

Dual-Desk PhD researchers

An open innovation approach implemented between KU Leuven and Siemens Industry Software

INTER-SECTORAL STAFF MOBILITY



Contact

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Main actors

- KU Leuven hosting research group (main professor and peer-researchers)
- Siemens Industry Software research group (main supervisor and peer-researchers)
- KU Leuven and SISW administrative and legal support
- KU Leuven Arenberg Doctoral School
- PhD researcher in question

To boost realization of Siemens Industry Software's and KU Leuven's complementary ambitions to advance, respectively, the industrial state-of-the-use and scientific state-of-the-art in mechanic and mechatronic system design and analysis, both organizations co-developed a concept they label "Dual Desk PhD".

A steering team, composed out of the corporate RTD Director of Siemens and the head of the KU Leuven Noise and Vibration research group, discuss on a regular basis cross-fertilization opportunities between the industrial product and service roadmap and the academic research roadmap. After identifying such opportunities, it is investigated if it makes sense to recruit/host a co-supervised researcher to develop the opportunity towards PhD-level scientific innovation with an industrial valorization target. Once the research objectives are defined and funding is agreed, an appropriate candidate is selected from within either organization or recruited as new researcher. The process is strongly enabled by dedicated industry-university funding schemes such as VLAIO Baekeland (Flanders) and H2020 Marie Skłodowska Curie Industrial Doctorates, but can also take the form of a bilateral PhD programme.

The researcher has two desks, one at KU Leuven and one at Siemens and divides his/her time between both, hence benefitting from being submerged in an academically inspiring environment, while at the same time gaining experience on what it means to bring innovation into an industrial context. The researcher can fall back on the fundamental knowledge base of KU Leuven while he/she can at the same time be challenged by full-scale industrial application studies with end-users through the network of Siemens Industry Software.

Over the past years, several such Dual Desk PhD's have successfully defended their degree and are now continuing their career at KU Leuven, Siemens and other organizations worldwide. KU Leuven and Siemens Industry Software highly appreciate the scheme and are continuously updating and further improving it learning from do's and don'ts experienced, expanding lessons learned to and streamlining processes in legal, financial and doctoral school administrations.

Process Main Stages

STAGE 1 – IDENTIFICATION OF A RESEARCH TOPIC

Identification of a suitable research topic based on roadmap cross-fertilization analysis and agreement on the corresponding funding scheme to be used.

STAGE 2 – PHD CANDIDATE SELECTION

Selection of a suitable PhD candidate (internal or external recruitment)

STAGE 3 – BUILDING A SOCIAL NETWORK

The first 3 months of the PhD are crucial as during this start-up phase, the researcher should get embedded in both the academic and industry environment and build up a social network with his/her peers.

STAGE 4 – MONITORING AND STEERING RESEARCH

Monitoring the progress and steering the research during the main part of the PhD research execution by the joint supervision team.

STAGE 5 – PHD DEFENSE

Wrap up of the work and defense of the PhD. During this phase, both the academic and industrial output KPI's need to be respected.

STAGE 6 – EVALUATION

After completion of the PhD, an important phase is the evaluation of the whole process by the steering group to update and improve the process based on lessons learned.

Touchpoints & Bottlenecks

TOUCHPOINT 1 – MEETINGS OF JOINT RESEARCH INTEREST

Periodic roadmap exchange meetings to identify topics of joint research interest (at least yearly). Identifying where academic research tracks and industrial needs meet is the starting point for a joint endeavor. This exchange takes the form of a workshop chaired by the steering team and involving the senior researchers of both parties.

TOUCHPOINT 2 – PERIODIC SYNCHRONISATION MEETINGS WITH STEERING TEAM MEMBERS

Periodic synchronization meetings between the steering team members to review the global process and the set of joint projects and programs:(at least bi-monthly). This allows to assess the overall process as well as the global status of the individual research tracks. It is important to timely identify problems with any of the researchers, their supervision, the operational circumstances or practical needs, financing etc. Where needed, extra individual progress meetings can be scheduled.

TOUCHPOINT 3 – REGULAR PROGRESS MEETINGS WITH SUPERVISORS

Per Dual Desk PhD hold regular progress meetings where both supervisors are present. This allows to assess progress according to each party's priorities, update the work plan, confirm next period targets and solve any operational issue of joint relevance (test setups, use cases, investments, research visits, publications, IP, ...). Where identified by the Synchronization meeting, additional ad-hoc progress meetings can be scheduled.

Success Factors / Barriers

Success factors driving the growing interest of both KU Leuven and Siemens Industry Software in the Dual Desk PhD scheme are a clear win-win leverage between scientific research advancement and industrial product and process innovation. The combination of academic research being pushed and inspired by industrial problem statements and industrial products and processes being fed with unique and truly revolutionary technologies yields extremely interesting and attractive PhD projects. Key requirement here is the open mindset and attitude of the members of the steering group, respecting each other's organization

DNA and KPI's. The fact that logistically and culturally the barriers between both organizations are rather low, also contributes to the success of the scheme.

Typical barriers hindering Dual Desk PhD schemes are dual in nature. First of all, ownership and access rights to results achieved are subject to often tedious discussions with legal departments, yet, based on a level of mutual trust built up and past success stories which are used as template model, a good understanding continuously grows and substantially lowers this barrier. Secondly, the alignment of formal procedures at both organization administrations takes time and needs to be monitored and iterated on the fly.

Conclusion

Overall, KU Leuven and Siemens Industry Software are very positive about the Dual Desk PhD scheme, realizing that the success of the programme is strongly driven by the long history of joined research and cooperation, by the willingness to work together on key technologies and by the fact that the steering group members are both missionaries of the scheme within their organizations.

DO

- Respect each other's DNA and KPI's
- Be sufficiently transparent and open on roadmap cross-fertilization

DON'T

- Be afraid to attempt new HR and administrative routes within your organization
- Follow the temptation of profile dilution
- Forget that the project is a PhD project, needing to advance the international state-of-the-art
- Forget that the project is driven also by an industrial need, requiring to assess the added value for industrial challenges
- Go for short term success; PhD research is by definition a mid-term activity

