

Quality Assurance and Risk Management Plan

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Introduction

As part of the Training Management (WP 2), the present Quality Assurance and Risk Management Plan outlines:

- How the InnoChain network establishes and evaluates the quality of the training activities in chapter 1. *Monitoring the quality of the network training plan.*
- Which risks can be foreseen and which measures the InnoChain network will take to them in chapter 2. *Risks and countermeasures.*

The substantial content of the network training plan can be found in the Innochain Plan 2.1 'Innochain Training Handbook for ESRs'.

1) Monitoring the quality of the network training plan

The network training plan are evaluated through a range of activities:

The Evaluation Events

ESR research projects are reviewed on a running basis through the two Research Colloquia 'Design Probes' and 'Prototypes', a pre-VIVA seminar as well as the final ESR evaluation/VIVA which supports a strong focus on the quality and outcome of the training activities in the

network. The final conference and exhibition 'Demonstrators also serves as a concluding evaluative element in the overall training plan.

The Research Colloquia and VIVA presentations are central in gathering the network, reviewing progress and creating exchange. The two colloquia are strategically placed at the end of the first and second ESR training year acting as evaluation events in which research progress is assessed and scientific quality assured. ESRs present their research to the academic and industrial partners as well as invited researchers that peer-review research questions, methodologies and results. The pre-viva presentation assembles the three sub-tracks allowing for focussed conversations and strategic feedback enabling ESRs to develop strong write-up plans.

The colloquia are paralleled with three research exhibitions show-casing experimental results in the form of speculative design probes, material prototypes and demonstrators and positioning material research as effective parts of the research enquiries.

The Visiting Scientist

Visiting scientists and peers are invited to review progress and contextualise results. They will be appointed for each of the main evaluation events. This allows the network to receive critical input from the top experts in a fast developing field. To enable an understanding of progression one external reviewer has been appointed, who will attend multiple evaluation and training events. The external reviewers is:

- Professor Christoph Gengnagel, University of Art, Berlin, School of Architecture, Chair for Construction and Structural Design, Germany

Furthermore visiting scientists are invited to participate as peers and presenters in key training events hereunder the Workshop-Seminars. Here, visiting scientists will review the ESR's results as well as engage in the critical and constructive scientific dialogue. The workshop seminars are documented and made publically available through media such as vimeo, the Innochain blog and the Innochain internal journal.

Finally, ESR's are offered secondary academic supervision by a beneficiary within the network as well as co-supervision from the industrial partner. This gives a running academic dialogue with peers on the central ESR activity: The research project.

The Innochain Network Journal

The Innochain network journal engages a wide audience of researchers, architectural practitioners, students and the interested public in the discussion of Innochain research results and events. Five issues of the journal are planned throughout the duration of Innochain. Details on the Innochain Network Journal are provided in the Innochain Plan: 6.1 Dissemination & Data management Plan.

Quality assurance of the network journal is insured through a rigorous editing and internal peer review process.

Industry board

The Industry Board (IB) acts as an advisory board to the SB. It consists of representatives from the industrial partnership who have extensive and successful experience with inter-sector collaboration. The members of the IB and further details are given in the Innochain Plan: 1.1 Management Structure.

The IB will monitor the quality and applicability of research and training activities in respect to an industrial perspective. They will advise the network in supporting and improving industry collaboration with a special focus on opportunities for commercialisation, cross network implementation and further industry collaboration outside the network.

The industry board will meet at 6 monthly intervals coinciding with key network events.

2) Risks and countermeasures

Innochain has identified a set of risks and prepared related mitigation actions.

Description of risk	Proposed risk-mitigation measures
Lack of common objectives and understanding among participants	Lack of common objectives and understanding among participants have been pre-assessed and addressed by the work plan design at proposal stage. Continuous monitoring throughout the project will be performed by the Supervisory Board and Steering Committee, who will propose to the individual WP leaders any necessary corrective

	actions, should the situation require it. Continuous meetings of the steering group will continuously consolidate and confirm the research aims and objective and enable the implementation of potential changes to the scientific research plan.
Participants not respecting the work plan or meeting deadlines	The risk is mitigated by carefully scheduling meetings and a constant communication among participants. A large number of the partners have a track record of working with one or more of the other partners. We will ensure complete ownership and shared responsibility of the work plan. If a deliverable, task or milestone is not completed, it will be raised at the following Steering Committee meeting and solved there.
ESRs not respecting the work plan	Progress monitoring on the individual projects takes place through three measures: personally, through supervision with local supervisor, industry supervisor and network co-supervisor; informally, through joint training events: workshop-seminars, summer school and research courses; and formally through the key evaluative training events. If progress is deemed to be off-track or industry collaboration is unconstructive, supervisors can consult the Supervisory Board or Industrial Board for support in amending individual research plans. The iteration of evaluative events will mean that such action will be timely and effective.
Shortage of resources (knowledge, expertise and facilities)	The participants have a wide range of knowledge, expertise and facilities that can be shared. If a particular facility or tool fails to operate, the consortium has extensive networks both within and outside the consortium to support direct troubleshooting.
Difficulties in recruiting ESRs	Recruitment is organised inside EU and internationally by the Steering Committee. The three stage recruitment procedure includes 1) Announcement (month 1): Each beneficiary will in collaboration with the SC and main supervisors prepare a joint job posting following national rules and local requirements. All ESR positions will be announced in English language and at the same time. Announcements will take place through EU web portals (e.g. Euraxess), university websites and local professional industry portals including FindAPhD.com, Smart Geometry and the

	Grasshopper 3D Community. 2) Selection (mth 4): A selection committee will evaluate applications. 3) Appointment (mth 6): ESRs are appointed for start of their research training in month 6. Some allowance is given for ESRs personal circumstances allowing for small shift in start dates (month 5-8).
A planned secondment cannot be made	The network has good experience with inter- sector PhD training and understands the particular requirements of such collaborations. The nature of building practice is very fluid. Projects are subject to radical changes in the economy, partnerships and regulatory requirements and are often stalled or change radically in their designs, material realisation and underlying technological solutions. For the secondment programme, we will implement flexible structures by which the ESRs engage and take part in the collaborations. We need to establish continuous relationships between the ESRs and their secondment hosts so that they can continually be informed about project development and design enquiries and we need to be flexible in when the secondments can take place. This will be secured firstly through a flexible secondment staging in which the secondment periods can be changed to fit with industrial projects and secondly through the individual ESR secondment logbook and bi-monthly industrial supervision session which communicates results continually to the industrial partners and the network as a whole.
A planned training event can not be held	A new date for a similar training event will be agreed at the next Steering Committee meeting.
There is a disagreement between supervisor and ESR	To support supervision and expand exposure to multiple research contexts ESRs are offered secondary academic supervision by a beneficiary within the network. This secondary supervisor will give individual supervision, be present at colloquia presentation and take part in the pre-VIVA and final VIVA exam. This ensures continuity in the reviewing process and supports general supervision.
Legal controversy or	The project's handling of Intellectual Property Rights will be completely in-line with the Horizon 2020 Model Grant Agreement, of

disagreement about IPR	which all the InnoChain participants are fully aware. Usage of individual foreground technology and knowledge will be agreed in the consortium agreement.
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