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Type: [X] Report [ ] Demonstrator, pilot, prototype [ ] Website, patent filings, videos, etc. [ ] Other	Co-Author(s): Benoit Maujean To: Albert Gauthier, Project Officer
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Contents: Deliverable 6.1. Documentation of the deployed technical mechanisms. Interim report on the deployment and use of technical and administrative tools that have been adopted for internal and external communication.	

Project Management Tools

In order to execute a project successfully, the project management team should be supported by a set of tools. The use of such tools usually makes the project managers' work easy as well as assisting in the standardisation of work processes for the coordinator and the consortium members. Below, we have described the management tools used by the LADIO project.

Document sharing system

We have chosen GoogleDrive and the GoogleTools as a platform for the shared editing of documents. GoogleTools are a flexible solution that allows document owners to provide fine-granular access on a per-document and per-user basis. The tools comprise a complete Office suite that is suitable for all required documentation and reporting tasks. They allow tight interaction between co-authors through integrated commenting and chat functions. The tools provide a moderate ability for version tracking, whose limits are off-set by being much better suited for fast, efficient, online co-operation that offline tools which may have better versioning functions. Furthermore, the Google office suite is well-integrated with chat and video conferencing functions, which enables a highly efficient collaboration.

Simula is currently a Google enterprise customer, which ensures that our documents are handled by servers within the legal domain of the European Union, and which allows us LADIO use Google tools under a strict confidentiality policy and without advertising.

Internal documentation

LADIO will use Google Drive to host internal documentation. LADIO's documents on Google Drive are only accessible by invitation. For the project members, this documentation is meant to function as their private discussion central and idea sharing venue.

By maintaining a well-structured organization in Google Drive, it can be used for discussions and management tasks. The ability to restrict rights further within the common LADIO folder, it can be used both for management and development content.

Contracts section

In the contracts section, which **restricted** to management, the following is developed and maintained:

- The proposal including figures and charts
- The Grant Agreement
- The text of the Consortium Agreement
- Text for Amendment(s)
- The sequence of Annex B documents
- Financial information

Organization sections

- Meeting overview: To keep track of both recurring audio conferences and scheduled project meetings.
- Meetings minutes and logs: This folder contains meeting notes for all meetings between 2 or more partners, both in person and online, as well as notes from relevant meetings between partners and 3rd parties. The folder is further structured to separate between management meetings (**restricted**), consortium meetings, and smaller meetings. The Meetings folder will be extended to contain logs of chats with administrative content that are conducted using asynchronous collaboration tools, in particular Slack/MatterMost (see Asynchronous Discussions paragraph). Audiovisual recordings may also be added if this is considered appropriate.
- What to publish on the website: Guidelines for what, when and how output of the project should be published at the project website.
- Partners/People: An updated list of who is working on the project, and contact information.
- Modes of operation from Brussels: Guidelines for when to contact the coordinator, and when to contact the Project Officer. This will be updated as routines form for the collaboration between the partners and the Project Officer.

Technical development sections

- WPs (Work Packages): A planning, discussion, working and reporting area concerning the status of topics that the consortium is working on, and who is collaboration on each of the topics. This complements the use of Waffle (see collaboration tools section), where individual development steps are specified and assigned. Where written content other than code is generated, documents are created in collaboration in this section, while individually created documents are at least uploaded to this section. In terms of administration, this section contains information for tracking progress with respect to the work plan, including its deadlines. Waffle is used for fine-grained steps.
- Deliverables: The schedule for deliverables, assignment of responsibilities, working documents created during the creation of the deliverables and the deliverables themselves as they are submitted.
- Datasets: Links to where the consortium members can find datasets for studying algorithms.

- Resources: Instruction for setting up databases and software. Presentation of testbeds and other pre-existing infrastructures. Information about material that is considered relevant for R&D of LADIO.
- Papers: A list of papers that have been submitted in the context of LADIO. When a new paper is planned by one of the partners, an extended abstract is published here, so that the partners can agree to its publication in accordance to the consortium agreement.

Use rules for Google Docs

- For every document that is authored for a deliverable, every partner involved in that work package appoints a co-author. The work package leader appoints one of the co-authors as the main editor (main author).
- During the review process, all participants to the deliverable must approve the document before submitting to the EC.
- Using the draft / review / proposed / final status, the main author of the document upgrades the status
- Google Docs editing mode is used during draft status
- Google Docs suggestion mode is used during review and proposed status

Communication

Video conferencing

The LADIO consortium holds a teleconference every month to keep track of the project progress, in addition to frequent bilateral teleconferences to discuss development decisions.

Mainly two audio-video conferencing systems are going to be used for LADIO. Costs for BlueJeans (https://www.bluejeans.com/) are covered by an existing contract of MIK, Google Hangouts (https://hangouts.google.com/) costs are covered by an existing contract of SRL.

BlueJeans is the primary choice of conferencing system for larger calls. Its advantages include:

- a quite high audiovisual quality, with reliable full-duplex audio communication, and a preference for maintaining audio quality over video quality
- a fixed, permanent URL that can be announced days, weeks or months in advance of a teleconference, and that can be used spontaneously by project members when not used otherwise
- an opportunity for dialing in by telephone when necessary
- availability as a stand-alone application and within a web browser
- screen sharing etc.

Its disadvantage is the very high compute requirement on the client computers, which drains batteries and creates heat and noise.

Google Hangouts is the secondary conferencing systems. Its advantages include:

- excellent integration with Google office suite and Hangouts chat
- integration with user IDs that are known from project partners due to Google Docs registration
- much less compute-hunger than BlueJeans
- arbitrary number of parallel sessions
- screen sharing etc.

Its disadvantages are the lack of permanent URLs, frequent fallback into a half-duplex audio mode, preference of video quality over audio quality.

For all official teleconferences, LADIO mandates that partners use either a combination of microphone and headset that provides decent audio quality (like the standard headphone of mobile phones) or a separate conference speaker, such as the ClearOne Chat 60-U, which does not include a camera, or the Logitech ConferenceCam BCC950, which does include a camera.

Asynchronous discussions

LADIO uses the online service Slack (https://slack.com) for asynchronous discussions. Slack allows the creation of a project that is assigned an own DNS-resolvable name, and the creation of an arbitrary number of channels within this project. Users can share textual discussions within these channels, or communicate privately (in an automatically created 1-on-1 channel) within a project. The interfaces makes it easy to extend communication beyond text, allowing the sharing and inline presentation of images, and video, linking to web pages and other services. Slack supports file upload to a channel as well.

To ensure the long-term availability of content from these discussions, LADIO will explore whether a move to a self-hosted instance of the free edition of MatterMost (https://about.mattermost.com/) is an appropriate replacement for Slack, or whether the LADIO project should pay for a Slack account.

Both Slack and MatterMost allow an export of conversations, which can then become part of the Meetings or Resources sections as mentioned above. Using the non-paid version of Slack, such content may, however, be lost before the relevance of a conversation is noticed by the project partners.

Diary

A dedicated Slack/MatterMost channel named #Diary is used for extremely brief, one-line weekly status reports concerning work that every individual member of the LADIO team is performing for LADIO.

This diary is meant to support the writing of reports, but also to provide assistance between partners more easily.

Use of the diary channel is considered experimental.

Additional tools

Websites

The main entry point to the LADIO project occurs through the website http://LADIOproject.eu. The name has been reserved by SRL.

The content is versioned and collaboratively edited through GitHub.

Separate websites will be maintained for the individual tools or groups of tools that are created, or released to the public, in the course the project. It is expected that a presentation of generic tools, although LADIO combines them for the project's goals, will attract contributors more quickly than a presentation in the context of their LADIO use.

The website http://LADIOproject.eu is kept up-to-date with new information on the following:

- Code made public
- Attendance at shows, trade fairs, as well as conferences where we present something

- White papers as well as research papers
- (New) People
- Press coverage
- Other news in the project

Code sharing and Version control

LADIO has chosen GitHub (https://github.com/) as the sharing and version control system for software development as well as for editing of some papers and reports. GitHub provides encrypted transfer (SSL) and private repositories with detailed ACL options. Git is also a version control system that several project members have used in an earlier collaboration, and it is popular with both commercial and open source developers. Projects can be kept private to a group of developers like the members of LADIO, and all or a subset can be published as open source when so decided by the project partners. Recent changes to commercial use of GitHub have resulted in a less appropriate scheme, but LADIO expects to re-use the pre-existing GitHub organization *poparteu* that was acquired under the older, more appropriate contract. This organization will be renamed within the 1st quarter, with the poparteu URLs redirected to the new organization. All project partners who will contribute to code development are experienced with git as a co-development and version control tool.

GitHub is particularly well-suited since important parts of the open source basis of LADIO (all public results of the POPART project) are already hosted on GitHub. GitHub can also support project publicity because publishing projects on GitHub attracts attention to the code that LADIO partners decide to release as open source. For code that the consortium chooses to release code as open source, this can easily be achieved by switching a repository to public status. There is a wide range of available clients for git, supporting all common computer platforms, and providing the level of detail needed by both advanced users and for very basic use.

The use of Git mandates that all new developments are implemented in branches. Before a branch is merged into the *develop* branch of a git repository, the author(s) must issue a pull request that allows other partners to review the changes or new contributions. If such changes have not been reviews for one week after a pull request was made, the author(s) may merge without review.

Whenever a version of a Git repository is used for a generating results for a paper, for a technical demonstration, and other noteworthy events, then this version of assigned a Tag. This Tag must be unique for the repository, but should be the same through all the Git repositories that are used in the event.

Each Git repository must contain a README and a CONTRIBUTIONS file.

LADIO relies on 3D reconstruction methods that are implemented in the open source project OpenMVG, and LADIO will contribute to this project. The 3D reconstruction of the markers will be integrated into the OpenMVG library. We will also integrate an interface into OpenMVG, which allows OpenMVG to link to the public LADIO repositories as a contribution to its 3D reconstruction methods (integrating additional geometrical information).

The OpenMVG repository is available at: https://github.com/poparteu/openMVG[1]

[1] The organization name “poparteu” will be renamed within Q1.

The number of repositories will increase as the project developed. The following repositories will be available from the start:

- http://ladioproject.eu, the repository for shared editing of the main LADIO web page.
- POPSift, an implementation of SIFT using nVidia CUDA: https://github.com/poparteu/popSIFT
- HAL, a software for networked and and shared memory communication that may form a basis for CamBox and MiniBox software: https://github.com/poparteu/hal

Twitter

LADIO aims at a distribution of all project news that will also be listed on the project's main web page using Twitter. For this reason, MIK will conduct a monthly poll for news among the partners.
The #Diary channel will also be read to determine whether newsworthy events have taken place.

Progress tracking

LADIO uses Waffle (https://waffle.io), an agile task management system, to track development progress.

Waffle uses a card-based paradigm, where a card represents an issue. Issues can be arranged into milestones, and they can be filtered to restrict clutter.

Waffle is integrated with GitHub. For a given issue in Waffle, which has been assigned a number, integration can be achieved by creating a GitHub branch with a name that includes the Waffle-assigned issue number. This may require the use of the Waffle's default workflow.

Use of Waffle is considered experimental.

LADIO Mailing Lists

We have the following mailing lists for different uses in the collaboration:

ladio-project-group@mikrosimage.com	All developers and researchers in the LADIO project
ladio-admin@googlegroups.com	Management related to the project