Work Packages

Channel	Type	Followers	Comments
Ethics Dialogues	Blog	NA	Managed by WP9
Human Brain Project at Esperienza Insegna	Twitter	90	NA
HBP Society	Twitter	1,071	Managed by WP9
HBP Neurorobotic	Twitter	1,416	Managed by WP3
HBP WP1	Twitter	316	Managed by WP1

² <https://twitter.com/HumanBrainProj/status/1665987393160204288>

³ Schirner, M., Deco, G. & Ritter, P. Learning how network structure shapes decision-making for bio-inspired computing. Nat Commun 14, 2963 (2023). <https://doi.org/10.1038/s41467-023-38626-y>

⁴ https://www.linkedin.com/feed/update/urn:li:activity:7064216803337461761?updateEntityUrn=urn%3Ali%3Afs_feUpdate%3A%28V2%2Curn%3Ali%3Aactivity%3A7064216803337461761%29

Channel	Type	Followers	Comments
HBP Ethics Support	Twitter	430	Managed by WP9
HBP High Performance Computing	Twitter	1,473	Managed by WP6

2.1.2.3 Newsletters

Keeping close links with the community was the purpose of the monthly newsletters sent by WP8 (Task T8.3) in which key highlights were summarized, events announced, people’s achievements acknowledged (e.g. awards, PhD earned, ...) (See Fig. 6). Close to 4000 recipients signed up to receive the HBP newsletter each month and drop-outs were pretty rare.

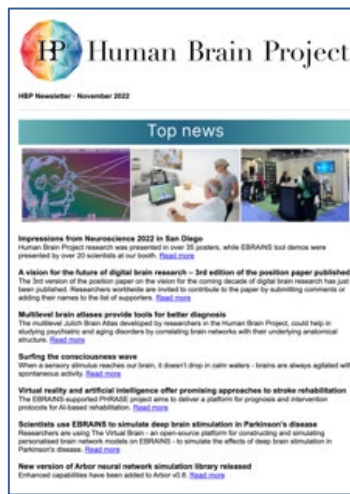


Figure 6: Screenshot of an edition of the Human Brain Project newsletter

2.1.3 Webinars for science dissemination to a wider audience

To highlight the HBP scientific achievements to a general audience, 17 interactive “Brain Matters” webinars⁵ were organized during SGA3 (Tasks T8.2 and T8.3). Featuring scientists and a facilitator, they provided a great platform to explain the HBP research results in simple terms and in a didactic way (see Fig. 7). On average the live sessions of the webinars attracted around 100 participants who were given the opportunity to interact and ask questions. The recordings were published on the HBP YouTube channel and were viewed by dozens of extra people. The recordings will remain available on YouTube after the project ends. The recordings have amassed 16394 views on YouTube.



Figure 7: Screen shot of the first edition of the “Brain Matters” webinars

⁵ <https://www.humanbrainproject.eu/en/brain-matters/>

2.1.4 Young researchers to the fore

Another key responsibility of the HBP was also to involve the younger generation of researchers in the various aspects of the project and to provide them with learning opportunities. This was one of the key focuses of Task 8.2 (see below). But giving them the word and the opportunity to present their own research was also high on the radar. The Summits, poster sessions and “abstract awards” gave them ample opportunity to showcase their research. In addition, several of them were also featured in videos where, after some presentation skill coaching, they were given the floor to explain the purpose, content and approach of their research. Such videos were shared on the HBP channels (see Table 1), highlighting the importance the project gave to the new generation of scientists.

Table 4: “Brain Matters webinar Young researchers

Title	Views (as of 18 Aug 2023)	Link
Sensory processing: visual brain circuits	177	https://www.youtube.com/watch?v=t4Lylg554xl
Cognitive tasks and decision making	522	https://www.youtube.com/watch?v=ulzq5_X7UgU
Emerging rhythmic patterns and their analysis	364	https://www.youtube.com/watch?v=ego6HPyaz4k
The Brain as a Network: good or bad?	648	https://www.youtube.com/watch?v=3sMCDvmmHxU

2.1.5 Video communication

Videos were another communication means leveraged by Work Package 8 (Task T8.3) to disseminate information and share the HBP research advances in an attractive way.

More than 285 videos are available on the [HBP YouTube channel](#)⁶. The [latest ones](#)⁷ were shot during the final Summit in Marseille and provided inspiring testimonials of scientists and participants about the achievements of the project (see Fig. 8). The channel gathers about 10 000 subscribers and reached 134,000 views over SGA3. The HBP You Tube channel will remain accessible after the end of the project.



Figure 8: HBP Summit in Marseille - shot of recap video with Summit participants on the stage

⁶ <https://www.youtube.com/user/TheHumanBrainProject>

⁷ https://www.youtube.com/playlist?list=PLHyCyen_OSEOmJh3bbChbtZuF3dlj2FpK

2.1.6 A new podcast program

To further enhance and explain the scientific achievements of the HBP, while also aiming at showing the human face of science (“the person behind the scientist”), a series of 9 podcasts⁸ was launched in 2023 (Task T8.3) (see Fig. 9). In an interview format, HBP and close-to-HBP scientists shared their experience, their professional journey, what they learned along the way and what, according to them, would not have been possible for them and for science without the HBP. Such podcasts are meant for a wide general audience and discuss the HBP and its impact from a different perspective. This new format drew significant attention, with some episodes gathering more than 1000 listeners. The HBP Podcasts will remain accessible after the end of the project.



Figure 9: Human Brain Project podcast graphic

2.2 Outreach and events

2.2.1 Ensuring HBP presence at key scientific events

Despite the fact that SGA3 started with the COVID-19 crisis, the Outreach and Events team (Task 8.2), in collaboration with HBP scientists, managed to ensure HBP presence and exposure at high-level events, reaching a broad scientific audience.

Table 5: Dissemination & communication activities during SGA3 M1-M42, by type*

Type	Number	Audience	Comments
Conference	27	5,411	-
Exhibition	6	523	-
Meeting	234	2,324	-
Meeting with Partnering Project	2	90	-
Other	411	22,714	-
Training	51	1,186	-
Workshop	116	1,824	-
Booth	38	3,116	-
Demo	26	142	-
Keynote	34	682	-
Networking	50	3,273	-
Paper	4	NA	-
Poster	321	1,340	-
Presentation	354	12,136	-
Short Paper	3	NA	-

⁸ <https://www.humanbrainproject.eu/en/follow-hbp/news/2023/05/11/listen-entire-human-brain-project-podcast-series/>

Type	Number	Audience	Comments
Talk	606	3,740	-
Tutorial	136	399	-
Communication Campaign (e.g. Radio, TV)	15	419	-
Flyer	45	70,086	-
Non-scientific and non-peer-reviewed publication (popularised publication)	18	5,500	-
Press Release	108	3,009,504	-
Social Media	103	5,213,074	-
Video/Film	86	69,476	-
Website	434	9,871,121	-
Podcast	9	6,361	Number of streams on YouTube, Spotify, and Apple Podcasts
Brain Matters webinar	17	16,394	Number of YouTube views
Brochures	4	3,000	Number of page views for 'Brochures and Books' page
News items	423	260,681	Number of page views for the 'News' section of the website
Newsletters	25	3,805	Number of newsletter subscribers by end of project
HBP/EBRAINS Roadshows	8	100	Participants reached per event
HBP Summit	1	670	Registered participants (including 90 speakers)
Public interest events	8	20	High-level/decision making profiles
YouTube Videos	189	134,000	YouTube views
Total	3,912	18,462,430	-

*Numbers retrieved from PLUS reporting tool.

Table 6: Estimated cumulative audience reached, by audience type, SGA3 M1-M42

Audience	SGA3 M1-M42
Scientific Community	6,693,188
Industry	553,837
Civil Society + General Public	13,498,198
Policy Makers	588,705
Media	8,285,749
Investors	412,459
Customers	413,607
Other (including HBP)	418,522
Total	30,864,265

Please note that some activities reached more than one type of audience, which accounts for the larger total number in Table 6.

The team succeeded with great agility in adjusting to a virtual event and booth mode. When travelling and meetings became possible again, new impetus was given to physical presence at congresses and events. Overall, HBP and EBRAINS organised exhibition booths and networking activities during 13 externally-organised scientific events (see Table 2).

Table 7: HBP presence at high-level events

Event	More information
FENS 2020	https://www.humanbrainproject.eu/en/fens2020/
Research & Innovation Days 2020	https://www.humanbrainproject.eu/en/ridays2020/
Bernstein Conference 2020	https://www.humanbrainproject.eu/en/bernstein2020/
SfN Global Connectome 2021	https://www.humanbrainproject.eu/en/sfn-gc-2021/
INCF Neuroinformatics Assembly 2021	https://www.humanbrainproject.eu/en/incf-neuroinformatics-assembly/
Brain Initiative Investigators Meeting 2021	https://www.humanbrainproject.eu/en/biim21/
Austrian Neuroscience Association Annual Meeting 2021	https://www.austrian-neuroscience.at/event-3926245
Brain Innovation Days 2021	https://www.braincouncil.eu/event-report-brain-innovation-days-2021/
SfN Neuroscience 2021	https://www.humanbrainproject.eu/en/neuroscience-2021/
European Big Data Value Forum 2021	https://www.humanbrainproject.eu/en/ebdvf2021/
EAN 2022	https://www.humanbrainproject.eu/en/ean-congress-2022/
FENS Forum 2022	https://www.humanbrainproject.eu/en/fens-forum-2022/
SfN Neuroscience 2022	https://www.humanbrainproject.eu/en/neuroscience-2022/

The team also worked very closely with the Community Building task (WP4) to ensure that contacts established at those events were recorded and invited to join the HBP/EBRAINS community. (Note: more details on the work performed by the Community Building task can be found in a separate deliverable in WP4).

2.2.2 *Coordination of the organisation of HBP Summit 2021 and 2023*

HBP Summits were major moments for the HBP and all its participants. During SGA3, two such high-level scientific events were organized to highlight scientific progress and results, to invite high-level keynote speakers, to engage with the broader scientific community, with the wider public, with politicians. Task 8.2 played a crucial role in the organisation of these major events which gathered several hundred participants and were key milestone moments in disseminating the HBP science and accomplishments (see Table 3).

The HBP Summit 2021: Pushing the Boundaries of Brain Research, took place from 12-15 October 2021 in a hybrid format, on-site and virtually, and was coordinated by partners EBRAINS and MUI. The four-day event had several sub-events: it kicked off with the European Brain Summit in Brussels co-organised with the European Brain Council, followed by the virtual HBP Internal Day, and finished off by a two-day virtual HBP Scientific Conference which included an EBRAINS Workshop on tools and services. Previously internal, this was the first open HBP Summit, and largest, attended by 1,001 mostly virtual participants (59% non-HBP), with 74 online posters and 10 Science Market exhibition booths showcasing EBRAINS RI.

The HBP Summit 2023: Achievements and Future of Digital Brain Research, took place from 28-31 March 2023 in Marseille, where researchers presented the abundant scientific achievements of the project and the legacy that it will leave for the research community. With the project approaching its conclusion in September 2023, a focal point of the final HBP Summit in Marseille was the discussion of the future of digital brain research. The event was attended by 670 participants, with 173 on-site posters and 15 Science Market exhibition booths, including collaborators and EBRAINS national nodes representatives.

Table 8: Post-event news items on the official project website

Event	More information
HBP Summit 2021	<ul style="list-style-type: none"> • https://www.humanbrainproject.eu/en/follow-hbp/news/2021/10/14/making-brain-health-priority-europe-brussels-sees-event-packed-high-level-brain-scientists-and-policy-makers/ • https://www.humanbrainproject.eu/en/follow-hbp/news/2021/10/15/new-tools-neurosciences-human-brain-project-presents-key-advances-annual-summit/ • https://www.humanbrainproject.eu/en/follow-hbp/news/2021/10/19/brain-inspired-technologies-and-open-infrastructure-brain-research-hbp-scientific-conference-closes-look-future/
HBP Summit 2023	<ul style="list-style-type: none"> • https://www.humanbrainproject.eu/en/follow-hbp/news/2023/03/29/hbp-final-summit-2023-marseille-has-started/ • https://www.humanbrainproject.eu/en/follow-hbp/news/2023/03/31/young-scientists-present-scientific-achievements-and-tools-developed-human-brain-project-during-poster-session-marseille/ • https://www.humanbrainproject.eu/en/follow-hbp/news/2023/03/30/innovation-awards-hbp-summit-honour-science-help-patients/ • https://www.humanbrainproject.eu/en/follow-hbp/news/2023/03/31/final-human-brain-project-summit-closes-vision-future-digital-brain-research/

2.3 HBP Education Programme

As one of the fundamental goals of the HBP, educating a new generation of researchers in neuroscience and computing and equipping them with more digitally-oriented and interdisciplinary skills was seen as a key responsibility for the project leaders. Task 8.2 was coordinating the HBP Education Programme which led the student community building efforts and launched two Open Calls in SGA3 to support the organisation of EBRAINS Infrastructure Training Events and EBRAINS Workshops.

During SGA3, over 3800 participants were educated on EBRAINS-based research, tools and services at 49 events organised or supported by the HBP Education Programme. This was more than double the participation in the SGA2 phase, also thanks to new virtual formats that emerged as a response to the Covid-19 pandemic, which allowed geographically unrestricted participation.

2.3.1 Student community building and social media

The HBP Education Programme [Social Media](#)⁹ reached over 14,000 followers across Facebook, Twitter, LinkedIn and Instagram, the monthly HBP Education Programme newsletter more than doubled in subscribers in SGA3, and a dedicated Slack channel grew in SGA3 to reach over 600 subscribers. The Education Programme social media activities were often cross-promoted thanks to many collaborators such as the Virtual Brain, IBI, EAN, EITN, APE Lab and the Austrian Neuroscience Association. Approaching the end of the project, these accounts were frozen or closed with traffic redirected to EBRAINS social media and Community Space as a legacy.

The HBP Education Programme achievements have only been made possible with the enthusiastic support of the network of HBP Student Representatives and Ambassadors, who represented the student community of their work packages and acted as important multipliers raising awareness for and contributing to the HBP Education Programme activities: <https://www.humanbrainproject.eu/en/education-training-career/education-programme/student-community/>

⁹ <https://www.humanbrainproject.eu/en/education/contact/>

Impressions and quotes from several Student Ambassadors:

The HBP Education Programme provided the ideal starting point for my scientific career. The Education Programme provided a unique and world-class opportunity for curious students to access the forefront of European computational neuroscience. I met my future employer via an HBP Education event, and I have first-hand accounts from dozens of scientific careers taking their first steps via HBP workshops and Young Researchers' Events.

Being a Student Ambassador for the HBP was a valuable experience on two accounts. I got to meet hundreds of hopeful students, learn from their unique perspectives, and gain new insights I would not otherwise have access to. I also obtained crucial first-hand experience for any early career researcher; conference organization, paper reviewing, outreach activities, and networking. The Education Programme deserves high praise for their contagious ambition and inclusive approach: their work will positively impact European brain science for decades.

Jens Egholm Pedersen, KTH Stockholm, Student Ambassador for WP3

"Being in the HBP student faculty as a student ambassador I experienced a lot of new insights in neuroscientific research. Due to the HBP Education Programme I was able to get to know a lot of young researchers, which helped me not only to acquire a good insight on the ongoing and novel research, but also find a lot of new friends over the world. In my time as a student ambassador, I was able to connect people and create collaborations between young researchers in the HBP community and I hope these connections will be fostered for a very long time."

Alper Yegenoglu, Forschungszentrum Jülich, Student Ambassador for WP5

"Multidisciplinary training, community and enthusiasm: these are the keywords of my experience within HBP Education. As a PhD student in a small computational neuroscience group, HBP education gave me unique opportunities to attend amazing training activities and feel part of a community beyond the borders of individual institutions. Later, as a student representative and ambassador, I was part of a fantastic team organizing educational activities and acting as a voice of the young neuroscientists community always with enthusiasm!"

Alice Geminiani, University of Pavia, (now Fundação Champalimaud), Student Representative and Student Ambassador for WP1 during SGA3

2.3.2 HBP Education Programme E-Library and Online Curriculum Courses

The HBP Education Programme E-Library contains material produced at educational events, such as workshops and schools, as well as lectures provided by scientists which were recorded at other occasions. The material is stored on the HBP Education Programme YouTube channel which had 331 new videos added in SGA3, and almost tripled in channel subscribers compared to SGA2.

The HBP Curriculum on Interdisciplinary Brain Science offered web-based distance learning courses. It provided basic lessons in the HBP core fields neuroscience, medicine, cognitive systems and ICT for early career researchers outside their area of specialisation, as well as courses on the subjects of ethics and intellectual property rights, translation and exploitation of research. By combining the online course with a participation in one of the HBP Education Programme event ECTS credits could be awarded by taking an online or on-site exam. A total of 18 exams took place and resulted in 25.5 ECTS points being awarded.

2.3.3 EBRAINS Infrastructure Training Events

EBRAINS Infrastructure Training Events were intended for a wide audience, from early-career researchers to experienced scientists. The aim was to introduce new users to the HBP ecosystem and provide hands-on training and valuable insights on tools and services offered by the EBRAINS Research Infrastructure. Proposals for event support were received via an Open Call, and overall 21 events were supported in SGA3 (see table 4), with a total of 1,555 participants, averaging on 40% of

women, 19 countries per event, and an excellent post-event survey satisfaction rating of 4.48 on average (scale 1-5; very poor to excellent).

Table 9: EBRAINS Infrastructure Training Events in SGA3

Event	More information
Tools and Services offered by EBRAINS Computing Services and Neuromorphic Computing	https://www.humanbrainproject.eu/en/ebrains-tools-2020/
EBRAINS Infrastructure Training: 2nd Elephant User Workshop	https://www.humanbrainproject.eu/en/follow-hbp/events/save-date-2nd-elephant-user-workshop/
CodeJam#11 - rising the maturity of EBRAINS	https://www.humanbrainproject.eu/en/education/participatecolaborate/infrastructure-events-trainings/codejam-11/
EBRAINS Infrastructure Training on Model Validation	https://www.humanbrainproject.eu/en/education/training-on-model-validation/
EBRAINS & IBRO First Virtual Master Class on Brain Atlasing and Simulation Services	https://www.humanbrainproject.eu/en/education/virtual-masterclass-1/
EBRAINS & IBRO Second Virtual Master Class on Brain Atlasing and Simulation Services	https://www.incf.org/training-week/ebrains-ibro-master-class-brain-atlasing-and-simulation-services
Mediterranean Seminar of Consciousness	https://www.humanbrainproject.eu/en/education/mediterranean-seminar-for-consciousness/
EBRAINS Training “From Synapses to Network Dynamics and Function” (at BNNI 2021)	https://www.humanbrainproject.eu/en/education/BNNI2021/
EBRAINS Training “Brain Function, Dysfunction and Neurorobotic Systems” (at BNNI 2021)	https://www.humanbrainproject.eu/en/education/BNNI2021/
CodeJam#12: EBRAINS interactive usage and multi-site workflows	https://www.humanbrainproject.eu/en/education/participatecolaborate/infrastructure-events-training/codejam-12/
Training course on Tools for Molecular Simulation of Neuronal Signaling Cascades	https://www.humanbrainproject.eu/en/education/molecular-simulation-tools/
Symposium: From Cortical Microcircuits to Consciousness	https://www.humanbrainproject.eu/en/education/participatecolaborate/infrastructure-events-training/corticon/
BRAINSIM 2022a - EBRAINS Brain Simulation School 2022 “EBRAINS Training on Collaboratory, Synaptic Plasticity and Learning”	https://www.humanbrainproject.eu/en/education/participatecolaborate/infrastructure-events-training/brainsim/
BRAINSIM 2022b - EBRAINS Brain Simulation School 2022 “Training on Single Neuron Models, Brain Circuit Models and Cognition”	https://www.humanbrainproject.eu/en/education/participatecolaborate/infrastructure-events-training/brainsim/
Training Event on ‘Computations in Consciousness and Perception’, as part of UvA Summer School	https://abc.uva.nl/about-abc/education/summer-school/summer-school.html
Young Researchers using EBRAINS for tomorrow's scientific challenges	https://www.humanbrainproject.eu/en/education-training-career/yr_workflows/
EBRAINS Training Event on Atlases and Simulation Services for the Austrian Neuroscience Association	https://flagship.kip.uni-heidelberg.de/jss/HBPm?m=showAgenda&meetingID=245
EBRAINS Training Sessions for early-career researchers as part of the 7th HBP Student Conference	https://www.humanbrainproject.eu/en/education-training-career/HBPSC2023/

Event	More information
Morning satellite training sessions of the HBP Summit 2023	https://summit2023.humanbrainproject.eu/satellite-events-day/
Afternoon satellite training sessions of the HBP Summit 2023	https://summit2023.humanbrainproject.eu/satellite-events-day/
EBRAINS Brain Simulation School 2023 Training on modelling neurons, circuits, and cognitive functions	https://www.humanbrainproject.eu/en/education-training-career/education-programme/training-events/brainsim23/

2.3.4 **EBRAINS Workshops**

EBRAINS Workshops aimed to introduce participants to the opportunities provided by the EBRAINS Research Infrastructure and educate them on the resources that are offered by EBRAINS. The larger multi-day events combined plenary sessions with hands-on interactive workshop modules in which participants learned how to utilise and benefit from EBRAINS tools and services.

Proposals for event support were received via an Open Call, and overall, 5 events were supported in SGA3 (see Table 5), with a total of 824 participants, averaging on 43% of women, 30 countries per event and an excellent post-event survey satisfaction rating of 4.43 on average (scale 1-5; very poor to excellent).

Table 10: EBRAINS Workshops during SGA3

Event	More information
EBRAINS Workshop at HBP Summit	https://www.humanbrainproject.eu/en/follow-hbp/news/2021/10/15/new-tools-neurosciences-human-brain-project-presents-key-advances-annual-summit/ https://www.humanbrainproject.eu/en/follow-hbp/news/2021/10/19/brain-inspired-technologies-and-open-infrastructure-brain-research-hbp-scientific-conference-closes-look-future/
EAN-EBRAINS Joint Workshop: The future of medical data sharing in clinical neurosciences	https://www.humanbrainproject.eu/en/education/ebrains-workshops/medicaldata/
EBRAINS Workshop: Brain Activity across Scales and Species: Analysis of experiments and simulations (BASSES)	https://www.humanbrainproject.eu/en/education/ebrains-workshops/basses/
HBP Partnering Projects Meeting: Status quo & outlook	https://www.humanbrainproject.eu/en/education-training-career/hbp-partnering-projects-meeting/
EBRAINS Workshop: Anatomy and function of the prefrontal cortex across species	https://www.humanbrainproject.eu/en/education-training-career/workshops/pfc/

2.3.5 **Young Researchers Events & HBP Student Conferences**

As mentioned, special attention was dedicated throughout the HBP to early-career researchers and to the next generation of scientists. Annual HBP Student Conferences on Interdisciplinary Brain Research, organised by early career researchers for early career researchers, aimed to encourage collaboration and scientific exchange across the fields of neuroscience, brain medicine and computer science, and allowed participants to present their own research. Young Researchers Events provided a setting for the EBRAINS Research Infrastructure to present the Project's tools and results to early career scientists and future users, including hands-on sessions. Overall, 3 HBP Student Conferences and 3 Young Researchers Events were organised in SGA3 (see Table 6), with a total of 1010 participants, averaging on 53% of women and 34 countries represented per event, and an excellent post-event survey satisfaction rating of 4.56 and 4.57 respectively (scale 1-5; very poor to excellent).

Table 11: Student Conferences and Young Researchers Events in SGA3

Event	More information
5th HBP Student Conference on Interdisciplinary Brain Research	https://www.humanbrainproject.eu/en/education/HBPSC2021/
6th HBP Student Conference on Interdisciplinary Brain Research	https://www.humanbrainproject.eu/en/education/HBPSC2022/
7th HBP Student Conference on Interdisciplinary Brain Research	https://www.humanbrainproject.eu/en/education-training-career/HBPSC2023/
Young Researchers Event 2021: EBRAINS for next-generation brain medicine	https://www.humanbrainproject.eu/en/education/YRE21/
Young Researchers Event Denmark: EBRAINS - a digital European Infrastructure for next-generation basic & clinical neuroscience	https://www.humanbrainproject.eu/en/education/participatecollaborate/young-researchers-events/yre22-denmark/
Young Researchers Event meets HIBALL: new digital tools to study the brain	https://www.humanbrainproject.eu/en/education-training-career/YRE2022-Croatia/

2.3.6 *HBP Tea & Slides webinar series for early-career researchers*

As a response to Covid-19 related restrictions, a new short format webinar series was introduced - HBP Tea & Slides. The [HBP Tea & Slides](#)¹⁰ series was a 30 minutes virtual coffee/tea break featuring talks by early career researcher in the HBP. Overall, 17 editions of a new Tea & Slides webinar series were organised, each with invited speakers from two distinct areas covering the broad spectrum of research disciplines contained in the project. In total, 565 attendees and 49 speakers participated in this event format, averaging on 47% of women, 15 different countries per event, and an excellent post-event survey satisfaction rating of 4.60 on average (scale 1-5; very poor to excellent).

2.4 Coordinating and managing collaborations: HBP Partnering Projects

One of the key goals of the HBP was to involve the scientific community in the co-development and usage of tools, software and services, in more generally to create an avenue for networking and collaboration. This is the reason why a specific Partnering mechanism was put in place.

The aim of the HBP Partnering mechanism was to allow already funded scientific projects to add new knowledge, competencies, ideas, and resources to the HBP and for the partners to benefit from the science and capabilities made available by the HBP. To ensure complementarity with the HBP scientific roadmap, Partnering Projects' (PPs') applications received were reviewed by HBP experts and then approved or rejected by the Science and Infrastructure Board (SIB) of the HBP, before signing Memorandum of Understanding with the coordinator of the HBP

Over the lifespan of the HBP, **76 PPs were formalized and involved 92 HBP Consortium Partners and 115 Associated Members** (namely partners that were not part of the HBP Consortium). In the course of SGA3, 39 PP were formalized (see Fig. 10 and Fig. 11).

¹⁰ <https://www.humanbrainproject.eu/en/education/HBPTeaAndSlides/>

Over the course of the SGA3, they proved to be key in developing a retention strategy, which aimed at consolidating the relationship between the PP members and EBRAINS and promoting the use of EBRAINS in the long run.

A campaign called “Meet the PPs” was launched. In the framework of this campaign, two surveys helped capture a clear picture of PPs’ needs and feedback with respect to EBRAINS RI’s offerings and future potential collaborations.

The answer to the survey question “What are your interests in EBRAINS?”, captured the general interest of PP Members toward the RI.

“a) Well supported and reliable Neuroinfrastructure that I can use in my own research b) the possibility to contribute to developing this infrastructure, c) networking opportunities, d) funding opportunities, e) channel to advertise own research, f) information channel about the relevant new results of others”.

The organization of a workshop in Spring 2022 (see more details in the next section) addressed the needs for more networking expressed in the survey.

2.4.2 Opportunities for Partnering Projects to present their research and discuss future post-HBP collaborations

During the internal day of the Summit 2021 was organized a session with the PP representatives called “Status and Evolution of the Partnering Environment », moderated by Dr. Francesca Irene Cavallo, representative of the High Level Support Team (HLST).

On 5 - 7 September 2022 in Nijmegen, the Netherlands, was held an [EBRAINS workshop entitled “HBP Partnering Projects Meeting: status quo and outlook¹²”](#) (see Fig. 12).

Hosted by the Prof. Paul Verschure, and co-organized with the HBP Outreach team, it gathered approximately 50 participants, including summer school attendees. The aim of the workshop was to provide PPs with an international pedestal to showcase their major achievements to the HBP Partnering environment and the wider scientific community.

An Opinion paper¹³ based on this event has been written and published in eNeuro.



Figure 12: Pictures of the Partnering Projects meeting in Nijmegen

During the final HBP Summit in Marseille, France, a session dedicated to the Partnering Projects and Voucher recipients was organized. The achievements of these programmes were presented, along with the outcomes and experience of two PPs and vouchers: AI-Mind and DOPAMAP.

PPs were also participating to a booth, presenting their research and discussing with the HBP community (see Fig. 13).

¹² <https://www.humanbrainproject.eu/en/education-training-career/hbp-partnering-projects-meeting/>

¹³ Human Brain Project Partnering Projects Meeting: Status Quo and Outlook, Lorents and al, eNeuro (in press)



Figure 13: From left to right, Dr. Kim, Prof. Haraldsen, PPs booth at the 2023 HBP Summit.

The work of the PP's was also featured in one of the most inspiring Brain Matters webinars "[Can digital twins and their synthetic data contribute to more responsible medical research](#)¹⁴?" which took place on 11 April 2023.

2.5 Innovation and exploitation

The partners of the HBP consortium encouraged to consolidate their innovation culture and engage in exploitation activities to develop their research towards tangible commercial and socio-economic impact. Practical support was provided to HBP partners to accelerate the transfer of HBP technologies to users' communities and promote industrial engagement processes. These challenges have been addressed through two different sets of activities.

2.5.1 *Exploitation of HBP service and tools*

Task T8.5 included transversal activities that aimed to accelerate the utilisation of HBP results - mainly hardware, software, services and databases.

2.5.2 *Support of HBP members on the design of exploitation plans*

Specific exploitation plans have been prepared (March 2021, September 2021 and May 2022) by research groups that were developing tools of interest for users within or outside HBP (researchers or industrial users, including hospitals). An exploitation plan for each exploitable technology has guaranteed that HBP researchers and developers could reflect about the actual possibilities of transferring such a technology development to the users' markets.

A total of 60 plans were comprehensively reviewed by the exploitation team and individual feedback was provided. In April 2023 the Innovation Team also designed an on-line questionnaire named "Final HBP results exploitation questionnaire" to collect information that helped to: a) draft the Innovation section of the final report, b) prepare the final review, c) allow HBP a good exploitation of project results and promote innovation, d) select the candidates to the Innovation Radar, and e) select the Key Exploitable Results (KER) of the project. You can see the questionnaire [here](#)¹⁵.

¹⁴ https://www.youtube.com/watch?v=PWWcO-gBGY&list=PLHyCyen_OSEPd8LnGHpuPFdfy1UhxuL8J&index=18

¹⁵ https://forms.office.com/Pages/ResponsePage.aspx?id=Xaj-aiPDcEK2naT70SfCVPIS_kD2X89ItbYzvcQJNhhUNzNIMVE5NlYwWkVEReHMklONTAzSkJOMS4u

2.5.3 *Competitive landscape scanning and analysis*

Researchers and developers' usually cannot devote enough resources to produce market analysis, i.e., analysis whose scope and level of detail goes beyond the abovementioned exploitation plans.

The support provided by the exploitation team intended to bridge this gap and provide researchers with a series of studies on the technology landscape, emerging initiatives, key actors, market insights and expected trends in each area of HBP work, thus enabling HBP members and teams to identify strategic opportunities more easily. [9 analysis reports](#)¹⁶ were delivered throughout SGA3, providing insights and roadmaps where HBP scientists and developers could define pathways to market for their research and products.

2.5.4 *Matching HBP mature results with market needs*

The exploitation of HBP results meant that HBP available and mature (with high TRL) technologies were practically matched with the specific needs of the scientific and industrial communities. HBP researchers engaged with potential users thought various activities set up by the exploitation team aiming at defining users' needs and facilitating technology transfer processes:

- Creation and update of a network of innovation contacts (usually WP managers) across the different HBP WPs and research groups. Their role included to help to identify researchers and developers that are working in potentially exploitable technologies, and function as contact persons for any innovation matters within the WP, e.g., reporting, distribution of information, etc.
- Continuous assessment of the maturity level of the HBP results (TRL) to facilitate the evolution of proofs of concept into industrial prototypes and operational final products. Many groups used in practice the [HBP TRL Assessment Guide](#)¹⁷ (for hardware, software, services, models and datasets). Specific training on TRL has been regularly delivered throughout SGA3.
- Follow-up and record of HBP patent applications and grants, software licenses and other IPR protection initiatives initiated by the different WPs or research groups. For each patent we have identified the patent details, (status, dates, number & issuing authority location), subject matter, PI responsible, PI's parent institution, relationship of patent to HBP: SP/WP, work area.
- Creation of a catalogue to allow researchers to publish their more clearly exploitable HBP technologies.
- Identification of EBRAINS potential users from the market analysis of technologies and roadmaps studies.
- Identify and monitor, in collaboration with the research groups, the developing technologies that need to be included in the Innovation Radar instrument of the EC.
- Collaboration in the design of the voucher programme and the evaluation of the innovation potential of the voucher proposals to guarantee that co-design and industrial involvement are present in HBP and address effectively the opportunities for exploitation.
- Support to HBP researchers and developers in dealing with IP aspects, in collaboration with specialised external IP agencies and the HBP legal team.
- Analysis of the compatibility of technology transfer and exploitation initiatives with the rationales of HBP responsible research and innovation. Cooperation with WP9 aimed to identify and assess dual use and ethical implications of the HBP technologies exploitation.

¹⁶ <https://www.humanbrainproject.eu/en/collaborate-hbp/innovation-industry/market-analysis-and-technology-roadmaps/>

¹⁷ <https://www.humanbrainproject.eu/en/collaborate-hbp/innovation-industry/technology-readiness-level/>

2.5.5 Matching start-up initiatives with funding actors and investors

To accelerate the market uptake of HBP developments, the HBP Exploitation team also established linkages between HBP entrepreneurs and capital investors. A two-day Fundraising Bootcamp for start-ups (E6112) took place in May 2023 in Brussels. The event gathered nine HBP entrepreneurs and six recognized international business angels and venture capital institutions from Europe and USA. The European Innovation Council (EIC) also contributed to the bootcamp.

During the first day, representatives of the HBP Exploitation team presented the achievements and technology transferring challenges of HBP over the last years. The invited investors, Asabys Partners, NLC The European Healthtech Venture Builder, Angels Santé, ECS Capital Partners, Machine Ventures, and Broadreach Global, provided the participants with mentoring and practical advice on initiating a business in the brain technology sector.

Each HBP entrepreneur made a pitch about their technology solutions: Light-sheet microscopy 'Clepio Biotech', Neuromorphic computing mechanism for low-energy edge/ IoT applications, Neuroscientific simulation tool & inspection of AI spiking neural networks, the Collaborative Brain Wave Analysis Pipeline, the Medical Informatics Platform, and the Cutting-edge platform for early identification of new drug candidates. Three already established HBP start-ups, "Phosphoenix" on a prosthesis for blindness, "Intrinsic Powers" on the tracking & recovering of consciousness in clinical practice, and the "VB-Tech" on the Virtual Epileptic Patient, presented their business setting-up experience and strategic plans.

2.5.6 Raising awareness on Innovation and exploitation

To raise researchers' awareness on the importance of exploiting their results the Exploitation team has designed two different lines of action: a training plan that provides researchers and developers with the minimum but necessary capacity-building in the areas of technology transfer and exploitation, and a set of communication and innovation outreach activities that aimed to disseminate innovation news, best practices, and exploitation-related highlights.

2.5.7 Training and capacity building

Focused on brain-based translational research, this activity has highlighted the general principles on the exploitation of products and services developed in HBP. Beneficiaries of the training plan have been researchers and managers of HBP partners involved in current or planned exploitation activities, and PhD and MSc students in translational brain research programmes and technology management or equivalent studies supported by HBP partners. Around 160 persons have attended these specialised courses. The following is a list of topics addressed on these training sessions:

- Innovation fundraising
- Innovation management course
- Exploitation plans elaboration
- TRL Assessment guidelines
- Key factors to successful exploitation of research results and technology transfer
- Broadening Horizons with Brain Market Analyses

2.5.8 *Communication and innovation outreach*

2.5.8.1 Innovation awards

The Innovation team designed the HBP Innovation Awards to recognize some project researchers in their role of “innovators”. The awards have given internal and external visibility to their efforts towards the exploitation of their research results.

Although winners did not receive a cash reward, this bi-monthly prize has given innovators the opportunity a) to get a printed diploma and 3D object with the title of the innovation and name and affiliation of the winner, b) include a description of the technology in the Innovation Newsletter, c) record an interview where the winner explained the motivation and interest in pursuing the innovation activities, d) inform the European Commission, via the project officer, about the prize and to include it as relevant in the reporting procedures of innovation in HBP, and e) participate in one special session of the HBP Summit where all prized innovators will receive public recognition, with the participation of the HBP CEO, SIB Chair and the EC.

The first Innovation Award was granted to Viktor Jirsa and the Virtual Epileptic Patient (VEP) team of the University of Marseille. The second Innovation Award was granted to Marcello Massimini and the PCI team from the University of Milan and the Coma Science Group of the University of Liège for their work on the Perturbational Complexity Index (PCI). The third Innovation award was delivered to “A brain prosthesis for the blind” - Pieter Roelfsema- Netherlands Institute for Neuroscience (NIN). The fourth Innovation award was for the Medical Informatics Platform led by Philippe Ryvlin, Yannis Ioannidis and managed by the MIP team.

2.5.8.2 Engagement to neurotechnology start-ups and SMEs

Strong engagement with the industry has taken place throughout SGA3. Task T8.6 developed activities aiming at involving industrial actors in the co-development and/or utilisation of EBRAINS tools and services. This consisted in the engagement with innovative start-ups and SMEs in different European countries to align new industrial and clinical/medical interests towards HBP technology developments and EBRAINS services.

A report ¹⁸on the role of neurotech-based start-ups, with around 250 European firms identified, was used as a database for the design and implementation of “Solution workshops”. These workshops aimed at creating engagement between identified start-ups and HBP researchers, to explore together opportunities for cooperation. This is the list of all the solution workshops organized during SGA3:

1. Neuroimaging: 30/6/2021

Participating start-ups (4): Pixyl, Qubiotech, Mag4Health and Ti-com

EBRAINS services presented: EBRAINS registering, HLST, EBRAINS Data services, QUINT, Knowledge Graph, EBRAINS Modelling & Simulation, Medical Informatics Platform, HBP Atlas.

2. Neurostimulation technologies: 1/12/2021

Participating start-ups (6): NEUROELECTRICS, NEUREK, OPTOCEUTICS, NEUROSOFT BIOELECTRONICS, SZELESTIM, ATLAS NEURO ENGINEERING

EBRAINS services presented: EBRAINS registering process, Supporting team, EBRAINS Data services, QUINT, Knowledge Graph, HBP Atlas, EBRAINS Modelling & Simulation tools, Virtual Epileptic Patient (VEP), MIP, Data analysis for electrophysiology using Elephant.

3. Genetics & Biomarkers: 20/7/2022

¹⁸ https://sos-ch-dk-2.exo.io/public-website-production-2022/filer_public/e6/1d/e61da67e-6889-4838-9a09-1e9630eca1eb/hbp_report_start_ups.pdf

Participating start-ups (6): Admit Therapeutics, NeoNeuro, Medexprim, Tetraneuron, Stalicia, Gather Foundation

EBRAINS services presented: Data and Knowledge and Atlases services, TVB, Health Data Cloud & Virtual Brain Cloud, Synaptic Proteome Database, EBRAINS registering process, Supporting team.

4. Neuropharma: 12/4/2022

Participating start-ups (4): Samos Medical, Micar Innovation (Micar21), TargTex, Anaxomics Biotech

EBRAINS services presented: PIPSA (Protein Interaction Property Similarity Analysis), TauRamd, SDA (Simulation of Diffusional Association), EBRAINS Data services, QUINT, Knowledge Graph, Synaptic Proteome Database, Structure Systems Biology toolkit, CGMD (Coarse-grained molecular dynamics), GRALL (Glycine Receptor Allosteric Ligand Library), Model CNS (Central Nervous System), BioExcel, EBRAINS registering process, Supporting team.

5. Neurorobotics: 30/11/2022

Participating start-ups (5): Neuron, Gogo, MedROBOTS, Bioretics, Braingrade

EBRAINS services presented: The Neurorobotics Platform (NRP), VEP on NRP. Neuro-Robin, Animus, registering process, Supporting team.

Other industrial engagement national initiatives included meetings with stakeholders in Spain (50 organisations including companies, associations, and biomedical institutions), Belgium (7 companies) and France (9 companies).

3. EBRAINS as a major player in the brain research community

Over the last 3 years, and as stipulated in SGA3, the Work Package 8 team, in addition to the HBP-related work described above, intensified its communication efforts to build the awareness and reputation of the Research Infrastructure and ensure its central position in the brain research network. This has resulted in EBRAINS being recognized as a major player in the brain research network.

3.1 Laying the foundation

3.1.1 A first manifesto “Discover EBRAINS”

In 2021, in collaboration with scientists, Work Package 8 (task 8.3) developed and wrote a 20-page brochure, entitled “[Discover EBRAINS](#)”¹⁶ (see Fig. 14) aiming at explaining in simple language what EBRAINS was about what its ambition was and how its roadmap would be.

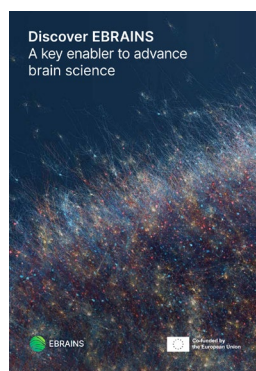


Figure 14: cover of the “Discover EBRAINS” manifesto

The document got good reviews not only from the HBP project teams but also from external audiences. It also proved to be a very useful piece to use with “new”, non-HBP stakeholders to

introduce EBRAINS. It was for instance sent for information to the many European research institutions which became strong ESFRI supporters of EBRAINS.

3.1.2 A clear visual identity

While EBRAINS is closely linked to the HBP, it soon appeared necessary to further develop the RI's own identity while keeping the ties with the HBP.

While a first logo had been developed at the creation of EBRAINS in 2019, it needed to be optimized especially to guarantee legibility on online and print media. Also, at the beginning of SGA3 there was little homogeneity in the way the logo was used and templates were not harmonized, weakening the brand definition of EBRAINS. There was also a clear request from the community to get clearer guidelines.

To remedy the situation a refreshed logo was developed together with specific templates and a visual brand book (2021) (see Fig. 15).



Figure 15: Extract from EBRAINS visual brand book

3.1.3 Introduction of EBRAINS to the European press

EBRAINS being meant to play an important role in Europe, and having a significant impact on the European research landscape, two main EU-media events were organized featuring EBRAINS, discussing the need for innovation in brain research and the role EBRAINS aimed to play.

The first one 19 “European research and innovation beyond 2020” was held on 1st December 2020 in collaboration with Politico (see Fig. 16). It gathered a high-level panel, composed of Jean-Eric Paquet, Nathalie Conrad, Marc Oliver Gewaltig, and Pascal Lamy. The event was introduced by EBRAINS CEO Pawel Swieboda, and moderated by a Politico journalist and attracted more than 2000 participants (Due to COVID, the event was held online)

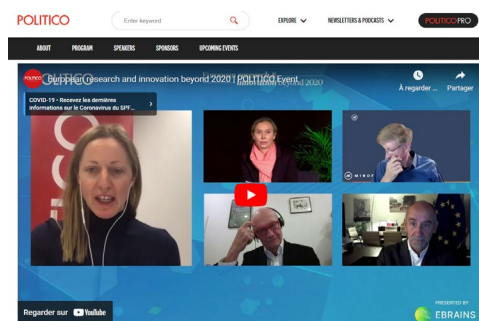


Figure 16: Screen shot of the event organised in collaboration with Politico

¹⁹ <https://www.politico.eu/event/european-research-and-innovation-beyond-2020/>

The second one “Brain health, the next challenge of the 21st century” was organized on 29 April 2021 with the Brussels Times. HBP/EBRAINS scientists Gitte Knudsen and Pieter Roelfsema, as well as and took part in a panel discussing brain research and the need for platforms such as EBRAINS and was moderated by a journalist. The event gathered more than 400 participants.

3.1.4 Getting onto the ESFRI 2021 roadmap

Getting EBRAINS onto the ESFRI 2021 roadmap was a major milestone in the evolution of the Research Infrastructure. Work Package 8 teams worked closely with the EBRAINS CEO, the HBP Scientific Director, EBRAINS Chief IT Officer, HBP T6.12 and several scientists to develop and prepare the ESFRI presentation and messages. Contacts with European universities were also established by EBRAINS management team, which led to gathering ESFRI support for EBRAINS from more than 120 university or research institutions across Europe.

3.2 Building visibility and awareness

With the basics in place, major efforts were led to increase EBRAINS’ visibility in the brain research landscape and among the broader scientific community.

3.2.1 Press outreach to cover the organisational growth and major milestones of EBRAINS

Media relations activities contributed to have the new EBRAINS infrastructure gain name recognition and a public profile. Led by Task 8.7, the team helped raise brand awareness, and name recognition, highlight its impact and potential, and the successful research output already generated by the HBP researchers using the RI.

Special emphasis on EBRAINS started with the ESFRI bid and subsequent inclusion in the ESFRI roadmap, position papers and more. New EBRAINS memberships and involvement in projects were also announced in high frequency. Joint announcements and press releases with the new local EBRAINS association members were coordinated in fast succession. The increase in frequency and member collaboration led to coverage on a more regular basis.

3.2.2 A strong social media presence

Launched in 2020 EBRAINS LinkedIn and Twitter accounts were actively developed to promote EBRAINS services and added value. Specific marketing campaigns were run to highlight the value of key services for researchers. As an illustration, the campaign that was run for the data services led to a significant increase in curation requests by EBRAINS users (see fig. 17).

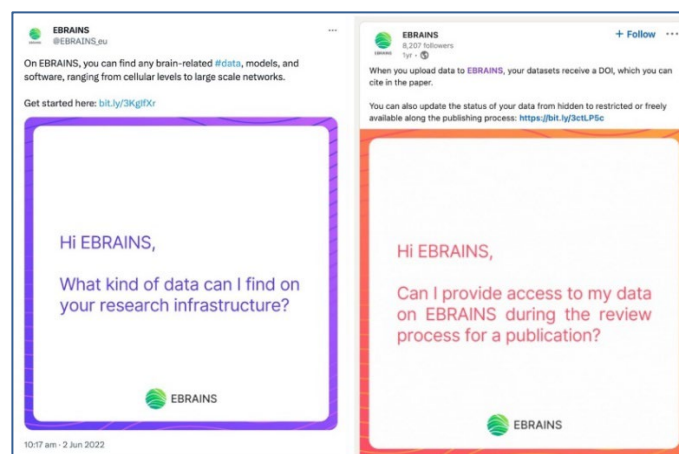


Figure 17: Social media posts developed for the promotion of EBRAINS data services

In terms of presence and visibility, EBRAINS social accounts, while still quite recent, compare very positively vs. other RIs', even the ones that have been active for several years (see Fig 18).

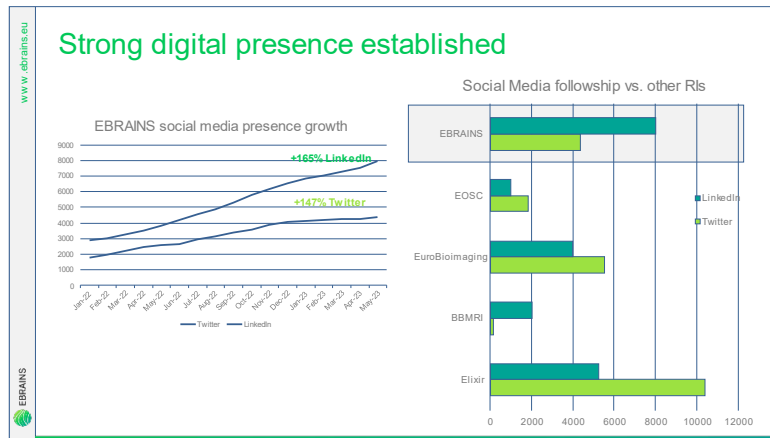


Figure 18: overview of the EBRAINS digital presence

Table 12: EBRAINS website statistics

EBRAINS	PR1	PR2
Avg. monthly users	2,666	5,358
Avg. monthly page views	11,353	12,340

There was an increase in page views on the EBRAINS website, albeit a small one. This could suggest that users are finding the content they want faster (i.e. the new website is easier to navigate) and don't need to visit several pages to find what they need.

3.2.3 Outreach to new collaboration partners and presentation of EBRAINS at more than 60 events

To promote EBRAINS' added value, Work Package 8 proactively looked for speaking opportunities at influential brain-related conferences, events, and meetings.

With the active participation of EBRAINS Management Board members, leading scientists and the Work Package 8 team, EBRAINS was (re)presented at more than **60 events** during SGA3, thereby spreading the word about the added value of the Research Infrastructure in brain science. Next to the most obvious conferences, like FENS, INCF, SfN, or IBRO, or the European Brain Council, EBRAINS also reached out to patient associations (Alzheimer EU, EFNA, Gamian, the Duchenne Data Foundation, International Epilepsy Foundation, ...) and participated in several of their meetings and workshops. In 2021-2022, a targeted "roadshow" was also conducted for EBRAINS to present the RI to **10 national neuroscience associations** in Europe.

Building on the relationship established with FLAG-ERA (national funding opportunities linked to Flagship projects) during the HBP, EBRAINS developed the relationship further to include the RI in the FLAG-ERA program. A special call on "data re-use" was launched in February 2023, encouraging applicants to use EBRAINS data services in their project application.

Next to that, a strong working relationship has been developed with the European Academy of Neurology (ENA) which invited EBRAINS to speak at their annual conference in 2022 and 2023, gathering more than 10 000 participants. EBRAINS' presence was also reinforced at conferences relating to Ethics, RRI, FAIR data, neurotechnology and brain modelling, and the involvement of the RI in the major European Health Data Space 2 Pilot Project ([HealthData@EU Pilot](https://ehds2pilot.eu/)²⁰) gives EBRAINS a voice at the table of this extremely important effort.

²⁰ <https://ehds2pilot.eu/>

3.2.4 EBRAINS with a strong footprint in the RI landscape

Stakeholder management and communication efforts led by Work Package 8 and EBRAINS management team also focused on establishing contacts and collaboration opportunities with other RIs.

EBRAINS takes an active part in the ESFRI community and regularly participates to ESFRI forum meetings. It engaged in the consultation on the Impact Assessment of Research Infrastructures, organised by the European Strategy Forum on Research Infrastructures (ESFRI). Other EBRAINS contributions to ESFRI have included providing answers to comprehensive questionnaires and active participation in the ESFRI Stakeholders Forum, where perspectives on issues such as RI funding and impact were provided. EBRAINS organised a dedicated side event at the International Conference on Research Infrastructures (ICRI) in 2022, showcasing its impact and influence in brain science, and highlighting the ways in which EBRAINS supports the ongoing development of brain science. During ICRI, EBRAINS also took part in a side event hosted by EIRENE, a newly established ESFRI infrastructure that addresses the challenges associated with human exposome studies.

EBRAINS has also engaged with the EATRIS research infrastructure at local French events, including the "Translational Neuroscience Day" co-organized by NeurATRIS and Celphedia.

EBRAINS has also become a member of the European Open Science Cloud (EOSC) Association and is helping to shape the future of the European Open Science Cloud, guiding its implementation strategy, contributing to advisory groups, participating in general assembly meetings, and engaging in critical policy dialogues. EBRAINS participated in the EOSC working group, alongside representatives of other RIs, including Euro-Biolmaging, CESSDA ERIC, LifeWatch ERIC, CLARIN ERIC, OPERAS, EATRIS-ERIC, BBMRI-ERIC, ESRF, EMBL, ELIXIR Hub, Instruct ERIC, ELI ERIC, ESS, CERN and FAIR.

EBRAINS has a significant collaboration with Euro-Biolmaging, a European Research Infrastructure that provides essential imaging services to neuroscientists. Exploratory workshops like the EBRAINS-Euro-Biolmaging workshop in May 2023²¹ were organized to demonstrate the complementary services offered by both RIs, address key topics like FAIR data principles, and identify potential areas of collaboration.

EBRAINS is an active participant in the INTEGRATE-LMedC project. This initiative aims to enhance the management, integration and sustainability of large medical cohort studies, identifying necessary new developments and integrating existing pan-European and national capacities. The INTEGRATE-LMedC consortium, including EBRAINS, BBMRI-ERIC, the European Clinical Research Infrastructure Network (ECRIN), and Norges Teknisk-Naturvitenskapelige Universitet (NTNU), amongst others, was formed in response to the increasing availability of health-related data and the need to optimise the European research infrastructure landscape. By actively involving or collaborating with EU RIs, projects and scientific societies such as BBMRI-ERIC, ECRIN, ESBB, EFLM, EIRENE, EBRAINS, and SYNCHROS, the INTEGRATE-LMedC project aims to reduce fragmentation and ensure coordination of efforts and alignment of priorities among Member States and Associated Countries.

3.2.5 EBRAINS as an advocate for brain research on the international scene

Advocating for brain research was another key area of focus for the management of the RI and Work Package 8 teams during SGA3. A proactive approach allowed EBRAINS to be speaking about the RI's added value at high-level international conferences, such as the World Health Summit, the World Health Organization Conference, or EU Research and Innovation meetings. EBRAINS has also strongly supported global and European initiatives launched in mental health.

²¹ <https://www.ebrains.eu/news-and-events/ebrains-euro-bioimaging-workshop>

EBRAINS' contribution in the EBRA (European Brain Research Area) project was also a determining element in ensuring EBRAINS' participation in the Brain Partnership project whose goal is to make brain research a priority on the European agenda and to lay the foundation for a major brain research collaborative initiative in the next European program.

EBRAINS worked with the Organisation for Economic Cooperation and Development (OECD) to organise two workshops on key brain health-related topics. These workshops brought together scientists from diverse disciplines and allowed valuable discussions on future areas of collaboration to help address the social challenges that neurodegenerative diseases pose for an ageing population.

3.3 Training of users

As mentioned above, Task 8.2 coordinated a program specifically dedicated to the organisation of EBRAINS sessions. The goal of these sessions was to provide new users with the opportunity to get familiar with the tools and services EBRAINS offers and to put them in practice through hands-on sessions (see section 2.3.3).

3.4 A user-centric approach

With one of its missions being to enhance brain science, EBRAINS' success will be measured by the number of researchers using the tools and services it offers and by the scientific breakthroughs that the platform will enable. For this, closer and more targeted communication with the users is essential. To enhance user experience, the EBRAINS website was radically transformed: from a previous "descriptive" website, users can now enter the EBRAINS platform through a user-oriented portal giving them easy access to the various tools and services and to the necessary resources and tutorials. Every EBRAINS service is one click away. The portal was launched in May 2023 and has been receiving positive feedback. Using flexible technology, it will continue to develop, in close cooperation with the service providers, to constantly adapt to the evolution of the RI and to the user needs.

3.5 Result and impact: a dynamic community expanding beyond the HBP

Enhanced EBRAINS' visibility and reputation contributed to having EBRAINS being contacted by major institutions to join their Horizon Europe calls consortia. This resulted in the involvement of EBRAINS and its services in 9 [EU-funded projects](#)²² and the coordination of 2 Projects (see Table 7 and 8). EBRAINS' contribution in the EBRA (European Brain Research Area) project was also a determining element in ensuring EBRAINS' participation in the Brain Partnership project whose goal is to make brain research a priority on the European agenda and to lay the foundation for a major brain research collaborative initiative in the next European program.

Table 13: Active projects in August 2023 where EBRAINS is coordinator

Name of the project	Call reference
EBRAINS PREP	INFRA2021-DEV-02-01
Virtual Brain Twin	HORIZON-HLTH-2023-TOOL-05-03

²² <https://www.ebrains.eu/focus-areas>

Table 14: Active projects in August 2023 where EBRAINS is partner

Name of the project	Call reference
PHRASE	EIC-2021-TRANSITION
eBRAINS Health	INFRA2021-TECH
EHDS2 Pilot (HealthData@EU Pilot)	EU4H-2021-PJ-06
AISN	HLTH-2021-DISEASE-04-04
TEF-HEALTH	DIGITAL-2022-CLOUD-AI-02-TEF-HEALTH
GreenDIGIT	HORIZON-INFRA-2023-TECH-01
TAME 2	HORIZON-MSCA-DN-2023
INTEGRATE-LMedC	HORIZON-INFRA-2023-DEV-01
CSA on Brain Health	HORIZON-HLTH-2023-DISEASE-03-06

Communication efforts to increase EBRAINS' visibility and reputation have also led to attracting many new non-HBP members to EBRAINS. **44 new associate members** have joined the EBRAINS' ranks in SGA3, bringing diversity of thoughts and approaches and new ideas and enthusiasm.

In January 2023 a first EBRAINS meeting was organised with about 70 participants representing the new EBRAINS constituency. Interactive discussion sessions allowed participants to exchange thoughts on topics as essential as the strengths, vulnerabilities, challenges and opportunities for EBRAINS moving forward. The meeting was key in having people meet - many for the first time - and get to know each other better. It highlighted the need for enhanced sharing to leverage collaboration opportunities, but above all it showed a genuine willingness for participants to work together towards the success of EBRAINS.

3. Looking Forward

The accomplishments achieved by the WP8 teams during SGA3 have significantly contributed to the establishment of a robust community and ecosystem centred around EBRAINS, as ESFRI research infrastructure. The attainment of this outcome can be directly attributed to the assiduous efforts exerted by each participating team.

Consequently, the groundwork has been laid for the forthcoming phases of consolidation of the research infrastructure. This endeavour must uphold its commitment to inclusiveness, integration within the broader brain community, and its ambitious pursuit of assuming a pivotal role in the realm of brain science and brain health.

The engagement of EBRAINS within the consortium of the CSA for Brain Health (HORIZON-HLTH-2023-DISEASE-03-06) stands as a testament to the multitude of pathways and prospects through which the Research Infrastructure is poised to make a profound impact in the times ahead.