



LASERLAB-EUROPE

The Integrated Initiative of European Laser Research Infrastructures IV

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Work package 6 – Access Management
and Monitoring Infrastructure-Users Connections

Deliverable D6.5
Final report on User-Infrastructures relations

Lead Beneficiary: 4 – CNRS

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| <i>Deliverable Type</i> | |
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| R = Report DEM = Demonstrator, pilot, prototype, plan designs DEC = Websites, patents filing, press & media actions, videos, etc. OTHER = Software, technical diagram, etc. | R |
| <i>Dissemination Level</i> | |
| PU = Public, fully open, e.g. web CO = Confidential, restricted under conditions set out in Model Grant Agreement CI = Classified, information as referred to in Commission Decision 2001/844/EC | PU |

1 Objectives of WP6

The objectives of this work package are to coordinate the joint transnational access programme of Laserlab-Europe and the common management of the application and selection procedures. In addition, the aim is to monitor and improve, at the consortium level, the quality of services provided to users by the access providing infrastructures, with substantial involvement of User Representatives. Advantage is taken of user feedback to refine the consortium's long-term strategy.

The work packages comprises the supervision of the access management and selection procedures through the Access Board, the organisation of User Meetings, interaction with User Representatives, analysing user feedback and user needs, as well as the analysis of the user community and measures to enlarge the user basis.

Work package and task leader: Access Board, headed by CEA-SLIC and CNRS-LULI.

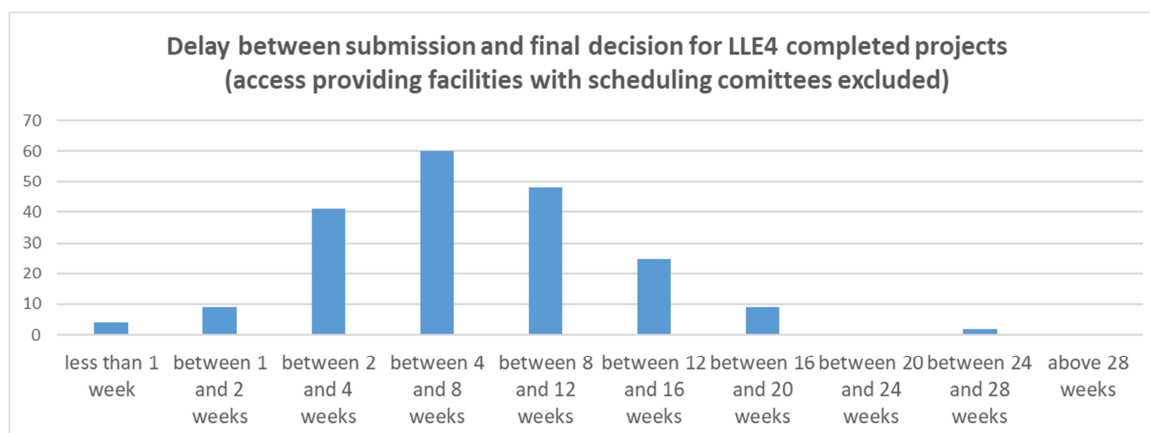
2 Modalities of Access Management and Selection Procedures

The access activity is organised as a joint activity among all participating infrastructures, under supervision of the Access Board. A web-based application procedure provides a single, unified entrance gate to all facilities of Laserlab-Europe. The technical web-based tools are implemented in WP2 "Virtual Infrastructure".

The proposal evaluation is being performed by a common, fully external Selection Panel, having access to a pool of more than 200 external and international referees. The Selection Panel is composed of international experts including one User Representative. The Panel acts on behalf of the Consortium, but is independent in its scientific judgements

The Chairman of the Access Selection Panel is Prof. Wolfgang Demtröder, an external and independent world-renowned scientist. His main responsibilities are the handling and monitoring of the access proposal reviewing process via the web platform, the provision of a final summary statement for each proposal as well as counselling on all access-related issues. He was nominated and elected by the Laserlab-Europe participants and is, in conformity with the EC policy for transnational access, independent from the participating infrastructures.

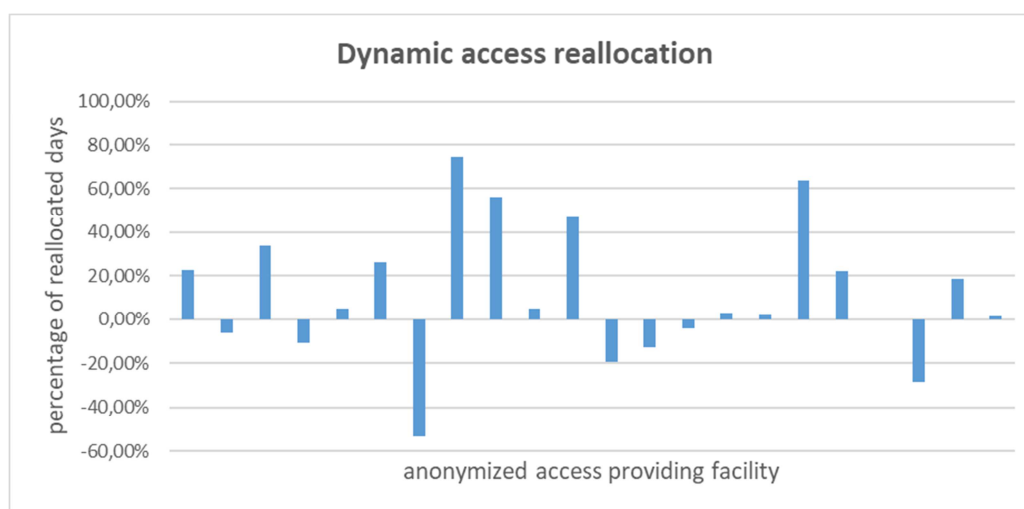
Selection is made on the basis of scientific excellence, followed by priority for new users. The application, evaluation and selection processes are fully web-based, the majority of hosts accepting proposals at any time. The total evaluation process takes, on average, about 55 days (see distribution on the graph below), which includes 20 days for initial feasibility check by the host, and 35 days for the external evaluation). This is considered as quite satisfactory according to the user feedback evaluation.



The longest delays are due to difficulties to find experts in the specific field who also were available to respond within the time foreseen (for two projects with considerably long delays, up to eight referees were contacted).

Transnational access is exclusively reserved for external users. Scientists from one access-providing partner wanting to use the facilities of another access-providing partner are not eligible for financing out of the access programme and such visits, hence, not considered transnational access.

The “Dynamic Access Allocation Policy” provides efficient flexibility to the individual Infrastructures when forced to react on unpredictable fluctuations in the Users demand, or on temporary down-times of equipment by transferring access units between APIs. Dynamic access allocations are being managed by the Access Board (through monitoring of the programme every 6 months), and approved by the General Assembly. The policy has been implemented on two occasions during the contract, in October 2018 and June 2019. It allows the Consortium-wide contract objectives in terms of access days, projects and user groups to be met, and even exceeded (+11.5%). The following graph illustrates how such reallocation effort is shared among the access providing facilities.



3 Support Offered to Users at each Facility

All access facilities routinely provide the necessary services to their Users, including on-site training, offices and computational tools. Administrative staff takes care of logistic arrangements: travel & subsistence, material transfer, reimbursements, clearance, etc. Dedicated technical staff is in charge of daily provision of laser and experimental area operation. The users also have scientific assistance from local scientists, thus receiving not only access to a given facility but also expertise from the host group.

The quality of these services is monitored through two sections (“Quality of the logistic / administrative / scientific / technical services before / during / after the experimental run” and “Facility operation”) of the Experimental Effectiveness Assessment Form (EEAF) (see paragraph 5 below). They allow the Principal Investigators providing not only factual grades but also suggestions on how to improve the facilities in terms of new instrumentation and laser performances. Among these recommendations, some examples are worth mentioning: implementation of a mass spectrometer inside the ULF-FORTH experimental chamber - to monitor the vacuum quality - or of an Argon ion gun at CELIA, and improvement of the FERMI two-color capabilities.

4 Interaction with User Representatives

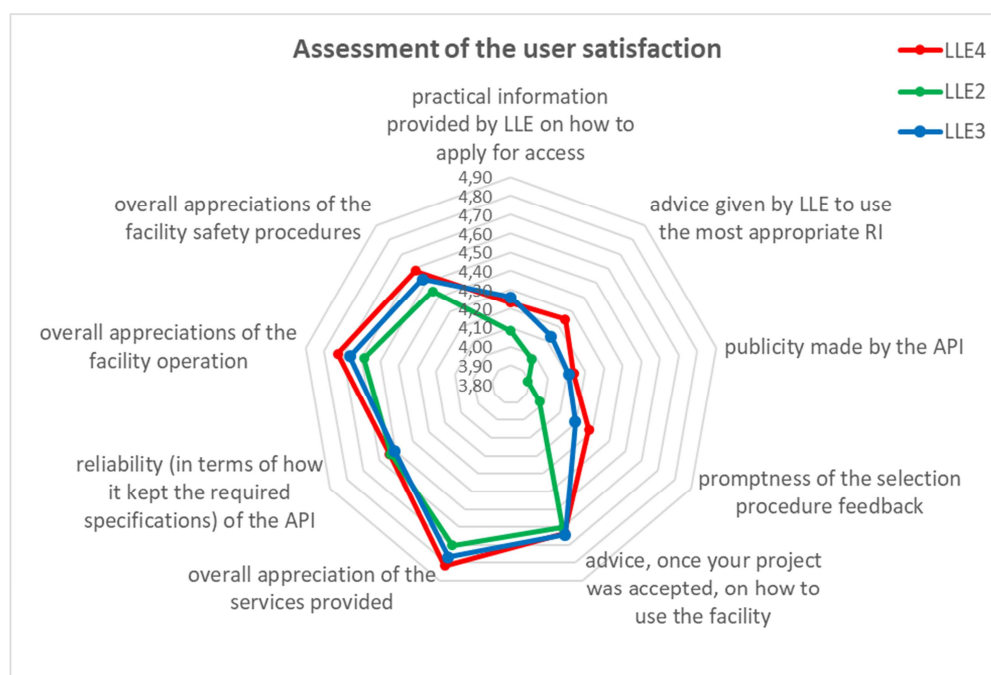
The User Representatives Committee of Laserlab-Europe consists of scientists who are experienced users of the Laserlab-Europe access facilities and, hence, are familiar with both the scientific needs of the users and the opportunities provided by the host infrastructures. In their capacity they act as interface between the user community and Laserlab-Europe, providing advice to both sides and helping to maintain and improve the relations between

them. Their role is of prime importance for implementation of user-related activities such as training or outreach to national communities. They co-organise the User Meetings (from establishing the scientific programme to chairing Round Tables) according to guidelines they have developed based on past experience. User Representatives are nominated and elected by the General Assembly and have permanent seats in the boards of Laserlab-Europe, in particular the Access Board, the Networking Board, the Management Board and the General Assembly.

5 User Feedback and Response to User Needs

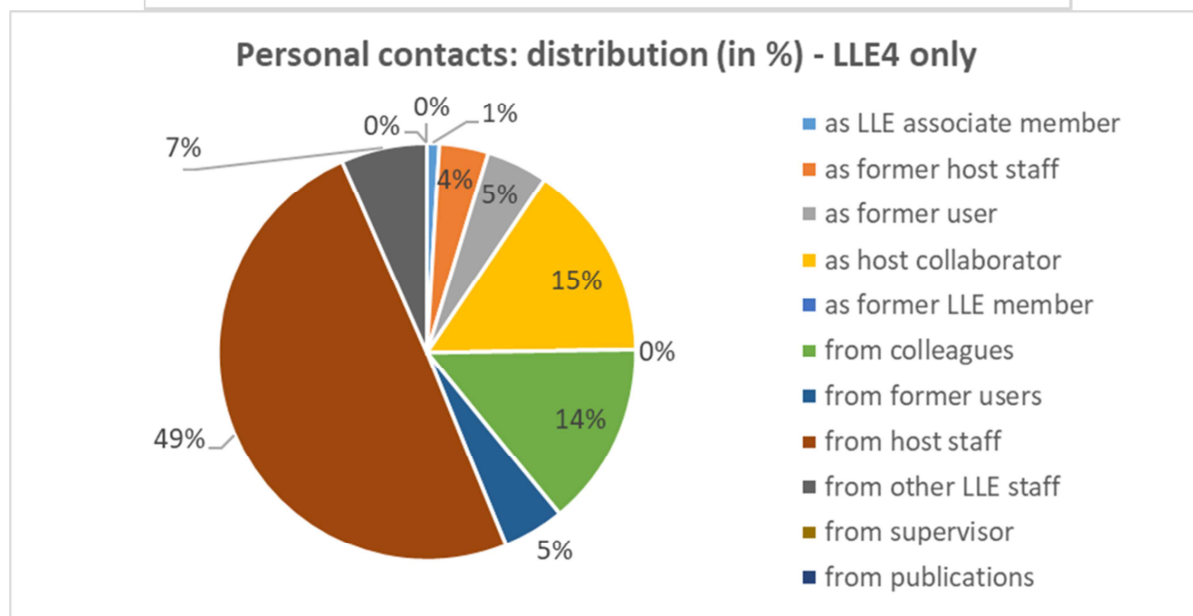
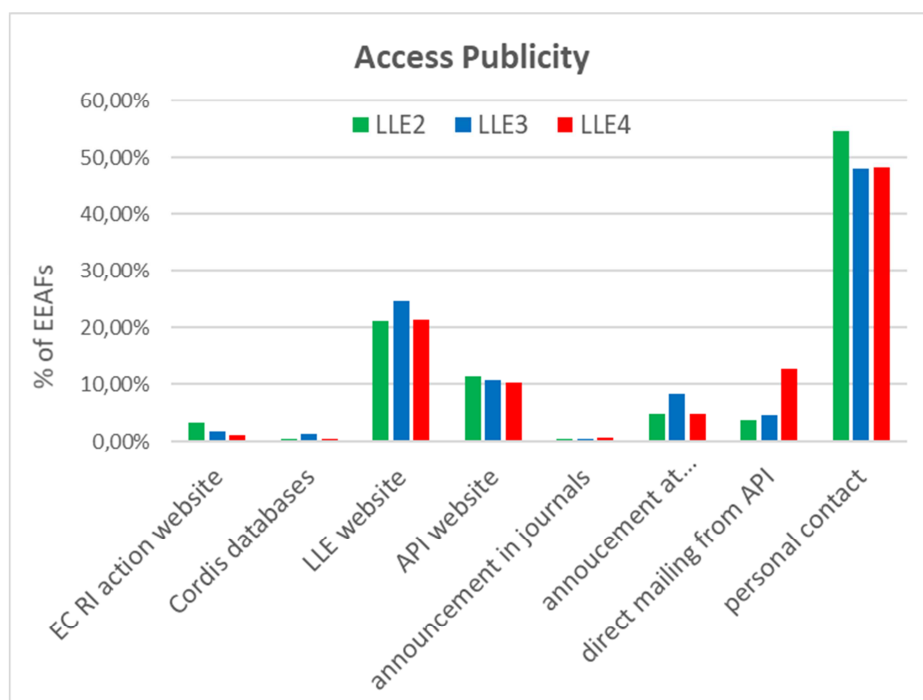
Principal Investigators are requested, once their experimental campaigns are completed, to fill in an Experimental Effectiveness Assessment Form (EEAF) and to submit a brief summary of their achievements (Activity Reports). The form assesses i) access publicity, ii) the Consortium's submission/selection procedure and iii) the overall quality of the support provided by the host facility through grades from 1 (very poor) to 5 (very good). Answers are analysed periodically in order to help defining actions to be taken by the infrastructures and the Consortium to improve the access offer.

177 EEAFs for Laserlab-Europe IV projects have been received so far, which represents a satisfactory response rate of 62%. Their analysis is summarized on the Kiviat diagram below (plotted from values 3.8 to 5).



LLE4 refers to the present Laserlab-Europe contract (12/2015-11/2019) whereas LLE2 stands for the 2nd contract (03/2009-05/2012) and LLE3 for the 3rd Laserlab-Europe contract (06/2012-11/2015).

For almost all services, the red line, which represents the current contract, is outside the blue and green lines, meaning that the user satisfaction is improving compared to previous programmes. The services on “how to apply for access” and “how to use the facility” are the only ones showing slightly lower scores than previously (-0.7% and -0.2%). Such variations are not very meaningful, especially when correlated to the access publicity channels; even if direct mailing from the access providing facilities seems to recapture user attention, the preferential channel is still personal contacts, mostly with API-related researchers (figures below).



In addition, a User Questionnaire was distributed at the beginning of the project to identify the long-term needs of the users. The collected data contributed – among other factors - to inclusion of new access providing facilities for the next project.

6 User Meetings

Annual User Meetings are organised at the consortium level in order to bring together a significant number of users, facilitating and fostering their exchanges across different disciplines and with the infrastructure operators. They provide a unique opportunity for users to present their scientific results and to give feedback on Laserlab-Europe's access programme via Round Table discussions, and for the access providers to present recent upgrades, new experimental set-ups or diagnostics. User Meetings are organised by the Access Board and the User Representatives, with each meeting being hosted by one of the access providing facilities. The following meetings have been held:

- a) Laserlab-Europe User Meeting 2016, 29-30 September 2016, Heraklion, Crete, Greece
(for details see D6.1)
- b) Laserlab-Europe User Meeting 2017, 27-29 August 2017, Vilnius, Lithuania
(for details see D6.2)
- c) Laserlab-Europe User Meeting 2018, 29-30 November 2018, Paris, France
(for details see D6.3)
- d) Laserlab-Europe User Meeting 2019, 27-29 October 2019, Coimbra, Portugal
(for details see D6.4)

7 User community analysis and gender issues

Numbers in this section have been extracted from the Laserlab-Europe Proposal Management System database on 22 November 2019, and therefore are not yet final.

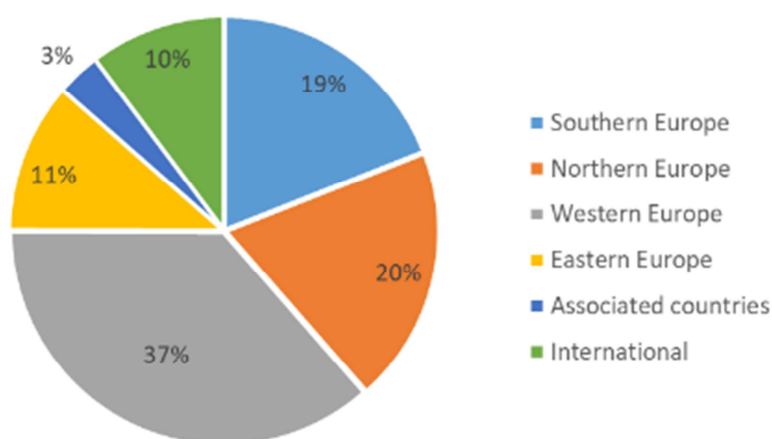
285 projects have been granted access so far and are completed, and 90 have been rejected, which leads to a rejection rate of 24%. 40 projects are pending (accepted but not yet scheduled, under evaluation or feasibility check). This backlog volume is rather stable as, among the completed projects, 42 have been submitted before the start of the contract (01/12/2015).

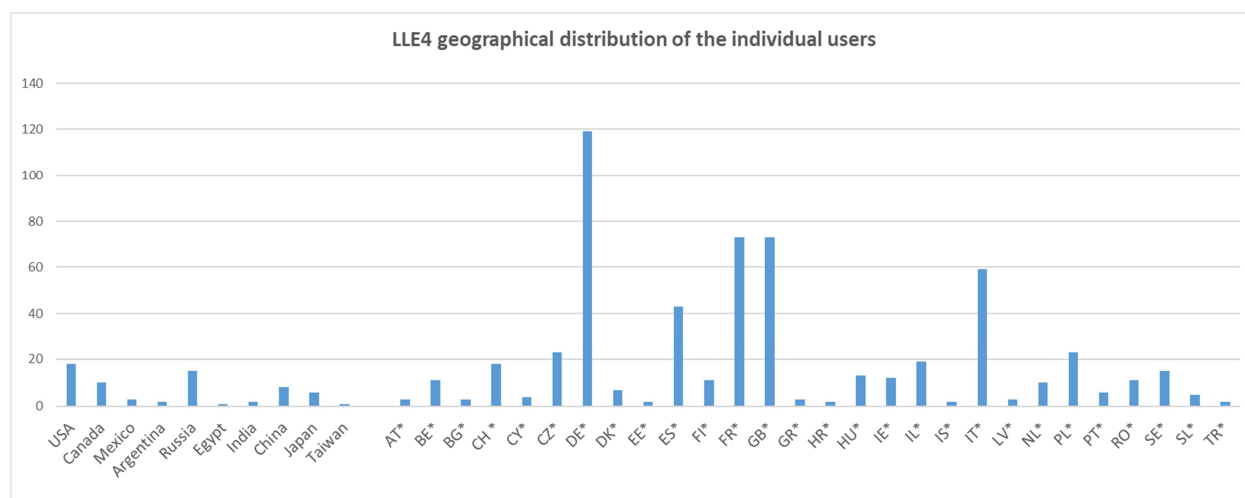
In terms of access units, the rejection rate increases to 47% as, for a majority of the completed projects, the number of allocated days has been reduced with respect to the number of required days in order to maximise – for a given access budget – the number of granted projects (and thus of users).

Among the 285 completed projects, 32 are “international” ones (either led by a non-European Principal Investigator or with a majority of non-European users), which represents 11.2% in terms of projects and 13.4% in terms of access units (426 days).

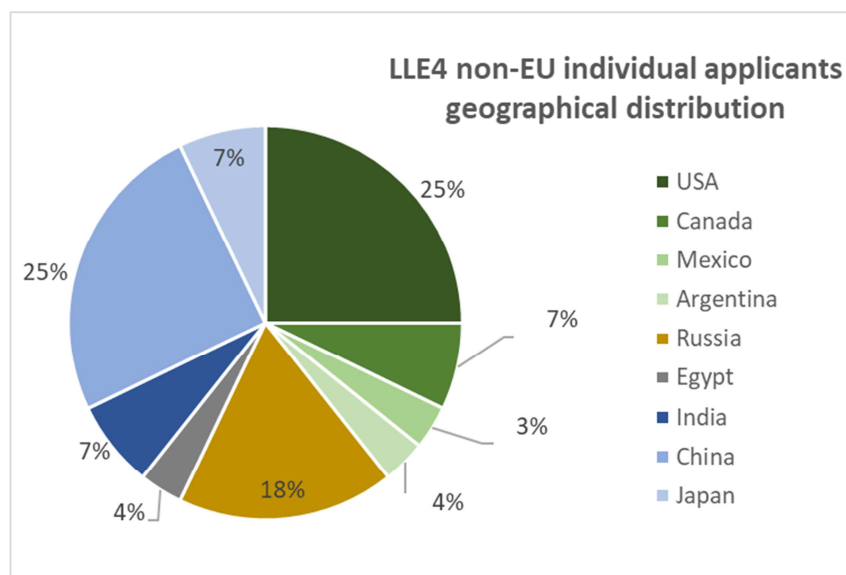
869 users have been welcomed in the framework of the Transnational Access Programme, corresponding to 641 individuals in the Laserlab-Europe IV user community when participation in more than one project is disregarded.

The following figures clarify the geographical distribution of the users’ home institutions.

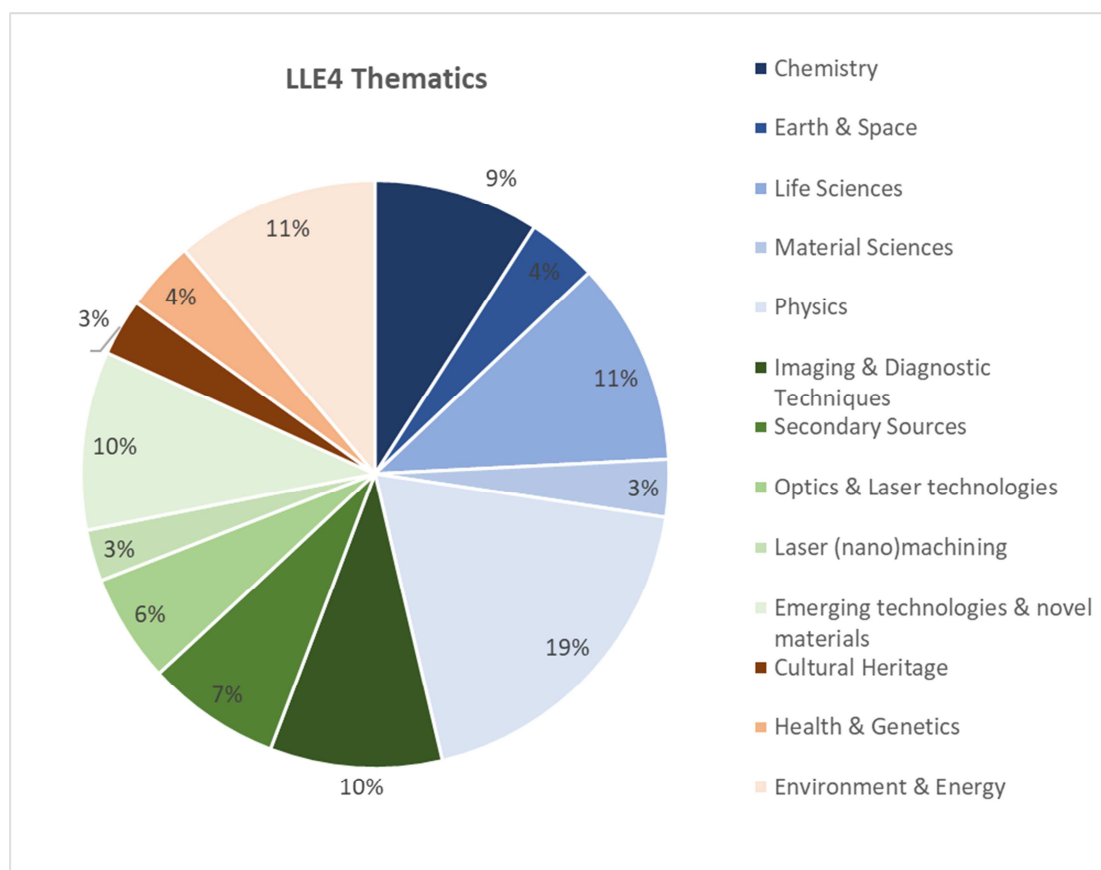




The users exhibit a rather homogeneous distribution over Europe, with still predominance of Western Europe (~36.5%) and strong user communities in Germany, UK, Italy and France (~50.6% of the overall user community). The “international” individual users represent 10.3% of the Laserlab-Europe IV community, with 39.3% from the Americas and 39.3% from Asia.



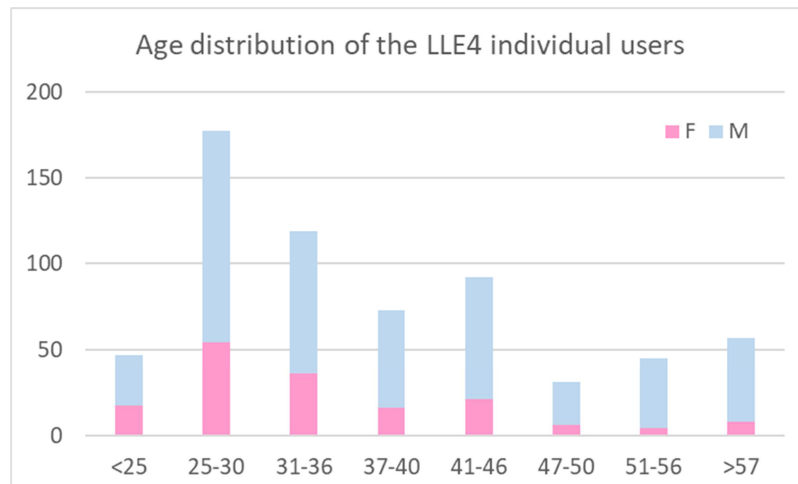
The scientific fields tackled through the Laserlab-Europe access programme are rich and diverse.



Even though projects aiming at deepening knowledge are still predominant (46.3% - in blue on the graph above), it is worth noticing the increasing parts devoted to projects aiming at developing novel technologies and materials (35.4% - in green) and to exploring societal applications (18.2% - in pink-orange). Among these latter, “Energy” encompasses for instance projects related to inertial fusion on high-energy laser facilities, to photovoltaics and hydrogen fuel production while “Environment” deals with combustion and redox chemistry projects. The emerging technologies are mainly nano(bio) technologies (spintronics) but also include interesting developments of novel scintillators or other particle sensors.

The Laserlab-Europe transnational access programme is more and more successful to attract new users. Among the 641 individual users, only 135 have benefited from the activity during the previous two contracts, since March 2009 (i.e. 21.1%). In addition, users from two new countries have been welcomed: Serbia (HR) and Sweden (SE).

Young researchers (assumed to be 36 years old or younger at completion of the project in which they were involved, in majority PhD students or post-docs) represent more than half of the individual users (53.5%) which is illustrating the important role of the transnational access activity for the training of the future European research community. It also confirms the attractiveness of the Laserlab-Europe infrastructures. Correlatively, the average age of the individual users is below 38 while the one of the principal investigators (senior researchers) is ~44.



Gender issues are also a key issue for Laserlab-Europe. The call for proposals emphasises for instance Laserlab-Europe's aim to strive for gender equality and explicitly encourage women to apply for access. Indicators, such as the percentage of female new users or female Principal Investigators, are thus regularly checked. At the time of the present analysis, 25.3% of the individual users are female users (which is quite satisfactory considering the percentage of women in hard sciences at the Master level); this percentage is increasing to 31.2% in the "young researchers" population but is reduced to 22.7% when only principal investigators are considered.