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IO 2: Comparison of functionality of relevant online collaboration and elearning tools

VI-TRAIN-Crafts - Virtuell TRAINing for traditional Crafts

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1 Publishable executive summary

Cultural Heritage (CH) is in the focus of the European Union as motor for employment, economic drive and development. In order to guarantee longevity & usability of European Heritage it is inevitable to keep up with the requirements of society like new technology and digitisation.

The Covid19 crisis added some urgency to the issue as training organisations strongly suffer from restrictions and new rules, which are threatening traditional education and training activities. Especially in regards to hands-on-training, where instructors need to get really close to learners in order to teach practical skills.

The consortium of VI-TRAIN-Crafts takes on the challenge of developing innovative training for traditional/threatened crafts and handling of building damages, which will boost the digitisation of training in (built) Cultural Heritage. A big focus is given to crafts that are almost nowhere trained any more. Lots of those crafts do need a lot of experience and guidance by experienced craftspeople. This training in particular will be boosted by various digitisation support.

The anticipated objectives of VI-TRAIN-Crafts are:

- to identify appropriate means of distance learning for the training of craftspeople (manual work),
- to identify appropriate means of online cooperation in training, regarding functionality, GDPR and data security
- to derive success criteria for highly accepted digital solutions
- to develop and test a virtual/3D-crafts training system by using sensors and VR/AR
- to develop and test a virtual/3D-buidling damage identification training system
- to investigate and test options overcoming restrictions, e.g. move sickness,
- to develop a train-the-trainer system for application of selected tools in training of traditional crafts

Participants of the courses developed in VI-TRAIN-Crafts can obtain a European certificate by undergoing a certification process provided by ECQA (www.ecqa.org), which is an internationally active organisation specialised in certification of skills and competences.

VI-TRAIN-Crafts nicely enriches the offer of The European Heritage Academy (EHA), which will be in charge of delivering VI-TRAIN-Crafts training courses after completion of the project. EHA is situated at Charterhouse Mauerbach, the future EU Competence and Community Centre for Architectural Conservation, being set up during INCREAS, a Pilot project for Cultural and Creative Industries, Finance, Learning, Innovation and Patenting for Cultural and Creative Industries (FLIP for CCI-2).



2 Relevant Definitions

To understand the following assessments definitions are required.

2.1 Video Conferencing

“*Video conferencing* is a form of ... meeting where multiple (two or more) people engage in a live audio-visual connection over the internet (online) without having to be present in the same location. It allows for remote audio-visual connections between parties.”¹

Key Points

- Video conferencing is a technology that allows users in different locations to hold real-time face-to-face meetings, ...
- The stability and quality of the video conference may fluctuate with the speed and reliability of the data connection.
- There are a variety of ways video conferencing can be conducted—such as using smartphones, tablets, or via desktop computers.

Usually, the assumption is that it can be done “... often at little to no cost”. Considering data protection rules and functionality (e.g. available features) it is not that cheap. For professional purposes, it is mainly always required to use a bigger license or package.

2.2 Online Chat

“*Online chat* may refer to any kind of communication over the Internet that offers a real-time transmission of text messages from sender to receiver. Chat messages are generally short in order to enable other participants to respond quickly. Thereby, a feeling similar to a spoken conversation is created, which distinguishes chatting from other text-based online communication forms such as Internet forums and email. Online chat may address point-to-point communications as well as multicast communications from one sender to many receivers and voice and video chat or may be (also) a feature of a web conferencing service.”²

For professional purposes, the benefit of a separate chat tool is limited because it creates a new channel with needs to be integrated in the file-based project work. As an tool to intensify the internal communication chat tools may have an additional benefit.

¹ <https://www.founderjar.com/what-is-video-conferencing/>

² https://en.wikipedia.org/wiki/Online_chat



2.3 Documents & File sharing

“*File sharing* is the public or private sharing of computer data or space in a network with various levels of access privilege. While files can easily be shared outside a network (for example, simply by handing or mailing someone your file on a diskette), the term file sharing almost always means sharing files in a network, even if in a small local area network. File sharing allows a number of people to use the same file or file by some combination of being able to read or view it, write to or modify it, copy it, or print it. Typically, a file sharing system has one or more administrators. Users may all have the same or may have different levels of access privilege.”³

Document & File Sharing is a feature got increased attention over the last years due to the intensified collaboration in projects and business. There are different systems available for temporary and regular use. The consortium already decided for a cloud system which is hosted in Europe (for data protection issues).

2.4 Online Project Management

“Basically, *digital project management* is no different from classic project management. In both cases, projects are to be kept in mind in order to carry out individual processes on time. In addition, active communication between the project participants and the digital project manager is important. Project implementers such as agencies thus have the opportunity to carry out their work as usual.

Large projects in particular, where mistakes have a particularly serious effect, depend on good structuring. This is not only about the distribution of tasks, but also about clear communication between the team members.”⁴

Online tools to support project management will be used more in the future. However, currently it is difficult to convince project partner to use online Project Management Tools.

³ <https://www.techtarget.com/searchmobilecomputing/definition/file-sharing>

⁴ Taken from <https://www.factro.de/blog/digitales-projektmanagement/> and translated



2.5 Other Online Collaboration Purposes

There are also other purposes for online collaboration, like online survey and online team collaboration tools.

Online (or internet) survey:

Online survey is understood as data-collection by using web spaces or apps, where a set of survey questions is sent out to a target sample and the members of this sample can respond to the questions over the world wide web. Respondents receive online surveys via various mediums such as email, embedded over website, social media etc.

Virtual whiteboards:

is understood as a learning space where both trainers and learners can write and interact with learners in real time via the internet.



3 Assessment of relevant tools

3.1 Assessment criteria

All tools are assessed against the following criteria:

- **Data protection**
The EU data protection rules require data storage in the EU or in countries which apply the same rules. The use of data is restricted, this includes the collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction of personal data. Therefore, if the data storage happens outside of the EU and/or the terms of use do not exclude the use, change and especially valorisation of data belonging to the project partners, these tools are legally not to use.
- **Usability**
Usability is defined as a measure of how well a specific user in a specific context can use a product/design to achieve a defined goal effectively, efficiently and satisfactorily. It includes the ability to learn and master.
- **User-Friendliness**
User-Friendliness means that a system or tool is easy to learn how to use and to use.

3.2 Video Conferencing tools

3.2.1 Zoom

Zoom maintains the right to share your data with third parties for business purposes and will do it. Data storage will happen in the US⁵.

Pros	Cons
<ul style="list-style-type: none"> • Good call quality • Easy to use • Rich in features (e.g.: background change) • Waiting rooms for your videos: Waiting rooms make it easy to control your meetings. Hosts and co-hosts can add and remove participants and adjust their level of control. • Strong protection in the classes of Video Conference Security and Data Traffic Protection • Highest functionality in the test • Straightforward planning of meetings with calendar integration • User friendly interface with good participant presentation • Basic functions for online collaboration 	<ul style="list-style-type: none"> • Not the cheapest option • Identity Protection still capable of development according to test • Time limitation for 3 or more participants of 40 mins (free version) • Attendance via fixed-line phone subject to costs

⁵ <https://explore.zoom.us/en/terms/>



3.2.2 GoToMeeting

GoToMeeting offers as applicable law the law of Ireland, which makes also the EU data protection rules valid. They will not share your data with third parties for business purposes, only if need to operate the service.⁶

Pros	Cons
<ul style="list-style-type: none"> • Up to 3,000 call participants • High-quality video • Option to call in via phone • Best protection in the classes of Data Traffic and Identity in test • Professional focus • Well layed-out user interface • Separate windows for participants and shared contents supported • Technically mature meeting setup • Handover of mouse / keyboard control • Recording of chats and meetings 	<ul style="list-style-type: none"> • Expensive • Need an account to make a call • Authentication/Access Control should be improved • Desktop application only available in paid versions • Simple chat without file transfers

3.2.3 Skype

For Skype the applicable law depends on the country the user is located. This makes the EU data protection rules valid if the user is located here. Microsoft will use the content, for example, to make copies of, retain, transmit, reformat, display, and distribute via communication tools your Content on the Services.⁷

Pros	Cons
<ul style="list-style-type: none"> • Strong protection of the video conferences in the security tests • Widely spread • Available on many platforms • Free video chats with up to 50 participants and no time limit • Many extras such as surveys, live subtitles, photo creation • Recording function for meetings • Comprehensive online help • Integrated VoIP service 	<ul style="list-style-type: none"> • Source code protection capable of development • Somewhat confusing user interface • (Decent) ad inserts

⁶ <https://www.goto.com/company/legal/terms-and-conditions>

⁷ <https://www.microsoft.com/en-gb/servicesagreement/>



3.2.4 Microsoft Teams

For MS Teams the applicable law depends on the country the user is located. This makes the EU data protection rules valid if the user is located here. Microsoft will use the content, for example, to make copies of, retain, transmit, reformat, display, and distribute via communication tools your Content on the Services.⁸

Pros	Cons
<ul style="list-style-type: none"> • Integration of apps and Office 365 products • Free • High number of participants • Advanced features, such as background replacement • Comes bundled with other Microsoft apps • Excellent value for its low cost 	<ul style="list-style-type: none"> • Must create an account to make a call • No recording of meetings and no phone dial-in in free package

3.2.5 Cisco Webex

For Webex the applicable law is the law of the United States. This makes the EU data protection rules not valid if the user is located here. Cisco will not claim any ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to Webex service.⁹

Pros	Cons
<ul style="list-style-type: none"> • Strong source code protection • Professional focus • Ideal planning of meetings with good calendar integration • Additional settings via web access • Good features including comment/markup functions • Recording of meetings • Participation via phone with domestic dial-in number 	<ul style="list-style-type: none"> • Room for optimisations regarding data protection • Limitation to 50 minutes • Simple chat without file transfer • Guest registration only via e-mail

3.2.6 Whereby

Norwegian law is applicable for any dispute regarding these terms of use. This makes the EU data protection rules not directly valid if the user is located here. But the legal conditions are similar (Norway is one of the countries which applies same or very similar rules. Whereby will not claim any ownership rights but remain the right to share with users' consent.¹⁰

Pros	Cons
<ul style="list-style-type: none"> • Easy to use • No login required • Mores security through Locked Rooms 	<ul style="list-style-type: none"> • Limited number of call participants (free version: max. 4) • Paid plans don't offer value

⁸ <https://www.microsoft.com/en-gb/servicesagreement/>

⁹ <https://www.cisco.com/c/en/us/about/legal/terms-conditions.html>

¹⁰ <https://whereby.com/information/tos/>



3.2.7 Conclusions Video Conferencing tools

Criteria	Zoom	GoToMeeting	Skype	MS Teams	Webex	Whereby
Data protection	-	+	+	+	-	0
Usability	+	+	-	0	-	-
User-Friendliness	+	+	-	+	-	0
Use recommended	No	Yes	Yes	Yes	No	Depend on contract rules

Zoom is definitely the tool which is used most all over the world. Its key advantage for training purposes is the feature to create break-out rooms. Therefore, it will be still used even it is not aligned with European Data Protection rules.

3.3 Chat tools

3.3.1 Slack

For Slack the applicable law is the law of the Republic Ireland. This makes the EU data protection rules valid if the user is located in the EU. Slack will not claim any ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹¹

Pros	Cons
<ul style="list-style-type: none"> • Plenty of third-party apps • Great free plan • Feature-rich • Management- and video conference tool in one • Developer tools: Building custom tools is simple with Slack. You can build a bot to automate tasks and use the Slack API. 	<ul style="list-style-type: none"> • Paid plans are more expensive than the competition

¹¹ <https://slack.com/intl/en-gb/terms-of-service>



3.3.2 Twist

For Twist the applicable law is the law of the United States. This makes the EU data protection rules valid if the user is located here. Twist will claim ownership rights for all uploaded materials. Additionally, they cooperate with MS Azure, Amazon Web Services, Zendesk Inc and Google LLC, which have different terms of use. Especially, Google reserves the right to copy, modify and use the data for its own purposes.¹²

Pros	Cons
<ul style="list-style-type: none"> • Easy to manage • Well-organized chat • Third-party app integration 	<ul style="list-style-type: none"> • Low on extra features • No voice or video calls

3.3.3 Chanty

For Chanty the applicable law is the law of the United States. This makes the EU data protection rules not valid if the user is located here. Chanty will not claim any ownership rights for its services, except for the legal obligations.¹³

Pros	Cons
<ul style="list-style-type: none"> • Innovative interface • Built-in project management 	<ul style="list-style-type: none"> • No video calls for groups

3.3.4 Conclusions Chat Tools

Criteria	Slack	Twist	Chanty
Data protection	-	-	-
Usability	+	+	-
User-Friendliness	+	-	-
Result	No	No	No

3.4 Documents & File sharing tools

The consortium has already decided the systems which will be used for eLearning Portal and filesharing within the consortium:

- <https://learn.european-heritage-academy.eu/>
This system is operated by ISCN (seat: Graz), an Austrian company. All rights are secured and stay with the consortium. The servers are in Austria.
- <https://cloud.nextstepit.at/login>
This system is operated by Nextstep (seat: Tulln), an Austrian company. All rights are secured and stay with the consortium. The servers are in Austria.

Using GoogleDocs is not recommended due to their privacy policy and terms of use (see 3.6.2)

¹² <https://www.watchtwist.com/terms-of-use>

¹³ <https://www.chanty.com/terms-of-use/>



3.5 Online Project Management Tools

3.5.1 Monday

For Monday the applicable law is the law of Israel. The applied rules are recognised as comparable to the EU data protection rules. Monday will not claim any ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹⁴

Pros	Cons
<ul style="list-style-type: none"> • Uncomplicated • Reasonably priced • Different project views 	<ul style="list-style-type: none"> • No full free version • Lacks subtasks

3.5.2 Asana

For Asana the applicable law is the law of United States. This makes the EU data protection rules not valid. Asana will claim ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹⁵

Pros	Cons
<ul style="list-style-type: none"> • Motivates your team • Task subdivision • Straightforward interface 	<ul style="list-style-type: none"> • Complicated customer support system

3.5.3 Trello

For Trello the applicable law is the law of United States. This makes the EU data protection rules not valid. Trello will not claim any ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹⁶

Pros	Cons
<ul style="list-style-type: none"> • Convenient for simple tasks • Easy to learn 	<ul style="list-style-type: none"> • Lacks features • Not enough value for its price

¹⁴ <https://monday.com//de/recht/tos/>

¹⁵ <https://www.atlassian.com/legal/cloud-terms-of-service>

¹⁶ <https://www.atlassian.com/legal/cloud-terms-of-service>



3.5.4 TeamGantt

For TeamGantt the applicable law is the law of United States. This makes the EU data protection rules not valid. TeamGantt will claim ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹⁷

Pros	Cons
<ul style="list-style-type: none"> • Intuitive interface • Time tracking features 	<ul style="list-style-type: none"> • Not many third-party integrations

3.5.5 Factro

For Factro the applicable law is the law of Germany. This makes the EU data protection rules valid. Factro will not claim any ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹⁸

Pros	Cons
<ul style="list-style-type: none"> • Uncomplicated • Reasonably priced • Time tracking features 	<ul style="list-style-type: none"> • Lack of clarity by tracking many projects

3.5.6 Conclusion Online Project Management

Criteria	Monday	Asana	Trello	TeamGantt	Factro
Data protection	+	-	-	-	+
Usability	+	+	-	0	+
User-Friendliness	+	-	-	+	+
Result	Yes	No	No	No	Yes

¹⁷ <https://www.teamgantt.com/terms>

¹⁸ <https://www.mentimeter.com/terms>



3.6 Online Survey Tools

3.6.1 Mentimeter

For Mentimeter the applicable law is the law of Sweden. This makes the EU data protection rules valid. Mentimeter will not claim any ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.¹⁹

Pros	Cons
<ul style="list-style-type: none"> • Uncomplicated • it can be run before, during, or after a presentation • Integration in Zoom, MS Teams, PowerPoint and other systems • Downloadable in Excel 	<ul style="list-style-type: none"> • Download features • Typing errors cannot be changed within Mentimeter before sharing pdf presentation

3.6.2 GoogleForms

For GoogleForms the applicable law is the law of the Republic of Ireland, if the user is located in the EU. This makes the EU data protection rules valid. Google will claim and use ownership rights for any text, files, images, photos, video, sounds, software, works of authorship, or for other materials that users will upload or otherwise provide to the service.²⁰

Pros	Cons
<ul style="list-style-type: none"> • Uncomplicated 	<ul style="list-style-type: none"> • Google has the right to use your results • No interactive survey possible

3.6.3 Microsoft Forms

For MS Forms the applicable law depends on the country the user is located. This makes the EU data protection rules valid if the user is located here. Microsoft will use the content, for example, to make copies of, retain, transmit, reformat, display, and distribute via communication tools your Content on the Services.²¹

Pros	Cons
<ul style="list-style-type: none"> • Uncomplicated • Reasonably priced (especially as part of Office365) 	<ul style="list-style-type: none"> • Download feature in Excel needs improvement (table structure do not allow statistical analysis easily)

¹⁹ <https://www.factro.de/blog/factro-100-prozent-dsgvo-konform/>

²⁰ <https://policies.google.com/?hl=en>

²¹ <https://www.microsoft.com/en-gb/servicesagreement/>



3.6.4 Conclusions Online survey Tools

Criteria	Mentimeter	GoogleForms	MS Forms
Data protection	+	--	+
Usability	+	+	+
User-Friendliness	+	+	-
Result	Yes	No	Yes

3.7 Virtual Whiteboard Tools

3.7.1 Miro

For Miro the applicable law is the law of the United States. This makes the EU data protection rules not valid. Miro will not use or sell the content, for example, to make copies of, retain, transmit, reformat, display, and distribute via communication tools your Content on the Services.²²

Pros	Cons
<ul style="list-style-type: none"> • Easy to use • Templates to support beginners 	<ul style="list-style-type: none"> • Pure use of symbols may not accurately reflect intended user actions • Users are not always easy to identify

3.7.2 Mural

For Mural the applicable law is the law of the United States. This makes the EU data protection rules not valid. Mural will not use and sell the content, for example, to make copies of, retain, transmit, reformat, display, and distribute via communication tools your Content on the Services.²³

Pros	Cons
<ul style="list-style-type: none"> • Easy to use • Templates to support beginners 	<ul style="list-style-type: none"> • Integration feature could be improved • Users are not always easy to identify

3.7.3 Milanote

Milanote is willing to follow both the Australian Privacy Act and the European Union's General Data Protection Regulation. Therefore, the EU data protection rules are valid if the user is located here. Milanote will use the content, for example, to make copies of, retain, transmit, reformat, display, and distribute via communication tools your Content on the Services.²⁴

Pros	Cons
<ul style="list-style-type: none"> • Easy to use • Clean and simple User Interface • Good structure • Templates to support beginners • Individual adaptations are easily possible 	<ul style="list-style-type: none"> • Recycle Bin feature could be improved

²² <https://miro.com/legal/terms-of-service/>

²³ <https://www.mural.co/terms/privacy-policy> and <https://www.mural.co/terms/services-agreement>

²⁴ <https://milanote.com/legal/privacy-policy> and <https://milanote.com/legal/terms-of-service>



3.7.4 Conclusions Virtual Whiteboard Tools

Criteria	Miro	Mural	Milanote
Data protection	-	0	+
Usability	+	+	+
User-Friendliness	+	+	+
Result	No	No ²⁵	Yes

²⁵ Mural is still referring to the EU-US Privacy Shield, which has been declared invalid by the ECJ in 2020.
IO2_Comparison of functionality of relevant online collaboration and elearning tools_20230707_V04_EN



4 Conclusions

4.1 Summary of achievements

This assessment was based on following criteria:

- Data protection
- Usability
- User-Friendliness

For an EU project partner, “Data protection” will be a “must” criterion. Otherwise the consortium cannot follow the rules agreed in Grant Agreements and other contracts between the EU (and its parts) and any EU project consortium.

The analysis shows very clearly which tools can legally be used by EU project partners. The following table shows the results:

Video Conferencing	GoToMeeting, Skype and MS Teams. Zoom only in special training situation (but with knowing that all data are stored in the United States)
Online Chat	None of the known tools (but video conferencing tools include always a chat feature)
Documents & File sharing	Cloud hosted within an EU country (local provider)
Online Project Management	Monday, Factivo
Online Survey	Mentimeter, MS Forms
Virtual Whiteboard	Milanote

4.2 Relation to continued developments

VI-TRAIN-Crafts will take these results into account for developing the further IOs, like organising virtual training sessions and virtual group work in training sessions.

Therefore, the consortium will choose the used tools accordingly to this assessment.



4.3 Contact to the Coordinator's Data Protect Officer

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5 Acronyms and terms

EU.....	European Commission (and its parts)
3D	three dimensional
AR.....	Augmented Reality
VR.....	Virtual Reality
CH.....	Cultural Heritage