Management, monitoring and evaluation

The management of complex interdisciplinary research and development projects is based on a process model that takes into account all specific challenges and framework conditions for success in the creation of innovations. Important elements and process steps are described below.

DITS is focused on effectiveness and efficiency in research and development projects. In order to achieve these goals, various measures and processes are provided in the project set-up. In particular, the following elements are part of the process model.

Creation of working groups that best meet the requirements profile is essential. The combination of specialists´ knowledge and experience helps to avoid expenses for the re-development of already existing solutions and results.

Cooperation must be based on clear agreements between the partners for the development phase and also for the later use of the results in the market. Early consultations and the coordination of interests help to avoid misunderstandings and to create a sustainable and stable legal basis.

State-of-the-art technology shall be applied. This is best achieved by young and motivated team members who contribute their ideas and knowledge to the project. The support and moderation of the project by experienced experts ensures that the requirements of the market and the consideration of standards in professional project management as well as business-management requirements are taken into account. The close, project-specific alliance of experts is an element for avoiding faults, minimizing costs and risks and creating a supportive basis for the work environment.

Team-Building: The interdisciplinary team is built on organisations and representatives from science, development, operations, management and financing. The combination of proven and approved specialists for the project creates the prerequisites for the best possible implementation. Young, highly motivated researchers – the **development team** – contribute state of the art technology and software design knowledge. Experienced specialists contribute operational knowledge and business oriented aspects as well as experience in professional project management and controlling; pilot users are integrated in that **advisory team.** The team as a whole acts effectively, efficiently and is oriented to create an innovative marketable product which covers the described needs and can close a gap in the market. Overhead, development time and cost as well as risks are reduced to a minimum.

MoU: The general conditions for cooperation within the team and the planned utilization of the project results are defined in a memorandum of understanding. In particular, legal questions regarding IP, existing patents, as well as used products and development results from other projects are answered. Aspects regarding the further use and commercialization of the results are clarified. **Deliverable:** MoU.

Legal and Financial **Audit:** Questions regarding data security and the protection of personal rights are clarified on a project-specific basis. Financing issues for development and market introduction are dealt with. Findings are considered in the Kick-Off.

Kick-off: The starting point for the creation of a catalogue of requirements is the project profile created by users and experts with market experience. The fact sheet contains a rationale for the need and a sketch of ideas for a solution. Within the framework of a kick-off workshop, realistic requirements are defined, taking into account the budget and the time-line. **Deliverable**: requirements and specifications.

Development: The process is organized in cycles built on each other. Each cycle is assigned a part of the planned development time – typically three months – and consists of the sub-steps of definition of objectives, planning, research, implementation and testing. The application manual and training documents are prepared and updated in parallel by team members who are not involved in the development which guarantees independence in reviewing the performance of the solution. At some level of detail, each stage will be complete and is closed with an audit. The development team reports and presents the preliminary solution to the advisory team. Results and project progress are evaluated. All targets for the next stage are adjusted and agreed, taking into account specifications, budget and duration. The method allows for feedback as problems arise or as new discoveries are made. **Deliverables**: audit reports.

Acceptance: The last cycle leads to the final result. The development results and the application manual are presented and analysed. The demonstrator is ready for the following testing. **Deliverable**: acceptance test report.

Field test: The demonstrator is provided for the subsequent field test. The pilot user has the leading role here. The development team is responsible for answering questions and fixing bugs. If problems arise, the advisory team is involved.
Deliverable: field test report.

Project completion: the project will be concluded with the final report and a presentation including statements on further use of the results. **Deliverable**: final report.