



PROFESSIONAL
& EXAMINATION
MANAGEMENT

LPLUS-System®

The successful introduction of computer-based examinations

Catalogue of goods and services



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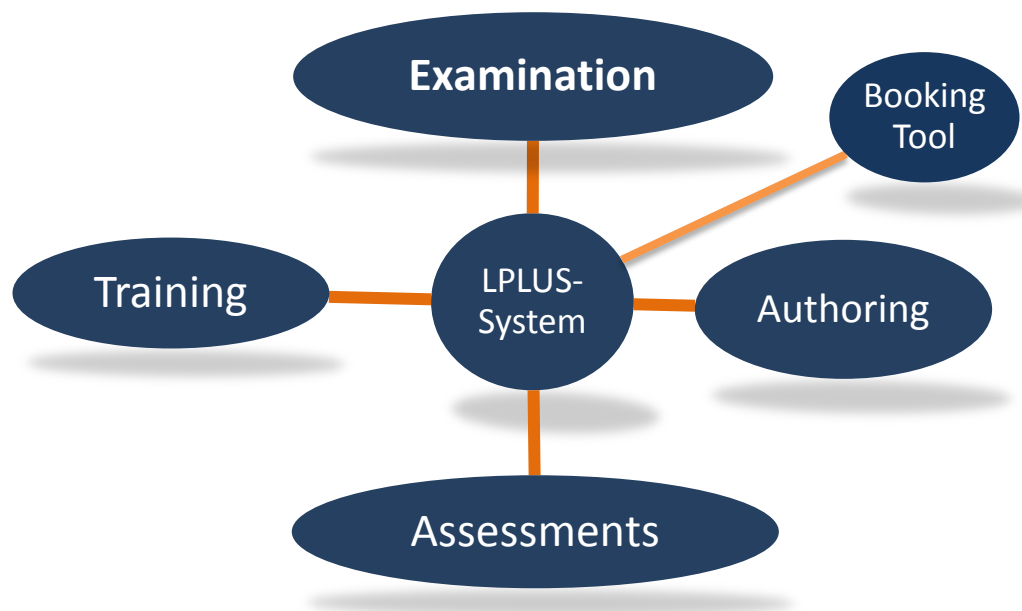
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The LPLUS-System®

The LPLUS-System is a web-based, integrated standard-software for the administration of all relevant processes in the context of theoretical examinations. It is suitable for different branches as well as different target groups.

Components

- Assessments for recruiting (tests with a lower level of legal requirements)
- Training system (for examinees in preparation for theoretical examinations),
- Authoring (for the input and administration of question catalogues),
- Examination system (for a fully automatic implementation and evaluation of theoretical examinations with a very high level of technical and legal security).



Characteristics

- Highly technical and legal safety,
- Highly flexible examination regulations,
- Complex personae and rights management,
- European industry standard for all types of exercises (format: LTM)
- Unique types of exercises for a fully automatic evaluation of very complex and multimedia exercises,
- Highly safe and legally proven test procedure for final industrial examinations,
- Possibility of a fully automatic compilation of variable examinations with a homogeneous degree of difficulty (examinations *on demand*). This procedure permits a reduction of the examination organisation and of the examination logistics as well as a significant reduction of costs in relation to a better quality in the same time.
- Together with the Add-ON LPLUS-Booking Tool customers archive a completely paper-less examination process.

Operational fields of examinations

- Examinations and further training for the German Chamber of Industry and Commerce throughout Germany.
- Examinations for the craft,
- Certifications,
- Examinations for universities,
- Theoretical examinations of professional and amateur pilots worldwide,
- Quality management of flight controller throughout Germany (DFS GmbH),
- Performance control at schools and educational providers,
- Assessments in the application process and in the evaluation of learning analysis,
- Naturalisation tests,
- Language proficiency tests

Operational scenarios

	<i>Technical hosting¹</i>	<i>Operational hosting²</i>	<i>Scenario³</i>
Option 1	LPLUS	LPLUS	Full service, usually for a small number of examinations.
Option 2	LPLUS	Client	Standard solution (SaaS = Software as a Service), usually for examinations with decentralised locations.
Option 3	Client	Client	Clients with won test centres, usually for regular/permanent examinations.
Option 4	Client	LPLUS	Specific cases

- ¹ Technical hosting: Server location
Responsibility for availability, data security, and data privacy.
- ² Operational hosting: Administration of the examination performance, data responsibility.
In the context of operational hosting, it is possible to assign LPLUS' services partially.
- ³ Scenario: Possibility of changing a scenario without any interruptions.

Safety

All question catalogues are reserved and all examination data are coded and can only be interpreted with the LPLUS-System. Each kind of technical disturbances and conflict scenarios will be intercepted completely (Data will only be saved on the server). The communication via internet happens under the https-protocol.



Technical realisation

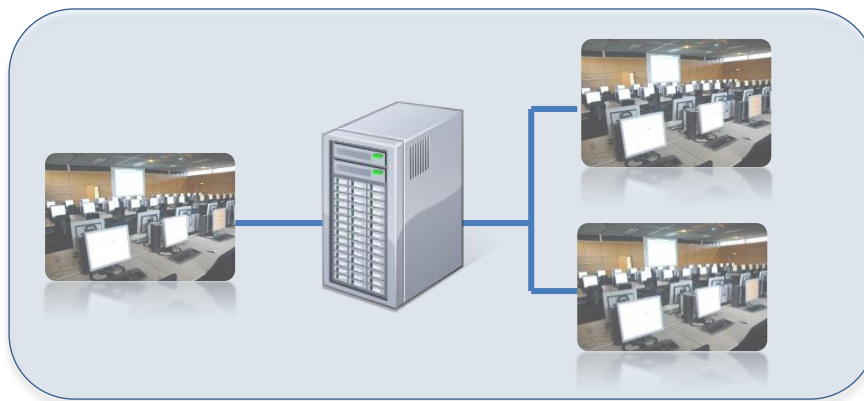
Server variants

- The server installation for examinations at clients (Option 3 and 4)

The LPLUS-System will be hosted on a client's server.

In this case, the installation on a failure-resistant server is required (Standard Windows 2003/2008 Server, MS-IIS, SQL licence).

In accordance to the demand of safety, the amount of data, and the budget, it is possible to run the application server and the database server on only one or on several computers.



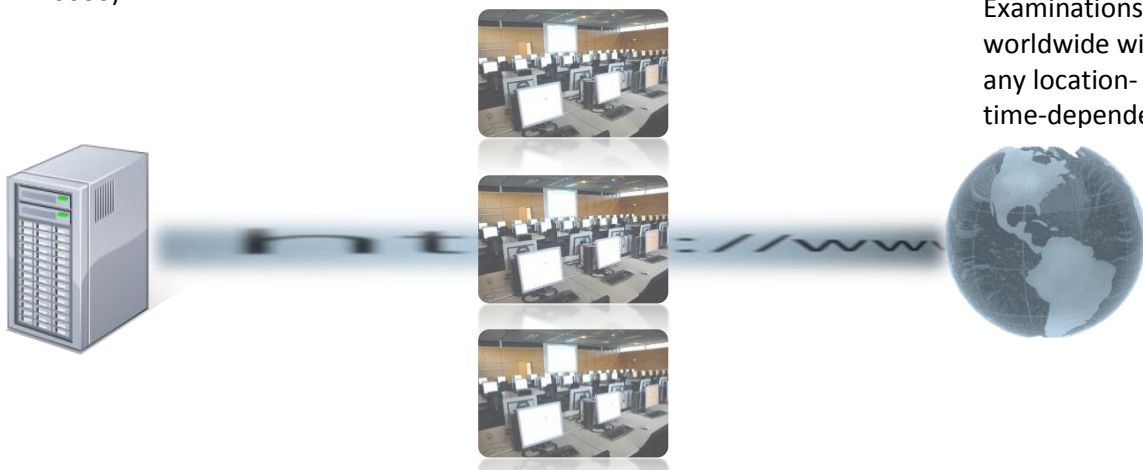
For the optimal integration of an examination server LPLUS will stand at your side with all our competence and experience.

- The usage of examination servers by LPLUS (Option 1 and 2)

The examination software is hosted by LPLUS.

The client does not need any server hardware at all.

A necessary requirement is usually a safe internet connection (https), (DSL >=6000).



Examinations worldwide without any location- or time-dependency.

Examination stations

In general, clients only need a web browser (Internet Explorer or Firefox). For a perfect performance the screen solution should be justified at least in 1024*768 pixels. A good keyboard, a mouse, and devices of low noise will support the examinees in their examinations.

According to the usage of multimedia elements in examinations, it could be necessary to install Microsoft's Media Player, Java, Flash, Silverlight, Microsoft Office or other software.

Temporarily the following variants are utilised amongst others:



Utilisation of an exclusive test centre

A room equipped with computers will be utilised only for online-examinations (50-200 personal computers).



Utilisation of an existing computer lab as a temporary test centre

Existing resources from e.g. computer labs will be utilised for online-examinations.



Utilisation of existing student's notebooks as temporary testing stations.

A student's notebook (or the devices of clients) will be utilised as a temporary testing station via a certain booting process. Any software installation on the student's notebook is not necessary.



Leasing of notebooks from commercial providers

The necessary number of personal computers for the online-examination will be installed by external providers in the client's rooms.

For further information please visit:

www.lplus.de/manual

User: technik

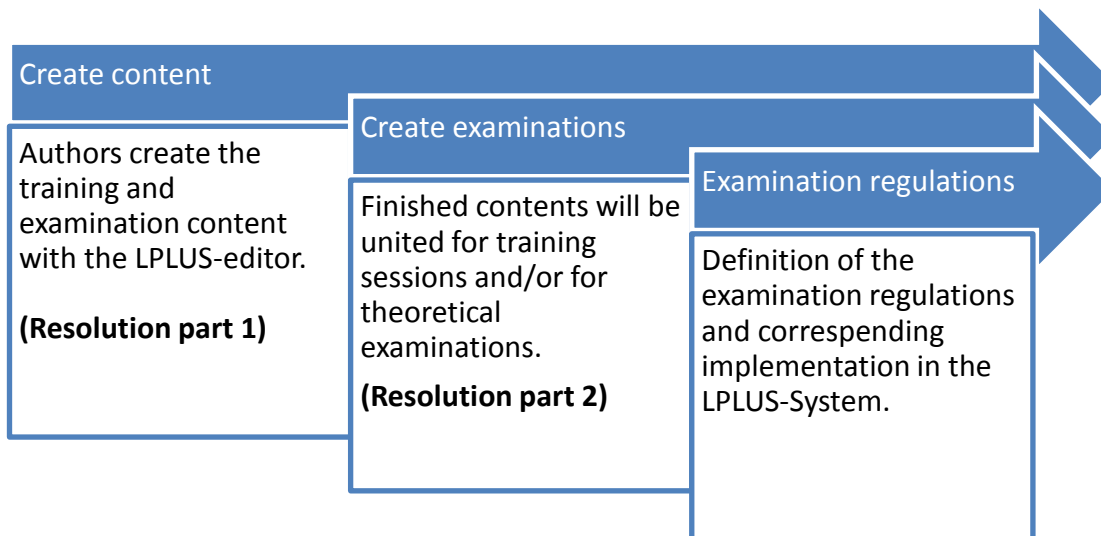
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Cooperation / rent

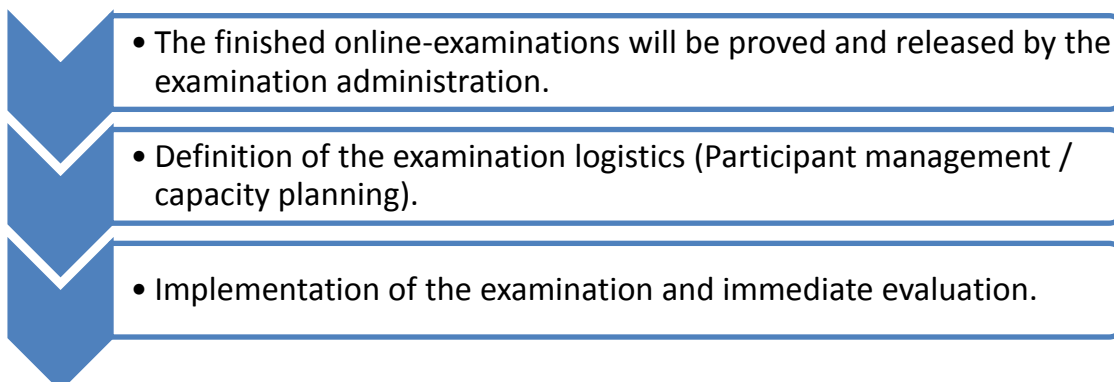
There are also other possibilities which have proved itself in practice. For example, the booking of examination resources in external test centres or the cooperation with relevant organisations (educational provider, Chamber of Industry and Commerce, universities, schools etc.) could be an inexpensive solution, if there are only a small number of dates in online-examinations.

Organisation of online-examinations

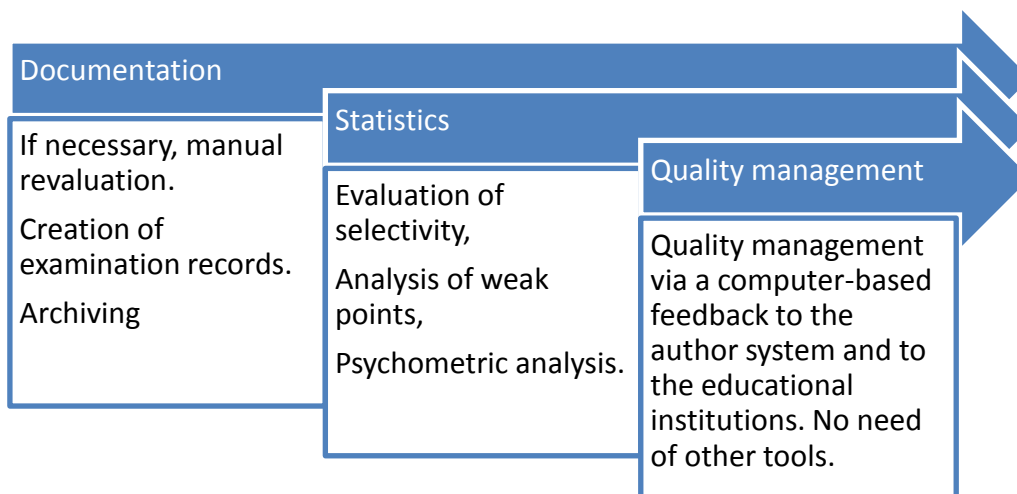
Upstream processes



Main process



Downstream processes

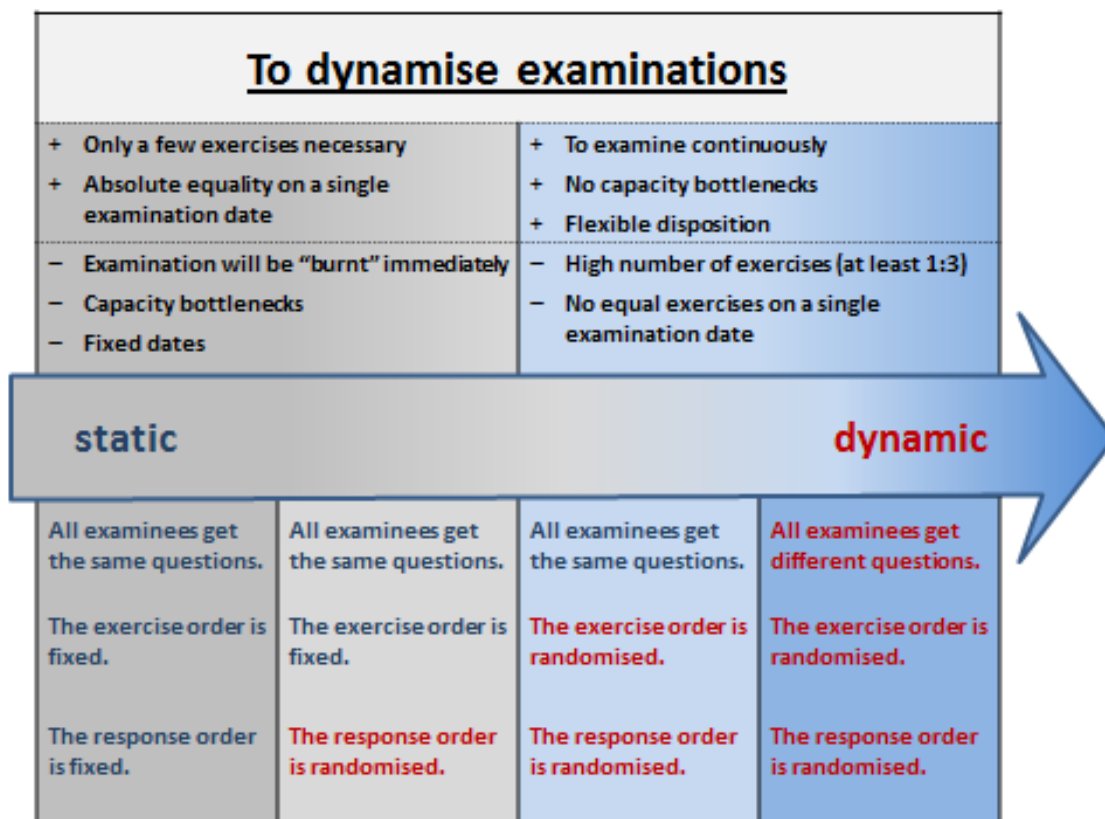


Terms of capacity

Online-examinations offer a high potential for creative examination questions and an effective organisational structure. In accordance to specification of the examination regulations, there are many technical possibilities for the implementation.

The following chart will clarify the variety between the broadband of existing conventions (static examinations) and dynamic examinations, called *on demand*-examinations.

Experience reports are available on the homepage of LPLUS (www.lplus.de) and/or e.g. on the homepage of the ZMML of the University of Bremen (www.zmml.uni-bremen.de) and on the homepage of the school of business informatics at the University of Münster (www.wi.uni-muenster.de/institut/index.html).



Human resource requirement

If and how many additional human resources are required can only be assessed in the certain situation. It has been proven that the manual effort – especially in the case of open questions – will reduce in relation to paper-based examinations in general. Hereto it exists an interesting survey of the CeDis at the Freie Universität Berlin.

Costs

In general, the costs will sink after the introduction of online-examinations because of a high saving of time. Especially the *on demand*-process contains a very high potential for savings. If there are more than 80.000 examinations per year, the costs of the software utility will reduce to less than two Euro per examination (see the current price list). Please pay attention to the latest price-list for actual costs.

Licensing models

Buying the software

Buy a limited or unlimited number of licenses of the LPLUS-TestStudio®. There will emerge non-recurring acquisition costs and only maintenance costs per year.

Alternatives

- Station license
Suitable for test centres.
- Amount license
Suitable for temporary examinations

Software as a Service (SaaS)

The SaaS does not require a software license, but the client will pay for every passed examination. This variant is based on a five-year contract in general. The final costs depend on the effective number of examinations (see the current price list).

Extra service

In the context of *outsourcing*-agreements, LPLUS can undertake certain agreed services in the process of examinations (see the current price list).