

## Call for Bids

**Name of Project:** Concept for a Framework for Internal API Alignment  
**Deadline for Bids:** 2019-04-30  
**Hand in Bids to:** Matthias Kunkel, ILIAS e.V., info@ilias.de

Dear All,

the Technical Board of the ILIAS society hereby calls for bids for the aforementioned project.

During the introduction of the Workflow Engine<sup>1</sup> the core developers discussed, how the Workflow Engine could consume activities offered by different components of the system. Since at that time similar activities were already offered via SOAP, the core developers declined to just reimplement these activities for another context. These spawned the idea to create a Service Discovery<sup>2</sup> that would allow components to implement these activities once and let them be consumed by SOAP as well as the Workflow Engine.

During discussions about an ILIAS-App and about connectivity with other systems, the requirement for a REST-Service in ILIAS<sup>3</sup> was stated. This REST service could be another consumer of the aforementioned Service Discovery.

When investigating the state of the art in input security<sup>4</sup> it became apparent that it currently is unclear, where and how constraints on structure as well as on policy should be enforced. With the current state of the art, where many activities are implemented in the GUI classes directly, a lot of code would need to be duplicated between GUIs and SOAP. A new layer that encodes activities abstracted from their consumer could be a natural home to enforce these constraints.

Furthermore, ILIAS currently offers very little structured documentation what users could do in general with different components. The SOAP-WSDL offers little in term of human-readable documentation, while the ILIAS docu is very GUI centric and does not answer the question what

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1 [https://docu.ilias.de/goto\\_docu\\_wiki\\_wpage\\_2049\\_1357.html](https://docu.ilias.de/goto_docu_wiki_wpage_2049_1357.html)

2 [https://docu.ilias.de/goto\\_docu\\_wiki\\_wpage\\_4689\\_1357.html](https://docu.ilias.de/goto_docu_wiki_wpage_4689_1357.html)

3 [https://docu.ilias.de/goto\\_docu\\_wiki\\_wpage\\_2121\\_1357.html](https://docu.ilias.de/goto_docu_wiki_wpage_2121_1357.html)

4 <https://github.com/ILIAS-eLearning/ILIAS/pull/1371>

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could be done in general with a component. A docu like this would be required for users of the Workflow Engine as well as for other usage scenarios of the outline abstraction.

The Technical Board looks to improve these situations by working towards a framework that provides an abstraction for domain-level activities with different components of the system. To move towards this goal, the requirements of such a framework should be examined and possible solutions should be explored. “Framework” here is understood as code and abstractions as well as, if required, processes.

Details of the project are outlined on the next page. Please hand in your bids and a corresponding statement of work by email according to the information in the header.

Bids will be judged by the offered price and the details outlined in the statement of work. We are looking forward to your submissions.

Best regards,

Matthias Kunkel

on behalf of the Technical Board of the ILIAS society

## Project Details

- Name of Project:** Concept for a Framework for Internal API Alignment
- Latest date of delivery:** 2019-07-31
- Goals and Benchmarks:**
- The requirements for such a framework from different perspectives are examined thoroughly. These perspectives are:
    - implementors of activities, i.e. maintainers of components that offer domain-level activities to users or other components
    - implementors of consumers of activities, e.g. the SOAP-service, GUIs or the Workflow Engine
    - power-users that want to use activities via the consumers, e.g. users of a REST-service
  - The relation of such a framework to other components of the system is outlined. Components that must be addressed are: RBAC, Initialisation, GUIs and Control-Flow, Refinery, Plugins, DI, while other related components should be considered as discovered.
  - One or multiple solutions are outlined as a preparation for the implementation of the aforementioned framework. For the possible solutions, the answers to the following questions are examined:
    - What would implementors of an activity need to do to offer an activity to the world?
    - What would implementors of consumers of activity need to do to consume these activities?
    - How would a documentation about the activities be offered to power-users? How would they use it?

**Deliverables:**

- A preliminary VC of about 2h with interested ILIAS developers to gather initial requirements, ideas and possible relations to other components.
- A PR containing the requirements, initial ideas and relations to other components for the TB, as prose or code.
- A discussion of the initial collection and possible solutions based on the PR with the TB via a VC of about 2h.
- A PR containing a concept with answers to the questions outlined in “Goals and Benchmarks” for the TB. The PR should take the current state of the discussion, as found in the locations mentioned on the first page, and the results of the preliminary workshop into account.
- A discussion of the concept based on the PR with the TB via a VC of about 2h.
- A public PR containing the concept, honed based on the feedback gathered from the TB.
- A presentation and discussion of the concept with interested ILIAS-developers via a VC of about 2h.
- A summary of the discussions and the general state of the concept in the public PR.

**General Conditions:**

- The PRs should be handed in at the repositories of the TB and the ILIAS e.V.
  - <https://github.com/ILIAS-TechnicalBoard/ILIAS>
  - <https://github.com/ILIAS-eLearning/ILIAS>
- The concept should be written down as markup and located in docs/documentation.
- The PRs and VCs should respect common procedures of the ILIAS community.