Open online meeting

Project report 2021

Content

Background, current situation and future needs

Municipalities in Finland have voiced a need to map out open source based alternatives for well-known proprietary online conferencing systems provided by e.g. Google and Microsoft for the following purposes:

➢ Online meeting (preferably web-based, no installation),
➢ Secure file-sharing and collaborative use of documents,
➢ Chat and messaging,
➢ Solution that enables online collaboration (easy to facilitate),
➢ Cloud services,
➢ Online voting (preferably integrated to the online meeting tool with strong identification method that would enable secret ballot voting).

There are several open source based solutions and tools available for each category but a coherent whole is still missing.

Purpose and aim of the project

The purpose in the first phase of the project was to conduct a preliminary study on how single open source based solutions and tools could be combined to a comprehensive joint solution and research the technical compatibility between the different OS solutions.

The project aims to create a comprehensive example solution that is based on open source components. The created example solution aims to offer new business opportunities for COSS member organizations as well as provide new open source solutions especially for smaller businesses and municipalities.

Implementation: Preliminary study

The preliminary study phase (fall 2020/ spring 2021) mapped out what kind of existing solutions are available for the above mentioned purposes.

The preliminary study considered the following:

a) what are the main functionalities that are necessary and expected by the end user
b) what kind of existing open source based solutions/ components are available that meet these end users needs

The study began by mapping out and listing well-known open source based solutions such as Jitsi that are available hosted. After this the study reached out to the listed communities behind the open source projects by sending out a questionnaire. The questionnaire consisted of the following: basic information, technical features, security, existing integrations etc.

As a result from the preliminary study phase a comprehensive comparison list was collected and published. The comparison list includes all different potential open source based solutions that are currently available.

The preliminary study phase was funded by FUUG - Finnish Unix User Group (grant 4000€).

Functionalities

The main functionalities and needs of the end users were categorized into four (4) different groups:

1. Web-conferencing and messaging solutions
- ➤ Key features: chat and messaging, creating teams or groups, audio and video calls, recording, screen sharing, file sharing, collaboration tools for example whiteboard, task lists, kanban etc.

2. Online file storage, management and collaboration platforms
- ➤ Key features: collaborative use and file sharing, creating documents for example text documents, spreatsheets, presentations etc.

3. Visual online collaboration and project management solutions
- ➤ Key features: collaborative whiteboard, kanban board, to-do or task lists, file attachment support

4. Online voting solutions
- ➤ Key features: online voting, possibility to organize secret ballots, identification methods to the service

1. Web-conferencing and messaging solutions

	Web	Chat, messaging	Creating teams, groups	Audio and video calls	Recording	Screen sharing	File-sharing	Collaboration tools for example white board, task list, kanban etc.	
BigBlueButton		✓	✓	✓	✓	✓		✓	*
element	✓	✓	✓	✓	✗	✓	✓		*
jami	✗	✓	✗	✓		✓	✓	✗	
jitsi.org	✓	✓	✓	✓	✓	✓	✓	✓	*
Mattermost	✓	✓	✓	✗	✗	✗	✓	✓	*
Nextcloud	✓	✓	✓	✓	✗	✓	✓	✓	
openVidu	✓	✓	✗	✓	✓	✓	✗	✗	
rocket.chat	✓	✓	✓	✓	✓	✓	✓	✓	
Signal		✓	✓	✓		✓	✓		*
TOX		✓	✓	✓		✓	✓		*
wire	✓	✓	✓	✓	✗	✓	✓	✗	
ZULIP	✓	✓	✓	✗	✗	✗	✓	✗	

* The information listed above has been collected from public resources (e.g. website). No information has been received directly from the community. Therefore some details might be missing.

Big Blue Button *

Desktop or mobile app available: Web
Other features: Emojis, Breakout Rooms, Polling, Multi-user whiteboard
Existing integrations with third-party applications: bigbluebutton.org/integrations/
Available: Hosted, Self-hosted
GDPR compliant: docs.bigbluebutton.org/admin/privacy.html#general-gdpr-considerations
Security: docs.bigbluebutton.org/admin/privacy.html#Privacy

Community
Active users:
Developers involved:
Partner network:
Localization: 20+ languages
License: LGPL license Version 3.0.
More information:

Website: bigbluebutton.org/
GitHub: github.com/bigbluebutton

element   Element *

Desktop or mobile app available: Web, Android, iOS, macOS, Windows & Linux
Other features:
Existing integrations with third-party applications: element.io/element-matrix-store
Available: Hosted, Self-hosted
GDPR compliant: Yes
Security: Own and control your data, Decentralised end-to-end encryption, Cross-signed verification, Open network

Community
Active users:
Developers involved:
Partner network:
Localization: App translation in 25 languages
License: Apache License 2.0
More information:

Website: element.io/
GitHub: github.com/vector-im

JAMI (or (GNU JAMI))

Desktop or mobile app available: Android, Android TV, iOS, macOS, Windows, Linux, f-Droid
Other features: Group videocall is available and RendezVous point (an account that transform your device in videoconference host). GroupChat Beta will be released in Spring 2021 (it will be a SwarmChat).
Existing integrations with third-party applications: No. But it offers a sdk for plugin (jami.net/plugins-sdk/)
Available: Distributed
GDPR compliant: Yes
Security: The architecture is privacy bydesign. No need of personal data (email or phone number) to create an account. Streams (audio, video, text, file transfer) are encrypted end to end. More info on jami.net/improving-performance-and-security-with-tls-1-3/ & jami.net/the-jami-quirks/ & jami.net/challenges-associated-with-jamis-distributed-architecture/

Community
Active users: Estimated to 100 000 (but hard to really know)
Developers involved: 20 core developers, 500+ contributors
Partner network: Not yet, but we have a "sponsor" with the Free Software Foundation which promote GNU Jami.
Localization: 88 langages localized on transifex, but 37 languages are translated more the 50% and 26 more than 75% (see details on www.transifex.com/savoirfairelinux/jami/
License: GPLv3
More information: Jami is the only real distributed peer-to-peer open source solution for communication.

Website: jami.net/
GitHub: git.jami.net/

Jitsi Meet *

Desktop or mobile app available: Android, iOS, F-Droid, macOS, Windows & Linux
Other features: Edit documents together using Etherpad
Existing integrations with third-party applications: jitsi.github.io/handbook/docs/dev-guide/dev-guide-web-integrations
Available: Hosted, Self-hosted
GDPR compliant:
Security: jitsi.org/security/

Community
Active users:
Developers involved:
Partner network: jitsi.org/partners/
Localization:
License: Apache-2.0 License
More information:

Website: jitsi.org/jitsi-meet/
GitHub: github.com/jitsi/jitsi-meet

Keybase.io

Desktop or mobile app available: Android, iOS, Linux, Mac, Windows
Other features: Encrypted git solution and cryptocurrency wallet
Existing integrations with third-party applications: No
Available: Hosted
GDPR compliant: Yes
Security: Keybase provides end-to-end encrypted services like chat, file sharing, git, and team management. In addition, it implements a notion of identity using cryptographic protocols tied to user's social media accounts and other internet presence like websites and owned DNS names. The goal of the app is to promote private communications with strong identity guarantees.

Community
Active users: n/a
Developers involved: 20
Partner network: No
Localization: 1
License: BSD 3-Clause "New" or "Revised" License
More information:

Website: keybase.io/
GitHub: github.com/keybase/client

Mattermost *

Desktop or mobile app available: Web, Windows, MacOS, Linux iOS, Android
Other features:
Existing integrations with third-party applications: integrations.mattermost.com/
Available: Hosted, Self-hosted
GDPR compliant:
Security: docs.mattermost.com/overview/security.html

Community
Active users:
Developers involved:
Partner network:
Localization:
License: Apache License Version 2.0
More information:

Website: mattermost.com/
GitHub: github.com/mattermost

Nextcloud Talk

Desktop or mobile app available: Android, iOS
Other features: Optional SIP gate (dial in by phone); commands (execute scripts from chat); automation integration with Nextcloud (you can automate things like when a file is uploaded in a shared folder, get a message in a chat room); chat bridging to other chat tools like Mattermost, Slack, Matrix or IRC; many small things: raise hand, message-read notifications, replying to earlier messages, full message search etc;
Existing integrations with third-party applications: The bridging feature supports linking chatrooms between Nextcloud and a room on MS Teams, Slack, Telegram, Matrix, IRC, Mattermost and a dozen more. Through Nextcloud there are many other integrations available - over 250 apps are in our app store, including things like Rocket.chat, Microsoft SharePoint and Windows Network Drive integration and more.
Available: Hosted, Self-hosted
GDPR compliant: Yes
Security: * 1-on-1 calls are end-to-end encrypted, group calls are also unless our high performance back-end is used, then they are decrypted and re-encrypted at the SFU (self-hosted). Of course all communication is TLS encrypted.
* Chats are stored on the self-hosted server (in the database).
* Our privacy center in user settings shows location of server & who (names of admins) have access to user data
* Users can disable the read notifications for privacy
* Nextcloud has a wide range of GDPR capabilities, see https://nextcloud.com/gdpr - including things like imprint and privacy links, data request and delete account features, terms-of-service check and more
* Nextcloud has very advanced security features including a half-dozen two-factor authentication mechanisms, built-in brute-force detection, rate limiting, password security enforcement (including an optional built-in check against the list of breached passwords on haveibeenpwned.com), machine learning based suspicious login detection, remote wipe, Content Security Policy and Same-site cookies protection and more.
* Nextcloud has a Security Bug Bounty program where up to USD 10.000 is awarded to security researchers reporting problems.

Community
Active users: Nextcloud has in the area of 30 million users. Not all have access to Talk, as it is an optional component.
Developers involved: About 1000 people contributed in the last 12 months
Partner network: Yes
Localization: over 100
License: AGPL
More information: Nextcloud Talk is a bit different from stand-alone solutions. While it can be and is used alone, it shines especially through its tight integration in Nextcloud. For example, you can edit office documents, and in the side bar start a chat or video call with other participants (who don't even need an account). Nextcloud is a fully open source, on-premises hosted competitor to Microsoft Office 365 and Google workspace (formerly G Suite). Most organizations need more than 'just' a (video) chat solution. They end up using a separate calendar, task management tool, chat app, file sharing platform, video call tool, mail app, password manager, and so on. This means not only extra cost and complexity for the IT team (either self-hosting all those different technologies or managing all those SaaS platforms) and the users (who have to deal with all the different user interfaces and bad interoperability between them), but also multiplying privacy and security risks (more passwords that can leak, more platforms that can be breached or leak documents etc) and productivity problems when one of the dozen or so platforms is down. We think consolidating to just a few platforms is the right choice for most organizations and Nextcloud is designed to fulfill the role of an integrated, remote content collaboration platform.

Website: nextcloud.com/talk/
GitHub: github.com/nextcloud/spreed

OpenVidu Call

Desktop or mobile app available: Android, iOS
Other features:
Existing integrations with third-party applications: No
Available: Self-hosted
GDPR compliant: Yes
Security: You deploy OpenVidu on your own premises. You have full control over the data managed by it.

Community
Active users: 1000
Developers involved: 8
Partner network: No
Localization: It is available only in English
License: Apache License v2
More information: OpenVidu Call is based on OpenVidu platform that allows you to build your own videoconference solution tightly integrated in your own application.

Website: openvidu.io/
GitHub: github.com/OpenVidu/openvidu-call

Rocket.chat

Desktop or mobile app available: Android, iOS, Windows, Linux, Mac
Other features: Omnichannel integrations, LiveChat, End-to End Encryption, Audit Panel, White-Label, Custom User permissions, Inter-company communication
Existing integrations with third-party applications: We have a marketplace with numerous integrations marketplace.rocket.chat/
Available: Hosted, Self-hosted
GDPR compliant: Yes
Security: rocket.chat/security/

Community
Active users: 29.35k Github Stars, Active Product Users 7.9 millions (December/2020)
Developers involved: In house, 40, globally + 1.500
Partner network: Yes, we have a global network of Resellers, Distributors, ISVs and Institutional Partners
Localization: Over 150 countries
License: MIT
More information:

Website: rocket.chat/
GitHub: github.com/RocketChat/

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Signal   Signal *

Desktop or mobile app available: Android, iOS, macOS, Windows & Linux
Other features:
Existing integrations with third-party applications:
Available: Hosted
GDPR compliant:
Security: support.signal.org/hc/en-us/categories/360000674811-Security

Community
Active users:
Developers involved:
Partner network:
Localization: 94+ languages (Transifex)
License: GPLv3
More information:

Website: signal.org/
GitHub: github.com/signalapp

TOX   **Tox ***

Desktop or mobile app available: Windows, macOS, Linux, FreeBSD, Android
Other features:
Existing integrations with third-party applications:
Available:
GDPR compliant:
Security:

Community
Active users:
Developers involved:
Partner network:
Localization:
License: GPLv3
More information:

Website: tox.chat/
GitHub: github.com/TokTok/c-toxcore

Wire

Desktop or mobile app available: Android, iOS, Linux, Windows, Mac, Web App

Other features: The platform is fully end to end encrypted

Existing integrations with third-party applications: Wire integrates natively with Identity and Access Services provides that use SAML and SCIM plus productivity, process, services, bots through our API. (github.com/wireapp/lithium)

Available: Hosted, Self-hosted

GDPR compliant: Yes

Security: Wire is fully end to end encrypted and provides full privacy for our customers - furthermore the Open Source nature, Privacy Policies, Annual Audits and ability to install on premise can secure organizations full data sovereignty and privacy.

Community

Active users: Wire has more than 1500 business customers

Developers involved: 60

Partner network: Yes - Wire has a partner network of resellers and systems integrators

Localization: Wire has been localized for 18 languages (support.wire.com/hc/en-us/articles/202856874-Which-languages-does-Wire-support-)

License: GPLv3

More information: Wire won Best Messenger at RSA, Best Usability on Capterra, is featured in the leaders quadrant on G2Crowd and was awarded Best Security by Cybersecurity Security Excellence Awards. Wire is also reviewed by Gartner and Forrester in their Workstream Collaboration Guide and Secure Collaboration report respectively. Wire is used by 1500 organizations including companies like EY, The German Government and Fortum.

Website: wire.com/en/

GitHub: github.com/wireapp

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Zulip

Desktop or mobile app available: Android, iOS, macOS, Windows & Linux
Other features: Zulip doesn't natively support video calls, but Zoom and Big Blue Button integrations are available - zulip.readthedocs.io/en/latest/production/video-calls.html
Existing integrations with third-party applications: zulip.com/integrations/ has the full list with documentation
Available: Hosted, Self-hosted
GDPR compliant: Yes
Security: zulip.com/security/

Community
Active users: -
Developers involved: As a popular open source project Zulip has as of now 665 people who have contributed code to the project. github.com/zulip/zulip/graphs/contributors has a nice breakdown showing who the main contributors have been (by number of commits)
Partner network: No
Localization: www.transifex.com/zulip/zulip/ has the up to date, detailed information about which languages have translations and to what extent
License: Apache 2
More information:

Website: zulip.com/
GitHub: github.com/zulip/zulip/

2. Online file storage, management and collaboration platforms

	Web	Collaborative use and file sharing	Creating documents for example text documents, spreatsheets, presentations etc.	
Collabora	✓	✓	✓	*
cozy.io		✓		*
Nextcloud	✓	✓	✓	
pydio cells	✓	✓	✓	
owncloud	✓	✓	✓	
Seafile	✓	✓	✓	
Sparkle Share		✓		*
Syncthing	✓	✓		*

* The information listed above has been collected from public resources (e.g. website). No information has been received directly from the community. Therefore some details might be missing.

Collabora Online *

Desktop or mobile app available: Web
Other features:
Existing integrations with third-party applications: Nextcloud, ownCloud, EGroupware, SharePoint, Alfresco, Moodle, Mattermost
Available: Hosted, Self-hosted
Security:

Community
Active users:
Developers involved:
Partner network: www.collaboraoffice.com/partners-main/partners/
Localization: 36 languages
License: Mozilla Public License v2.0
More information:

Website: www.collaboraoffice.com/collabora-online/
GitHub: github.com/CollaboraOnline

*The information listed above has been collected from public resources (e.g. website). No information has been received directly from the community. Therefore some details might be missing.

Cozy Drive *

Desktop or mobile app available: Mac, Windows, Linux, iOS, Android
Other features:
Existing integrations with third-party applications:
Available: Self-hosted
Security: cozy.io/en/privacy/

Community
Active users:
Developers involved:
Partner network:
Localization: 18 (Transifex)
License: AGPL-3.0 License
More information:

Website: cozy.io/en/
GitHub: github.com/cozy/cozy-stack

Nextcloud Hub

Desktop or mobile app available: Android, iOS, Linux, Windows, Mac, variety of mostly unofficial apps exist for other platforms like Jolla/Sailfish
Other features: A pretty complete Office 365 replacement.
- (unlimited) public links
- file locking
- workspaces (collaborative note taking area above a folder for share description, todo lists etc)
- workflow management (automate tasks)
- global search (across apps - files, mail, chat messages, etc), tagging, favorites, full-text search and thumbnails of documents and images
- integrated video and text chat, calendar, contacts and mail and >250 other apps available in our app store"
Existing integrations with third-party applications: Any number of user management connections (LDAP, SAML, Kerberos etc)
- external storage (access data on Dropbox, object storage, SharePoint, WND, FTP and more)
- hundreds of apps on our app store with a wide variety of other integrations and features
Available: Self-hosted
Security: Nextcloud has a wide range of security features, from end-to-end and server-side encryption to a File Access Control feature using rule-based access blocking, Video Verification (use a video call to verify identity before granting access to a file share), anti-virus scanning, 2-factor authentication and more.
GDPR features include configurable imprint and privacy links, data request feature for users, delete account feature, terms-of-service check and more.
Nextcloud GmbH has a security bug bounty program: we pay up to USD 10.000 to a security researcher who responsibly reports a security flaw in Nextcloud.

Community
Active users: Estimated 300.000 to 500.000 Nextcloud servers with 20-40 million users
Developers involved: Over 2000 people have contributed over the years, more than 500 in our github project
Partner network: Yes
Localization: 102 languages on transifex
License: AGPL
More information: Main competition/goal is Office 365/Google Apps, so Nextcloud Hub does more than file sync & share, with video chat and groupware among other things.
Nextcloud is also a very popular app platform with over 250 apps available, adding a wide variety of functionality, from Google Drive integration to password and bookmark managers.

Website: nextcloud.com/files/
GitHub: github.com/nextcloud/server

Pydio Cells

Desktop or mobile app available: Android, iOS, Linux, Windows, Mac
Other features: Pydio Cells is enterprise software focused on advanced security rules and auditing features. Written in Go, it embeds its own webserver and just requires a mysql/mariadb database. Beside standard "public links" (with all security options), sharing files and folders across platform users is made easy through the creation of "Cells", that can be seen as channels (like in modern chat applications). Users can create a Cell with a team and share folders in it, or organise data by topic or by projects using this feature. User-defined metadata along with the integrated search engine empower users to adapt the software to their needs.
Existing integrations with third-party applications: SSO with any OAuth2/OpenIDConnect identitiy providers, office documents edition with Collabora Online, users directory with ldap/ad.
Available: Self-hosted
Security: Self hosted, written with a modern, compiled, secure language, Cells provides many advanced features for finely controlling who accesses what, as well as auditing in real-time these accesses.

Community
Active users: Hard to tell as its open source. Previous version (in PHP) was downloaded more than a million times along the years.
Developers involved: ~15
Partner network: Yes
Localization: 6
License: AGPL v3
More information: Pydio also ships Cells Enterprise, a vendor-supported version of Cells, packed with advanced security features for proper enterprise usage.

Website: pydio.com/
GitHub: github.com/pydio/cells

ownCloud

Desktop or mobile app available: Android, iOS, Linux, Windows, Mac
Other features: See the range of features here owncloud.com/features/
Existing integrations with third-party applications: marketplace.owncloud.com/apps/category/integration
Available: Hosted, Self-hosted, Hybrid
Security: Its Privacy-by-Design, Zero-Knowledge-Architecture as well as optional on-premises hosting make ownCloud the safe choice for at-risk data. It authenticates using multiple auth factors and can integrate with existing identity providers. Thorough permissions management and policy enforcement as well as extensive logging make sure access is traceable and limited to eligible users. Furthermore, ownCloud is end-to-end encrypted and has features like secure view.

Community
Active users: +100 Million users
Developers involved: Around 100 full-time developers and contributors
Partner network: owncloud.com/partners/
Localization: www.transifex.com/owncloud-org/owncloud/
License: APGLv3
More information:

Website: owncloud.com/
GitHub: github.com/owncloud

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Seafile

Desktop or mobile app available: Android, iOS, Linux, Windows, Mac
Other features: Virtual Drive client for desktop, End-to-end client side file encryption, Wiki for knowledge management
Existing integrations with third-party applications: OnlyOffice, Collabora Online, Kolab, Plesk, Microsoft Outlook
Available: Self-hosted
Security: Seafile provides end-to-end client side data encryption. Files can be encrypted with user-chosen password before sending to the server. Even the system administrator cannot decrypt the data.

Community
Active users: ~1Million
Developers involved: ~30
Partner network: Yes
Localization: 34
License: Server in GPLv3. Other components: manual.seafile.com/
More information:

Website: www.seafile.com/en/home/
GitHub: github.com/haiwen/seafile

SparkleShare *

Desktop or mobile app available: Mac, Windows, Linux
Other features:
Existing integrations with third-party applications:
Available: Self-hosted
Security:

Community
Active users:
Developers involved:
Partner network:
Localization:
License: GPLv3
More information:

Website: www.sparkleshare.org/
GitHub: github.com/hbons/SparkleShare/

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Syncthing *

Desktop or mobile app available: Mac OS X, Windows, Linux, FreeBSD, Solaris and OpenBSD
Other features:
Existing integrations with third-party applications: OS integrations: SyncTrayzor, syncthing-macos. Further integrations of all kinds listed on the community contributions page docs.syncthing.net/users/contrib.html
Available:
Security: syncthing.net/security/

Community
Active users:
Developers involved:
Partner network:
Localization: 64 languages (Transifex)
License: MPL 2.0
More information:

Website: syncthing.net/
GitHub: github.com/syncthing/

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	Web	Collaborative whiteboard	Kanban board	To-do lists, task lists	File attachment support
OpenBoard	✗	✓				*
OpenProject	✓	✗	✓	✓	✓
TAIGA	✓	✗	✓	✓	✓
(turtle)	✗	✗	✗	✓	✓	*
Wekan	✓	✗	✓	✓	✓
Restya	✓	✗	✓	✓	✓

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OpenBoard *

Desktop or mobile app available: Windows, macOS, Linux
Other features:
Existing integrations with third-party applications:
Available:
Security:

Community
Active users:
Developers involved:
Partner network:
Localization: 14 languages
License: GPLv3
More information:

Website: openboard.ch/index.en.html
GitHub: github.com/OpenBoard-org/OpenBoard

OpenProject

Desktop or mobile app available: Web-based, responsive solution (can be accessed via Chrome, Safari, Firefox, MS Edge)
Other features: Gantt chart, Scrum, Budget, time and cost reports and much more (see www.openproject.org/collaboration-software-features/)
Existing integrations with third-party applications: GitHub (docs.openproject.org/system-admin-guide/github-integration/)
Available: Hosted, Self-hosted
Security: 2 factor authentication, save passwords, encrypted (TLS), user management & access control

Community
Active users: No exact numbers (due to high privacy / security standards provided by OpenProject) but active installations are in the tens of thousands of organizations
Developers involved: Around ~150 contributors (mostly from OpenProject GmbH but also from open source community): github.com/opf/openproject/graphs/contributors
Partner network: Reseller program is available: www.openproject.org/reseller-program/
Localization: 10 core languages and around 40 languages total (some partially translated): crowdin.com/project/openproject
License: GPLv3 (github.com/opf/openproject/blob/dev/docs/COPYRIGHT.rdoc)
More information: OpenProject is an open source project management solution which supports traditional, agile and hybrid project management. Our development team is based in Europe (headquartered in Berlin, Germany) and data security and privacy are key aspects for OpenProject.

Website: www.openproject.org/
GitHub: github.com/opf/openproject

Taiga

Desktop or mobile app available: Android, iOS
Other features: Scrum, Epics, Wiki
Existing integrations with third-party applications: Github, Gitlab, GOCS, Mattermost, Slack
Available: Hosted, Self-hosted
Security: www.taiga.io/security, https://www.taiga.io/privacy-policy

Community
Active users: ~1 million (400K SaaS rest on premise)
Developers involved: 10
Partner network: We are currently building that up
Localization: Taiga is available in more than 20 languages
License: AGPL
More information: Taiga is particularly suitable for cross functional teams because, although it has a rich and complete feature set with extensive customization options, it is very simple to start with through its intuitive user interface.

Website: www.taiga.io/
GitHub: github.com/taigaio

Turtl *

Desktop or mobile app available: Windows, Linux, macOS, Android (iOS coming soon)
Other features:
Existing integrations with third-party applications:
Available:
Security: turtlapp.com/docs/security/

Community
Active users:
Developers involved:
Partner network:
Localization: Multiple translations (German, Spanish, French, and more)
License: GPL-3.0
More information:

Verkkosivusto (Website): turtlapp.com/
Koodi GitHubissa (GitHub): github.com/turtl

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Wekan

Desktop or mobile app available: Android, Windows, Ubuntu Touch. github.com/wekan/wekan/wiki/Browser-compatibility-matrix
Other features: Import from Trello. Import/Export Wekan, CSV/TSV, Excel. Swimlanes, WIP limits, etc.
Existing integrations with third-party applications: REST API, github.com/wekan/wekan-gogs , Webhooks
Available: Hosted, Self-hosted
Security: All code Open Source, XSS filtering on input fields, brute force login protection, up-to-date dependencies like Node.js Meteor etc, automatic updates on Snap version.

Community
Active users: In Wekan Snap version, installed to about 9000 servers worldwide, see snapcraft.io/wekan . Other version like Docker, Source, Sandstorm etc probably similar numbers.
Developers involved: Total 189
Partner network: Yes
Localization: 60
License: MIT (mostly, includes some BSD/Apache)
More information: Wekan is used at some governments, hospitals, etc.

Website: wekan.github.io/
GitHub: github.com/wekan/wekan

Restya   **Restyaboard**

Desktop or mobile app available: Android, iOS
Other features: Offline sync, multiple layouts, revisions with undo, etc. More in restya.com/board/comparisons/trello-vs-restyaboard and https://restya.com/board/features
Existing integrations with third-party applications: restya.com/board/apps and over 500+ through Zapier restya.com/board/integrations/all
Available: Hosted, Self-hosted
Security: Passwords encrypted using Blowfish algorithm. Continuous development with user feedback.

Community
Active users: Around 70000
Developers involved: 25
Partner network: Yes. restya.com/board/partners Can become a partner through restya.com/contact?category=become-a-partner
Localization: German and Czech are professionally translated. 31 other languages are user contributed www.transifex.com/restya/restyaboard/
License: Dual License (OSL 3.0 & Commercial License)
More information:

Website: restya.com/board
GitHub: github.com/RestyaPlatform/board

4. Online voting solutions

One center goal while comparing the available solutions was that the solution should be already integrated or have the possibility to be integrated to an online meeting solution. Strong identification is preferred to enable secret ballot voting for the use of cities and municipalities etc.

	Web	Online voting feature	Possibility to organize secret ballots
CHVote	✓	✓	✗
CONSUL	✓	✓	✓
decidim	✓	✓	✓
VOLIS	✓	✓	✓

CHVote

Desktop or mobile app available: -
Identification methods to the service: Voting card identification number only
Other features: -
Existing integrations with third-party applications such as online meeting tools: -
Available: Self-hosted
Security: Universal verifiability, end to end encryption until the vote has been detached from the voter's identification, verifiable mix-net for mixing the ballot, independant control components to minimize vulnerabilities and internal compromissions.

Community
Active users: 0
Developers involved: 0
Partner network: No
Localization: 0
License: AGPL v3
More information: The development of the solution has been discontinued in december 2018, and the development team does not exist anymore.

Website: republique-et-canton-de-geneve.github.io/chvote-1-0/index-en.html
GitHub: chvote2.gitlab.io/

Consul

Desktop or mobile app available: No app, but the platform is full responsive. Most users use it through their smartphones.
Identification methods to the service: Email registration, Facebook, Twitter, Google+, SMS, Census, Electronic-ID, and others.
Other features: Other features included: debates, citizen proposals, participatory budgeting, crowdlaw, collaborative drafting, polls, configurable participation processes. It is translated to 34 and counts also with a automatic translation system (including all the user created content) in 90 languages.
Existing integrations with third-party applications such as online meeting tools: No
Available: Self-hosted
Security: The security and privacy is certified and cared by the 135 governments from 35 countries using the tool worldwide.

Community
Active users: More than 90 million users from 35 countries.
Developers involved: 115 developers have contributed to the code
Partner network: Yes. The project is managed by a network of collaborators of 13 non-profit organisation from 12 different countries, and counts with a working network with 135 public institutions worldwide.
Localization: 35
License: AGPLv3
More information: -

Website: consulproject.org/en/
GitHub: https://github.com/consul/consul

Decidim: the participatory democracy framework

Desktop or mobile app available: We plan to have a Progressive Web App in 2022
Identification methods to the service: Authentication can be implemented depending in the needs of the institution or organization. See decidim.org/modules/
Other features: Regarding e-voting we're developing these features in a new module, that we plan to end the first iteration at 2021 Q3.
Existing integrations with third-party applications such as online meeting tools: No
Available: Hosted, Self-hosted
Security: We regularly do security audits. We have a responsible security policy, see github.com/decidim/decidim/security/policy

Community
Active users: 400.000 registered participants in all the installations globally.
Developers involved: 109 total contributors github.com/decidim/decidim/graphs/contributors
Partner network: Yes, see decidim.org/partners/
Localization: 13 mantained languages (with at least 80% of translations). As Decidim is a continuous development it depends in the moment that you see these numbers. See crowdin.com/project/decidim
License: Affero GPL v3
More information: With Decidim you can do Participatory Processes, Assemblies, Initiatives and Consultations with Proposals, Meetings, Accountability, Surveys, etc. As it's a modular architecture, if there isn't a given feature already made by the community, the implementers and developers can make a new module for their needs.

Website: decidim.org/
GitHub: github.com/decidim/decidim/

VOLIS - information system for online meetings and public votings

Desktop or mobile app available: It has dedicated mobile view, which is used automatically, when browsing via mobile device
Identification methods to the service: Estonian ID-card, Mobile ID, Baltics Smart-ID. It also supports Estonian TARA service for identification based on eIDAS standard (for EU citizens)
Other features: Supports fully virtual online meetings for the local councils, governments etc. in managing all procedural steps necessary for it. Supports full Budgetary Participation process, including public votings and referendums for municipalities. More: www.elvl.ee/volis
Existing integrations with third-party applications such as online meeting tools: X-Road interfaces for connecting different registries (like Estonian Population Register, Business register) and with document managing software (so VOLIS can be used as part of document process, where politics/public can participate and create metadata, like voting results, protocols, etc)
Available: Hosted, Self-hosted, Other: can be hosted for cloud SLA
Security: System is audited, it complies with Estonian etalon security standard, ISKE.

Community
Active users: About 50 local governments and other organisations in Estonia. Year 2020 1,678,848 human lookups, 297,383 user authentificated login sessions.
Developers involved: 2 in Estonia, 1 in Sweden, 1 in Ukraine, 1 in Georgia
Partner network: Yes, managed by the Association of Estonian Cities and Municipalities
Localization: 4
License: EUPL
More information: We encourage contacting us, at be a part of the future VOLIS-related projects. New, VOLIS2 development analysis has started in Estonia.

Website: www.volis.ee/gvolis/?kid=
Code: koodivaramu.eesti.ee/elvl/volis
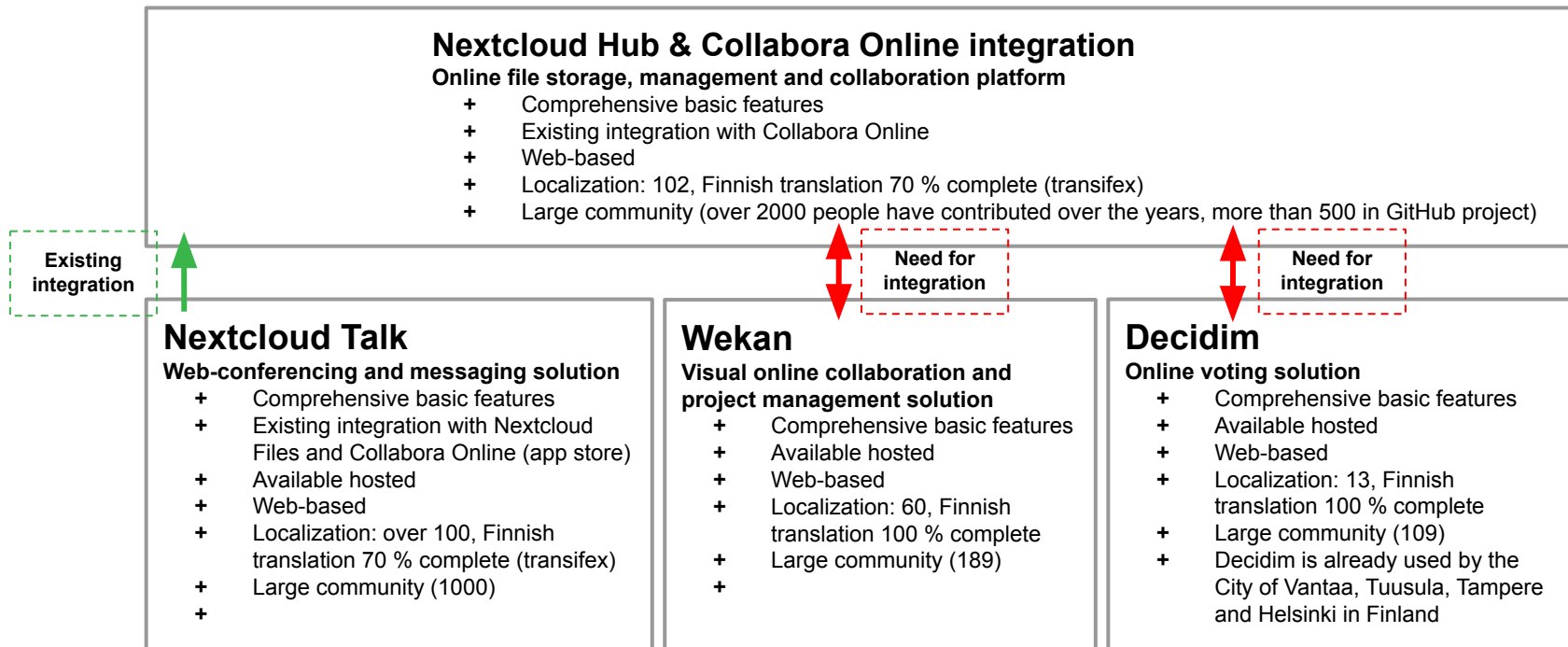
2021

Selection criteria

The individual open source based solutions and components were selected by the following criteria:

- ➢ Comprehensiveness of the features
- ➢ Existing integrations between other open source solutions
- ➢ Preferably available hosted
- ➢ Preferably web-based
- ➢ The amount of localizations (especially Finnish translation)
- ➢ Security aspect
- ➢ Size of the community

Description of the example solution

Nextcloud Hub & Collabora Online integration
Online file storage, management and collaboration platform
  + Comprehensive basic features
  + Existing integration with Collabora Online
  + Web-based
  + Localization: 102, Finnish translation 70 % complete (transifex)
  + Large community (over 2000 people have contributed over the years, more than 500 in GitHub project)

Existing integration

Need for integration

Need for integration

Nextcloud Talk
Web-conferencing and messaging solution
  + Comprehensive basic features
  + Existing integration with Nextcloud Files and Collabora Online (app store)
  + Available hosted
  + Web-based
  + Localization: over 100, Finnish translation 70 % complete (transifex)
  + Large community (1000)
  +

Wekan
Visual online collaboration and project management solution
  + Comprehensive basic features
  + Available hosted
  + Web-based
  + Localization: 60, Finnish translation 100 % complete
  + Large community (189)

Decidim
Online voting solution
  + Comprehensive basic features
  + Available hosted
  + Web-based
  + Localization: 13, Finnish translation 100 % complete
  + Large community (109)
  + Decidim is already used by the City of Vantaa, Tuusula, Tampere and Helsinki in Finland

Next steps

Technical implementation and a pilot

Second phase of the project: focusing on the technical implementation of the "Open online meeting" concept (technical components, providers and partners, integrations, p-o-c) and testing the solution. COSS will contribute by creating a proof-of-concept and launching a pilot.

The aim of the project is not to develop a ready-made solution. The piloting may require technical expertise from the piloting organization for example acquiring the service as a hosted solution. The end result will be a concept that defines the right open source components that will fit the needs, locates the possible challenges and how to overcome them.

Tentatively the City of Kankaanpää has agreed to partner in the project pilot.

Productization and launch

Third phase of the project: focusing on productization and launch of the concept. Defining the value proposition for the complete solution (technical platform + support) that is being offered to small and medium sized organizations as well as cities and municipalities. Creating a marketing plan.

Production and further development

Fourth and final phase of the project: moving into production, collecting feedback of the service and further develop the service based on the feedback.

2021